

preface

Fieldwork carried out during 1980-1981, in the Sakon Nakhon Basin of Northeast Thailand, provided most of the archaeological evidence set out in the present report. In addition, pottery recovered from excavated and/or surveyed sites spread within the Khorat Plateau, the adjacent Petchabun Highlands, and the more distant Central Plains region, has provided important comparative data. Information regarding the distribution of ceramic traditions in the area was virtually non-existent in 1980. When such conditions exist a research strategy which provides an overview of the region in question is a vital first step in orientating the data under immediate scrutiny. Hence, at David Peacock's suggestion, it was decided to aim for an extensive corpus of pottery, from as many sites as possible, against which the primary material could be brought into focus. The comparative pottery enhanced Sakon Nakhon Basin evidence by allowing it to be set in a tempero-areal background. Such background information can give important insight into socio-economic and other cultural factors. In the present study it has allowed these processes to be brought under closer scrutiny. Fieldwork during 1985, at the neolithic site of Khok Phanom Di, contributed technological information which further bears on several inferences and conclusions within this report. These explanations particularly concern the origins of manufacturing techniques which were adopted by potters late in the Northeastern cultural sequence.

This report is a very slightly modified version of the author's doctoral dissertation "The Prehistoric Ceramics of Northeast Thailand", submitted to the University of Otago in 1987. The changes involve a different page format suited to double-sided publication, with running headers, and an index. It also expands and clarifies preliminary results previously published by the author in the three volume report, B.A.R. International Series 231(iii), edited by Higham and Kijngam (1984). Readers who wish to avail themselves of a detailed report which also covers the non-ceramic aspects of the 1980-81 archaeological expeditions, carried out under the auspices of the Thai Fine Arts Department's Northeast Thailand Archaeological Project, should refer to that publication. The present volume serves as a further contribution to the 1984 three volume series, with the intention that it provide a more comprehensive cover of that investigation. It is also the author's hope that the present report may contribute to our understanding of the prehistory of Thailand, through a consideration of Thai prehistoric ceramic artefacts. Many of the sites covered are located beyond the area covered by the 1980-81 investigation, and it has thus been possible to make available a quite broad perspective of Northeast Thai prehistory, in terms of the ceramic spectrum available at the time of publication.

At the commencement of the Sakon Nakhon Basin fieldwork, which provided both cultural and geological data, it was envisaged that any technological or petrographic information would fall under the analytical rubric so cogently promoted by earlier workers such as Anna Shepard and David Peacock. This approach seemed fitted to evidence derived from potting clays and/or ceramic artefacts. A fundamental assumption was that mineralogical evidence would provide

the yardstick for suggesting likely ceramic source areas, identifying exchange networks, detecting possible cultural changes, and exploring the integration of pottery manufacture with other socio-economic activities. One example is understanding the role of pottery in ritual behaviour, as displayed in activities considered to reflect symbolic expression. In this study the assumptions proved to be insufficient for the task at hand. They were inadequate because the material proved intractable under normal analytical procedures. Thus new techniques capable of resolving this impasse were needed.

When new research projects are initiated, particularly those involving fresh methods of inquiry, or methods which have not been applied in the area before, it is perhaps predictable that the results will not fit neatly into previous explanatory structures or “scientific paradigms”. Such was the case in this study. Much of the pottery described in the following chapters was manufactured from clays which are, in standard petrographic terms, best considered “geologically non-specific”. In light of this difficulty, a new approach has been adopted.

Earlier Southeast Asian studies have concentrated on pottery style. These emphasize form and design characteristics, features susceptible to transient influences. Reliance on such evidence risks misleading results. Ceramic fabrics, however, encapsulate technological and mineralogical information potentially useful in explaining cultural relationships and changes in the potter’s craft. Such information is essential if prehistoric wares are to be used for chronological frameworks, and as markers of social organisation, exchange networks and cultural changes.

Khorat Plateau geology, geomorphology and palaeoclimate are each outlined and related to Sakon Nakhon Basin potting clays. The geology is relatively homogeneous, due to its principally sedimentary composition. Materials derived from sedimentary areas can present technical problems for potters because they often require special manufacturing methods. The resultant fabrics are often distinctive. Thus both mineralogical and technological information can be identified in wares produced under these conditions. A new analytical method, which combines these data, is presented. Many prehistoric manufactories are likely to have been located in sedimentary terrain for two important reasons. First, it is estimated to form up to 80% of the earth’s crust. Second, prehistoric settlements tend to be concentrated in such terrain for socio-economic reasons unrelated to pottery factors.

The role production centres played in the distribution of ceramics is considered critical. Production is constrained by the need for reliable supplies of suitable clays and other ceramic ingredients. Quality potting clays are often restricted to small localised deposits. Pottery was often a prominent exchange item. This was partly because consumer populations were often net importers. Thus the mere presence of pottery in archaeological contexts does not guarantee *in situ* manufacture. These factors must be taken into consideration, therefore, when pottery is used to construct archaeological frameworks such as relative local or regional chronologies, if reliable conclusions are to result. Further, geographically explicit labels, such as “Ban Chiang Painted” or “Om Kaeo Ware”, should only be used if they genuinely define a ware’s origin. Evidence is presented which contradicts previous assumptions regarding the origins of these latter wares. Alternative explanations are given in their place.

Particular attention is paid to temper species because they are important ingredients in pottery manufacture. Since potters display marked conservatism in technological matters, tempers help identify different ceramic traditions. One Ban Na Di mortuary ware fabric, however, contained a technologically superfluous additive. This is considered to represent symbolic expression. It correlates strongly with a mortuary vessel form which is also considered ritually significant for independent reasons. Such correlations demonstrate the need to combine

technological and stylistic evidence.

Two temporally separated Ban Na Di ceramic traditions are detailed through analyses of potting clays, ceramic artefacts, tools associated with pottery manufacture, and the accoutrements of metallurgy. Each distinctive tradition employed different clays and fabrication techniques, and displayed different pottery styles. The local changes are considered to reflect broadscale developments of some magnitude. Theoretical models are suggested to account for these changes. They draw on material from sites within and beyond the Khorat Plateau. This evidence is used to suggest exchange networks, the presence of itinerant metallurgists, and to index the movement of pottery made under the rubric of the later ceramic tradition into an area previously lacking its associated distinctive technology. It is argued the implications of such changes are important because they heralded significant socio-economic events which markedly widened the external relationships of early Sakon Nakhon Basin communities. In addition they are thought to index the arrival of immigrant potters familiar with the new ceramic technology. It is postulated that this technology originated far to the south, ultimately beyond the margins of the Khorat Plateau. The coincidence of these new ceramics and exotic artefacts suggests that Sakon Nakhon Basin communities subsequently took part in a much expanded and more dynamic exchange network than they previously knew.

Finally, the role pottery plays in archaeological method and theory is briefly considered. As ceramic materials are rock-like in composition they are usually durable. Such durability affords pottery a degree of importance to archaeologists which may often exceed that given it by prehistoric societies. It is fortunate, however, that pottery is durable because it provides insight into cultural activities which would otherwise be unobtainable.

acknowledgements

This study is a slightly modified version of a dissertation submitted for the degree of Doctor of Philosophy at the University of Otago. The field work formed part of the Thai Fine Arts Department's Northeast Thailand Archaeological Project. The Ban Na Di excavations were carried out under the co-directorship of Amphan Kijngam, who was at that time the director of the Northeast Thailand project, and Professor Charles Higham of the University of Otago. The director of research, Archaeology Division of the Fine Arts Department, at this time, was Pisit Charoenwongsa, and he played an important role in the planning and supervision of the research, which began at Ban Chiang and was carried on at other Northeastern sites such as Non Chai. The Ban Na Di expedition was supported by the Thai Fine Arts Department and the University of Otago. Funding was provided by the Ford Foundation, and the University of Otago.

The excavation directors invited the author to undertake an analysis of the ceramics, and to them I express my thanks. Fieldwork carried out during the excavation programme, aimed at locating Sakon Nakhon Basin potting clay quarries, was conducted with the support of the Fine Arts Department which provided a four-wheel drive vehicle and driver.

The New Zealand Government provided funding for pottery sorting in the Otago University laboratories. In all, thirty-five New Zealand students helped sort pottery into various categories. The government also provided temporary helpers who were trained in thin-sectioning techniques and other tasks. Over 1,000 sections were created, and the assistance of these helpers is gratefully acknowledged.

The report has benefited from the combined assistance and encouragement of many colleagues and advisors with a broad range of interests, but united in their desire to expand our understanding of Southeast Asian prehistory. I acknowledge their generous assistance. An essential aspect of the investigation involved geological evidence. The help offered by geologists and geochemists attached to the University of Otago's Geology Department has been invaluable. Among these I thank Associate Professor C.L.Landis, Associate Professor J.D. Campbell, Dr. A.F. Cooper, Dr. D. Craw, Dr. Y. Kawachi and Dr. A. Reay. During my visit to Southampton University Dr. D.P.S. Peacock instilled ideas which played an important part in the overall analytical direction of the work. Discussions with Dr. I.C. Freestone, Dr. J. Riley, Dr. M.S. Tite, and Professor W. Watson helped stimulate and clarify many questions. Dr. C.G. Adams of the British Museum (Natural History) helped with the sponge spicule identification. The species *Ephydatia meyeri* was kindly identified by Professor F.W. Harrison, Western Carolina University. Professor Alan Musgrave helped with questions concerning the philosophy of science.

I wish to acknowledge assistance of the technical staff of the Department of Anthropology,