

Ann Kumar. *Globalizing the Prehistory of Japan: Language, Genes and Civilization*.
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The Jomon and Yayoi Periods roughly correspond to prehistoric times in the Japanese Archipelago. Owing to geographical propinquity, East Asia and Southern Siberia have been considered to be main areas which mixed genes and cultures with the Japanese Archipelago. In this book, Ann Kumar tries to extend this gene-culture pool to Southeast Asia, especially Java. Considering the general feature of this book, the first word in the title may be somewhat overstated. Yet, as a person familiar with Murayama Shichiro's works on Austronesian influences on Japanese language, I praise the author's effort to combine linguistic, archeological, skeletal, and genetic data on the origins of the Yayoi period on the Japanese Archipelago.

This book consists of three parts. From the beginning of Part I, readers are dragged into an

interesting hypothesis that Indonesian and Japanese cultures have clear similarities. Although some of them, such as rice classification, may be a suitable starter for the book, I was puzzled by the relatively long discussion on horse marks. This kind of cultural similarity has been apparent in historical times, since the cultural connection between Japan and Southeast Asia is well documented from the Sixteenth Century. I am afraid that some readers who are interested in prehistory may stop reading this book when they come across horses figures on pages 16 and 17. However, patience is rewarded by a reasonable description of Japanese and Indonesian prehistories in Chapter 2. Nevertheless, the author seems to not be familiar with the recent claims that the Yayoi period began in 3000 BP [Harunari and Imamura 2004], contrary to the traditional view of 2500 BP [Imamura 1996]. This is understandable, because Japanese researchers of Japanese archeology rarely write papers in English. In any case, if this new scheme is acceptable, the time frames of the Jomon-Yayoi succession presented in this book need modification. Five hundred years, or 20 human generations, are not short. This time shift may affect some of the author's arguments in this book.

Part II is the core of this book. Four chapters are devoted to rice, bones, DNA, and languages. Some papers in which I was involved were cited in Chapter 5, and this may be one of the main reasons why I was asked to review this book. As my background is in anthropology, I have been interested not only in the genetic relationships of human populations but also in linguistic and skeletal data. My knowledge is limited, but I would like to comment on each chapter in Part II.

Chapter 3 deals with rice. The history of rice cultivation research is long, and there have been dramatic changes during the last 20 years with the use of new DNA technologies. Unfortunately, the author failed to mention these new

studies, although some recent papers are fragmentarily cited. For example, Sato Yoichiro [1992] demonstrated a close relationship between temperate and tropic zone japonica, the latter also known as javanica. Yet, Sato himself considered that it came to Japan via Taiwan or possibly the Philippines, not directly from Indonesia. It is strange that the author never paid attention to Sato's work, although she cited earlier works by Oka Hikoichi, with whom Sato studied rice when they were in the same department at the National Institute of Genetics, where I am now.

Another important paper on rice pylogeny is Xu *et al.* [2007]. The phylogenetic tree shown in that paper clearly demonstrates a close affinity between temperate and tropic zone japonica, though their ancestor seems to differ from *Oryza rufipogon* (*nirva*) in China. It should also be noted that javanica (tropical zone japonica) strains are closer to temperate zone japonica (japonica currently dominant in the Japanese Archipelago) and are from China, not Indonesia. This finding, using 49 SINE insertion polymorphic loci, should be considered in any discussion of the genetic relationships of rice.

Chapter 4 leads onto a discussion on human teeth and skulls. Many Japanese researchers, in particular the late Hanihara Kazuro, cited in this chapter are familiar to me. As I personally believe that nonmetric cranial traits are more suitable than metric traits for the phylogenetic study of human populations, I searched the website of *Anthropological Science*, the official journal of the Anthropological Society of Nippon. I found two papers of interest at this website; Shigematsu *et al.* [2004] and Fukumine *et al.* [2006]. In both papers, Japanese populations were compared with many surrounding human populations including those in South East Asia. Their results confirmed the author's point that the Yayoi people were close to South East Asians, though

this pattern is different from the late Hanihara's [1991] view on his dual structure hypothesis.

Chapter 5 is about DNA. The author nicely summarizes research results up to 2004, including her own paper. It seems this chapter was written in 2005 and no revisions were made before this book was published in 2009. During the last four years, an amazing amount of data has been produced thanks to a vast array of Genome Wide Association Studies. Li *et al.* [2008] compared 650,000 SNP loci for 51 human populations. Japanese were clustered with Han Chinese in their phylogenetic tree. Tian *et al.* [2008] compared 200,000 SNP loci for 22 mostly Asian populations. Although Indonesian populations were not used, Philippines, Vietnamese, and Cambodians were included in this paper, as well as Japanese. Their PCA plot shows that Koreans are closest to Japanese, consistent with their geographical locations. Microsatellite DNA polymorphism is also often used for population comparison. Li *et al.* [2006] examined 105 microsatellite DNA loci for nine human populations mainly from East Asia, and found that Japanese were closest to Southern Chinese rather than Northern Chinese. This southern connection is interesting and as such the author should have paid more attention to these recent papers before publishing this book. Although published after this book came out, HUGO Pan-Asian SNP Consortium's [2009] effort should also be mentioned in this book review.

Chapter 6 is about languages. I am not a specialist of linguistics, so I asked the professional linguist, Dr. Onishi Masayuki at the Research Institute for Humanity and Nature. He worked with the author when he was in Australia, and was one of the people acknowledged in this book. Accommodating his opinion, I would like to mention that the author's analysis is sound and that similarities between Japanese and Javanese languages exist through borrowing from Old Java-

nese to Old Japanese. Nevertheless, I still have reservations about accepting a direct connection between the two languages, because geographically the Japanese Archipelago and the Sunda Archipelago are rather remote. It may be possible to hypothesize that some missing link, such as the northern Philippines or Taiwan or Southern China culturally connected these two Archipelagoes. This connection is certainly more acceptable than the Tamil-Japan connection hypothesis, almost dead now after almost its sole proponent passed away two years ago.

Part III of this book is not easy to cover for me. I therefore omit this part from my review.

Although I have offered various criticisms of this book, I agree with the author that the prehistory of the Japanese Archipelago should be viewed not only from East Asia (and Southern Siberia) but also from a more geographically broad perspective, including South East Asia. Hunter-gatherers travel over much larger distances than farmers. We have to be prepared to confront unexpected connections with places located far from the Japanese Archipelago. (Saito Naruya • Division of Population Genetics, National Institute of Genetics)

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