

Digging against the clock

Paul G. Bahn

Recent Archaeological Discoveries in Japan. Edited by Tsuboi Kiyotari. Translated by Gina L. Barnes. *Unesco/Centre for East Asian Cultural Studies: 1987. Pp.127. Pbk FF.100, £15, \$23.*

THIS, the latest addition to an attractive series that has been appearing since 1979, is as informative and interesting as its predecessors, which covered recent archaeological discoveries in China, Korea and India. The pace of production and publication of the volumes is slow; but as a survey of work in Japan up to 1984, the book constitutes a readable and well-illustrated account for those without easy access to or comprehension of the Japanese literature.

One's faith in its accuracy is shaken by the very first sentence of the Introduction (which states that "the Japanese archipelago lies west of the Asian landmass"), but happily this is a minor slip in an otherwise excellent text. Until recently, Japan was much neglected in archaeology courses taught in other parts of the world, in part through the unavailability of translated material. Yet its location in relation to a continent is not dissimilar to that of Britain on the other side of Eurasia (both, for example, became islands through the postglacial rise in sea level), a point which should perhaps have stimulated more comparative studies. In addition, because Japan extends from the subarctic to the subtropical zone, past human adaptations to very different environments can be studied within a fairly small distance.

The book contains chapters on all of the main periods recognized in Japanese archaeology, each written by a specialist. The treatment is somewhat uneven, a situation dictated partly by differing conditions of preservation of artefacts, and partly by the particular interests of each author or of Japanese archaeologists in general. For the Palaeolithic, stone tools predominate in the discussion; in the Jomon culture, pottery, subsistence and settlement types; in the Yayoi, early agriculture and bronze bells. The chapter on the Kofun period is inevitably devoted to a study of the development and structure of its huge keyhole-shaped mounds, as well as to evidence for social differences in the society. Finally, the descriptions of the early historical periods are concerned with texts, and sites related to the regional administrative bureaucracy.

Within these chapters, however, lie accounts of the discoveries that have placed Japan on the world archaeological map. First, the recognition (since 1949) of

the existence of its Palaeolithic cultures, and especially their remarkable features such as edge-ground axes (a technological achievement also found among the Pleistocene occupants of northern Australia), the oldest definite pottery vessels in the world (from 10,000 or even 12,000 years ago) and, since the book was written, evidence for very early sophistication in woodworking (see *Nature* 329, 110; 1987). In later periods came the establishment of rice cultivation, which has been investigated through excavation of paddy fields and analysis of plant phytoliths. And, in the early historical periods, the tens of thousands of slim wooden tablets bearing writing in ink, which pro-

vide a detailed picture of administration, economics and politics.

The great misfortune of Japanese archaeology, however, is that such a huge proportion of effort and resources over the past few decades has had to be devoted to rapid salvage excavations in the face of ever-encroaching development and construction projects. The result — the comparative lack of regional synthesis or planned research programmes — is all too evident in the book. It will be sad if studies of that kind can only be undertaken after most of Japan's sites have disappeared for ever. □

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Fun in the night

Bruce Margon

First Light: The Search for the Edge of the Universe. By Richard Preston. *Atlantic Monthly Press, New York: 1987. Pp.263. \$18.95.*

I HAD expected to dislike this book. The dust jacket (presumably not entirely the author's fault) is overripe in the extreme. Astronomers "rip the veil from space-time" but are not allowed to touch the controls of the huge 200-inch telescope "because they might destroy it". As an observational astronomer, I confess as well to some trepidation at an obvious although unstated purpose of this story — that is, finally to reveal how much fun a few grown men and women can have playing with computers and many tons of precision glass and steel in the middle of the night.

Despite my no doubt pompous intent to condemn this work, I failed. It's fun! Preston strings together a dozen essentially independent vignettes of astronomy in a somewhat odd, but certainly not unsatisfying, way. The book contains short biographies of a varied group of living and dead twentieth-century astronomers, sharing in common perhaps only their intense levels of energy, ingenuity and devotion to their work. Although the characters (such as Fritz Zwicky, Maarten Schmidt and Jim Gunn) are well known to other astrophysicists, they have not been previously featured in the general literature.

Interleaved between the personalities are tales of two current, important but again disparate astronomical problems: the quest for very high redshift quasi-stellar objects at the far edge of the Universe, and the search for a rare class of nearby asteroids at our cosmic doorstep. And for good measure, we learn something of the construction history of two major astronomical facilities, the Hale

200-inch telescope, and the Hubble Space Telescope.

Preston's style, although not quite as flowery as that on the dust jacket, will never be accused of being dry. The superlatives, expletives and adjectives fly past. But the author's enthusiasm is infectious, and the style soon becomes unobtrusive. The book flows back and forth between its tales smoothly, and with some of the urgency of a good mystery. The presentation is appropriate for an educated layman curious about twentieth-century science, but without a background in astronomy. Even professional astronomers and physicists will enjoy the colourful accounts of their famous colleagues' youth.

A more balanced and thereby more informative book might have at least briefly noted the parallel scientific activities of 'the competition'. The reader here may gain the impression that distant quasars are found only at Palomar Mountain, when in fact other groups around the world, particularly in Britain, were simultaneously using different but equally elegant search techniques, in some cases with spectacular successes that preceded those of the protagonists of *First Light*.

There are not enough permanent jobs in astrophysics to accommodate the number of bright new PhDs. There are certainly too few large telescopes as well. *First Light* is fun enough to read that it will do its part to make things worse. Books that, in a reasonably accurate and well-informed manner, show that scientists can make poor guesses, swear, trip on things and generally exhibit the full range of human failings, while still making genuine and lasting intellectual progress on the most difficult of problems, are important. This is such a book, and an interesting, entertaining and sometimes outright funny one at that. □

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