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**MARKET EXCHANGE SYSTEMS WITHIN THE ROMAN ECONOMY
OF THE FIRST AND SECOND CENTURIES A.D.**

by

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Thesis submitted for the degree of Ph.D. in the Department of
Archaeology at the University of Newcastle upon Tyne.

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The drawings were all done by myself except for Fig. 6 which is reproduced with the authors' kind permission.

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ABSTRACT

A primary hypothesis is proposed concerning the presence and importance of market exchange systems within the Roman economy. In Part I this hypothesis is placed in its context with a number of contrasting models of the Roman economy being summarised and discussed. Those produced by classical historians are supplemented by the less familiar but often theoretically more sound models derived from the work of a selection of social and economic historians. Problems of economic theory are further highlighted in the closing chapter.

In Part II the relevance of archaeology and in particular the evidence of ceramic data to the testing of the primary hypothesis is examined. An analysis of a set of ceramic data from an area in Northamptonshire is preceded by a resumé of the archaeology and pottery of that county. The analysis concludes that market exchange systems were indeed operating in second century Northamptonshire.

Part III takes this conclusion as a starting point for reassessing archaeological models of the Romano-British economy and then extends the discussion to incorporate the Roman economy as a whole. The use of ethnographic and historical analogies in this context is examined, and the latter used to produce a modified, dynamic model of the Roman economy. The concluding chapter assesses the validity of the final model, stressing the fact that even though the Roman economy seems never to have been fully 'marketized' this does not mean that it was in any way a failure. The increase in material wealth enjoyed by almost the

entire population of the empire is confirmed by archaeologists and economic historians alike.

The thesis closes with a section in which suggestions are made about directions for future research into the subject of the Roman economy.

INTRODUCTION

Section i) - Aims and Hypotheses

The origins of this thesis and the research that it entailed lie in an undergraduate reading of Finley's 'The Ancient Economy' (Finley 1973). Finley's primitivist/negativist treatment of the Roman economy has been extremely influential amongst those who study ancient economic history, archaeologists included. With the current open-armed acceptance of Finley's model, even a modified one (see Hopkins 1983) with its dismissive attitude towards even the most obvious archaeological evidence for the complexity and sophistication of the Roman economy, it was thought useful to propose and test a counter-hypothesis using data from as many sources as possible, but with a particular emphasis on that provided by archaeology. In its barest bones this primary hypothesis was that:

a self-regulating, free-enterprise market system of exchange operated extensively during the first centuries of Rome's occupation of Britain, at least in the lowland civilian zone.

The extent, importance and even existence of systems of market exchange in the ancient world forms the basis of much that is in dispute in the study of Roman economics. Ancient economic historians have become aware of how their own experience of modern market-centred economies has influenced their interpretation of the past. Prehistorians have led the way in this in the world of archaeology, closely followed by medievalists. Romanists have unfortunately lagged far behind and not for nothing was the study of Roman Britain recently likened to "... an aged, cosseted old lady, sitting immobile in an

airless room reeking of stale scent, fawned on by a bevy of tireless dedicated servants " (Cunliffe 1984 178).

Roman economic archaeologists in fact start at a great disadvantage to their cousins in Prehistoric and Medieval archaeology. In these latter fields, theory and methodology have been adopted, modified and developed from other disciplines to aid research for many years. This has not been the case in Roman archaeology, perhaps because of the sheer mass of data which needs to be processed. It is of course the scale of this data which makes it all the more important that new approaches are tried in Roman archaeology, not just for their relevance to the Roman situation but also for their relevance to the development of archaeological theory and methodology in general.

The lack of a sound theoretical and methodological basis for the study of Roman economics has radically influenced the author's approach to this thesis. A desire to stress the crucial importance of archaeological data to the study of marketing in the Roman economy has had to be tempered by the necessary incorporation of a large amount of theoretical groundwork as well as historical background information.

Since the approach to the subject matter is so novel to the Roman archaeologist it was decided that the layout of the thesis should very much reflect the research procedure that produced it. Many Roman archaeologists are becoming familiar with such research procedures but too many more are not.

Paradoxically it was perhaps Finley above all others who first introduced the new approach to the Roman economist and in setting up here such a radically opposing primary hypothesis this author in no way wishes to negate Finley's outstanding contribution to the study of the ancient economy. The aim of this thesis is in fact to counterbalance rather than destroy. The exploration of the contradictions between the primary hypothesis and those of Finley and others as well as its testing using archaeological data will, it is hoped, give a clearer picture of the role market exchange had to play in the Roman world, and its overall importance in the exchange systems operating in the Roman economy.

Section ii)~Archaeological Methodology

In the past archaeologists have had a rather lowly role to play as the 'handmaidens of history'. The physical realities of archaeological 'data' (if it was even considered as such), were of a sort that only the most tentative generalisations based on inference, analogies with ethnographic data and certain guiding principles like how a flint fractured, were allowed. The further an archaeologist went from the 'facts', the less acceptable were the hypotheses induced from those facts or data. This so-called 'inductive' methodology based on the interpretation from empirical data, was seriously challenged in the 1960's by the New Archaeologists. Lewis Binford represented much of their original thinking on archaeological methodology in his book 'An Archaeological Perspective' (Binford 1972). In it Binford proposes a new 'perspective' on methodology derived from the scientific method of deductive reasoning. In this a proposition is made and then a series of testable hypotheses are deduced which, if supported against independent empirical data, would tend to verify the proposition (ibid 90). Thus the soundness of the hypothesis rests not in the way it was arrived at but the way it stands up when tested against relevant observational data (see Hempel 1965 6).

The New Archaeology was eagerly, if often inadequately utilized by prehistorians, but hardly touched the world of Classical Archaeology until very recently. The process of model building implicit in Binford's explanation and made explicit in for example T.F. Carney's 'The Shape of the Past' (Carney 1975), seems suddenly to have dawned upon the Roman archaeologist. See for example D.P.S. Peacock's chapter 'Towards a Model for Roman

Pottery Studies' in his 'Pottery in the Roman World' (Peacock 1982).

The scientific credibility attached to the deductive approach is obviously one of its attractions. There are already however, dissenting voices. The key to Binford's new perspective was the testing of hypotheses and the models built from them. Unfortunately, archaeologists are beginning more and more to realise that the testing or as Barrett (1983) points out, the refutation of hypotheses has left most of them in the dark. The root of the problem lies in the fact that it is impossible to talk about a dynamic past ".... if we cannot firstly agree what our observations on the static archaeological record represents" (ibid 189). The necessity being, in Binford's words, the establishment of a 'Middle Range Theory' (ibid 189). For Barrett, at the moment this is a practical impossibility. His suggestion is that archaeologists must alter their aims.

The New Archaeologists were attempting in their research to define scientific laws of human behaviour. The idea that the formulation of mathematically testable scientific laws is the only way to the truth is now being seriously doubted (see Sayer 1984), see for example, current research by physicists into super-symmetry and beyond. For Barret (1983) the new challenge to New Archaeology is the study of human actions or ".... the way individuals and groups actively construct and manipulate a social order " (ibid 189). This is in effect history.

As far as the author of this thesis is concerned however, the

archaeologist must resist a reversion to the old 'handmaiden' role. Though archaeologists may have to abandon the hope of formulating general laws of human behaviour, they need not abandon their scientific approach to their data. Clive Orton provides a simple compromise to the induction versus deduction debate. He calls it the 'statistical cycle' and illustrates it as in Fig. 1 (Orton 1980 20). Being a cycle it illustrates well how many of the present generation of researchers approach their work. In particular it shows how a prior knowledge of data will affect the hypothesis instead of the 'out of thin air' procedure of deductive reasoning. It is thus well suited to the archaeological realities but still gives scope for model and hypothesis building before actually analysing the data.

As an aside, the use of models in archaeological research has been much abused, see for example two reviews of Peacock (1982), (McVicar 1983 and Griffiths and Greene 1983).

Here models are understood to be simplifications of hypotheses, and as Orton writes "... a good model has to strike a balance between being a) complicated enough to represent the real world adequately and b) simple enough to be amenable to statistical analysis." (Orton 1980 20). The use of models is felt here to be vital if any valid attempt is to be made to statistically analyse archaeological data.

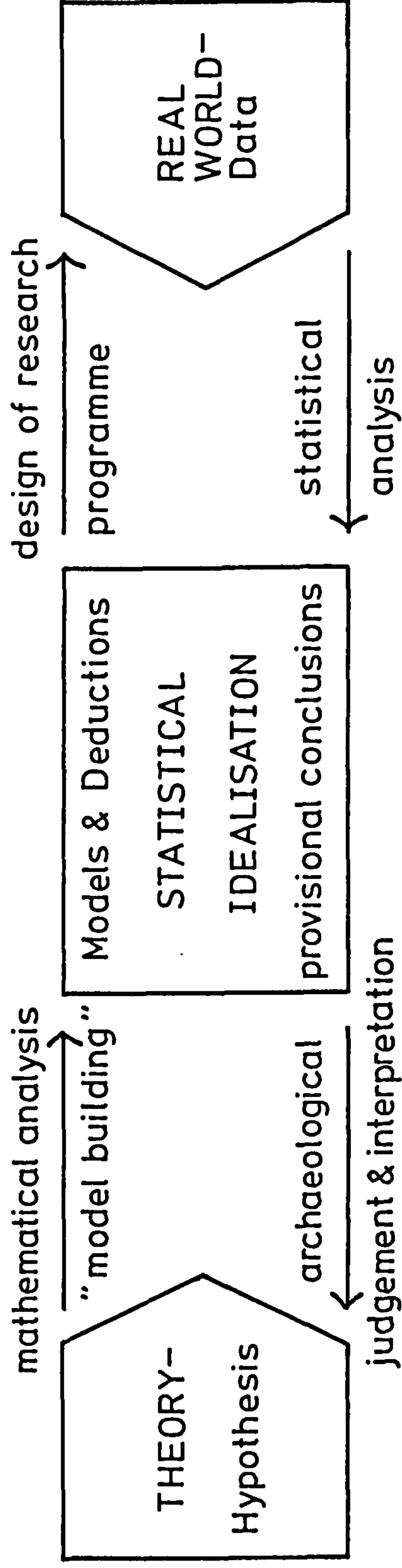


Fig.1 The 'statistical cycle' (after Orton 1980 Fig.1.3)

P A R T I

GENERAL MODELS OF THE ROMAN ECONOMY

INTRODUCTION

As pointed out in the section above on Archaeological Methodology the formulation of hypotheses is always affected by a prior knowledge of the data in question and by the work that has already been done on that data by others.

Being such a vast subject the Roman economy has provided fertile ground for model building and not just by classical historians. The following sections are intended to be brief summaries of the most influential and/or interesting models of the Roman economy that so far have been produced. It is by no means exhaustive but is as far as possible representative. The models of Rostovtzeff (1957) and Finley (1973) will be discussed from a theoretical stand point in Chapter 3 below. They may perhaps be taken as representing the two furthest poles of the subject. As will be seen there are many stages in between.

The models of the ancient economic historians and classicists will be summarised first, followed by those of sociologists and economic historians. Two further groups will be incorporated later on in the thesis. These are those constructed by archaeologists and numismatists and those put forward by anthropologists and ethno-archaeologists. It was felt that adding these two groups of models after the proposed statistical analysis instead of before, would be more instructive, particularly in modifying the initial hypothesis and models.

CHAPTER 1

THE ECONOMIC MODELS OF THE ANCIENT HISTORIANS

Section i) - Ideal versus Reality: the reliability of the historical sources.

In discussing interpretations of the Roman economy by classicists and ancient historians it must be stressed that no attempt will be made to criticise them from the point of view of their interpretations of the classical sources. Few archaeologists are qualified to do so. What can be done though, is to briefly mention some of the traps into which classicists are likely to fall.

Two reviews of major works by eminent ancient historians immediately spring to mind. The first and perhaps most pertinent is the review by M.W. Frederiksen of M. Finley's 'Ancient Economy' (Frederiksen 1975). Frederiksen opens by examining Finley's solidly sociological approach:

"... the social framework.... a view of Roman society that may be likened to a large and rather complicated layer cake. The emphasis on 'stratification' has the advantage of reminding us of a total society, in which the great majority were the voiceless; the image conveys visually that statuses always existed, and were based on huge discrepancies of wealth. For Finley, however, status also determined the mentality, and so the economic relations, of the Roman world; to understand

its economic life, we must look to the opinions of its 'top people'" (ibid 165).

Frederiksen questions the soundness of Finley's social framework, wondering at his definition of the "prevailing social ethos" based as it is solely on the writings of Rome's 'top people'. Frederiksen concludes this point with the question of whether, "...the book succeeds in proving that 'economy' was negligible because it was subordinated to one cultural and psychological framework" (ibid 170).

The second review is by Keith Hopkins who looks at Fergus Millar's weighty tome 'The Emperor in the Roman World' (Hopkins 1978a). The review is called 'Rules of Evidence' and it is exactly the application of these 'rules' that Hopkins criticises. He quotes Millar's defence as being that we should base "...our conceptions solely on those attitudes and expectations" expressed in the sources and should not come to the study of Roman society, armed with ".... an array of concepts derived from the study of other societies." Hopkins makes it quite clear that such a defence is untenable, illustrating his point with an excerpt from a fifth century A.D. Chinese text which describes the contemporary Romans as follows, "The people are tall and upright in their dealings, like the Chinese...." Hopkins insists that such sources add dimensions which cannot be ignored. He thus questions the validity of dismissing one part of a record and citing another part as though it described reality, "The evidence is not holy, it is itself a social construct and so should not be taken at face value any more than one should take the Times.... as necessarily right " (ibid 183).

All too often there has been a conflict between the 'ideal' of a written source and the 'reality' of an archaeological fact. In the past archaeology always took second place, today hopefully no longer.

It must be pointed out here in conclusion that not all classical historians are guilty of the above mistakes. Two notable exceptions are N. Lewis (1985) and R. MacMullen (1974). Both authors have attempted to give Frederiksen's 'voiceless majority' tongues. Lewis has examined a very large collection of papyrological evidence from Egypt to give a picture of everyday life in Roman Egypt. MacMullen has used a huge variety of sources including papyri; tombstones; Jewish doctrines; as well as the usual classical authors, in his attempt to describe the entire social framework from the top to the bottom and beyond Italy to the provinces, "...beyond the city to the countryside, and beyond the external, the legal and administrative aspects, to the internal " (MacMullen 1974 viii). It is a brave if rather idiosyncratic effort and goes some way to redressing a very unbalanced picture.

The following summaries of the economic models of ancient historians and classicists often mirror this imbalance which should therefore be kept very much in mind. Each summary follows a strict pattern as will become apparent. It will also be noticed that agriculture is in each case only briefly looked at, this reflects the bias of the hypothesis upon which this thesis is based (see above). Similarly with the emphasis on the situation in the first two centuries A.D. only.

Section ii) – The Models

a) M.I. ROSTOVITZEFF

'The Social and Economic History of the Roman Empire' Vols. I and II 1st Ed. 1926, 2nd Ed. 1957 Oxford

Rostovtzeff's great work is characterised above all else by its author's enormous enthusiasm for all that belonged to the ancient world. His knowledge of the historical sources is amply matched by his familiarity with ancient archaeology. Rostovtzeff's view of the ancient economy is very much of an empire-wide, unified system, though he does mention special cases such as Britain, northern Gaul and Germany where in his opinion, urbanization failed to gain a foothold and the economy was almost completely agrarian.

In the rest of the empire, even where towns and cities continued or started to exert their civilizing influence, Rostovtzeff quickly points out that the majority of the population, rich and poor, would have gained their livelihood through agriculture too. From the late Republic into the Augustan era, all over the empire, large and medium-sized farms at least, would have been run on capitalistic lines, the largest using slave labour and being at pains to maximize efficiency, with an emphasis on cash crops and the ".... more or less scientific tillage of the soil " (1957 343). Rostovtzeff sees a general tendency throughout the empire towards the concentration of land in the hands of a few proprietors who lived in the cities, particularly members of the imperial aristocracy, the emperor chief among them. Rostovtzeff sees this process, the growth of the latifundia, as fairly slow

in Italy, Spain and Gaul but extremely fast in North Africa and Egypt. Describing the big agricultural concerns of Italy in particular, Rostovtzeff terms them as of 'factory' type, "... self-supporting as far as possible and forming a little world in.... themselves " (ibid, notes to Plate X).

Rostovtzeff's view of the economic unity of the early empire is emphasised in his description of trade in the second century A.D. as still ".... truly a world commerce," wholly unfettered. The actual objects of this commerce in Rostovtzeff's eyes were far from being mere luxuries, they were in fact almost exclusively the necessities of life; fish; grain; oil; wine and manufactured goods.

The business organisation backing up this commerce was to Rostovtzeff, sophisticated in the extreme. He describes, for instance, the late Republican forum in Rome as teeming with life, financial deals being struck over real estate perhaps thousands of miles away, or over ships, store houses, slaves or cattle. He talks of shares and bonds, and the sale of goods for cash and credit. Roman banking is seen as well able to handle the financial implications of a large scale and widespread commerce. This ability was not confined to Rome. Rostovtzeff writes of fully developed credit and credit operations in the cities of the empire and the establishment under the Flavians and Antonines of "... real banks, both private and municipal... throughout the empire " (ibid 180).

Industry was flourishing as well during the early years of the empire. In the late Republic the failing industries of Campania

and Etruria in Italy were revived by rich Roman knights who had made their fortunes during Rome's early colonization, first as army suppliers and then very often as usurers and tax farmers. The new Italian industries, thanks to the capital investment, as Rostovtzeff puts it, of the knights, were soon growing fast, producing for an indefinite market rather than to order, with highly specialized workshops. However, the concentration of money in the hands of Roman capitalists and its use for usury and so on, began, according to Rostovtzeff to hold back Italian industry and this "... handicapped the sound development of a normally growing capitalist system " (ibid 36). Such problems were not felt in the provinces until well into the second century A.D. and the enthusiasm and enterprise of the Roman knights was carried on in the early empire by what Rostovtzeff calls the urban bourgeoisie of the empire.

The actual organisation of industrial enterprises presents an interesting paradox that Rostovtzeff is quick to underline. Although many such enterprises were on a very large scale indeed, they never completely succeeded in monopolising their own particular corners of the market. The small individual urban workshop was, it seems, well able to hold its own in competition. Rostovtzeff notes the same phenomenon between urban producers and those on the large estates. This latter subject will be returned to below in Rostovtzeff's discussion of industrial stagnation.

The market for which these 'industrialists' produced was not just geographically widespread. Rostovtzeff goes so far as to term it a 'mass market' with even the poorer members of urban and rural society participating. However, Rostovtzeff sees this as

having an unfortunate effect, since, though the 'lower classes' were numerous, they were also very poor in relative terms and manufactured goods had thus to be very cheap to be within their means. This led eventually to a decay in artistic taste and skill among the producers.

The question of industrial or technological stagnation does not arise in Rostovtzeff's earlier chapters. In the late Republic and first years of the empire there was no lack of men ready to invest capital in commerce and industry:

"I feel confident that the pulse of economic life beat very briskly in the Augustan age both in Italy and the provinces. The bourgeoisie of this period was not idle, and the ideal of the rentier-life was no more widespread among its members than it is among men of the same class in our own days." (ibid 58).

The machinery of finance was not lacking either and so Rostovtzeff feels bound to ask why ancient industry did not reach the heights of development attained in the modern world, in particular why the Roman empire failed to evolve the capitalistic forms of industry peculiar to the modern age.

Rostovtzeff's answer, as he points out himself, runs in opposition to the opinions of contemporary economic historians such as Max Weber. These latter saw the general survival of the so-called primitive house economies (Oikenwirtschaft) as being

the major hindrance to economic development in the ancient world. Rostovtzeff instead believed that, although certainly the house economy did survive, it was just that, a survival. Home-produced articles such as cloth were far out numbered by those supplied to the home via the market. Rostovtzeff cites archaeological evidence to prove that this was applicable even to the poorer rural sections of the empire. He prefers to change the emphasis of the problem and ask instead why, in the face of such market penetration and industrial development, the house economy survived at all. It in fact later became the dominant economy of the ancient world. Rostovtzeff dismisses explanations laying the blame at the feet of the institution of slavery.

Instead he looks at the "... more general social and political conditions of the empire". As soon as the empire ceased expanding, with Romanization reaching a climax under Hadrian, the market had become limited. The urban bourgeoisie seemingly lost their enthusiasm and enterprise and developed the 'rentier-mentality' that Rostovtzeff first mentions in his opening chapters. As this city bourgeoisie became more entrenched and exclusive, so the rural poor upon whom they ultimately depended, gradually began to get poorer. Upon these weakening foundations, Rostovtzeff suggests that it would have been impossible to base progressive capitalistic industrialisation.

Rostovtzeff has much to say of the role of the state in economic policy-making. Augustus for instance, though apparently having "... no special economic policy," did have a guiding principle, for, "... in refraining from regulating the economic life of the

Roman empire, Augustus followed the same policy which he deemed best for its political and social life..." (ibid 75). This policy, or lack of it, is termed by Rostovtzeff 'laissez-faire', and he writes that it continued to be practiced by Augustus' successors right through the first and second centuries A.D.. Rostovtzeff does however, detect a certain degree of economic paternalism, particularly in the deliberate fostering of city-life. This can be linked with early emperors' attitudes towards the urban bourgeoisie, "This strong middle class formed the economic back bone of the state and it was consciously developed by the emperors " (1926 preface). Thus although the Roman government seems to have taken hardly any economic measures at all, Rostovtzeff sees this as a quite deliberate policy, particularly since "... in the economic life of the empire the great capitalists of Republican times seem to have remained dominant... one of these capitalists and the largest of all was the emperor" (1957 54).

It is not surprising therefore that Rostovtzeff finds the government's non-interference in the well known decline of Italian industry rather hard to understand. What Rostovtzeff calls the "slow economic emancipation of the provinces," the decentralization of industry and the growth of provincial autonomy, seems to culminate under Hadrian with his abandonment of Italy for the provinces. Rostovtzeff is forced to admit that the failure to halt the decline of Italian industry in the face of provincial competition, could indicate a lack of policy or initiative on the emperors' part but concludes that whatever the reason it shows that the industrialists had no political power, unlike the land owners and rich merchants. Italy's general

economic decline may also have gone unnoticed for many years, being a very gradual process according to Rostovtzeff, another possible excuse for the state's apparent inaction.

b) F.M. HEICHELHEIM

'An Ancient Economic History' Vol III Trans. J. Stevens, 1970
Leyden (original edition: 'wirtschafts geschichte des
Altertums' 1938).

This edition of Heichelheim's work was published posthumously and unfortunately the translation is of rather poor quality. Volume III covers the period from Alexander to the end of the classical Roman era. The section to be summarised here is that comprising Chapter VIII (pp 208-274) which is concerned with the last years of the Republic up until the start of Diocletian's reign.

With the founding of the Roman empire, Heichelheim describes how Rome's high standards of agricultural cultivation spread throughout the provinces, though earlier, more primitive techniques were never completely out-moded. In spite of this process of unification, and the body of agricultural literature built up at the time, very few technological advances were made in that field. Land remained, though, a secure investment for capital, in fact, Heichelheim writes that it became increasingly so in comparison to other sectors of the economy. He sees this fact as bringing ever larger numbers of capitalists into farming, "... at the expense of the achievements of the free peasants of all provinces without though, entirely destroying them" (1970 258).

Heichelheim describes how, from the late Republic, free foreign trade rode, "as a matter of course", on the back of the state corn supply systems. From this beginning Heichelheim sees an

economic revolution, "... the first for many thousands of years, which brought into world-wide foreign exchange, luxury articles only included in modern European trading progress since the Renaissance" (ibid 237). Cheap goods for mass-consumption were also shipped and carried, though Heichelheim sees a gradual tendency for such goods to travel shorter and shorter distances, "Only valuable products travelled unhampered over wide stretches of land" (ibid 219).

Throughout his work Heichelheim refers to the producers of manufactured goods as craftworkers, there is no mention of industrial production or the factory system. By implication Heichelheim sees the urban and rural poor as just about able to purchase the cheapest products of such manufacturers. The large craft concerns of the empire are described by Heichelheim as being based on large rural estate complexes, capable of supplying the state, local and even foreign, markets. Heichelheim sees them as eventually more profitable than town-based producers. Even as early as the first and second centuries A.D. he sees what he calls the 'rural market' bypassing the town market, "Even exchange in kind was not completely excluded from this period" (ibid 242). However, Heichelheim also notes the archaeological evidence for the, "... wonderful market facilities ... provided even in Britain and southern Arabia ... in surprisingly large numbers" (ibid 242). It is difficult to gain an idea of how Heichelheim actually visualised the productive capacity of the empire's 'craft concerns' but at one point he does refer to "... mass-produced goods, necessary to life..." (ibid 235) and he does point out that in the Principate, inscriptions and other evidence paint a picture of independent businesses flourishing in towns as

never before in spite of the early competition from estate-based concerns.

Heichelheim has little to say on the development of industrial technology in the Roman world though he does refer to the lack of advance in agricultural techniques.

From the very birth of the empire, Heichelheim sees the Roman state as having had a fairly close involvement in the direction of economic life. As he puts it himself, "The state began to enter the field as the social and economic leader and administrator," and Augustus' roads and canals "... did yeoman service for world trade..." (ibid 210). Hadrian, recognising the importance of the merchant professions to city life, actively promoted their interests by the granting of privileges and controls. Speaking of Republican Rome, Heichelheim writes that it had "... a characteristically free economy which is very similar to the modern policy of 'laissez-faire', although practically and ideologically it did not go so far. This seems to have continued even after the death of Augustus " (ibid 264).

Confusingly, Heichelheim adds a few pages later that he finds it:

"astonishing from the modern point of view how a state selective people [sic] of the rank of the Romans should ignore for so long so politically important a consideration as that of state economy... and that it should content itself with half-hearted experiments and improvisations" (ibid 270).

The rural, estate-based economies, though distinct and eventually dominant, are seen by Heichelheim as run very much on the same lines as the 'free economy' though he does add that:

"The opportunity to cross over from an area of restricted economy to one of free competition and there build up the family finances in a steady and economically practicable form was nevertheless considerably small" (ibid 264).

Financial institutions such as banks and "marine loans, Lombard credit, security with actual possession, mortgage or personal credit were all known in the widest possible legal variety and were very often employed in this period [first to third centuries A.D]" (ibid 243).

c) J. TOUTAIN

'The Economic Life of the Ancient World.' Trans. M.R. Dobie 1930
London

Toutain's economic history runs from the time of Homer to the fall of the Roman empire. Part IV (pp 251-329) entitled 'The Economic Life of the Ancient World under the Roman Empire' is the section to be summarised here.

The author examines agriculture, trade and industry in three distinct sections. On the subject of agriculture. Toutain describes the beneficial effect of the imperial administration with improvements in methods of working effected and a "... more detailed study and intelligent utilization of the soil and climate" (1930 261), being encouraged, resulting in increases in returns. Toutain emphasises the "... unity of conception and application " (ibid 261), in the empire-wide rural economy. The agricultural land of the provinces in the first and second centuries A.D. was, according to Toutain mostly farmed in small to medium-sized estates, owned by the urban "middle or working classes" even though the latifundia system was widespread throughout the empire.

The theme of economic unification is continued with Toutain's examination of Roman commerce. He visualises an increasing

agricultural and industrial specialisation in the provinces. This in its turn automatically fostered a circulation of goods, with Rome and Italy in particular, providing "a very powerful centre of attraction for natural and manufactured products" (ibid 305). Trade was thus organised and conducted on an empire-wide scale, for example the *stationes* or crop agencies to be found all over the Roman world, and of course the generalised use of the standardised Imperial coinage.

Toutain writes that industrial production during the early empire was characterised by great advances in the volume of production as "... consumption became more general and outlets and markets became more numerous" (ibid 284).

The West benefited particularly industrially speaking, with the foundation of towns, the organisation of land road systems and inland navigation and the increased demand of consumers, local, regional and inter-regional. Toutain describes how most of each town's economic needs were met by the output of "... little industrial concerns which had no ambition to do business on a large scale" (ibid 291). As always though, there were exceptions. Referring to first century A.D. pottery production, Toutain writes that an industry is revealed that was "... chiefly anxious for a large output and [so] manufactured wholesale" (ibid 295).

Thus in fact Toutain sees a broad range in the size of Roman industrial units, from the small shop-cum-workshop usual in the towns with "... the owner assisted by one or two slaves or a few

free workers, himself making the things which he sold " (ibid 299), to the larger estate-based workshops whose owners "... did not hesitate to supplement the revenues which they obtained from agriculture and stock-breeding by the profits of various industries, weaving, pottery, metal working" (ibid 299). Toutain also describes the very largest of industrial units attested to in the sources and archaeologically. However, he concludes with these words:

"Establishments of this kind could only develop and flourish if their owners had considerable funds at their disposal. It has therefore been said that industry in the last centuries of antiquity, had become at least in part, capitalistic. but one must not exaggerate this character, nor, above all, regard the evolution as having been more general than it was. Household economy had not disappeared ... and small industries were still numerous in town and country " (ibid 303).

Thus, just as in agriculture, Toutain sees the small to medium-sized property being predominant.

Toutain recognises that though industrial and agricultural production increased substantially during the empire, the actual technology did not. He does not attempt any real explanation of this, though in describing the agricultural improvements in the semi-deserts of North Africa he does write.

"We cannot say whether the object was attained as a result of coordinated research and experiment or by a series of practical shots, but there is no doubt that farmers succeeded in most provinces in developing the crops which best suited the natural conditions" (ibid 269).

Turning to the question of the state's economic policies he writes that during the frequent chronic grain shortages, "The Imperial government could not remain indifferent to these economic happenings. Measures were taken to encourage corn growing and to stem the advance of wine growing " (ibid 163). Toutain sees this economic paternalism on the part of the Roman state as quite a major force in the Roman economy. The peace and security of the empire, along with the closer supervision of provincial governors to prevent exploitation, all contributed to the "... undeniable prosperity" of the ancient world. "... the Roman government itself directly encouraged economic progress by the impulse it gave to public works" (ibid 256). Toutain further credits the Roman state with encouraging the massive reclamation of forest, swamp and desert particularly in the north and west. He cites the privileges granted to estate owners who planted olives in the semi-deserts of Algeria and Tunisia, turning them into fertile lands, a feat apparently impossible in modern times.

Toutain has little to say specifically on Italy's economic decline, preferring to refer to the general empire-wide decline from the end of the second century A.D.

'An Economic History of Rome' 2nd ed. 1927. London

The second edition of Frank's work is an historically extended version, including the first years of the Principate with his previous thoughts on the Republic. In his opening chapters he thus sets the economic scene in early Latium, describing the very early development of laws of private property (Frank 1927 14-15), and Rome's greater concern with territorial integrity than with commerce. Frank charts the establishment of Roman coinage and then the beginnings of Rome's territorial expansion.

From the late Republic onwards, the keen interest taken by the wealthy in the subject of agriculture is reflected in the agricultural treatises which have survived from that period. Frank points out that, "To speak of capitalistic farming with slave labour as 'scientific agriculture' is a modern nuance not excused by our sources" (ibid 436-437). Previous to this he also dismisses any idea that the Roman ideal of self-sufficiency in the farmstead was a mark of primitive conditions. It was rather a sign "... of an elaborate capitalistic economy in which the fastidious landlord could afford to satisfy his every whim" (ibid 271). Thus, even the large plantation estates (latifundia) of the empire were far from independent of the market for labour and implements.

To satisfy the whims of the wealthy, Frank sees a wide-scale commerce developing. By the first century A.D., he describes this commerce as organised and specialised, although the actual numbers of 'real' Romans engaged in it was probably always small, though less in the West with its hunger for romanitas. In spite of this organisation, Frank still sees middlemen as few and

far between. Artisans in towns usually sold their goods direct to the consumers. In foreign trade the consumer or retailer bought in the market place direct from the shipper. In other words, the consumer was generally much closer to the producer than today.

Frank writes extensively on the nature of Roman industry during the late Republic and early empire. He suggests that the factory system did exist, for example, in the production of Arretine ware:

"In this industry we find the machinery of an extensive factory production of articles intended for wide distribution" (ibid 223).

However, such organisation was the exception to the rule. In the cities, Frank likens the industrial system to that of early nineteenth century New England where local artisans in the inland towns not yet connected by the railway, produced most of the articles needed by each town. As noted above though, the cities in growing wealthy provided a market for a wider commercial network:

"... division of labour and the employment of some labour-saving machinery and technical processes were present in the production of silver and bronze ware, pottery, glassware, furniture, bricks and some table delicacies, while in most of these instances there is evident a capitalistic production having a world-wide trade in view" (ibid 273).

The fortunes to be made in such enterprises paled into insignificance beside those of the landed gentry of Rome and the provinces. The business organisation was never sophisticated

enough according to Frank. The machinery of banking developed slowly and the lack of joint-stock companies, in other words, the absence of the concept of limited liability, further inhibited development. Frank writes that anyway, ready capital was scarce and wealthy men would rather store surplus wealth in the strong box, until another piece of land came up for sale.

Frank sees this attitude as originating in Rome's early provincial accumulations:

"... Rome's constant acquisition of new lands turned men and capital away from commerce and industry into fields more congenial, and therein lies the chief reason for Rome's circumscribed economic interest" (ibid 118).

"The returns from the simple investments in land and in capitalistic enterprises sufficed to keep the people in prosperity and presently in flabby desuetude" (ibid 126).

This, coupled with the slave system, the lack of patent laws and the prohibitive cost of land transport, explains for Frank the lack of technological advance during the Roman period. Those in power, though intensely concerned with material gain had too many other daily influences working on them for a purely economic viewpoint to be reflected in political fields. The demands of ceremonial, political and diplomatic life coupled with the deep-rooted disdain of labour were, as Frank puts it, strong counteracting forces to normal economic pressures. He does sound a warning note though:

"We may if we will, repeat the time-worn judgment that Rome scorned labor, but we must of course remember that Cicero's circle was not all there was of Rome" (ibid 325).

Frank refers particularly to the provinces where he sees in the archaeological record a rather more worldly-wise, less aristocratic society than the literature "deigns to notice".

On the question of economic policy Frank makes it clear that the influence of the emperors was decisive. He writes of Julius Caesar's 'program', which though not apparently thought out in economic terms still reflected that emperor's intense consideration of the "... economic aspects of his political measures" (ibid 348). Frank concludes that had Caesar not been struck down when he was, "... the hoary traditions of political laissez-faire imposed by native individualism would doubtless have been ended" (ibid 348).

What in fact resulted was the government's confining itself entirely to the role of political administrator. The state had no economic policy "either helping or hindering business", however such a "... policy of laissez-faire, ... after all accomplished more than compulsion could have done" (ibid 456), and during the early empire men were at liberty everywhere "... to develop their resources and prove their capacity" (ibid 409).

Frank writes of Italy's economic decline as being a direct result of provincial competition and soil exhaustion though he does stress that it is impossible to generalise about the economic conditions in Italy, since the regions are so diverse.

e) T FRANK (ed.)

'An Economic Survey of Ancient Rome' Vols. I - V 1st eds. 1933-40 Baltimore, 2nd ed. 1975 New York.

This is probably the most comprehensive economic survey of the Roman world yet published, since it deals with the empire province by province. Each provincial section is written by a different expert in the field. A summary of every volume will not be attempted. Instead there will be a section on Tenney Frank's own contributions, Vols I and V, respectively 'Rome and Italy of the Republic' and 'Rome and Italy of the Empire' and then one of the provincial sections, Le Gaule Romaine, by Albert Grenier in Vol. III, 'Britain, Spain, Sicily and Gaul'. This of course assumes a uniform interpretation of the Roman economic situation throughout the five volumes. From a detailed reading of these works, the assumption would appear to be justified.

Tenney Frank's volumes on Rome and Italy deal fairly completely with the literary, epigraphic and archaeological evidence for Italian agriculture, trade and industry.

Italian agriculture is characterized by falling cereal production as vine and olive raising prospered, from the late Republic onwards and by the rise in the latifundia system. However, Frank sees Italian agriculture in general to be in a fairly good condition in the first century A.D. It did not suffer until later when the over expansion of vineyards at the expense of cereals and the second century attack on olive growing by Spanish and African competitors began to make itself felt.

Historically, writes Frank, Rome was at first slow to exploit the commercial potential of her expanding sphere of Mediterranean influence. By the late Republic, the situation had changed and Italian and Roman merchants had spread far and wide, though never able to hold their own in the East with the native businessmen. Under the empire, Frank notes that the extent of Roman commerce was much increased, both importing and exporting. The old Greek influenced 'tramping' system of shipping was replaced in the eastern empire by a somewhat more regularised system with some foreign merchants setting up stationes with their own representatives in the Italian commercial ports. The articles of commerce are seen by Frank as primarily luxuries, the more exotic the better, to satisfy the demands of the wealthy Romans grown rich under their state's imperial expansion. The profits of this luxury exchange, Frank sees as mainly falling into the hands of the producers and merchants of the East, Egypt, Asia, Syria, Arabia and India, long used to handling such a trade.

The effects of this trade on Italy's own industries may be imagined. An initial expansion was quickly followed by decline and Frank suggests that prospering landlords "... succeeded better in holding their gains than did the industrialists " (1975 22).

As to the organisation of Italian industry, Frank writes that from the evidence of Pompeii, the combined workshop and salesroom was "... typical of all normal industry ..." (ibid 216) both in the small towns of Italy and of the metropolis itself. Frank does

surmise that some industries were carried on in 'factories' of sorts. He details the example of Italian bronze production, since, "... not only a generous investment of capital, but a far-reaching division of labour " (ibid 199), may be assumed. By contrast, Frank looks at lead-pipe making in Rome and concludes that:

"... the inertia of this industry is simply an illustration of how tenaciously a small-shop system may conserve itself against obvious economic inducements towards centralisation" (ibid 207).

In the case of the Italian cloth industry even the small workshop system could not gain much of a hold since most of Italy's local needs were satisfied by home production according to Frank. Even Rome generally made do with regionally produced material though this was probably produced in 'factories'.

Thus the 'factory system' was the exception rather than the rule in Frank's opinion. A factor contributing to this 'inertia' was possibly the simple nature of the business organisation of the time. Finance for business enterprises came from individuals and partnerships since the concepts of limited liability and corporate law were unknown. The risks attendant upon investment banking were thus also high, as Frank points out and so the personal slaves who generally handled the finances of Rome's wealthiest citizens had little incentive to dispose of their owners' wealth in such a dangerous way. A final contributory factor cited by Frank to Italy's industrial inertia was the high

cost and slowness of land transport.

Frank does not directly discuss the subject of Rome and Italy's technological achievements, but it may be assumed through his discussion of the small-shop system and the overall lack of labour saving machinery, that he considered, it to be in a general state of stagnation. As already seen Frank attributes this inertia in some degree to the innate conservatism of the small shop system. He does however provide a number of other explanations.

From the very earliest days of Rome's provincial expansion, Frank sees Italy's farmers as somehow better 'business men' than her industrialists (see above). This is not so apparent in Southern Italy and Frank uses Pompeii as an example, writing that the Hellenic tradition of that region held trade and industry in less contempt than among Rome's upper classes. This then is at the root of Rome's industrial inertia, a contempt for trade and industry. Frank traces its origin in Rome's traditionally agrarian past, reinforced by the servile or foreign nature of most of the occupations involved. Thus little wealth was acquired by the 'new' rich from commerce, banking and industry and these occupations became "... more than tabu to respectable Romans" (ibid 28). What little wealth that was gained early on "... was held generally by a relatively small circle of purse-proud parvenus who in turn left their estates to a profligate and spoiled generation of inheritors" (ibid 29). Those who remained in commerce and industry could never hope to attain high social status which Frank sees in modern times as "... a stimulus of considerable force " (ibid 217) to business activities. Thus by

Augustus' day, "... the important men of the state had placed their investments in provincial real estate and mortgages, not in industry or commerce, and the chief economic drive during the Empire was conditioned by this fact " (ibid 295).

Frank describes imperial policy towards trade and commerce as, at best, ambiguous. He does suggest that both Claudius and Vespasian took some positive actions. For example, Vespasian's road building, though primarily military in purpose, was planned "... not without regard for the convenience of trade". (ibid 55).

Indeed, Frank goes so far as to propose that Asia's prosperity in the second century A.D. owed much to this particular policy. With these exceptions, Frank sees the agrarian bias prevailing. What he describes as "the ancient custom" of laissez-faire continued to be practised by the emperors. All ports were open to all trade, there were no monopolies, closed seas or forbidden goods.

Italy's gradual economic decline followed inevitably in Frank's eyes from these policies and the social attitudes that inspired them. As already noted above, Frank sees Italy's industrialists as failing to make good the initial growth inspired by Rome's early expansion. Such industries eventually lost out badly to provincial competitors whose firmer basis according to Frank was their ability to command free labour. The conquest of the East further hampered home production since it inspired a taste for exotic luxuries which Italy itself could not

provide.

"As we approach the second century A.D. we find the flow of funds that had first enriched Rome and Italy was diminishing and that on the other hand the large sums spent by Roman wasters on provincial luxuries and products had been used more wisely in the provinces on productive industry and commerce" (ibid 60).

It follows naturally from Frank's view of imperial policy that no steps were taken to prevent the economic imbalance between Italy and her provinces, "The directors of the state had no need or desire..." (ibid 295). From the first century then, a combination of declining markets and the erosion and deterioration of the soil meant that Italy became a "mere province" and grew progressively weaker.

One of the provinces that competed so effectively with Italy was Gaul. Albert Grenier's work is as comprehensive as Frank's on the subject of agriculture, trade and industry.

Discussing the agriculture of the province, Grenier emphasises the large size and importance of Gaul's grain exports, particularly from the western parts of the province upon which much of Narbonne's commercial success was founded. Grenier describes the framework of Gaul's agriculture as based on the fundus, self-sufficient in principle and sometimes with its own small workshops attached.

Commercial life in Gaul following the conquest flourished with ports such as Narbonne and Arles handling a huge volume of trade, both exports of Gaul's abundant natural resources and imports of luxuries from the rest of the empire. Grenier describes Lyons as the capital commercial city and centre for all routes inland in the province. Through this agency the centre of Gaul was turned towards Italy and the Mediterranean, administratively, politically and economically.

Initially, Grenier sees a flood of Italians arriving in Gaul to exploit its natural riches, not just as farmers but also as merchants and manufacturers. It is apparent, particularly in the field of manufacture that the native population was not idle. Grenier takes the example of the great terra sigillata industries of Gaul. Grenier sees a joint origin for these industries. The indigenous pottery industries were heavily influenced by incoming Italian craftsmen. Grenier stresses the vast size of the terra sigillata potteries at La Graufesenque and Lezoux. They captured the markets of the Mediterranean world in direct competition with similar Italian products. The latter fell out of favour in Grenier's view, because the local market was not strong enough to support its production. The Italian population was either too poor to buy it or too rich to want it. Grenier implies that in Gaul the army provided the solid regional market necessary for the provincial industries before they could attempt a more 'international' trade.

Grenier has much to say on the organisation of the ceramic industry as well. He suggests that the potters sold their wares to middle-men who then packed them up and sent them on to the

markets. He cites much epigraphic and archaeological evidence to support these ideas. At the potteries, the various graffiti accounts found at La Graufesenque suggest to Grenier that potters worked in a form of loose cooperative, sharing kilns but actually making the pottery in their own separate workshops. He realises that the workshops excavated would be beyond the means of the single artisan:

"Une officine suppose donc des capitaux, non pas sans doute bien considerables mais qui devaient cependant dépasser les ressources d'un simple artisan " (Grenier 1975 561).

He believed that "associations de potiers" would answer this problem rather than a simple land-owner/potter relationship, and also explain the ease with which the potters migrated from one industrial area to another. He also notes that there was, "Aucune trace de rivalité entre les officines d'une meme region. des vases qu'elle produit sont identifié de qualité de technique, de vernis et de décor" (ibid 561). The dynamic nature of the provincial industry as opposed to Italian industry, rests, in Grenier's opinion, on the non-servile nature of the men who took part in it:

"Cettetradition du travail libre aurait assuré, des le milieu du premier siecle de notre ère, le triomphe des officines gauloises sur celles de l'italie ou dominait le travail servile..." (ibid 562).

f) C. MOSSÉ

'The Ancient World at Work' Trans. J. Lloyd 1969 London

Mossé's book cannot strictly be called an economic history since it contains no general explanations of economic decline or imperial policy making for example. His model of the ancient world at work is still worthy of examination though as will be seen below.

Historically, Mossé includes the classical and Hellenic periods along with the Roman in his survey. Only the early years of the latter will be summarised here. It should be noted that Mossé confines his analysis almost exclusively to Italy and Rome, only referring to the provinces as and when they impinge on the Italian economy.

Dealing with the Italian agricultural situation first, Mossé describes how the economy of the latifundia had replaced by the late Republic, a much earlier Greek inspired system where land was farmed in medium-sized plots by men who aimed to use their money investment productively, Mossé gives the example of speculation on the prices of food stuffs. The new latifundia were on a far larger scale, usually slave-worked and looked upon more as steady sources of income and safe repositories of wealth, than as productive units, by their wealthy senatorial owners. Mossé describes how in the end the basic economic unsoundness, that of the absentee landlord, of the latifundia system led to its decline, even though it spread to Sicily, Sardinia and North Africa. From the second century A.D. in Italy and the third in the rest of the empire, land began more and more

to be divided up and worked by tenants in small allotments.

A major problem for Italian agriculture is seen by Mossé to have been the cheapness of provincial grain compared to Italian grain. This resulted in the turning over of Italian land more and more to the growing of 'cash crops' such as vines and olives, using the enormous influx of the wealth of conquest for the initial investment. This meant Rome and Italy was forced to rely on an external agent for the supply of its grain. As Mossé puts it, "The entire population of Italy was living off the Empire and this is what brought about its downfall" (1969 61).

The wealth of conquest had another very important effect according to Mossé. It turned some of the Romans to the world of commerce and Mossé goes so far as to state that the Romanoi far outstripped the other groups of traders in the great emporos of Delos in the second century B.C., both in the volume of trade goods and also in their capital gains. Back in Rome itself, the provincial wealth encouraged a taste for luxuries amongst those who benefited from it. Thus Mossé sees the merchants of Italy and the empire as mainly handling luxury goods, admittedly carrying them great distances but only in relatively small quantities.

During the early empire, Mossé recognises some slight market expansion but considers that the individual buying power of the masses remained very low. The expansion was enough to encourage the geographical concentration and specialisation of certain industries, though even in this case the small workshop remained the 'normal' unit. Mossé quotes the example of the

Arretine industries of Italy where even if one man owned several workshops these were not amalgamated to form factory units. Thus the basis of Italian and provincial manufacture was the small urban workshop run by free men assisted perhaps by a few slaves. This situation began to change from the second century A.D. according to Mossé with the rise in power of the *collegia* or trade guilds since Mossé describes them as having a very strict control over the occupations concerned. His suggestion is that perhaps to avoid this control, rural workshops began to be set up on the great estates. This 'domanial' industry eventually became dominant in the economy of Italy and the provinces as "... the villa came to be a world in itself" (ibid 107).

Mossé's book, of course, is primarily concerned with the details of Roman labour and he is at pains to stress the importance of understanding what work meant as a concept. To the ancients:

"Idleness was not a vice, but an ideal to which every gentleman aspired and which was praised by wise men too" (ibid 1).

This attitude and the deeply founded contempt for labour that went with it stemmed not just, according to Mossé from a dislike of getting hands dirty, but rather from the ties of dependance created by labour. Such dependence was a total anachronism to the Roman citizen who treasured his freedom so proudly. The existence of slavery of course helped reinforce the contempt for manual labour.

Mossé is clear-sighted enough to realise that inspite of what

classical authors wrote about the contemptibility of manual labour, other sources of evidence, particularly epigraphic, show quite clearly that men did work and did well on it see for example the funeral monuments of Italy and Gaul"... ornamented by relief sculptures glorifying work and manual labour " (ibid 26). He goes on to describe how even in the later years of the Republic there was a respectable class of businessmen and artisans in Italy and Rome, with no political power of course, but possessing no small social standing for all that. In spite of this, Mossé still seems to consider the anti-work attitude, though perhaps in existence "... for a limited period, and professed by a minority of nostalgic thinkers..." (ibid 29), still had a profound effect, particularly on the development of technology in the Roman world.

The so-called 'stagnation of technique' during the Roman period, is thus explained by Mossé, as not due to any inability on the part of the Roman mind, but rather from a lack of stimulation, originating in the attitudes of the top levels of Roman society admittedly, but having a universally deadening effect on both industry and agriculture, "The existence of personal slavery and the enslavement of cities or of subject peoples, so that minorities could enjoy a state of idleness... which eventually turned them into parasites" (ibid 45), was a further major contributory factor to the low level of technological achievement.

Mossé implies that the prevailing political conditions of the period did nothing to alleviate this situation. He notes that the

Roman state did take some economic actions such as their efforts to protect Italian agriculture and in particular the attempt to revive Italian viticulture. Mossé sees the government as quite powerless to save the Italian economy in the face of provincial competition in both manufactured goods and food stuffs. Other than this Mossé makes no mention of the role or otherwise of the Roman state in the economy.

The decline of the Italian economy could not thus be halted. Mossé sees its origin in the non-productive use to which Romans put their provincially-made fortunes. The wealth of conquest was spent on "... land, luxuries, public contracts or foreign trade", though the latter two by the lower social orders, the equites only. As already noted above, Mosse sees even the investment in land as unsound economically, since it did not lead to Italian self-sufficiency.

g) R. DUNCAN-JONES

'The Economy of the Roman Empire - Quantitative Studies' 1974
Cambridge

Duncan-Jones' subtitle betrays the real nature of this book. It is not the sort of survey that either Rostovtzeff (1957) or Finley (1973) meant by their titles. Only the Introduction attempts to make any broad economic generalisations based on the information which makes up the body of the work. This information being the quantitative studies of the subtitle. However, though the Introduction is brief, a mere twelve pages long, it does contain some interesting ideas. To start with, from his

extensive knowledge of economic statistics, mainly for Africa and Italy in the Principate, he feels able to state that, "The Roman economy ... remained a primitive system which would today qualify the Roman Empire for recognition as a 'developing' country " (Duncan-Jones 1974 1). The features of this 'developing' country include low level agriculture, backward industrial technology based on small-scale units and with land transport costly and inefficient. Duncan-Jones cannot deny the scale of the seaborne commerce of this period, encouraged as he points out, by the uniform currency over the vast area of the empire, coupled with low customs barriers. However, such trade that did exist was almost always in luxuries or government supplies. Duncan-Jones does not accept descriptions of the large-scale long-distance movement of low-priced goods intended for sale to a mass market. With the lack of an effective credit system and with banks being small and isolated institutions, he writes that in modern terms the Gross National Product for the empire would have been very low considering the population to have been something in the order of fifty million people. Duncan-Jones does not however belittle the physical achievements of the empire. He uses the term 'outstanding' to describe the cities and their embellishments. These achievements are on the whole seen as flying in the face of the low agricultural efficiency on which most of the empire's wealth was based. They were in fact really products of the huge absolute resources of the empire in terms of land and men, rather than an economically efficient exploitation of restricted resources.

Duncan-Jones is at pains to point out the importance of wealth

in the Roman social system, describing it as having an "... explicit and active domination ... [of] Roman social structures " (ibid 3). A large part of what follows in the book is concerned with the quantified evidence for the sizes of Roman fortunes and the uses to which they were put. What is also clear are the extremes of wealth which were a prime feature of Roman society, though the poorest labourer probably still got more than the barest subsistence in Duncan-Jones' opinion.

From his work on prices, particularly in Italy and Africa, Duncan-Jones concludes that, "It is clear that the Roman economy of the Principate was basically a money economy. References to exchange in kind are few " (ibid 6). He expands on this by admitting that rural coin finds are not numerous outside 'well-to-do households' but still feels it likely "... that most rural producers would have had some access to money through the market place of the town on whose territory their land lay " (ibid 7), even though "... on general grounds... money...[may have been] less pervasive in the countryside than in towns " (ibid 7).

After the Introduction come the quantitative studies divided into three major sections, the first entitled 'Wealth and its Sources', the second, 'Prices and Price Levels', and the third 'Population and Demographic Policy'. In the first section Duncan-Jones discusses the finances of the Roman senator and his agricultural investments and profits, underlining the economic importance of agriculture to the empire. In the second section he specifically analyses the evidence for prices in the African provinces and Italy, showing that there is far more hard data to be gleaned than previously thought and concluding with a

thorough criticism of the use of prices from Latin novels to back up what in the past has been seen as a very fragmentary record. The final section looks first at city sizes and organisation and what these can say about population. It then looks at the Roman governments' *alimenta* system which Duncan-Jones sees as being a government policy intended to encourage the Roman birth rate.

The Appendices which make up a fair proportion of the whole book are seventeen in all and add more detail to what has already been discussed with such things as estate sizes in Italy (appendix 1); agricultural workloads and manning ratios (appendix 2); size of private fortunes under the Principate (appendix 7) and Diocletian's Price Edict and the cost of transport (appendix 17).

h) A.H.M. JONES

'The Roman Economy' (ed. P.A. Brunt) 1974 Oxford

This work, edited by P.A. Brunt includes discussions of various economic conclusions incorporated in 'The Later Roman Empire' (Jones 1964). The range of subjects covered in the twenty-one chapters is very diverse. Here, only those sections of broader economic relevance will be examined. These include the chapter on the Economic Life of Roman Towns (Ch. 2); Numismatics and History (Ch. 3); Ancient Empires and the Economy: Rome (Ch. 6); Taxation in Antiquity (Ch. 8); Inflation under the Roman Empire (Ch. 9) and the Cloth Industry under the Roman Empire (Ch. 18).

In discussing the economic life of the Roman town, Jones makes it quite clear that agriculture alone was responsible for the

wealth of the upper classes and the employment of nearly everybody else. Jones writes that for the Romans, land was the only form of stable capital, "Most wealth was invested in land which maintained its real value " (Jones 1974 138). The state's revenues furthermore were almost exclusively based on taxes on land and the rural population. The contribution of the *collatio lustralis*, the tax on trade and industry was, as Jones puts it, "... a very minor item in the Imperial budget " (ibid 36). The petty nature of the trade and industry paying this tax is illustrated by the fact that even though it was such a minor tax, "... all authorities agree that it was an intolerable burden " (ibid 36).

Jones gives two reasons for the economically insignificant role of Roman trade and industry, firstly, the crippling cost of land transport and secondly the limited nature of the market since the vast majority of the empire's population were humble peasants or the urban poor. Only in the great cities was there a sufficient concentration of the wealthy classes to provide an adequate market. In these cases, the merchants and traders who supplied the well-to-do classes were themselves relatively small beer. Jones writes that even the superior merchants of the provincial capitals, "... the bankers, jewellers, silversmiths and clothiers who presumably catered for the gentry of the province, were modest folk, their ambition was, it appears, to be enrolled in the provincial *officium* " (ibid 51), the lowest grade in the imperial service. The fifth century A.D. law that Jones bases this statement on was passed in order to prevent such people from entering even this lowly position.

In the few cities of the empire where commerce or industry had major economic roles such as Alexandria, Lyons (Lugdunum) and Ostia, the fortunes of the men who profited in such occupations were hardly in the league of the average Roman senator, or as Jones describes them, "... the great territorial magnates of the empire " (ibid 60). The merchants also in general had little political power and Jones uses legal evidence to support this statement. He concludes his second chapter with the words, "Once again it appears that commerce could not compete with land as a source of wealth " (ibid 60).

From the Republic onwards then, the wealthy classes in Rome spent the wealth of conquest on land and also luxury goods. As Jones puts it, little was used for an "... economically productive purpose" (ibid 124). The Italian peasantry on the other hand were dispossessed in their thousands to satisfy the land hunger of the wealthy. The free corn handouts in the cities were small recompense. Under the Principate, Jones sees the flow of wealth from the provinces as lessening. However, the main holders of wealth and therefore land were still concentrated in Italy and still using the income from their estates to buy luxuries or more land. Jones suggests that though encouraging luxury trade this situation had a depressing influence on large scale trade and industry by limiting the market:

"... both by supplying directly through taxation or requisition a considerable body of potential purchasers and by impoverishing and thus reducing the purchasing power of the vast

mass of the population, the peasants. Trade was thus mainly confined to goods of a luxury character and the market to a wealthy minority " (ibid 129).

This small scale business organisation was reflected in Rome's financial institutions. The so-called banks of the Roman world are described by Jones as little more than isolated offices where money was changed or briefly deposited. Credit existed but "... only in the sense that people lent each other money" (ibid 18), and mortgages and nautical loans could also be had. Currency was strictly cash, though Jones cites the evidence for the few exceptions.

Turning to Roman industry, Jones in Chapter 18 looks in detail at the manufacture of cloth. Drawing his evidence from many sources he concludes that though weaving was generally a professional occupation and clothing the object of trade, the industry was still small-scale and developed little under the empire. The men who worked in the great weaving centres such as Alexandria, Tarsus, Damascus and the tribal centres of Gaul, were of very lowly status and the industry itself was organised on the basis of small workshops.

Thus, Jones sees Rome's technology as primitive and backward. The wealthy spent their money on land and luxuries rather than investing it in trade and industry. Even capital investment aimed at land improvement was very limited. Jones first touches on the subject of government economic policy in his chapter on

Numismatics (Ch. 3). He states that the Roman state's monetary policy was in fact non-existent and that the economic knowledge of the ancients was childish, "... it is safer to postulate that the government acted upon very crude notions" (ibid 74). Thus the Roman government had no economic policy, "... save in a very rudimentary sense" (ibid 137). The state had little interest in the lowly traders and manufacturers of the empire since they had little political power themselves and so as Jones points out, no steps were taken by the government to favour for example, Italian traders. Any help that was extended had political rather than economic motives, for instance, the ensuring of Rome's corn supply.

i) M.I. FINLEY

'The Ancient Economy' 1973 London

Finley's controversial addition to the ranks of ancient economic histories is in fact not really a history at all. Finley himself is at pains to make this clear in his preface (see Finley 1973 9). It is instead an examination of concepts, definitions and ideologies, both ancient and modern and as such is difficult to summarise in the same way as the other summaries in this section. The evaluations to be found in later sections below will probably give a clearer picture of Finley's intentions.

Finley analyses the ancient economy in strictly social terms and thus his chapter on agriculture is entitled 'Landlords and Peasants'. These two social categories represent to Finley two entirely different attitudes to agriculture. To the landlord, the ownership of land meant, "... the absence of an occupation; for

the others the peasants, it meant unyielding toil" (ibid 96). This dichotomy produced in Finley's opinion, a single idea, that the land was "... the fountainhead of all good, material and moral," (ibid 97) and he is positive that 'most' people in the ancient world gained their livelihood from the land.

Turning to the question of the average size of landholdings, Finley points out the scarcity of accurate data but concludes that there was a general trend for the gap between the size of the holdings of the smallest and largest landowners to widen. The emphasis was thus on a steady increase in the size of the largest landholdings, the latifundia, owned by the ruling Roman elite, who gained large, steady incomes from them. In spite of this Finley produces evidence in the early empire, at least in Gaul and Italy of a middle range of holdings as well, concluding that a fairly balanced spectrum must be envisaged, "... in most parts of the ancient world at most times, allowing for divergent standards of comfort " (ibid 104).

The peasant at the lower end of the spectrum was never far away from economic ruin. Finley explains how peasant farming has a built-in in-efficiency in that, "The small ancient peasant holdings meant chronic under-employment of labour in terms of production, though not under-employment of energy..." (ibid 106). In other words the peasant usually had too little to do for each member of his family, and so questions of maximising efficiency were lost in the effort to maximise labour input. This also had serious effects on technological advance as will be seen below.

The large landowners were safe from financial crisis simply

because of the size of their estates. Finley emphasises the "... 'peasant-like' passion for self-sufficiency..." (ibid 108) on the large estates. The senators were no more interested in maximising efficiency than were the peasants, and Finley goes on to state that even though the great landowners were purely interested in profit, investment in land was never, in antiquity, "... a matter of systematic calculated policy, of what Weber called economic rationality." (ibid 117). Thus there are no Roman estate agents nor a Roman real-property market.

With agriculture playing such a dominant role in the Roman economy, Finley sees the world of trade and commerce as a rather subsidiary one. He admits that the empire had many great commercial cities such as Lugdunum (Lyons); Aegina; Chios and Marseilles, but these were very much special cases, "Ancient cities in the great majority counted farmers, whether working or gentleman farmers, men whose economic interest lay chiefly and often exclusively in the land, as the core of their citizenry " (ibid 131). A further important point that Finley makes in his final chapter on the State and the Economy, is that:

"The expanded commercial activity of the first two centuries of the Empire was not a Roman phenomenon. It was shared by many peoples within the empire and was not part of imperial exploitation, there was no competition between Romans and non-Romans for markets " (ibid 158).

In discussing the "business practices" of the ancient world, Finley is at pains to point out how simple such activities were.

Bankers certainly existed and "endless money lending" took place, "... but all lenders were rigidly bound by the actual amount of cash on hand; there was not, in other words, any machinery for the creation of credit through negotiable instruments" (ibid 141). Furthermore, Finley hypothesises that the borrowing that did take place among the Romans was for non-productive purposes, thus as a byproduct, most loans were short-term, book-keeping was primitive, and there was a complete absence of a concept of amortization.

Finley's view of the lack of sophistication in Rome's financial institutions is echoed in his discussions of Roman industry, or as he terms it 'manufacture'. In his opening chapter, Finley quotes David Hume as saying, "I do not remember a passage in any ancient author, where the growth of a city is ascribed to the establishment of a manufacture " (ibid 22). Most industrial enterprises, according to Finley, were small-scale and geared towards the local market, very few were deliberately designed for export. Even in the case of the large terra sigillata producers of Lezoux and La Graufesenque, Finley is disparaging, " they did.... it is true, export their ware for a long period throughout the western empire, but the potters were themselves modest men, not even little Wedgwoods" (ibid 137). The contribution of manufacture to the income of the city, was in Finley's eyes negligible. Cities were centres of consumption not production. The necessity (in the peasant's case) and the ideal (in the landlord's case) of self-sufficiency was an important contributory factor to this state of affairs, since in both cases

it restricted the market to those luxuries which only a small number of the very rich could afford.

Finley sees household self-sufficiency as just one of a number of complex causes for the lack of technological progress in the ancient world. As noted above, the inefficiency of the peasant small-holding held back any technical advances at that level. In the case of the larger estates, "... large incomes, absenteeism and its accompanying psychology of the life of leisure, of land ownership as a non-occupation, and when it was practised, letting or sub-letting in fragmented tenancies all combined to block any search for radical improvements " (ibid 109). In industry, "... new requirements were met by the transfer of old techniques " (ibid 109) and the high cost of land transport further restricted large-scale production.

Rostovtzeff's bourgeoisie (Rostovtzeff 1957), as Finley points out, were the ones who might have been expected to develop and create new techniques of capital formation (Finley 1973 145) and thus open the doors to technological progress. They did not, "Actually, these were not the men with the greatest potential. For that we look to the land holding elites, and their disincentive was decisive " (ibid 145). A life of landowning idleness mixed with a smattering of politics was the only undemeaning one available. Participation in commerce or manufacture was social suicide.

At the very root of Rome's technological 'stagnation' was the fact that the resources of the empire were such that there was no real necessity for technological improvement. As Finley puts it, the mentality of the rich:

"... may have been a non-productive one; it was in no way a non-acquisitive one. They could permit themselves the luxury of a moral choice and still wax richer, not poorer "
(ibid 122).

The attitude of course was that of the ruling elite. Its consequence was, for Finley, the complete lack of interest or realisation of what today would be called the political economy. Finley dismisses any ideas that the Roman state had a so-called laissez-faire policy (ibid 155). The need to satisfy material wants led to a number of what could be called economic actions by the Roman state, but for Finley, these do not constitute economic policies in the modern sense. As often as not, an economic consequence in the ancient world, can be assigned a purely political cause.

Section iii)-Comparing and Categorizing the Models

In the following table and accompanying bar chart (Fig. 2 and Fig. 3) an attempt has been made to show graphically what so far has only been implied, the physical differences between the nine models of the Roman economy presented above. The bar chart (Fig. 3) is based upon a series of generalised proposals about the economy (Fig. 2) for each of which either a positive or negative answer can be given. Models with more positive answers than

The proposals	Rostovtzeff	Heichelheim	Toutain	Frank 1927	Frank 1975	Mosse	Duncan-Jones	Jones	Finley
1. A market economy existed. —————	X	X	X	X	X	X	X	X	X
2. Commerce was widescale both socially and geographically. —————	X	X	X	X	X	0	0	0	0
3. Banking was sophisticated (or capable of being so). —————	X	X	-	U	0	-	0	0	0
4. the monetization of the economy was extensive. —————	X	-	-	-	-	-	X	-	U
5. The household economy hardly survived. —————	X	0	X	X	X	X	-	U	0
6. Industrial units included factory-type units. —————	X	X	X	X	X	0	0	0	0
7. Industrial production was aimed at a mass market. —————	X	X	X	X	-	U	0	U	0
8. the mass market included the urban and possibly rural poor. —————	X	X	X	0	-	0	0	0	0
9. Industry and commerce was almost completely town/city based. —————	X	0	0	X	X	X	0	X	0
10. the Roman state had an economic policy. —————	X	X	X	X	X	0	0	U	U
11. The Roman economy was run on laissez-faire principles. —————	X	X	0	X	X	0	U	0	U
	Total	X11 X8	X7	X8	X7	X3	X2	X2	X0
	Total	00 02	02	02	01	06	08	08	011
	X	Author agrees with proposal							
	0	Author does not agree with proposal							

Fig.2 Comparing the ancient historians' models

negative may be termed 'modernistic'. Models with more negative answers than positive may be termed 'primitivistic'. Rostovtzeff (1957) as can quickly be seen, presents the most 'modernistic' model of the Roman economy, while Finley (1973) gives the most 'primitivistic'. The two authors disagree on every point, the existence of marketization; the degree of sophistication in commerce and banking; the political economy; the extent of industrialisation and the penetration of the market. To this might be added the degree of monetisation, somewhat assumed by Rostovtzeff.

This 'black and white' division is clearly not to be found in the seven other models. Indeed, as will be seen, a fourfold division rather than a twofold one based on differences in theoretical approaches, must be postulated.

The models that comes closest to Rostovtzeff's is that of Toutain (1930) who only really disagrees over the subject of the laissez-faire policies of the state and the degree of survival of the household economy. Rostovtzeff postulates a deliberate policy of non-interference on the part of the Roman state whereas Toutain credits the Roman government with a strong urge to further economic progress as manifested in "... the impulse it gave to public works " (ibid 256). The survival of the household economy is seen by Toutain as offsetting the often quite sophisticated industrial enterprises of the first century A.D. for example. Rostovtzeff on the other hand sees the household economy during the period in question as merely a relic of a past era. Toutain like Rostovtzeff is quite happy to refer to 'industrial' enterprises supplying numerous expanding markets. He also

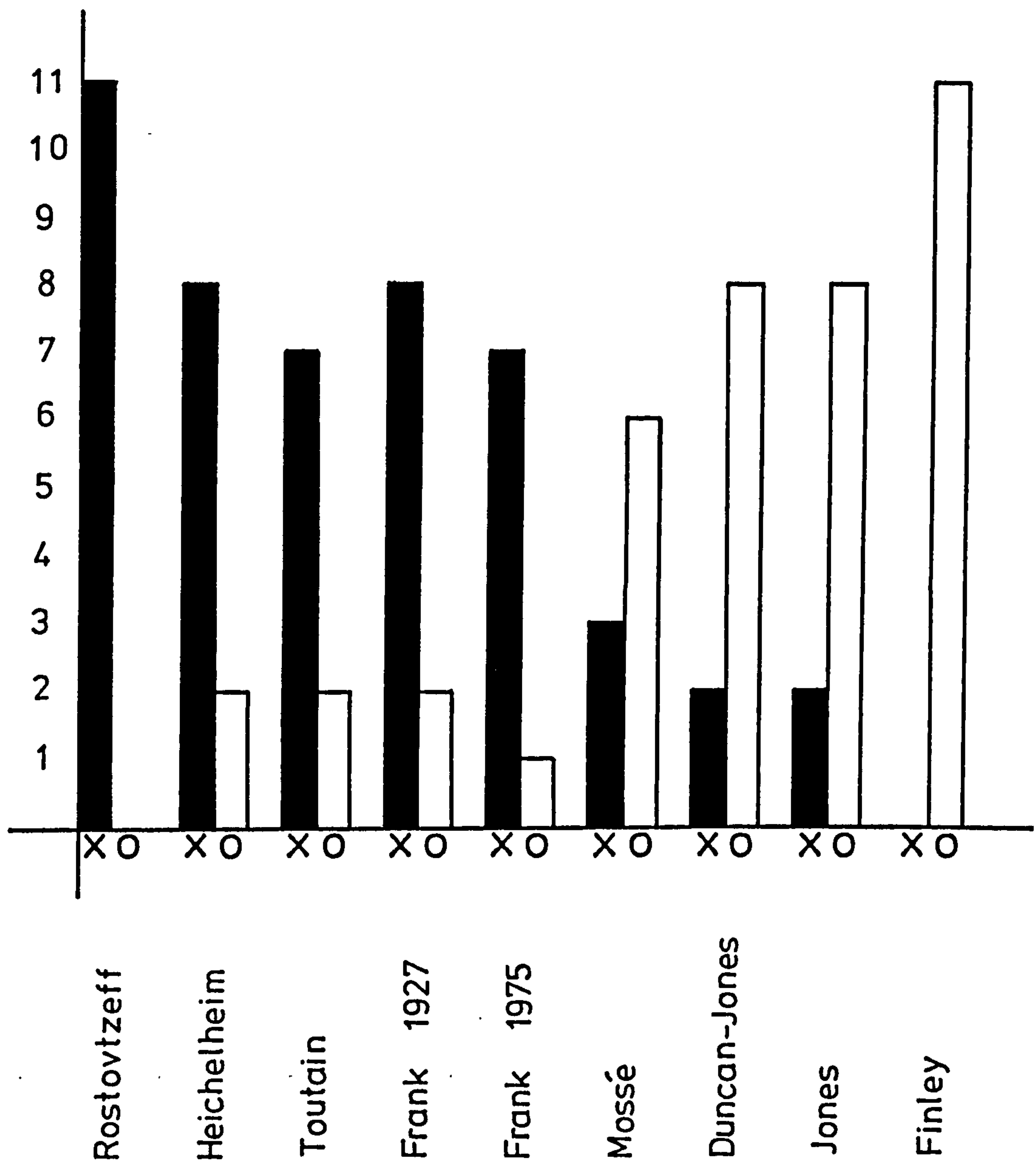


Fig.3 Graphic representation of fig.2

describes an urban 'middle-class' owning local rural estates throughout the provinces. Few share with Rostovtzeff an all-embracing view of the empire as an economic whole consisting of broad spectrums both socially and economically speaking. Toutain differs firmly from Rostovtzeff in his recognition of the mistakes to be made in describing the industries of antiquity as capitalistic, "... one must not exaggerate this character..." (ibid 303).

The models of Tenney Frank (1927 and 1975) and Heichelheim (1970) may be placed next on the graphic scale (see Fig. 3). Heichelheim's model with its distinct bipartite division of the Roman empire into a classical centre zone representing Rome and Italy with an outer border zone representing the rest of the empire, proved less easy to categorize than Tenney Frank's, perhaps more to do with the bad translation than anything else. Heichelheim is quite clear about the existence and extent of marketisation, going so far as to talk of mass-produced goods circulating widely in the empire. However, he also noticeably avoids any mention of 'industrialisation' preferring to refer to 'craft-concerns', the largest usually estate, not town-based. The idea of a separate rural market in opposition to that of the town seems quite important to his model. In the Principate he sees an early flourishing of town-based businesses but even then, competition from villa-based producers (in other words, the household economy) was strong and finally overwhelming. He does not belittle the economic institutions available, such as banking, but he disagrees violently with both Rostovtzeff and Toutain on the question of the state's economic actions. Heichelheim allows the government to have run a "...

characteristically free economy", almost, but not quite a laissez-faire one. He then however goes on to express his astonishment at the apparent economic ineptitude of the Roman state, particularly its lack of planning and of economic foresight. His noticeably censorious tone is echoed by Tenney Frank who is generally in agreement on most of the proposals.

Frank's earlier work (1927) can be seen as slightly less primitivistic than the later (1975) since in it he refers to some sophistication in banking practices and the subsuming of the household economy to one of small urban workshops and artisans, clearly producing for a fairly widespread market with some evidence for a capitalistic production in the larger, wealthier cities. Both points are rescinded to some extent in the later work (1975).

Unlike Heichelheim, Frank is prepared to acknowledge the presence of 'factory type' units of production, quoting the example of the Arretine industry of Italy. These were, however, an exception to the general rule. Frank sees the major markets for such producers as being in the cities of the empire and only luxuries travelled widely.

Frank's view of the economic role played by the government at first sight differs slightly from Heichelheim's. Frank believed in particular that Julius Caesar concerned himself with the "... economic aspects of his political measures" (Frank 1927 348), as perhaps did Vespasian and Claudius. However, a policy of 'laissez-faire' prevailed, by which Frank means specifically that

the Roman state had no economic policy "... either helping or hindering business " (ibid 409).

Interestingly, Frank is one of only two of the authors who recognises the problems inherent in trying to build an economic model solely on the ideals of a single class, "... we must of course remember that Cicero's circle was not all there was of Rome " (ibid 325). (See also opening section above, 'Ideal versus Reality'.) Frank also seems well aware of the potential pitfalls in using the terms of modern western economic analysis in his model of the ancient economy.

" ... the a priori methods of interpreting historical development by means of generally accepted economic and psychological maxims must be applied to Roman history only with great reserve " (ibid 118-119).

He writes more particularly in the case of Roman agriculture, "To speak of capitalistic farming with slave labour as 'scientific agriculture' is a modern nuance not excused by our sources " (ibid 436).

The model which stands very much at the half-way stage of the graphic scale (see Fig. 3) between those of Rostovtzeff and Finley, is that of Mossé. This author echoes Frank's caution in literal interpretations of classical sources, recognising that men did actually work and did well on it (Mossé 1969 26). The point being the distinction in attitude between the business-men of the provinces and the idle rich landowners of Rome and Italy,

something with which Mossé is again in accord with Frank.

Mossé is far from denying the existence of some degree of marketisation within the empire as a whole, but it is clear that in his opinion the individual buying power of the masses remained very low throughout the Principate. What market expansion that did occur was apparently minimal and even where certain industries became specialised and geographically concentrated, the 'normal' production unit was still the small urban workshop, a point with which Frank concurs. Mossé records the rise of the rural workshop or household economy in opposition to the urban producer as much later than perhaps Heichelheim would see it, though a final domination by the estate economy is not in doubt.

Mossé allows little space in his model for the economic actions, or otherwise, of the Roman state, noting merely its powerlessness to halt the early decline in Italian agriculture, in the face of provincial competition. Like Rostovtzeff and Heichelheim, Mossé seems unaware of the possible misuse of terms such as 'industry', 'capital' and 'market' in his model.

At the further end of the graphic scale (see Fig. 3) are the primitivists. These comprise of three models, that of Finley (1973), of course, along with Jones' (1974) and Duncan-Jones' (1974). The latter model is of necessity a skeleton since it is taken from a very short description indeed. It is, however, very clearly that of a primitivist. This is in fact made quite explicit by its author, who describes the Roman economy as suitable for describing as that of a 'developing country'. The existence of any sort of mass-market for cheaply produced goods

is entirely refuted and Duncan-Jones sees all industrial units as very much on the small scale. On the other hand he sees the Roman economy as fairly extensively monetised, allowing even the poorest rural worker some access to the local town market-place. Duncan-Jones can also not deny the importance and scale of seaborne commerce, though always based on the carriage of luxuries or government supplies. Any advanced aspects of the Roman economy are thus seen by Duncan-Jones as flying in the face of the primitive realities of the period. Nowhere does he makes it explicit that he is aware of the pitfalls of using such modern terms as Gross National Product.

A.H.M. Jones by contrast makes quite clear his realisation of these theoretical problems for example in his discussion of inflation during the Roman era:

"... if we want to understand this [inflation] we must clear the mind of nearly all the basic concepts of modern economies. We must not think in terms of banks, credits and a managed paper money " (Jones 1974 187).

He then proceeds to discuss for example the 'economically productive' uses to which wealth could be put and the fact that the purchase of land was the only form of stable 'capital investment' for the Romans. This aside, Jones, like Duncan-Jones, uses the words 'primitive' and 'backward' to describe the Roman economy, with a severely limited market, insignificant contributions by trade and industry with small-scale business organisation and a lack of proper financial institutions. Even

capital investment in land improvements was seriously constrained. As for the economic policies of the Roman state, Jones is firm; it had none, "... save in a very rudimentary sense " (ibid 137). In a more specific instance he comments, "This [preceding point] implies that Trajan... was aware of the quantity theory of currency which is incredible " (ibid 74).

Finley (1973) as already noted above is at the very opposite end of the spectrum to Rostovtzeff, and his model differs radically even from its closest neighbours in its deliberate avoidance of all modern economic terminology.

For Finley, 'the market' as an institution did not exist, let alone a self-regulating free one. Commerce was a question of luxuries for the well-to-do. Business practices were primitive in the extreme. The household economy survived and flourished strongly everywhere while urban production was based on the small workshop unit. Even the men who ran the oft-cited terra sigillata workshops of Gaul were "... hardly little Wedgwoods " (Finley 1973 137). The vast majority of the population of the empire worked the land in a state of crushing poverty with little opportunity or ability to purchase or acquire urban produced goods. To describe the Roman government as having an economic policy, laissez-faire or otherwise is to Finley, absolute folly in the face of the historical evidence. To even talk of the 'Ancient Economy' at all seems to Finley to be something of an anathema, particularly since the ancients themselves did not conceptualise it as such.

It is suspected here that Finley's work deliberately goes to

extremes in order to provoke controversy, where a milder, less polemical approach might well have been ignored by those whose ideas most needed revising (see Griffiths 1986 forthcoming). Keith Hopkins, a self-confessed disciple of Finley's makes this quite explicit in his Introduction to 'Trade in the Ancient Economy' (Hopkins 1983), and in fact goes on to produce a modified, less savagely primitivistic version of the model (see summary of Hopkins' model below section ii) e)).

As already noted above a simple bipartite division of the models into 'modernistic' and 'primitivistic' does not reflect the wide spectrum of approaches made explicit by the graph (Fig. 3), and is therefore inadequate. Far more satisfactory is a division based on the theoretical stand-points, conceptualised or otherwise, of the various authors. In this case a fourfold categorisation is revealed as follows:

- A i) those authors who use modernistic terminology
- ii) those authors who see the pitfalls of using modernistic terminology but still use it.
- B i) those authors who see the pitfalls of using modernistic terminology and so deliberately avoid it.
- ii) those authors who do not explicitly see the pitfalls of using modernistic terminology, but still do not use it.

Authors in category A produce 'modernistic' models while authors in category B produce 'primitivistic' models.

The nine models summarised above may thus be divided as follows:

- | | | | |
|-----|---------------------|---|----------------|
| Ai) | Rostovtzeff (1957) | } | 'modernists' |
| | Heichelheim (1970) | | |
| | Toutain (1930) | | |
| ii) | Frank (1927) | | |
| | Frank (ed. 1975) | | |
| Bi) | Finley (1973) | } | 'primitivists' |
| ii) | Mossé (1969) | | |
| | Duncan-Jones (1974) | | |
| | Jones (1974) | | |

CHAPTER 2

THE ECONOMIC MODELS OF SOCIOLOGISTS AND ECONOMIC HISTORIANS

Section i)-Problems with Interpretation.

The problem that these authors have in presenting models of ancient economies is very often a lack of familiarity with the sources. This may be recognised by the author but dismissed by arguing the unreliability of the ancient texts and of the interpretation of archaeological remains. On the other hand, the distance at which these specialists stand away from primary evidence, does have its advantages. In the first place there is less danger of the authors identifying themselves too strongly with ancient authors and imputing concepts and ideals possibly alien to them. Secondly sociologists and economists apply first hand the methods and theories of their own particular disciplines and in applying them to the ancient situation may bring valuable insights, avoiding the danger, hopefully, of applying outdated methods and theoretical tools, a trap the archaeologist in particular, is rather prone to fall into.

The following handful of authors was selected from those most readily available to the author at that time. They represent, it is felt as diverse and interesting a range of models as possible and one or two rather unfamiliar ones of particular note.

Section ii) - The Models

a) E.K. HUNT

'Property and Prophets: The Evolution of Economic Institutions and Ideologies' 1981 New York

In spite of his title, Hunt devotes little space to the economic institutions and ideologies of the ancient world. To Hunt, the institution of slavery was simply the most important fact of ancient economic life. He goes so far as to state that in ancient Greece and Rome, as many as eighty per cent of the population were slaves, and it was this class that undertook the manual and much of the clerical, bureaucratic and artistic work of those societies. Most of the economy was based on agriculture, the few exceptions, in Hunt's view, being the cities where central government could be found.

Slavery was the dominant economic institution of the period, because the natural inferiority of some human beings was the dominant ideology. Hunt writes that it can be seen from the historical sources that slavery was viewed as 'natural' by the ancients and usually just taken for granted.

This fact of ancient life according to Hunt was also the principle limiting factor in economic development at that time. In the world of industry, Hunt writes that slaves could not be given "... complex or delicate machinery of any sort; they would break it up and often use it for weapons to revolt " (Hunt 1981 3). Similarly, agricultural organisation had to be on a very simple level, "... usually limited to one crop tilled with

implements " (ibid 3). This led to land being worked out and left as waste and overall to a very limited production. Hunt concludes by mentioning the psychological brake that the institution of slavery further applied to technological advance, particularly in the Roman world.

b) S. VILJOEN

'Economic Systems in World History' 1974 London

In his Introduction, Viljoen describes how economies may best be defined by their degree of integration into the society of which they are a part (in other words their degree of social 'embeddedness'). The spectrum ranges from totally socially embedded economies right through to modern free enterprise economies. The study of the coordination of economic processes leads Viljoen to a three-fold classification, 1) collective economies; 2) centrally administered economies, and 3) market-oriented economies. Viljoen stresses that many historical economies were a mixture of all three of these categories, the Graeco-Roman world in particular.

In his following discussion of the antique world, Viljoen opens with the heading, 'The Free-Enterprise Economies of Antiquity' and proceeds to describe how such economies arose in the Greek east, starting in the twelfth century B.C. The gradual transition to market-oriented economies was stimulated, according to Viljoen, by the poor agricultural resources of the Mediterranean basin which led to vigorous commercial competition. By the second half of the seventh century B.C. Viljoen sees the introduction of "... cheap articles of mass consumption"

(Viljoen 1974 47), into international trade, coinciding with the development of coined currency. He describes how class conflict, a characteristic of a free economy, continued from the classical period into the Roman. Indeed, such conflict "... became an inherent element of the economic life of Roman times " (ibid 50).

Viljoen is careful to point out that the use of the term 'free-enterprise' economy is strictly relative:

"In the [modern] market economy the production and distribution of goods and services is carried on through the medium of a self-regulating mechanism of price-fixing markets" (ibid 55).

The Roman markets that existed:

"... could... hardly be conceived as constituting an integrated and self-regulating system, in which the product markets were intimately related to the factor markets through the supply-demand-price mechanism, and in which the participants followed the principle of maximising return and minimising cost." (ibid 56).

This being so, Viljoen still feels it correct to apply the label 'free-enterprise' to the ancient economy. The Roman economy was free in the sense that a number of markets were "more or less" free to regulate themselves. Freedom of choice, politically as well as economically is described by Viljoen as the very essence

of the free enterprise economy and he writes that both existed to some extent in the ancient world:

"What was particularly important to the maintenance of a free society was the fact that the social system of antiquity was based on an unequivocal recognition of private property, the right not merely to its use, but also to its control and disposal by the possessor " (ibid 56).

The commerce, particularly seaborne commerce, of the ancient economy is seen by Viljoen as the most developed part of that economy. However, the actual volume of trade must not be exaggerated. There was little large scale trade in commodities and raw materials or manufactured goods, though Viljoen cites metal and ceramic wares as an exception.

Up until the first century A.D., Viljoen sees the Roman empire as divided into two clearly defined entities, the West exporting raw materials, and the East exporting manufactured goods, with Italy occupying the central position. After this date, Viljoen sees an increasing tendency towards provincial or regional self-sufficiency, for example, Gaul provided a central economic role in the north-west. Thus trade in staple products became localised. On the other hand the luxury trade between regions grew in leaps and bounds, though the external supply of such goods as silks and spices from the Far East in return for Roman manufactures and bullion, was, in Viljoen's opinion, a severe

drain on the empire's financial resources. The actual organisation of Roman commerce advanced no further than the well-established eastern model, it was rudimentary even in such great consumer centres as Rome.

Roman banking was similarly under-developed. Roman banks were only small establishments, performing a wide range of activities such as running auctions, holding deposits, money changing, investing money for customers, buying and selling real estate for them and lending money on security. (See *ibid* 63).

Viljoen does not however see these factors as the most important short comings of the ancient economy. In his conclusion to the section being summarised here, he specifies the conditions required for the effective performance of a free enterprise economy which, because of its relevance both here and in later discussions will be quoted in full:

"... the free enterprise economy requires certain very specific conditions for effective performance It can function satisfactorily, in the first place, only in a progressive and expanding economy. Such a system requires, in particular, a cultural atmosphere that is sympathetic to the development of business activity, a milieu that is conditioned by an appropriate economic ethics [sic], and that places a high valuation on enterprise, innovation and progress. A second requirement is the development of a rational technology,

of rational means of accountancy, and of the rational organisation of industry generally. A third essential condition is a free market for labour and for capital, and especially the technical means and the institutional environment that favour the mobilisation of credit for private and for public purposes, as well as the commercialisation of claims and rights to business enterprises. Finally, an essential requirement is a measure of legal certainty in regard to the individual's obligations to the state, which obligations should not be arbitrarily assessed but should be subject to ordinary legal interpretation and decision by the courts of the land, and an individual who is aggrieved should have the means of redress even against the state " (ibid 63).

Only part of these requirements were ever fulfilled in the Roman period. Viljoen sees the problem as lying quite distinctly in the prevailing psychological attitudes rather than in the existing institutional background.

To illustrate this Viljoen examines the agricultural-warrior ancestry of the Greeks and Romans and the contempt for trade and industry which resulted from it, at least among the upper classes. The entry of foreigners, freed men and slaves into these occupations served to underline this contempt. Viljoen interestingly describes the Roman army as "... the real industry

of the free man" (ibid 67).

Viljoen lays much of the blame for Rome's technological stagnation at the door of the institution of slavery, writing that it not only served to reduce the status of the artisan and labourer but also, undermined "... the diligence, initiative and self-reliance of the citizen" (ibid 68). Technological advance was further hampered by the actual institution of the empire itself. The greater uniformity held back development and industrial organisation remained on a handicraft basis everywhere, "Economic development did not take the form so much of a greater intensity of production as of the wider diffusion of the centres of manufacture " (ibid 53). The manufactures themselves, in their dullness and standardisation reflected the sterility of the technological sphere, "... for the Romans had no genius for science or art " (ibid 69).

Having underlined the technological limitations of the Roman era, Viljoen then goes on to discuss the organisational ones. Thus for example there was the very simple, individualistic organisation of business enterprises. Production was a secondary consideration and businesses were envisaged more as repositories of excess funds than as profit making enterprises. Owners tended to be little interested "... in adopting new devices, in maximising returns and minimising costs, and in generally improving efficiency " (ibid 73). The primitive nature of accountancy made it simpler to administer smaller businesses and the latter were no less efficient than larger ones. In the world of Roman agriculture Viljoen sees a rather different picture.

Some consistent attempts were apparently made to "... effect the rational organisation of the undertaking " (ibid 74). On the whole though, landowners showed a tendency to increase their land holdings rather than to increase the yields of the original holding. Viljoen cites the Roman authors Columella and Pliny to support this statement. Thus, even here, the Roman capitalist's attitude towards investment was very different to his modern counterpart.

As already mentioned above, Viljoen sees the limitations imposed on economic development as in a large part due to the prevailing attitudes of the period. Those with political power were at best indifferent to things economic. Those involved in trade and industry, the slaves, freedmen and foreigners had no political power. Political advantage, thus consistently overruled economic advantage. Viljoen quotes Frank (1927) as saying that the ancient world has no record of any state of importance so unconcerned with its economic prosperity as was the Roman Republic. During the empire, Viljoen sees some change, but "... state control was spasmodic and of little significance " (ibid 76). Only in the Roman state's provision of the corn dole to its citizenry was an exception made, "... Rome consistently regulated and restricted the grain trade in her own favour " (ibid 77). Since there was no surplus of grain in the ancient world, this action led to nearly all the cities of the Empire suffering periods of scarcity.

Viljoen details the inefficiencies of the Roman civil service, "reluctantly" built up during the empire. He does the same for the Roman fiscal system and then goes on to discuss the

exploitation of the provinces, "The loot of the provinces poured into central Italy, where it enriched, not the people as a whole, but the senatorial and equestrian classes " (ibid 79). Throughout the early empire, Viljoen stresses that Rome remained a city state in its actions and attitudes. However, the real spirit of the polis had been lost:

"The Roman Empire never seemed to have evoked any active patriotism from the vast majority of its citizens; it was a geographical entity without a real unifying and animating force " (ibid 85).

For Viljoen, this goes a long way to explain Rome's ultimate failure.

To summarise. Viljoen states that the Roman economy was never highly dynamic or progressive for the following reasons:

"... first the negative and unsympathetic attitude of the citizens to economic affairs, secondly the unprogressive nature of technology and organisation, and finally the policy of the state, which encouraged too many consumers to be a drag on the productive resources of the economy " (ibid 81).

c) T.F. CARNEY

'The Shape of the Past: Models and Antiquity' 1985 Kansas

The following resumé of Carney's model of the Roman economy is based on Chapter 4 of the above named work, '"Economic" in Antiquity' (pp 137-224). His theoretical standpoint is heavily influenced by the work of Karl Polanyi and indeed may be seen as a modernised and slightly extended version of it.

The author describes himself as a social scientist with an arts background and the book is very much an attempt to introduce ancient historians to interdisciplinary concepts of which they seem to Carney, almost entirely ignorant. This being so, much of the book, like Finley's 'Ancient Economy' (1973) (see above) is concerned with theoretical issues.

Carney initially lists and explains the four generally accepted modes of exchange; reciprocity; redistribution; the market and mobilisation. He states that all four were present to a greater or lesser degree with only one generally dominant at any one time.

He then goes on to discuss the uses of money and the monetization of the economy, this latter being dependent on the "... extent of the market" (Carney 1975 144). Carney states that Rome altered the economic history of antiquity by bringing much of Western Europe (Britain as well, it is assumed), into a monetised economy, a process which involved high social costs. In Rome's case the cost was detribalisation, "... the movement from the guarantees against rapacity built into tribal reciprocity to the

dog-eat-dog world of market competition and profiteering " (ibid 144-5).

Turning to the market and marketisation in detail, Carney makes the important point that marketisation is a gradual developmental process. "... it is not a simple matter of whether market principles do or do not operate to establish prices for certain specific goods. A market matrix is involved " (ibid 146). In Rome's case, Carney sees the development of marketisation as severely hampered by its "... organisational and technological backwardness, the inadequacy of governmental support, and lack of a business ethic " (ibid 147). He goes on to look at Roman banking and government actions during economic emergencies to back up this statement. The lack of the institution of the firm and public service instrumentality in the Roman market matrix and their replacement by the household or estate economy and the regulative apparatus bureaucracy placed further crippling limitations on the process of marketisation:

"... the extended household lacked the scale, continuity, single-purpose planning and instrumentally designed organisation of the business firm. Nor did the household possess the firm's commitment to market relationships and in particular, to continuous ploughing back of resources to generate technological innovation." (ibid 150).

The attitudes of the Roman government and its bureaucracy reinforced this anti-business ethic. What Carney describes as

"need achievement", the human key to the development of the economy, was strictly inhibited by the state, "The governmental bureaucracy was regulative and extractive not developmental " (ibid 151).

The development of the ancient market thus mirrors these limitations. The poor had little purchasing power and luxury goods dominated commerce. Technology was poorly developed and what goods that were mass-produced clearly reflect the influence and interests of the great households. Carney sees this as entirely to be expected:

"The army commanders tended to come from the squirearchy. The top bureaucrats retired to large country houses. The men of the religious apparatus had temple estates. These men, and their interests, dominated the societies of antiquity " (ibid 152).

Carney never plays down the extent of marketisation in the Roman empire. Even in the wildest and most remote parts of the empire, the presence of Roman soldiery injected "enormous" sums of coinage in the local economies. (See ibid 182). It was however mobilisation exchange, a rather advanced form of redistribution, that was in Carney's view the dominating mode of exchange in the Roman economy, for the reasons already stated.

Returning to the process of monetisation and its explanation (a process quite capable of occurring in a redistributive or mobilisation exchange economy), Carney looks at the ancients'

consciousness of economic phenomena. He uses the example of Italy's economic decline in the first and second century A.D. to show the ancient government's apparent blindness to "... the role that money itself could play in economic development or decline " (ibid 188). Under Augustus, Carney describes how Italy in the volume of coinage produced and used, lost out to the standing army of her empire's frontiers. Vineyards and potteries, those of Arezzo for instance, were relocated near this huge source of revenue and consequently with more and more money being spent and invested outside Italy, a crippling recession set in which the state seemed powerless to prevent.

To conclude, Carney sees the economies of antiquity as containing "... a variety of anomalous exchange practices and states of economic development " (ibid 182). In Rome's case, though the market had an important role to play, it was the advanced redistributive economy or mobilisation exchange economy that predominated. Throughout antiquity "... pluralism was the economic norm" (ibid 182).

d) A. GUHA

'An Evolutionary View of Economic Growth' 1981 Oxford.

In this book, Ashok Guha uses the example of Rome's economic and political rise and fall to demonstrate the explanatory powers of his theory of the process of economic growth. He suggests that the latter can best be interpreted as an integral part of the biological evolutionary process. He is at pains to stress that this is not merely an analogy, "... economic development can be viewed as a process of continuous accumulation of pressures on the natural resource base and their resolution " (Guha 1981 133). Technological change is the secret of sustained growth and Guha sees four main forces or "autonomous demand factors" which cause the economy to be "driven against the natural resource barrier again and again until the necessary innovations emerge or society regulates the expansionary forces..." (ibid 37).

These four main forces are as follows:

- 1) Population pressure on natural resources
- 2) Economic opportunities due to trade and transfer
- 3) Military competition
- 4) Demonstration effects (i.e. 'keeping up with the Joneses').

From these Guha constructs the model illustrated in Fig. 4, for economic growth within a national economy. This can be applied

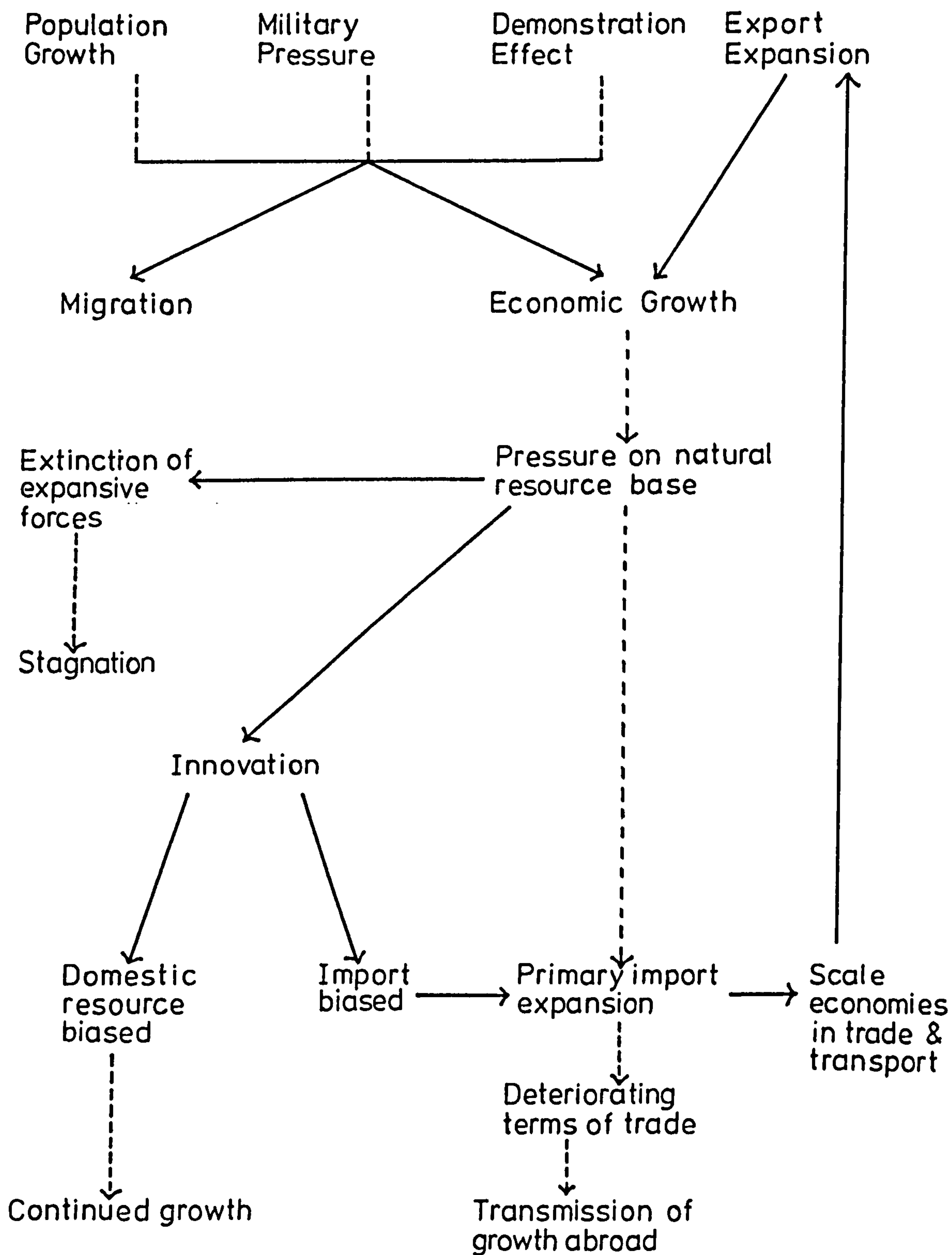


Fig.4 Guha's model

to Rome's economic history as Guha demonstrates (ibid 64ff).

The primary stimulus to Rome's economic development was the struggle for supremacy over the Mediterranean seaways between Rome and her great rival Carthage. Each was in the position geographically to control the crucial links between the east and west Mediterranean through the Straits of Messina and the sea-corridor between the African coast and Sicily. Rome was thus subject to military pressure, one of Guha's autonomous demand factors. She responded by eventually defeating Carthage and laid the basis for political and economic expansion on a grand scale. The creation of new markets in her empire for home-produced oil, wine and manufactures, constitutes the second of Guha's autonomous demand factors, export expansion.

The material results of this stimulus are well known. Wealth poured into Rome. The resources of most of the known world were at Rome's command. However, there was no technological revolution in Italy. What in fact happened was that Rome came increasingly to rely on imports from her provinces. By doing so she lost a primary stimulus, export expansion. Taking the manufacture of terra sigillata as a well known example. Italy's indigenous industry simply crumbled up once rival exporting industries were established in southern Gaul.

Guha explains why this happened as follows. Given the climatic homogeneity of the Mediterranean basin it became worthwhile for the provinces to produce their own oil, wine and manufactures, thus eroding Rome's primary economic role and leading to deteriorating terms of trade and the eventual transmission of

growth abroad. Looking at Guha's actual model it can be seen that in effect he has bypassed an essential link in the chain, pressure on the natural resource base. Applied to Italy this would mean that because of scarcity of some resource Rome was forced into primary import expansion. It must then be asked what sort of pressure is Guha talking about and why did not stagnation occur immediately.

The answer seems to lie in Guha's reference to an international division of labour within the empire as a whole. Primary export expansion meant that the Roman with political power had more wealth to dispose of than ever before. Land owners no longer needed to grow staples, instead they turned more and more to cash crops, olives and vines. The upper-class Romans continued to grow wealthy and gradually their tastes changed. Arretine earthenware was no longer acceptable on well-to-do tables, only bronze, silver or gold would do. Numerous derisory references to earthenware vessels can be picked out from contemporary sources. To whom could the 'luxury' potters then sell. Certainly not the Roman peasant. The answer seems to have been the provincials, eager to acquire the trappings of civilization (i.e. the 'demonstration effect'). Branch factories were thus set up such as those proved to be at Lyons and then elsewhere in southern Gaul. The potters were not stepping into a void however, there was the army to supply at first; the ordinary Roman soldier still thought of fine earthenware as a luxury, even if his political masters did not.

Thus in Italy the crafts and trades that survived were those at

the top of the scale, producing luxuries to satisfy the increasingly refined tastes of a tiny elite, the wealthiest people in the Empire. To the provincial producers were left at first the other economic tasks, the production of staples and day-to-day manufactures. Italy of course could not do without grain and table-ware, it was simply easier and more profitable to let others produce them. Thus in Italy only small-scale luxury producers flourished. Skills and capital were diverted to the vast markets of the provinces, not because of a pressure on Italy's natural resource base but because of a failure to utilize it to the full. The resources of the empire were simply too tempting and the Roman government was hardly aware of the economic consequences of the decentralization to the provinces of her essential domestic industries including agriculture. As Guha puts it, Italy eventually became an economic deadweight within the empire.

Later on in the book, Guha models the failure of the market in densely populated backward societies which also has relevance for the Roman situation. He writes that in such a backward society with a very low per capita income and with an extremely skewed income distribution:

"...the mass of the very poor cannot afford any but the most elementary necessities. The microscopic elite, on the other hand, is too small to constitute a large market for any one good: it demands a wide variety of products, each in small quantities. The market for each manufacture is not just narrow but inelastic:

in the absence of a middle class, moderate price cuts do not make the product accessible to very many more consumers than before" (ibid 86).

Guha's model can be seen to reflect the primitivist models of Finley and Jones (see above) and yet is couched in the terms of modern, market-centred analysis.

e) K. HOPKINS

'Conquerors and Slaves' 1978b Cambridge.

"Taxes and Trade in the Roman Empire 200 BC-AD 400" in JRS 70 1980 pp 101-125.

"Introduction" in 'Trade in the Ancient Economy' 1983 pp ix-xxv London.

Keith Hopkins has written a handful of major articles and books incorporating much that is to do with the Roman economy, most notably 'Conquerors and Slaves' (1978) and 'Taxes and Trade' (1980). The most comprehensive statement of his model for the Roman economy in general is perhaps set out in his introduction to the jointly edited book 'Trade in the Ancient Economy' (Hopkins 1983). In this he summarises what he terms the new economic orthodoxy 'master-minded' by Finley and Jones (see Chapter 1 above), with land and labour as the two most important factors in production. Status depended on landed wealth and dictated both methods of acquisition and patterns of consumption, and "... among the rich in ancient societies, greater value was attached to conspicuous consumption than to increased production,

or the painful acquisition of more wealth" (ibid xiv).

Hopkins considers Finley's model to be by far the best available:

"It provides a matrix of coherent proposals about structure, character and operation of the ancient economy. It provides a theoretical framework within which individual surviving fragments of evidence and individual case studies can be lodged. Alternatively, individual case studies can test the limits of the model...." (ibid xiv).

Hopkins does however see the model as a little "...too uniform, almost static in composition" (ibid xiv). His answer is an elaboration of the model to incorporate 'modest' economic growth and subsequent decline in the ancient world.

The general trend towards the production of a larger surplus in the Mediterranean basin occurred during the last millenium BC and the first two centuries AD according to Hopkins. It resulted from political changes with larger and more powerful states exacting taxes which forced an increase in the size of the surplus produced, and also from social and technological innovations which improved production capabilities.

These factors can be detailed in seven 'sub-propositions' as Hopkins terms them:

1) The evidence of poll and settlement patterns indicates

that at this time a rise in total agricultural production was occasioned as more land was brought under the plough.

2) The population of the empire in the first two centuries AD was greater than the population of the same area a) 1,000 years earlier and b) 500 years later.

3) The proportion of the total population engaged in non-agricultural production and services increased, as suggested by the increase in the built-up areas in towns and thus in the population.

4) Because of 3), total non-agricultural production rose, witness the wealth of Roman artefacts discovered by archaeologists far more than in pre-Roman levels.

5) The average amount produced by each person engaged in agriculture and in non-agricultural production rose. This is again implied by 3), but Hopkins stresses that any change was modest. In the case of non-agricultural productivity he writes that, "clearly there was no basic shift. Any overall change was modest in its impact on the total economy" (ibid xvii).

6) The total amount and the proportion of total production extracted from primary producers in taxes and rents increased.

7) This clause is in fact the subject of Hopkin's article 'Taxes and Trade' (1980) already mentioned above. Here his initial premise is that Rome's imposition of taxes paid in money greatly increased the volume of trade within the Roman empire. His second is that, "...so far as money taxes were levied on conquered provinces and then spent in other provinces or in Italy, then the tax-exporting provinces had to earn money with

which to pay their taxes by exporting goods of an equal value " (ibid 101).

From this Hopkins visualises a tripartite division of the Roman empire in the first two centuries A.D.:

1) an outer ring of frontier provinces in which defensive armies were stationed,

2) an inner ring of relatively rich tax-exporting provinces, such as Spain, southern Gaul, northern Africa, Asia Minor, Syria and Egypt,

3) the centre comprising Italy and the city of Rome, the seat of the Court and of the central government, which, like the armies on the frontiers, consumed a large volume of taxes (ibid 101).

The impact of imposing a money tax which was spent outside the region was serious, particularly on the small-scale cultivator, especially those in areas which had not previously operated a money tax system before the Roman conquest, "There, cultivators were forced to produce and sell a surplus which they had not previously produced or which they had previously consumed themselves..." (ibid 101).

Hopkins then sets up further propositions in order to test his 'taxes and trade' model, pointing out by way of a qualification that in his view the complexity of demand within the Roman economy has been misjudged, "...simple categories, elite/peasantry, luxury trade/trade in staples... lead implicitly to a serious underestimate of the sophistication, variety and

volume of goods commonly traded in the Roman empire "(ibid 103). Having said this he then goes on to describe the monetization of the Roman economy as nothing more than "a thin veneer of sophistication" (ibid 104), covering the reality, a subsistence economy with up to ninety per cent of the population not taking part in the money economy.

Hopkins then presents some of the evidence for a substantial rise in interregional trade between 200 BC and AD 200, including Mediterranean shipwrecks and a steep rise in the money supply in the late Republican period, concluding that this rise occurred because more people were using money for more activities. He wonders at the intentions of the government in increasing the money supply, deciding that it may not necessarily have been due to the yearly needs of the army alone. Republican senators may in fact have had some general idea of the need for money independent of each year's state needs.

The Roman state seems to have had no direct mechanism for distributing coin, other than by state expenditure, but the fact that by the first and second centuries AD the whole of the empire had been integrated into a single monetary economy indicates to Hopkins that some mechanism existed to distribute coinage and this Hopkins concludes was the flow of money-taxes and tax-stimulated trade.

The final corroboration of Hopkins' initial premise that money taxation in the High Empire stimulated trade, is the evidence of the third century AD when money taxes were gradually replaced by

taxes in kind. Such taxes did not cross provincial boundaries so readily and did not require conversion via town markets. There was as a result a decline in trade and in the towns in the third century, "... and by the fourth century there was a definite drop in the volume of silver currency in circulation " (ibid 124).

Returning to the seven clauses of Hopkins' general economic model, together they provide the basis for an extension of Finley's model which Hopkins sees as well able to incorporate such an addition or 'modest dynamic' without "...undermining its basic primitivism " (Hopkins 1983 xxi).

Section iii)-Comparing the Models

The models surveyed above may briefly be categorized as follows:-

Hunt - 'slave' economy

Viljoen - 'modified free-enterprise' economy

Hopkins - 'primitive/subsistence' economy

Carney - 'mobilization exchange' economy

The models are clearly very different from each other. Since none of the authors can be termed ancient historians it is interesting to examine the historical bases of each of their models.

Hunt's model is very clearly in the traditional Marxist mould with the economy being explained in terms of labour relations. It is a brief and very generalised model and in reality should probably be only applied to the situation in Rome and Italy, though this is far from explicit. Marx's own knowledge of the ancients came from a first hand knowledge of the sources (see Chapter 3) and so perhaps to both his and Hunt's models can be applied the same caveats mentioned in Chapter 1 section i).

Hopkins' sources are much more recent and diverse than Hunt's, he relies heavily on Finley's various works (see Chapter 1 section ii) i)) and those of Jones (see Chapter 1 section ii) h)) as well as some reference to classical authors. His primitivist view of the Roman economy reflects very much both Finley and Jones' own models. All three use a certain amount of archaeological evidence to backup their arguments. Hopkins' unlike his mentors does propose the limited existence of a market economy, albeit

strictly subsumed by the primitive, subsistence economy in which the majority of the population partook.

Both Carney and Viljoen's models are at pains to stress the mix of economies to be found in the ancient world. Carney's historical source is almost primarily an American one, Davisson and Harper, whereas Viljoen's sources are more European and include Rostovtzeff, Frank and Heichelheim. As might be expected, Viljoen's model follows its sources in the sophisticated picture it presents. Viljoen thus describes the Roman economy of the first and second centuries A.D. as a modified free-enterprise one predominantly, but with much reciprocal and redistributive exchange occurring as well. Carney does not go so far. For him the predominant type of exchange was that of mobilization exchange with the economy geared - "mobilized" - towards the holding of military power since this, not commerce, gave control of land, and it was this not capital as in a market economy, that produced resources and wealth in antiquity. He does add that market exchange, though not the most potent force working upon the economy, was indeed the most vital one and thus must not be dismissed from an analysis.

CHAPTER 3

THEORETICAL PROBLEMS IN THE ANALYSIS OF THE ROMAN ECONOMY

The foundation of much of what Polanyi (1957a) calls formal economic analysis was laid in the late eighteenth and nineteenth centuries by the so-called classical economists. Chief and earliest amongst these was Adam Smith, the Scottish author of 'The Wealth of Nations' (Smith 1961) born in 1723. He is rightly known as the Father of Political Economy. His work expressed and to some extent modified the ideas of the so-called Physiocrats. During the 'agricultural' revolution in late eighteenth century England, the economic value and profitability of land to the State was brought home to the economic thinkers of the period (Physiocrats). The Physiocrats were thus led to believe in the efficacy of the natural order just as the ancient Greek philosophers had done. L.H. Haney puts it as follows, "The nation [to them], being best governed whose laws.... come nearest to expressing the constitution of the natural order " (Haney 1911 139). The Physiocrats were the first up-holders of 'absolutism of theory' in political economy since their doctrine was founded on the natural order of things and thus unchangeable. These ideas were in opposition to those of earlier 'pre-scientific' economists, particularly in eighteenth century France when labour (admittedly mostly agricultural) was considered to be the foundation of wealth.

The Physiocrats saw Nature as cooperating with Man to produce a net surplus, Nature's bounty. Commerce and manufacture on the other hand were seen as non-productive unless more goods were produced than were needed to make them in the first place. In

other words, "... by growing wheat a man added to the wealth of the nation more than he did by making bread out of wheat " (ibid 142).

Such ideas were in fact supported by very few people in eighteenth century England. The Industrial Revolution demonstrated conclusively the importance and real productiveness of commerce and industry. Adam Smith's great contribution was to combine the influence of natural philosophy with a hard-nosed understanding of the reality of the industrial age. For Smith, the most fundamental force at work in society was self-interest. He combined this principle with three other concepts derived from the Physiocrats, that of a beneficent Providence, that of natural rights and that of 'laissez-faire', the non-interference of government in economic practices.

Adam Smith had a huge influence on both economists and the British economy. One of the greatest influences working on him was that of Greek 'natural' philosophy as already explained with reference to the Physiocrats. 'The Wealth of Nations' itself contains references to Pythagoras, Democritus, Epicurus, Zeno and above all Plato and Aristotle. Of the 'classical' economists who followed Smith all but Ricardo had studied Greek. Malthus took prizes in Latin and Greek at Cambridge and found support for his theories on population in Plato and Aristotle. Mill translated and annotated four dialogues of Plato. Lasalle wrote on Heraclitus' philosophy before turning to other things and Karl Marx who perhaps influenced the course of modern Western economic analysis more than any other writer, wrote his doctoral

dissertation (first published 1902) on the natural philosophies of Epicurus and Democritus (see Spiegel 1971).

The 'parallels' found by classical economists in their ancient sources and used to support their own analyses of the nineteenth century European economy have in a circular fashion, had a profound influence on the way modern classical historians have interpreted the actual working 'economy' of the ancients. In other words, the 'tools' developed (in part from ancient philosophical thought) to explain the functioning of the modern industrial market economy of Western Europe, have in their turn been used to try and explain the functioning of the ancient Mediterranean economy. The failings of this approach will be discussed fully below, but first it is important to examine the circle at its origin.

As recently as 1971, H.W. Spiegel devoted a fair amount of space in his book 'The Growth of Economic Thought', to discussing the 'economic' thoughts of the pre- and post-Socratic Greek philosophers. In the pre-Socratic period he discusses the importance of Pythagorean (Pythagoras c.582-c.507 B.C.) mathematics and their influence on Aristotle's later theory of just exchange. He also notes how Heraclitus' (c.535-475 B.C.) idea that 'war is the father of all things', in other words how equilibrium arises from the conflict of opposing force, led eventually to our notion of a self-regulating market. He mentions Democritus' (c.460-c.370 B.C.) lost economic treatise in which the character of utility was discussed and as a result very probably ideas of supply and demand as well. Democritus alone among Greek philosophers extolled the virtues of labour, "Toil is

sweeter than idleness when men gain what they toil for or know that they will use it." Marx's early interest in Democritus' philosophy is self-explanatory.

An analysis of Plato's work (c.427-c.347 B.C.) demonstrates, according to Spiegel (1971), how impossible it is to separate Greek 'economic' thought from the context of their political ideas. In 'The Republic', Plato discusses the characteristics, uses and disadvantages of material wealth. The fall of Plato's ideal state would be invariably attributable in some way to the accumulation of wealth and the inequalities and conflicts created thereby. Men, to Plato, were in fact, naturally unequal. From this arises the concept of the division of labour, centuries later to become a corner-stone of Adam Smith's economic system, though, as Spiegel points out (ibid), significantly different in context and emphasis.

Plato's disciple Aristotle (384-322 B.C.) apparently contributed even further to economic theory with his ideas on the economic organisation of society, communal as opposed to private property and principles of value and exchange. Most of these are to be found in his 'Politics', and some also in 'Ethics', 'Topics' and 'Rhetoric'. His thoughts on 'natural' methods of acquisition through agriculture, fishing and piracy and so on, where true wealth is limited in quantity by the needs of the household and city, "... life is action, not production", are clearly paralleled by the ideas of the eighteenth century Physiocrats outlined above. The desire for unlimited monetary gain as an end in itself was clearly seen by Aristotle as an 'unnatural'

practising of the 'art of acquisition'.

The Physiocrats similarly echoed both Plato and Aristototele's rejection of commercialism and their low opinion of the qualities of hired labour. Aristototele believed, as did Adam Smith in Man's natural selfishness and uses this belief to defend the principle of private property, in opposition to Plato's valuing of communal property. Finally, Spiegel (ibid) claims that in Aristototele can be found the seeds of the modern interpretation of the economic value of a good as being a subjective derivation from its utility, rather than Marxist and earlier derivations of value as proportional to the amount of labour incorporated in goods, or commanded by them.

For the post-Socratic period, Spiegel (ibid) discusses the doctrines of the Epicureans with their particular emphasis on restraining the demand for wordly goods. Man's natural inequality was still accepted, as the stoic Chrysippus (280-207 B.C.) remarked, "... nothing can prevent some seats in the theatre from being better than others."

In Spiegel's view (ibid), the Romans contributed little more to the subject, though in another field, law, the Romans made a major contribution to the economies of modern Europe, for example, the formulation of the doctrines of the corporation in which the corporate assets are separated from the assets of the owners of the corporation, in other words while the owners may change, the corporation does not. This is apparently traceable via Roman law to roots in stoic philosophy which dealt with the unity of the whole in the face of the diversity and the change of

its constituent parts. (ibid).

With a background such as this it is unsurprising that the first and greatest book on the subject of the Roman Economy, M. Rostovtzeff's 'Economic and Social History of the Roman Empire' (1926 and 1957), discusses that economy in the terms of the nineteenth and early twentieth century classical economists, particularly those of Marx and his followers.

In his preface to the first edition (1926), Rostovtzeff wrote:

"I am convinced that, without a thorough investigation of the social and economic conditions, no attempt to write a general history of the Roman Empire can be successful "
(1957 xi).

He was well ahead of his time in the field of classical history and his so-called "hypermodernistic twentieth century" interpretations (Blake 1978) stood unchallenged for decades. In fact, it was not really until 1973, when M.I. Finley published a series of lectures under the title of 'The Ancient Economy', that classical scholars and archaeologists in general began to question such time-honoured approaches. This is doubly surprising since in America, the same year that Rostovtzeff's second edition (1957) was published, a work called 'Trade and Market in Early Empires' was also published. This book was the culmination of many years work by the economic historian Karl Polanyi and the anthropologist Conrad M. Arensberg (Polanyi

et al 1957).

As Finley points out (1973), Polanyi and Arensberg demonstrated at least to his complete satisfaction, "... the inapplicability to the ancient world of a market-centred analysis " (ibid 26). Indeed even before Polanyi, ancient historians such as Max Weber and Johannes Hasebroek, were questioning approaches such as Rostovtzeff's.

This then is the major problem in any analysis of the ancient economy, the validity of the very tools by which interpretations are established, a theoretical problem whose complexities can lead the archaeologist into the realms of pure philosophy.

The first step in resolving the problem is to examine the realities of Rostovtzeff's 'formal' economic approach to the Roman situation (Rostovtzeff 1957). It is important to notice that the 'social' and 'economic' sections of the various chapters are clearly separated, a point which will be returned to below. Even a cursory glance at the 'economic' sections reveals a text riddled with the terms of Marxist economics. E.K. Hunt (1981) provides a concise summary of Marx's conception of capitalism which it will be useful at this point to quote in full:

"In Marx's historical materialism the mode of production was the most significant aspect of any social system. The capitalist mode of production was one in which the market allocated labour and resources. It was made up

of four classes: capitalists, small and independent shop-keepers and professionals, workers and poor people with few if any source of income. The most important classes were the capitalists and the workers. The capitalists' power was based upon private ownership of capital... capital involved ownership of tools and machines within the context of the social and economic relations between capitalists and laborers, whereby laborers received as wages only a part of the value they produced and capitalists demanded the remaining surplus as a necessary condition for permitting laborers to produce " (Hunt 1981 83).

In his opening paragraphs Rostovtzeff (1957) describes how it was the deliberate policy of the Julii and the Claudii to build their empire upon the urban bourgeoisie, "This strong middle class formed the economic backbone of the state and it was consciously developed by the emperors " (ibid xii). This attitude writes Rostovtzeff was apparent from the obvious fostering of city-life that the emperors indulged in. The eventual breakdown of city life was due to the 'rentier-mentality' of the urban middle classes which led to the fossilization of industry and the systematic exploitation of the lower classes which in its turn damaged the latter's buying power and thus destroyed urban industry and commerce even more completely. In the Augustan age however, Rostovtzeff writes, "I feel confident that the pulse of economic life beat very briskly.... both in Italy and the provinces. The bourgeoisie of this period was not idle and the

ideal of the rentier-life was no more widespread among its members than it is among men of the same class in our own days " (ibid 58). Marx's 'independent shop keepers and professionals' are obvious as are his exploited 'workers'. As for the capitalist wielders of power, Rostovtzeff writes:

"In the economic life of the Empire, the great capitalists of Republican times seem to have remained dominant... One of these capitalists and the largest of all, was the emperor " (ibid 54).

By using such terms, Rostovtzeff must mean them quite clearly to be understood in their Marxist sense, with all that implies for the economic system.

Nowhere is the danger of this approach more clearly underlined than in Rostovtzeff's use of the term 'laissez-faire'. Indeed, Finley selects it as one of his main points of critical attack (Finley 1973). For example, Rostovtzeff writes concerning the Julii and Claudii:

"The attitude of the emperors towards economic life, their economic policy or their lack of one, remained the same as in the days of Augustus. A policy of laissez-faire prevailed " (Rostovtzeff 1957 91).

What then does the word mean? The term in fact arose in Britain during the late eighteenth and early nineteenth centuries, during the Industrial Revolution. At this time the so-called classical liberal ideology of capitalism came to dominate society and economic thinking. The new ideology as explained above with reference to Adam Smith, pictured individuals as egoistic, coldly calculating, lazy and generally independent of the society of which they were a part. (see Hunt 1981). Adam Smith described the market as an "invisible hand" capable of channeling egoistic drives into the most socially useful activities. This analogy supported a doctrine of 'laissez-faire'. The only functions this philosophy assigned to the government were those that would support and encourage profit-making activities such as the protection of private property and the enforcement of contracts.

This doctrine replaced the Christian paternalist ethic in which the government of Britain for instance had a strong directive role to play. As Hobsbawm (1973) points out one has only to look at the consistently aggressive foreign policies of the sixteenth and seventeenth century governments of Britain to see this in action, "Unlike her foreign competitors, Britain was prepared to subordinate all foreign policy to economic ends " (Hobsbawm 1973 33). The result was that she ended up controlling the seas and most of the trade upon them, as well as establishing a vast empire totally geared to her economic needs.

It was only after this power base had been laid that British manufacturers and merchants could and did begin to call for a slackening of the government's grip on the direction of the economy. Adam Smith did more than anyone to further their

interests by arguing that left to itself the economy, or in other words, the market would operate in the most socially beneficial way. For example, competition for sales between manufacturers would supposedly result in a lowering of prices and so on. The government need take no part in this process since it was 'natural' and thus entirely self motivating. This 'not-taking part' then was what became known as the policy of 'laissez-faire'.

Historically speaking Rostovtzeff had no evidence whatsoever to suppose a similar doctrine directed the actions of the Roman emperors. What in fact is found in the sources on the subject of the state's economic policies is a yawning gap. Rostovtzeff actually admits this in the same breath that he introduces the term 'laissez-faire' when he refers to "... their [the emperors'] economic policy or their lack of one " (Rostovtzeff 1957 91).

It cannot be that Rostovtzeff misunderstood the full implications of the term. His whole book is built upon a framework of such terms and their assumptions. The failing was in fact a general failing of the intellectual milieu of the time, firstly in being unable to accept the fact that men such as Cicero, Caesar and Augustus whose writings they were so familiar with were unable to conceptualize an economic doctrine; and secondly, following on from this by trying to explain the gap in the sources by applying the brand new tools of 'formal' economic analysis, inextricably bound up as they were with the economic system that produced them. As outlined above this came about, ultimately via early modern interpretations of the classical

Greek philosophers.

Finley (1973) makes short work of Rostovtzeff's flawed approach. He most certainly would not agree with the statement quoted by Hawke (1980 4) that, "... economic history has been well-defined as that part of history which requires a knowledge of economics for its full understanding".

By opening with an account of the origin and developments in the use of the word 'economics', Finley (1973) brings us to the crux of the problem. Finley's argument is that since the ancients themselves did not possess the modern concept of 'the economy' as "... a differentiated sub-system of society" (ibid 21), then the ancient economy cannot be studied in the same way as the modern economy. Finley stresses that the use of the term 'economics' must be restricted to the analysis of a modern capitalist system but he also has to admit that in the past there were other forms of 'economies' all worthy of study even though in these cases one would be posing questions that the ancients themselves never thought about. As has been seen in the above sections on Finley's work he rejects this approach completely preferring to ask questions about wealth, status and so on, that the ancients would have understood.

Finley labels the method of analysis defined by Polanyi (1957a) as 'substantive'. The antithesis of this approach is 'formalism', or formal economics, a term which has already been used with reference to Rostovtzeff. Polanyi gives a clearer explanation of the substantive approach than Finley and it is worth examining briefly. Polanyi writes that before the modern era:

"... in contrast to kinship, magic or etiquette with their powerful keywords, the economy as such remained nameless. There existed, as a rule, no term to designate the concept of economic. Accordingly, as far as one can judge, this concept was absent " (ibid 71).

Polanyi explains that the reason for this absence is, "... the difficulty of identifying the economic process under conditions where it is embedded in non-economic institutions [in other words, in society as a whole] " (ibid 71). Rostovtzeff's separation of the 'economic' from the 'social' history as noted above underlines his ignorance of the 'substantive' approach. (See Appendix A for further definitions.)

Polanyi makes the important point that in the case of the socially 'embedded' economy, "... only the concept of the economy, not the economy itself is in abeyance, of course " (ibid 71), something that Finley is less clear on.

Before continuing the discussion it is interesting to note Finley and Polanyi's very different views of Aristotle's writings. Finley (1973) dismisses, "The one Greek attempt at a general economic ... statement... the opening of the pseudo-Aristotelian Oikonomikos" as being of "... crashing banality" (ibid 20), whereas Polanyi (1957b) admittedly not a classicist, writes a chapter entitled 'Aristotle Discovers the Economy', commenting at one point that, "On the nature of the economy Aristotle's starting point is, as always, empirical. But the

conceptualisation even of the most obvious facts is deep and original " (ibid 80). It is perhaps surprising that both Finley and Polanyi may be termed substantivists given their very different approaches to the sources.

As far as Polanyi is concerned, only the substantive meaning of economic "... is capable of yielding the concepts that are required by the social sciences for an investigation of all the empirical economies of the past and present " (Polanyi 1957a 244). Finley does not go so far, considering 'formal' analysis as appropriate for modern market-centred economies.

Neither Finley nor Polanyi have had the last word on the subject. Indeed the debate between 'formalists' and 'substantivists' and the various factions within these groups still continues. Hopkins describes the ancient economy as a "battle-ground" with the humble pottery cataloguers representing pacifists while the field archaeologists are the non-combatant workers who provide the economists with their new weapons (Hopkins 1983 ix). He sees the roots of the conflict in a "... professional love of polemic, deep differences in beliefs and values, and an irremediable ignorance about the classical world..." (ibid ix).

Dowling has summarised the on-going dispute in his article 'The Goodfellows versus the Dalton Gang: The Assumptions of Economic Anthropology' (Dowling 1979). Goodfellow it must be explained was an early formalist who studied primitive economies, whereas Dalton may be taken as a spokesman for the substantive economic anthropologists. The vitriolic nature of the debate among anthropologists and sociologists led Schneider to remark that,

"... as the antiphony between opposed sides has risen in pitch some bystanders have pronounced a plague on both houses, believing that where there is so much heat there cannot be light " (quoted in Dowling 1979 292).

Dowling (ibid) outlines the opposing theoretical stances and then makes the point that supporters of both view-points have contributed equally valuable empirical analyses in the field of economic anthropology. Thus it seems that the theoretical standpoint does not affect or invalidate fieldwork. To Dowling, both formalists and substantivists are at once right and wrong. His article is an attempt to provide a theoretical 'middle road' approach to the subject of economic analysis.

Dowling (ibid) begins by stating the ultimate goal of the economic anthropologist, which is to end up with a body of theory in which, "... orthodox formal economics will take its place as a special case " (ibid 292),

"... so allowing generalisations to be ultimately framed which will subsume the phenomena of both civilised and uncivilised, price and non-price communities into a body of principles about human behaviour which will be truly universal " (R. Firth quoted in Dowling 1979 293).

To this end Dowling (ibid) proposes an examination of the most basic assumptions about the subject followed by a tiered classification of these assumptions. Such a classification will then aid in the synthesis of the two approaches. Dowling proposes that having constructed such a classification it becomes clear from the perspective of economic anthropology, that formalists and substantivists, far from opposing each other in fact actually complement each other.

Dowling's classification is as follows:

1) The primary or universal assumptions

These are applicable to all peoples in all times and places. For example, all people have infinitely expandable wants or, all people are motivated by self-interest. The 'rightness' or otherwise of such assumptions can lead into the realms of pure philosophy but according to Dowling (ibid) such excursions have produced "nothing but increased intransigence " (ibid 294). Instead Dowling makes an approach from the stand-point of anthropology and makes a good case for the validity or universality of the assumptions about infinitely expandable wants and self interest.

2) The secondary or economy-wide assumptions

This is the next rung down in Dowling's tiered classification. These assumptions may help to explain the workings of one type of economy but perhaps not of another. For example, that production units proceed on the basis of the profit motive, or, that the social relations involved in transactions are impersonal. Formalists try to promote such level two assumptions to those of

level one, in other words by assuming their universal applicability.

3) The tertiary or intraeconomy assumptions

This is Dowling's final level and concerns assumptions which only hold good for local transactional patterns. For example, the market is atomistic, or monopolistic, or oligoposonistic and so on.

The failure of the formalists to recognise the difference between level one and level two assumptions is recognised immediately by the substantivists but they in their turn have made a mistake by trying to relegate universal economic assumptions to the level of secondary or economy-wide assumptions. Thus as Dowling concludes, "... outside the industrial, commercial world we can achieve understanding better by altering the secondary assumptions of orthodox economics " (ibid 294).

The process may be begun by recognising how Rostovtzeff (1957) raises the secondary assumptions of orthodox economics to the level of primary ones in his use of terms such as money markets, capitalist enterprises, entrepreneurial activity and so on, in relation to the Roman economy.

Finley (1973) on the other hand refuses to make any purely economic assumptions at any level whatsoever about the Roman economy. His view it seems was that since the ancient economy is so little understood both theoretically and empirically it was necessary to make a completely new approach to its analysis, one involving only those concepts with which the ancients were

themselves familiar. The unreliability of this approach was discussed above (Chapter 1 section i)).

The applicability or otherwise of Dowling's (1979) 'middle road' synthesis of the major theoretical approaches to the problem of the analysis of the Roman economy will be assessed below (Chapter 10 section i)).

P A R T I I

THE EVIDENCE OF ARCHAEOLOGY

CHAPTER 4

POTTERY AND THE ROMAN ECONOMY

Section i) - The Potential of Ceramics in the Field of Roman Economics

Those who study Roman pottery today are perhaps fortunate in that they are no longer restricted to constructing endless typologies and hence chronologies. Renfrew describes this work as an "... almost obsessive concentration by some specialists " (Renfrew 1977 3), bringing ceramic studies a bad name in some archaeological circles. More recently Peacock has described the origins of this approach in the way that Roman archaeology has in the past been regarded as merely an "illustrative adjunct" of Roman history, chronology being obviously vital if the archaeology was to enhance the established historical framework (Peacock 1982 3).

Prehistoric artefacts have suffered no such bias simply because of their being 'prehistoric' and it has really been thanks to discussions of aims and methodologies by prehistorians that the potential of ceramics in the field of Roman economics has at last been understood, as Peacock puts it "... after about eighty years of continuous research " (Peacock 1982 4). Of course economics is just one of a number of fields to which the study of ceramics can contribute. Renfrew has discussed these in relation to the various properties of pottery (Renfrew 1977), for example the porous nature of some clays after firing means that a study of residues found in pottery sherds may lead to information on the original uses of the pottery as a container of foods or liquids.

Perhaps the most important property of pottery where the study of economics is concerned is Renfrew's sixth property, "Pottery once broken is not in general reusable, and once buried is generally well-preserved" (ibid 6). The implication being that patterns in space and time related to economic activity should be recoverable in the archaeological record. Young underlines this:

"... [pottery] has a special importance for archaeologists because of this ubiquity and quantity, and because pottery vessels remain in use for limited periods only, and change in source, style and technique through time..."
(Young 1980 1).

The potential of pottery in elucidating patterns related to economic behaviour is undoubted. The statistical analysis of ceramic data should therefore prove to be the simplest (perhaps the only) way to test the hypothesis proposed above concerning the systems of exchange operating in Roman Britain. (See Introduction section i) - Aims).

Section ii) - Data Collection: The Situation in Britain Today

Having recognised the potential of ceramics, further study has been hampered by a lack of actual data, as recognised by a number of archaeologists, notably Fulford (1981) and Peacock (1982) (see also Griffiths 1983 unpublished conference paper). Five years ago the Department of the Environment published a set of guidelines on the processing and publication of Roman pottery from excavations (Young 1980). One of the opening paragraphs

stated that:

"... to realise completely the potential of the evidence of man's past offered by pottery, there must be a full, factual and quantified record of the pottery. All forms and all fabrics must be listed by context. The constraints of archaeological publication mean that in future it will only rarely be possible for this information to be published in full, but it is essential that a record is prepared as an archive which can be made available on request " (ibid 1).

Three years ago after just such requests had been made unsuccessfully to five archaeological units by this author, the actual reality of the situation in Britain became apparent. Only two of the units even had consolidated form/fabric series (only applicable to their own handful of sites), only one of which was available for immediate use. The publication record for recent excavations was overall fairly good but the almost total lack of quantification even on sites published since 1980, was quite deplorable. The answer in this case was to select a number of already published sites and quantify the pottery personally. Understandably this seriously reduced the size of the sample that could be analysed since both time and money were severely limited.

It is unsurprising therefore that historians dismiss or are ignorant of the theoretical and methodological advances being

made by archaeologists. Salway for instance in his Oxford History of Roman Britain (1981) considers that it is probably "fruitless" to seek to understand the underlying working of the ancient economy, basing this statement it seems on a preceding discussion of the lack of data of any sort available in Britain upon which to base economic theories.

The various regional and county units in Britain must realise that the potential of ceramics in all fields, not just economics is such that every effort must be made to establish form/fabric series into which quantified site assemblages can be fitted as rapidly and efficiently as possible. The author's own experiences as will be seen below, show that this is not the apparently impossible task it might at first appear and that the rewards are well worth the effort. At the moment Peacock's non-specialists can still not expect intelligent answers to the few simple questions they might pose but hopefully they will not have to wait for another eighty years of continuous research before the answers are forthcoming (Peacock 1982 4).

Section iii) - The Quantification of Excavated Pottery

Having discussed the potential usefulness of ceramics in economic research the next stage is to discuss the translation of this potential into statistical reality.

Quantifying whole objects such as flint axes presents no initial problem. Quantifying objects which can break in an almost infinite number of ways is rather harder. Because of its potential, much thought has recently been given to trying to

extract reliable and representative statistics from the tons of pottery annually excavated throughout the world. Archaeologists working on sites as far apart as Fiji and Stobi have been working on the problem. For example the work of Wilhelm G. Solheim II who published an article in Current Anthropology (Solheim 1960) on the pottery from Fiji and Sarawak called 'The Use of Sherd Weights and Counts in the Handling of Archaeological Data'. As can be seen from the title, Solheim examines a simple sherd count backed up by weighing the different 'varieties' of pottery. He underlines the different results produced by the two methods, a product of the difference in size of the sherds of each variety. He demonstrates this fact by comparing the number of sherds per unit weight of each variety. This difference in size according to Solheim is due a) to the ease of recognition of the variety and b) to the absolute size of the sherds of each variety. In other words some varieties of pottery generally break up into smaller sherds than others and in some varieties these smaller sherds are less easily assigned to variety groups than others. It must be assumed from this that Solheim's 'varieties' are based more on decoration and form than on fabric as is more usual in British pottery studies.

Using the two differing methods of quantification and then comparing the number of pieces per unit weight of each variety from different levels and different areas of Solheim's site gave much information on the homogeneity of the site spatially and chronologically.

It will be noticed immediately that Solheim is using the data with a specific end (unstated) in mind, intra - site comparison.

He admits himself that this sort of analysis "... does not answer the question of what form of quantified data to use for comparing sites " (ibid 329). He suggests following Baumhoff and Heizer's solution (1959), a method for approximating the number of whole vessels of different kinds through the use of sherd weights.

J.D. Evan's work on pottery from two neolithic settlement sites in the Aegean; Knossos on Crete and Saliagos near Antiparos in the Cyclades is also worthy of consideration (Evans 1973). Unlike Solheim, quite clearly Evans states his chief objective in trying to quantify his pottery. This was to facilitate the objective description of the material as a whole, but with the hope that the results might eventually prove useful for purposes of comparison between sites. He suggests that there are three ways of quantifying pottery.

- a) count the number of sherds
- b) measure the area of pot surface they represent
- c) weigh them

Evans comments that using all three together would be the best method but that time and money cut this down to just one. In his view weighing comes out on top since it is easy to measure and in his opinion at least as informative as a sherd count. He acknowledges Solheim's stated objections that a few large 'coarse' sherds can weigh the same as a lot of 'fine' ones but counters this by stating that at least on his own sites the majority of the pottery was locally made and of a very similar fabric and that there were no fundamental distinctions between the 'fine' and 'coarse' ware fabrics anyway. Any discrepancies

were apparently further ironed out by studying aggregate levels rather than individual ones thus making the samples larger. To make the weight figures more manageable a standard unit of 100 kgs was used, later changed to 50 kgs when strata with very small amounts of pottery were found. Overall Evans' approach is more concerned with the occurrence of change over time on his sites rather than variability within single periods of time.

Quite obviously the way data is handled is governed both by the questions which are to be asked of it and by the nature of the data itself, in this case the nature of the pottery and the sites it is excavated from. V.R. Anderson-Stojanovic demonstrates this in her analysis of the pottery from Stobi (Anderson-Stojanovic 1982). She sets out the five overall objectives which governed her original approach. These are as follows:

1. To be able to store and make accessible data from a large number of sherds.
2. To discover meaningful relationships between various ceramic attributes.
3. To approach the material from a variety of ways to answer questions about pottery chronology, manufacture and technology.
4. To determine through seriation analysis the relative frequency of wares and attributes.
5. Through cluster analysis to learn as much as possible about fabric groups and ware at Stobi.

Once these objectives have been reached, Anderson-Stojanovic considers that it would then be possible to compare the Stobi data on relative frequencies of types of wares with data from contemporary sites elsewhere in the Greek and Roman world, "... to provide information about the distribution of ancient wares necessary for any reconstruction of trade patterns in classical antiquity and how they changed through time " (ibid 340).

The actual method of quantification employed for the Stobi pottery is a simple sherd count. Since the total amount of pottery excavated at Stobi was enormous, Anderson-Stojanovic concentrates in the first instance on deposits dating from the second to the fourth centuries A.D. (where the most chronological confusion occurs) and from these deposits she then selects a large but apparently far from random sample representing different kinds of contexts and yielding large amounts of pottery, 35,025 sherds in all from a total of 83 deposits.

Briefly, the analysis proceeds as follows. The sherd count was arranged firstly into general fabric or ware groups. Then body sherds and other non-diagnostic or very fragmentary pieces were returned to context storage. The remaining sherds, mostly rims and bases were then treated to a sophisticated computer coding procedure involving filling out an 80-column Fortran Coding Form with thirty-five variables for each sherd such as Condition; Ware Group; Part of Vessel; Fabric Colour and so on. These variables are very much the product of the preliminary sorting procedures outlined above as well as earlier work on a provisional typology. The complexity of this analysis grew out of the five original

objectives which were extremely wide ranging.

The quantification itself of the Stobi pottery was not complex at all and in fact Anderson-Stojanovic totally ignores any questions on the validity of using simple sherd and/or rim/base sherd counts to represent past pottery populations. What she also sidesteps is the problem of dividing the pottery into fabric groups and wares. Her solution as set out in her overall objectives is cluster analysis based on the data recorded on her computer coding cards. It must not be forgotten that this data includes only diagnostic (mainly rim/base) sherds. The quantification of the entire deposit assemblages was based on "... fabric or ware groups - various imports, local color-slipped tablewares, light-bodied plain or buff ware, cooking wares, amphoras [sic] and other identifiable fabrics, and within these groups was separated by form and vessel part " (ibid 341). It must be assumed that all future computer analyses will be based on the quantities of diagnostic sherds alone. Cluster analysis to divide the pottery into fabric groups will thus not be applicable to the entire pottery assemblage and so inter-site comparison will only be possible either on the original generalised fabric or ware groups or on the diagnostic sherds only, neither of which is terribly satisfactory.

The British team in charge of the excavation at Carthage were faced with a similar mass of Roman pottery as the excavators at Stobi, over fifteen tons in all. They tackled it in a far more rational way. Peacock describes their approach in his book 'Pottery in the Roman World' (1982). He states that before any quantitative assessment can be started, the ceramic worker "...

must firstly identify sources or characterise and discriminate wares of different but unknown origins" (ibid 170). At Carthage very little of the origins of the coarse wares was known. The excavators approached the problem by dividing the material into "... broad categories, such as hand-made wares, amphorae, mortaria, jugs, bowls, cooking pots etc. and then establishing a type series for each" (ibid 170). This latter was then used as a basis for quantification, "In addition to counting rim sherds, weights were established and body sherds were included in this" (ibid 170). The end results, though inevitably uneven was a set of data from which it would be possible to work out the proportion of a given type in any phase, either by using weight, or rim sherd counts.

With hindsight the British team acknowledged that it would have made sense to adopt a slightly less catholic sampling procedure, since at Carthage it took "... five hundred man-days to sort in the field the fifteen tons of excavated pottery and at least double that figure in preparing the archive and final report" (ibid 171).

Clearly excavators and ceramic workers in the past have had great trouble in producing satisfactory quantified reports. This may be why so many, still ignore the necessity of producing this type of assessment (see Griffiths 1983 unpublished conference paper).

The authors of the book 'Computers and Mathematics in Archaeology' (Doran and Hodson 1975) might be expected to give some guidance on the matter. Unfortunately this is not so, they spare little thought on the subject contenting themselves by

stating that, "... quantified studies of pottery at the assemblage level have tended to accept intuitive types of whole vessels or parts of vessels " (ibid 112). They mentioned weighing as an alternative and also the use of variations in rim diameter as used by Orton (1970) (see below) in his study of wheel-made pottery from Romano-British kilns in London.

Orton's more recent book 'Mathematics in Archaeology' (1980) provides a more useful account of the problems and possible solutions to the quantification of pottery. As already seen, before deciding on the method of quantification to be used it must be first decided what is actually going to be quantified and why. Solheim (1960) uses pottery 'varieties'; Evans (1973) uses pottery 'wares' and Anderson-Stojanovic (1982) as outlined above sidesteps the issue completely. Orton (1980) writes that the idea of pot 'type' should be approached by examining the two general characteristics every sherd has, its fabric and its form (i.e. the form of vessel that the sherd originally came from). Only having attempted this classification can the problem of quantification be approached. Orton makes no bones about the fact that "... unfortunately there is no best way..., nor is there likely to be one " (ibid 162). He also underlines the point that Anderson-Stojanovic (1982) avoids, the question of the relationship between the pottery in use at a site at a certain time (the population) and the pottery the archaeologist actually finds (the sample):

"Unless we are prepared to make some assumptions about the relationship, we can say

nothing quantitative about the pottery at all "
(Orton 1980 162).

What little statistical work that has been done on the subject tends to reveal that it is reasonable to compare proportions between one assemblage of pottery and another, but not the proportions actually within one assemblage.

Orton then returns to methods of quantification. On a completely excavated site, a rarity as any archaeologist will agree, estimates of whole vessels present may be possible; but on the partially excavated site four alternatives are left, keeping in mind Orton's two all important caveats:

1. Unless all types break into the same number of sherds the estimate of the relative proportions is seriously affected by the proportion of the site that has been excavated.
2. Unless the whole site has been excavated, vessels that break up into many sherds will be over-represented relative to those that break into few.

The four alternatives that Orton proposes are:

- a) number of vessels represented
- b) counting sherds
- c) weighing sherds
- d) vessel equivalents

The first alternative is clearly unsatisfactory if the pottery does not come from a completely excavated site. The second alternative, sherd count does not satisfactorily answer Orton's caveat 2) (see above) unless dealing only with site to site

(inter-site) comparisons when this is less important than caveat 1) (see above). Orton writes that weighing, the third alternative, is more subtle than a mere sherd count but is otherwise pretty much the same since it overcomes caveat 1) but not 2).

Orton himself favours the final alternative, vessel equivalents. This can be calculated as the percentage weight of the total vessel or perhaps the percentage of a whole rim taken up by a rim sherd, measured by using a special rim radius chart. The latter is cruder to assess but easier than the former. So far not enough theoretical or empirical work has been done to thoroughly support the use of estimated vessel equivalents (e.v.e.'s) and Orton concludes by advising researchers "... who cannot wait for the theoreticians to come up with the 'best' method " (ibid 167), to first of all consider the nature of the site and then the uses to which the data will be put. Orton sides with Solheim (1960) in suggesting the use of two methods in conjunction for greater accuracy, but other than showing a personal preference for e.v.e.'s, Orton leaves it entirely up to the researcher to decide how to quantify their pottery.

Millet approached the problem a year earlier than Orton in his article 'How Much Pottery?' (Millet 1979). He makes it quite clear that the problem is really more the excavator's than the research student's since the latter has specific aims in mind and can tailor their method to those aims, whereas the excavator must satisfy a readership whose aims may be manifold. Thus the article is a brief resumé of quantification methods much like Orton's, followed by a discussion of the practical advantages of

each method to the excavator with limited resources, and ending up with a 'test' of the reliability of the various methods.

Weighing and sherd counting unsurprisingly turned out to be the quickest and easiest methods. As for reliability there was little difference, but taken all in all a combination of minimum numbers of vessels and sherd weight was suggested as the best, though in view of the difficulties with calculating the minimum numbers of vessels he does write that sherd weight alone would probably be the most useful for inter-site comparison, with sherd count thrown in to give information on average sherd weight and hence on the condition of the pottery.

Millet concludes by echoing Orton's conclusions that the subject is still open to debate. What he does stress is that, "... it is important to include all the pottery from an assemblage in any quantified information (not excluding unidentified, 'residual' or any other sherds...) " (ibid 78). He also points out that an assemblage which has been sorted and which is thus incomplete is virtually useless for comparative purposes. (See also a review by Griffiths and Greene (1987 forthcoming)).

It was eventually decided that the pottery data to be collected for the analysis in Chapter 6 would be quantified using two methods, sherd count and weighing. Though e.v.e's might have been more acceptable than the simple sherd count it was decided that with time at a premium it was too long-winded a process, and furthermore since only inter-site comparison was required the theoretical advantages of e.v.e's were less important than they might otherwise have been.

CHAPTER 5

THE CERAMIC DATA: SETTING THE SCENE

Section i) - Introduction : The Research Programme

It may now be assumed that an analysis of ceramic data has the potential to test the hypothesis upon which this thesis rests. The methods available for quantifying that data have already been examined, but before proceeding further, the process by which the research strategy was arrived at must be discussed.

As the opening section on Aims made clear, this thesis rests partly on the desire to challenge the extremes of the 'primitive' model of the Roman economy. The primary hypothesis was designed to be the complete antithesis of the 'primitive' model as proposed by Finley (1973) (see Chapter 1 section i) c)). Finley's model, though apparently theoretically sound, remains to be thoroughly tested archaeologically. The author has stressed elsewhere the necessity of such a validation (Griffiths 1986 forthcoming). It was felt that such a test should be attempted here since a thorough refutation of the 'primitive' model on the basis of statistical 'reality' would be the best stepping-off point for further research. Furthermore, the simplicity of the 'primitive' model and the fact that it had been carefully worked out already, lent it far more readily to statistical idealisation and hence to the design of an initial research strategy. Finally, of course, should there prove to be support for, rather than refutation of the 'primitive' model via the data, then valuable time would not have been spent in building the necessarily more complex mathematical models for the primary 'modernist' hypothesis.

As has already been seen, the 'primitive' economic model is indissolubly linked to the society of which it is a part. Thus the economic model must be described in 'social' terms as follows:

A numerically tiny elite consuming luxury goods supplied by long-distance trade and regional specialist craftsmen is contrasted by the numerically vast mass of the populace living at subsistence level consuming only locally produced goods of low quality. Such a system of exchange may be termed reciprocal and redistributive. Market exchange does not occur.

For the ceramic archaeologist, the mathematical model corresponding to this hypothesis might be expressed as follows:

On (a small number of) high-status sites, large amounts of luxury goods and regional specialities would be expected. On (a large number of) low-status sites very few such goods would be expected. Instead a majority of low-quality locally-produced goods should be found.

The major problem with this mathematical model is the archaeological definition of the social status of the user of the pottery assemblage. It was felt that the most obvious solution to the problem would be to select assemblages found in close association to actual domestic structures defined archaeologically. If it is assumed that the nature of such a structure and its associated finds would be an accurate indicator of the social status of the people who lived in it and used the pottery of which the ceramic assemblage is the remains then the

problem is solved satisfactorily.

Such an assumption seems reasonable in the light of what is known or can be inferred both about the upper echelons of the native Iron Age population and their Roman conquerors, in particular their inclination towards conspicuous consumption. The upper class at least, of Romano-British society might be expected to display its material wealth in conspicuous ways, most obviously, archaeologically, in house-building and decorating and in personal possessions. The ready acceptance by the British native aristocracy of 'Romanitas' that Tacitus notes so disparagingly in *The Agricola* (Tacitus 1977 72ff) along with the clear status symbolism of Romanised imports such as wine amphorae and Mediterranean bronze and silver ware among the immediately pre-Roman Iron Age aristocracies of south-east Britain, would further suggest that the presence of 'Romanised' features in structures and associated finds would be a further indicator of the social status of the sites' occupants. Put simply, the Romano-British family living in a courtyard villa might reasonably be expected to be of higher social status than one living in a 'native' type round-house.

a) The Research Strategy

The research strategy was thus designed with the mathematical model outlined above, in mind. The resulting criteria were as follows; a number of compatibly quantified pottery assemblages were required from a series of archaeological sites within a single geographical zone, preferably in the low-land (civilian) zone of Roman Britain.

The sites had to include substantially or completely excavated domestic structures of demonstrably second century A.D. date. Details of construction and associated finds had to be readily available. The assemblages obviously had to be contemporary with the excavated domestic structures and in close association. They also had to be relatively uncontaminated with earlier or later material and above all the assemblages had to be absolutely intact (see Chapter 4 section iii) above). A final necessity seemed to be a consolidated form/fabric series for the area's locally-produced pottery.

The area finally chosen for study was the county of Northamptonshire. It fulfilled most of the listed criteria and some more general ones. For instance the county was heavily settled in Roman times (see Chapter 5 section iii) d) below). Only two archaeology units had to be dealt with, the Northamptonshire County Council Archaeology Unit (NCC) in County Hall, Northampton and the Northampton Development Corporation Archaeology Unit (NDC), based just outside the county town. There was one society of amateur archaeologists covering the area, the Upper Nene Archaeology Society (UNAS) and one museum, the Northampton Central Museum and Art Gallery (NMAG). This represented only four bodies, all within or near Northampton, a very different proposition to the situation in some other counties.

More specifically, the pottery from a dozen sites in the county was found to fit almost all the requirements of the research strategy outlined above. The pottery report of each of these

sites was either already published or available in manuscript form. Each site had clearly domestic structures of the second century A.D. associated with unsorted, uncontaminated, contemporary pottery assemblages. Some of these assemblages had already been quantified but in such widely differing ways no comparison was possible and so each assemblage chosen was requantified by the author. Details of the construction of and finds associated with each of the second century structures were also on the whole readily available either in publications or as manuscripts.

The one major drawback apart from the lack of already quantified data was that a consolidated form/fabric series for the locally-produced Roman wares had not at that stage been published. The solution was to produce one designed especially for this piece of research. Various excavators had prepared interim attempts, for example that for Clay Lane (Windell forthcoming) and their incorporation into the author's own generalised fabric series will be discussed below (Chapter 5 section b)). Lack of the appropriate experience coupled with the scarcity of time and money, prevented the collection of quantified data on pottery forms.

Finally, the possibility of extending the research to include a chronological analysis was abandoned at an early stage in the face of the paucity of evidence.

Section ii) - The Second Century Pottery of Roman Northamptonshire

a) Discussion and Description

The coarse ware fabric series used in the following analysis was constructed by the author following an examination of the assemblages in question and of the interim fabric series made for the Clay Lane excavations by the NCC (Windell forthcoming).

A number of the other published sites examined had separate fabric series of their own and this is indicated in the site summaries below (Chapter 5 sectioniv)). Fig. 5 shows the final fabric divisions used and indicates how they correspond to the fabric divisions of other specialists.

Since the data was collected a detailed appraisal of the Roman forms and fabrics found during excavations at Towcester has been published by Woodfield (Woodfield & Brown 1983). (See Fig. 6). Subsequent examination of the Towcester fabric series and discussion with its author have indicated that the fabric series used here, though simplified, is perfectly meaningful as far as sources and marketing are concerned. Indeed, its simplicity was intended as a positive advantage when it came to extend the analysis to other areas.

The length of time it has taken to produce something like Woodfield's report is an indicator of the difficulties to be encountered in making meaningful divisions of the locally produced wares.

Towcester: Park Street	Great Weldon	Piddington	Brixworth	Mileoak	Quinton	Wood Burcote	Clay Lane	Towcester: Alchester Road	Ringstead	Thorplands	Overstone
G 1 G 2	Grey (various shades)		Grey (various shades)	Fabrics A-D	Grey (various shades)	Grey wares	Fabric E	Fabric nos 22, 17, 16, 30.	Grey wares	Grey ware	Grey wares
BB1	Black burnished ware		Black ware, burnished	BB1	Black ware, burnished	Black wares, BB1	Black burnished wares	Fabric no. 15	BB1	BB1	—
B	Sandy orange fabric		Brown gritty wares	Gritty orange buff fabrics	Brown sandy fabrics	Buff wares, oxidised ware	Fabric C	Fabric nos 35a, 26, 33, 34, 36, 38, 41.	?	Brown sandy fabrics	Fine buff to pale orange sandy ware
OPW	Hard buff/ white fabrics		Flagon	Flagon	Flagon	White, pink wares	Fabric F Fabric G	Flagon	Flagon	Flagon	White sandy wares
C-G	Calcite gritted		Calcite gritted	Shelly fabrics	Calcite gritted	Calcareous wares	Fabric B	Fabric nos 44b, 44c, 44d.	Calcareous wares	Calcite gritted	Limestone gritted
H	?		Gritty off-white (oatmeal) ware	?	Crushed pottery grog	?	Fabric A	Fabric no. 35b	?	Coarse gritted (lumpy)	Non- limestone gritted wares
											CALCAREOUS
											GROGGED

Fig. 5 Comparison of fabric divisions

The different GREY ware fabrics are almost impossible to distinguish by visual examination alone. More complex analyses have yet to be tried but as Woodfield points out (pers. comm.), unless the specialist can source a sherd by eye there is no point in determining its origin petrologically or chemically since clearly such a procedure cannot be used on every single sherd.

The Jurassic Clay Beds from which these wares were produced cover large areas of the county and beyond and many of the seventy-four Romano-British pottery kilns shown on Swan's map in her recently published gazetteer (Swan 1984 Map 14) must have been producing these ubiquitous grey wares (see Map 8). They formed a large proportion of all the assemblages examined.

Woodfield indicates that the kilns at Ecton in the Upper Nene Valley were probably the major producers of this fabric in the second century A.D. The evidence from Towcester (ibid) and from the excavation of four kilns at Ecton indicates a second to mid-third century life span for the potteries. From surface indications the excavator suggested a total of fifty kilns in the area (Johnstone 1969).

The major second century forms found at Towcester in grey wares were necked jars and beakers with some triangular-rim dishes decorated with trellis, rouletting, stabbing and multiple neck cordons. (See Fig. 6).

Other sources of grey wares were possibly among the earlier kilns in the Lower Nene Valley area, producing in the second century

the following forms; dog-dishes, flat- and triangular- rimmed dishes as well as jars and beakers (see Fig. 6). Decoration included rouletting, trellis, cordons and stabbing.

A further sub-group among the grey wares is described by Woodfield (Woodfield & Brown 1983) as a fine blue-tinged grey ware, sometimes with a red core. The ware was confined to the second century at Towcester and Woodfield suggests an Upper Nene/Ecton source for it. The forms described by Woodfield are rouletted beakers, triangular- and flat- rimmed dishes, small jars and dog dishes. (See Fig. 6).

A very small percentage (0.3% at Towcester) of what Woodfield calls Later Grey wares seem to be appearing in the later second century. A fairly local source is suggested (ibid). The only forms were dog dishes and triangular- rimmed dishes. (See Fig. 6). Decoration similar to Black Burnished Category 1 ware.

The next fabric category in the fabric series used here was BLACK and was taken to present the well known Black Burnished category 1 wares. These originated in the Poole region of Dorset.

The second century forms identified by Woodfield at Towcester (ibid) comprised cooling^k pots, flat-rimmed dishes and dog dishes. (See Fig. 6). The usual lattice decorations were found.

The SANDY ware category included two of Woodfield's fabric divisions a) Pink/cream and red bodied/black granular sandy wares and b) coarse sand and grog-tempered wares, buff and dark grey in colour. The former may have had a source in the

Verulamium area though the majority were probably local Upper Nene products. Forms included channel-rim jars and some storage jars.(See Fig. 6). The coarser sandy wares were also assigned a local source by Woodfield, possibly within Towcester itself since a kiln was excavated containing similar material (ibid 80). Second century forms were solely storage jars though at Towcester (ibid) earlier forms survived, including very wide-mouthed heavy bowls and channel-rimmed jars. (See Fig. 6).

The generalised WHITE ware category used here in fact refers to the fine white ware from which mainly flagons were made. The colours of the fabric range from orange through pink, buff, cream and white. At Towcester about a third of Woodfield's phase 2 flagons were given a source in the Oxford region and the rest either from around Verulamium or the Upper Nene. (See Fig. 6).

The so-called CALCAREOUS wares are very distinctive since they are tempered with ground shell hence the common description 'shelly' wares. In the second century these wares seem to have a local source on the whole. Woodfield proposes a production centre somewhere south of Towcester from the evidence of other excavated assemblages in the area (ibid). A small proportion (1.5%) at Towcester in the second century may have come from the kilns at Harrold (Beds). (See Map 8). During the second century the only form produced in the calcareous fabrics found at Towcester was a rather crude necked cooking pot (See Fig. 6). The only decoration was simple rilling.

The final category among the coarse ware fabric series used here

was the GROGGED wares. These are often described as 'porridgy' wares, and Woodfield describes them as having a soft pink and buff fabric (ibid). She also notes that large numbers of tiles were produced in the same fabric and suggests that the source when found will prove to be a fairly major production centre and will probably be found somewhere south and east of Towcester (ibid). The standard form at Towcester was a wide-mouthed necked jar (almost a bowl shape) but also included large storage jars perhaps with slipped surfaces. (See Fig. 6). Woodfield notes that there was some evidence for linear painted designs as well as incised wavy line decoration usually between two parallel lines.

Other coarseware categories recognised were 'BELGIC' and miscellaneous ware. The latter (MISC) category included all unidentifiable fabrics in the assemblages examined.

The fine ware categories (including MORTARIA and AMPHORAE) formed an interesting but numerically smaller group of fabrics. Identification of many of these wares by anyone other than the specialist is difficult and so the identification of the quantified groups is based on the published material where possible. Summaries of the published specialists' reports are included in Appendix B below to give an idea of the range of sources for mortaria, amphorae and colour coated wares.

Also included in the fine wares were Woodfield's orange/red beaker fabrics (ORANGE BEAKERS). These were easily distinguishable in the assemblages examined being fairly thin-walled and fine with a brightly coloured fabric. Three second century beaker forms were identified at Towcester, everted-rim

indented beakers, some with pedestal foot, cornice-rim rouletted beakers and plain beakers. One colour coated beaker was observed. In the same fine orange/red fabric at Towcester were Tazze, a foot-ring bowl and a colour coated bowl. (See Fig. 6). Woodfield suggests a local, probably Upper Nene source.

Other fine ware categories recognised were PAINTED and MICA-DUSTED wares and IMITATION SAMIAN.

The SAMIAN or terra sigillata formed a very distinct category among the fine wares since of all the fine wares, samian alone almost invariably has a specialist report in which nearly every scrap found is recorded, sourced and dated. Summaries of the relevant samian reports are to be found in Appendix B below.

As expected the vast majority of the second century samian found on the sites in question came from the potteries of central Gaul, particularly those round Lezoux. The forms found are recorded in Fig. 45.

(For further details on the fabrics discussed above see Chapter 6 section ii) h) below).

b) The Fabric Hierarchy

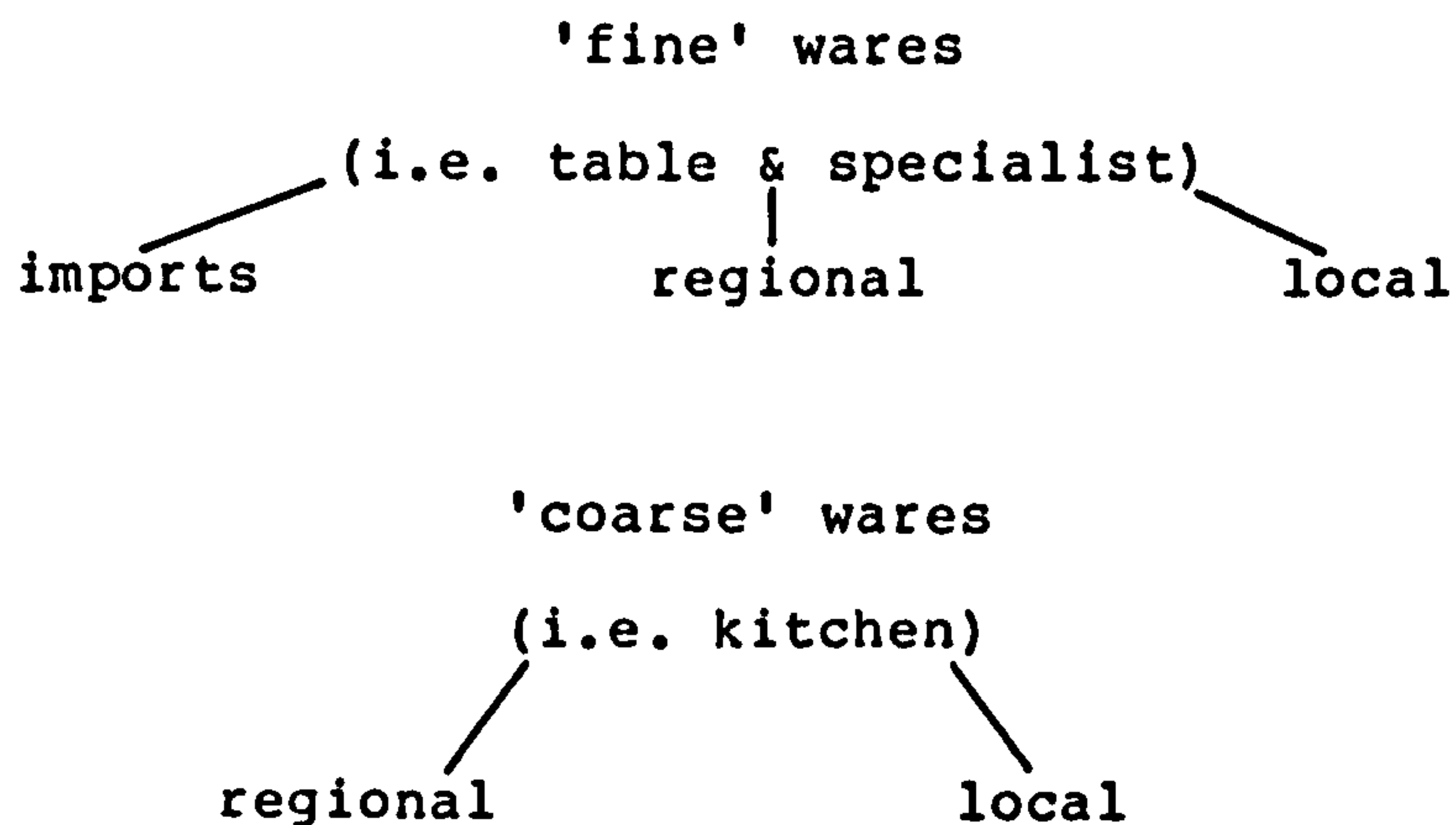
In the brief account above of the pottery which the author expected to encounter in Northants assemblages , the terms 'fine' and 'coarse' ware were freely used. Woodfield prefers a tripartite division of the fabric categories (Woodfield & Brown 1983). (See Fig. 6).

- a) traded fine and specialist wares
- b) table and specialist wares
- c) kitchen wares

These have various subdivisions:

- a) i) imports
 - ii) non-local
- b) i) local
- c) i) regional
 - ii) local

A modification of this hierarchy might be proposed which is as follows:



This hierarchy avoids the implication inherent in Woodfield's hierarchy that because a fine ware such as a colour coated beaker was made locally it is somehow less important than one imported or made elsewhere in the province.

The wares included in each of these categories are as follows:

'Fine' Wares (including specialist)

- | | | | |
|-------|----------------------------------|---|----------|
| a) i) | SAMIAN | } | IMPORTS |
| | AMPHORAE | | |
| | COLOUR COAT (Rhine/Lezoux) | | |
| ii) | Flagons (Ver/Ox)-WHITE | } | REGIONAL |
| | MORTARIA (Ver/Ox etc) | | |
| | MICA-DUSTED | | |
| | COLOUR COAT (Lower Nene & Other) | | |
| | GREY (Lower Nene) | | |
| iii) | MORTARIA (Upper Nene) | } | LOCAL |
| | GREY (Upper Nene) | | |
| | ORANGE BEAKERS | | |

'Coarse' wares

- | | | | | |
|-------|---------------------------|---|----------|-------|
| b) i) | Black Burnished 1 - BLACK | } | REGIONAL | |
| | GROGGED | | | |
| | BELGIC | | | |
| | CALCAREOUS (Harrold etc.) | | | |
| ii) | light coloured sandy | } | - SANDY | LOCAL |
| | later coarse grey | | | |

miscellaneous - MISC.

Clearly GREY wares more appropriate to a) iii) have been incorporated elsewhere, but the evidence from Towcester (ibid) suggests only small quantities are involved. It should finally be noted that in the following chapter both the fabric hierarchy and the form/fabric descriptions underwent considerable modification during their use in the analysis.

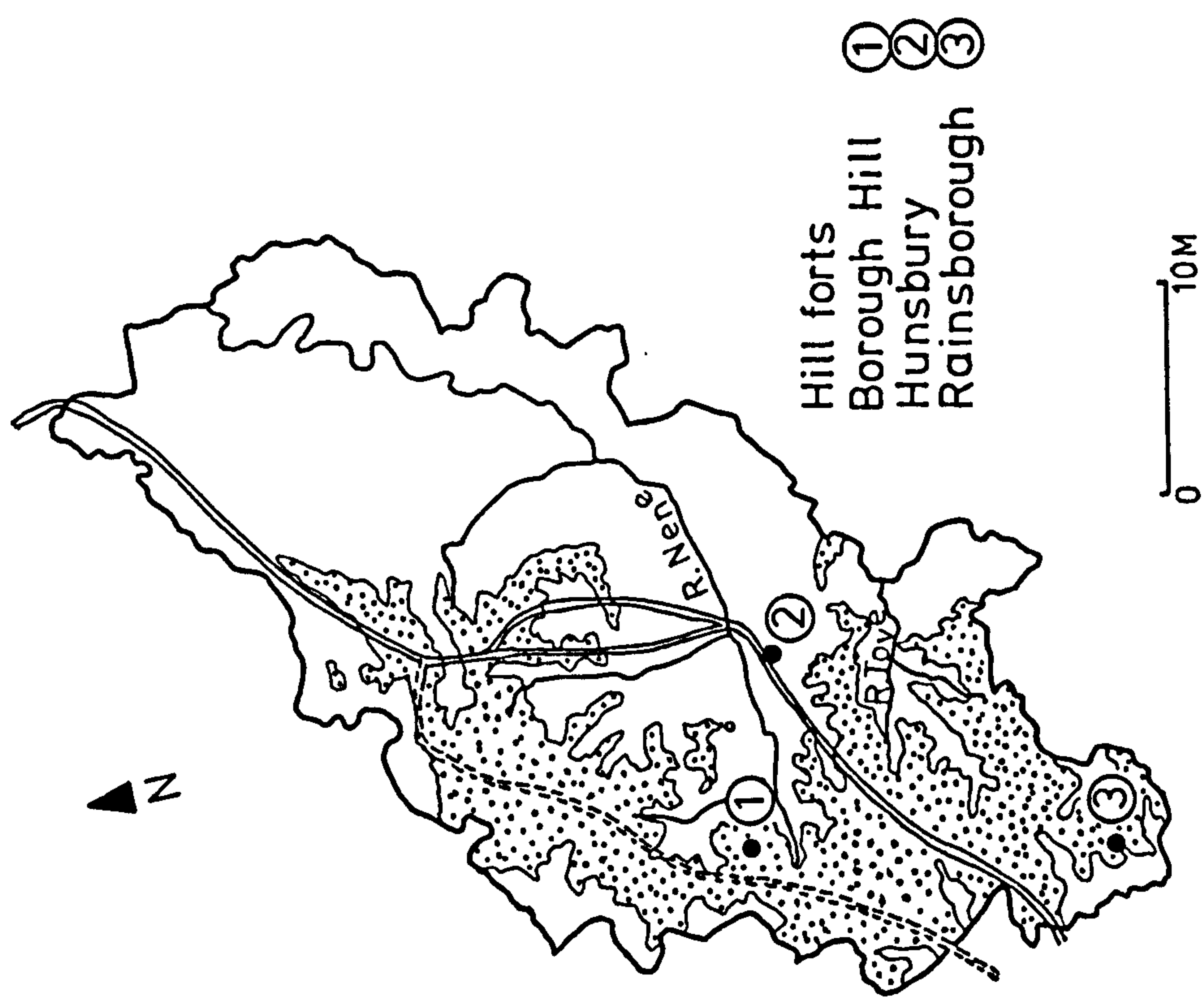
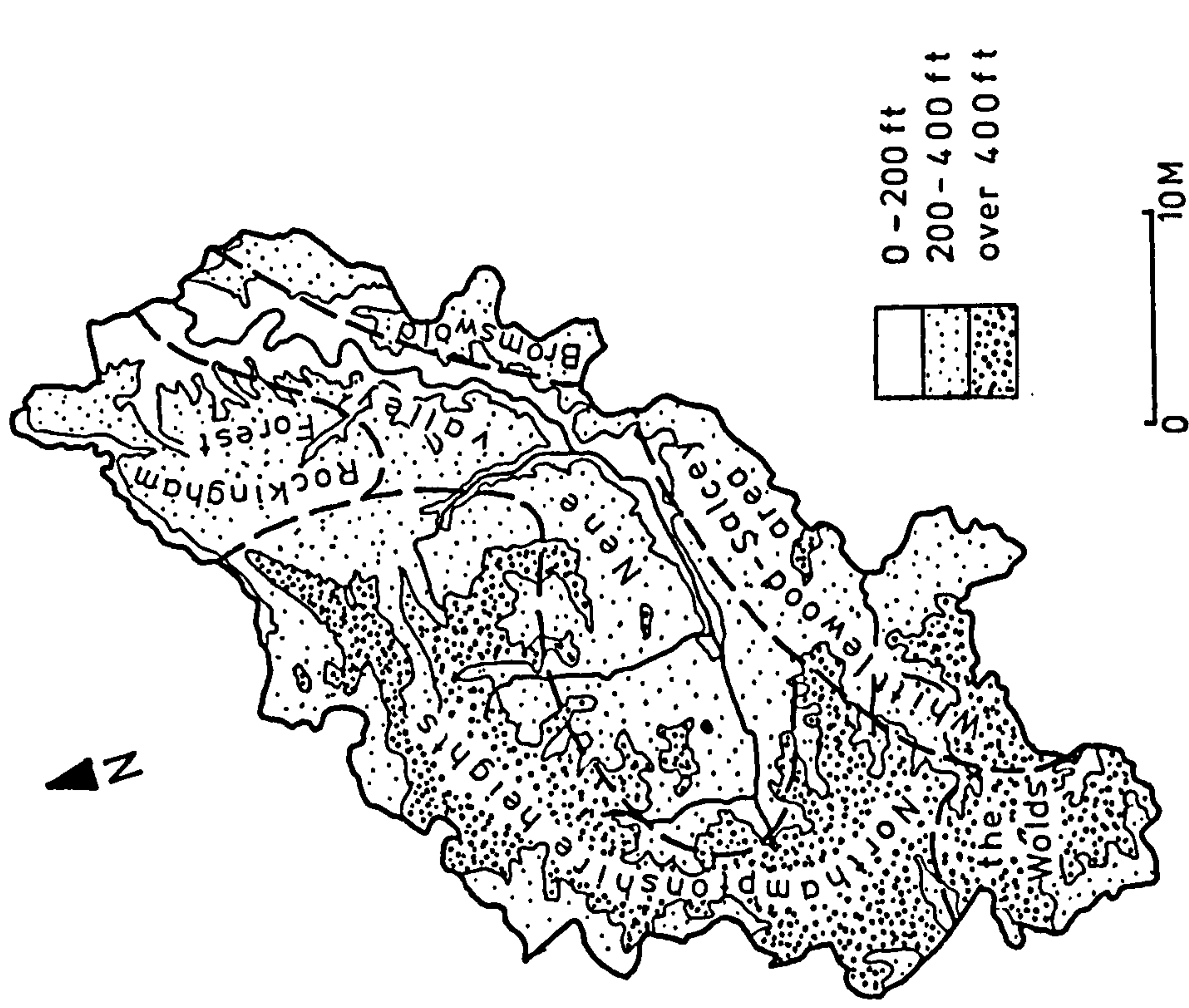
Section iii)-Roman Northamptonshire

a) The Natural Topography (See Map 1)

The modern county boundary of Northamptonshire encloses an extremely varied countryside dominated by the valley of the River Nene. Taylor (1975) goes so far as to describe the region as a cross section of many of the types of natural environments to be found in Lowland Britain (ibid 109). In the following description Steane's division of the county into six physically differing regions has been used; the Northamptonshire Heights; the Nene Valley; the Wolds ; the Whittlewood-Salcey area; the Bromswold area and the Rockingham Forest (Steane 1974). (See Map 1).

As already described the Nene Valley dominates the county but is contrasted to the west by the Northamptonshire Heights, an area of rolling uplands mostly over 400ft above sea level. This region according to Steane was originally heavily forested and its principle underlying strata are the "... intractable, but not unduly hard, heavy clays of the Middle and Upper Lias, often blanketed by a thick mantle of Boulder Clay" (ibid 26).

The Nene itself originates in these uplands as do the Welland, Ouse, Cherwell and Avon. The Nene Valley is wide and cuts deeply through the Great Oolite limestone; the Estuarine series and the Northampton Sands with their underlying Lias clays. The gravel terraces and alluvial soils of the valley sides have been occupied and farmed since the Neolithic. As can be seen from the map (see Map 1), the uplands to the west are cut by a series of tributary streams such as the Ise, Stowe Brook and Willow Brook.



Map 1 Northants topography (after Steane 1974)

Map 2 The "Jurassic Way"

The land is higher here and projects eastwards as low spurs or hills.

A further upland region is the Wolds, over 400ft above sea level again and lying to the south of the county. The countryside here is in fact much less gentle and rounded than the Northamptonshire Highlands though the presence of light soils of the Oolite series and the Upper and Middle Lias as opposed to the predominant Boulder Clays of the Highlands, means the land has been heavily cultivated and settled from early times.

The Rockingham Forest region presents a very different picture again. Here a "... complex of Jurassic Limestones and corn brash covered on higher ground by drift Boulder Clay, produced a heavily wooded region " (ibid 29). This region was known in medieval times as the Rockingham Forest. An important feature of the landscape even today are the numerous opencast mining operations for the underlying Northampton ferruginous limestone of that area.

The narrow strips of land east of the Nene Valley termed by Steane the Whittlewood-Salcey area and Bromswold, were also heavily wooded from early times. They form in fact the low watershed between the basins of the Nene and Ouse and are "... composed of Great Oolite Limestone in the south and Oxford clay in the north, masked by great depths of drift Boulder Clay left by the glaciers of the last Ice Age" (ibid 28). The landscape though flattish still lies mostly about 400ft above sea level. Upper Lias Clays are exposed to the south where the River Tove

cuts down to the Ouse.

b) The Pre-Roman Landscape (See Map 2)

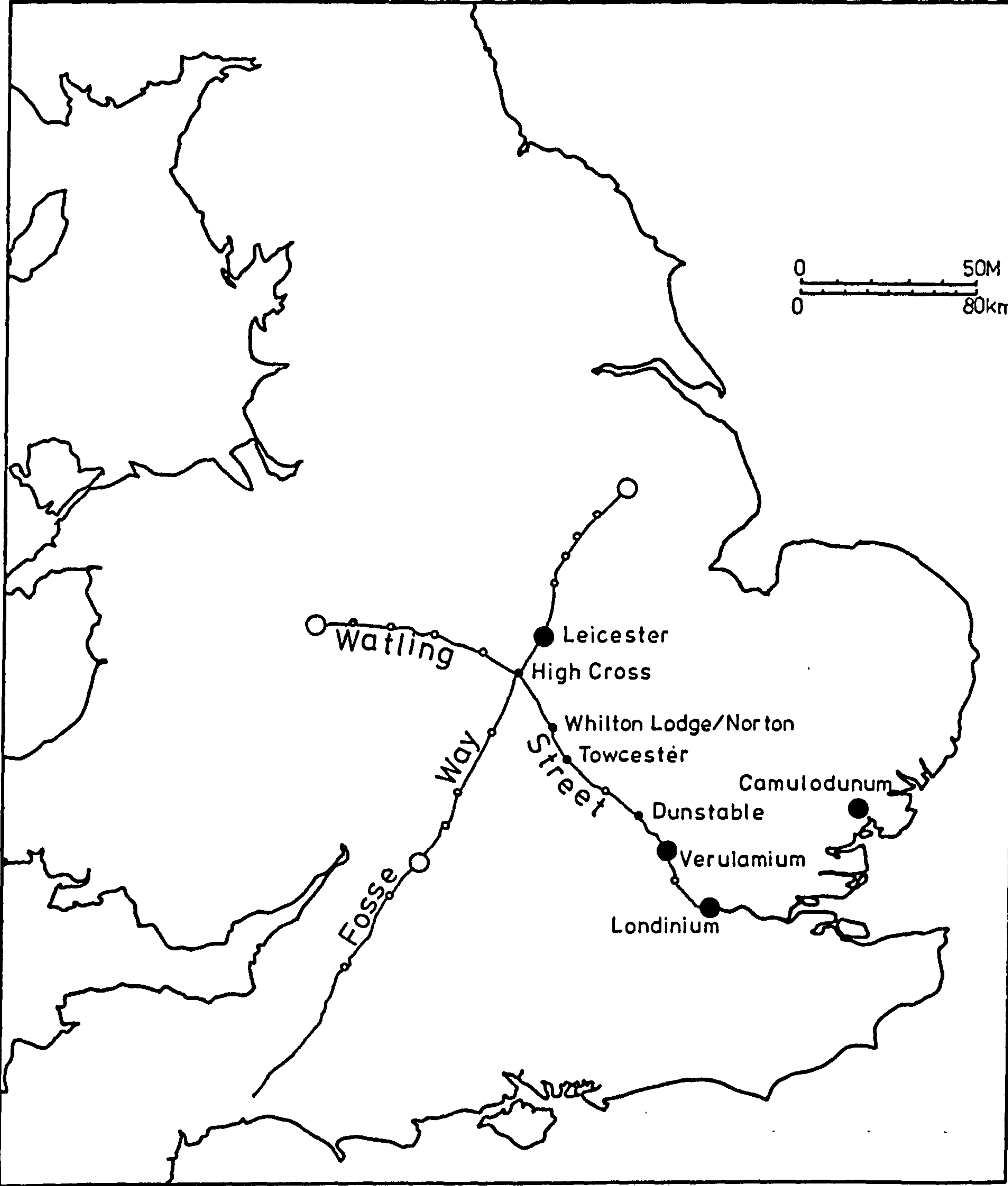
The countryside of Northamptonshire contains a number of known Iron Age sites. Obviously the local iron bearing rocks, easily accessible by opencast mining encouraged settlement as well as the various light and easily exploited soils of the Nene Valley and elsewhere.

Three hill forts are known in the county. These are at Hunsbury Hill, Rainsborough Camp and Borough Hill. All three are situated near the ancient trackway known as the Jurassic Way which passes through the length of the county mainly across the Northamptonshire Heights. Furthermore, they all have commanding strategic positions, Hunsbury Hill for instance overlooks the Nene Valley crossing a mile to the south of modern Northampton.

Steane describes how the rest of the landscape is "... dotted with isolated farms on the better drained soils of the Great Oolite Limestone and the Northamptonshire Sandstone" (ibid 37). He adds that by the first century B.C. the process of deforestation in the Welland and Nene Valleys was probably well advanced so that by the first century A.D. the lowland areas of the county were well occupied with some penetration of the uplands.

c) The Roman Occupation (See Map 3)

Following the initial defeat in A.D. 43 of the southern British forces led by Caratacus and Togodumnus on the Medway by Aulus



Map 3 The Roman occupation

Plautus and the subsequent capture of Camulodunum, the Roman legions split and marched inland. The vast Midlands had been part of the powerful Catuvellaunian kingdom whose leaders at the time were Caratacus and Togodumnus. The flight of one and the death of the other meant that LEG XIV whose job it was to advance into the Midlands, can have met with little opposition.

The fourteenth legion's initial advance obviously would have been along native trackways, but as Frere points out, road building would have followed very quickly:

"... Watling Street may be taken to indicate the track of the Fourteenth; and the first alignment of this road goes only as far as the Fosse Way at High Cross, south-west of Leicester. So far we know little of military posts along its course, except at Verulamium, but sites like Dunstable, Towcester or Whilton Lodge are spaced at appropriate intervals and forts might be expected at them. Leicester itself is a likely place for a fortress for part at least of the Legion." (Frere 1974 87-89).

Thus within a very short period of time the East Midlands were subdued and incorporated into the first province of Britannia. However the countryside was far from at peace in the following decades. The revolt of Boudicca in A.D. 60 recalled the then governor Suetonius Paulinus from campaigning in Wales. His forced march south to London must have been down the Watling Street and

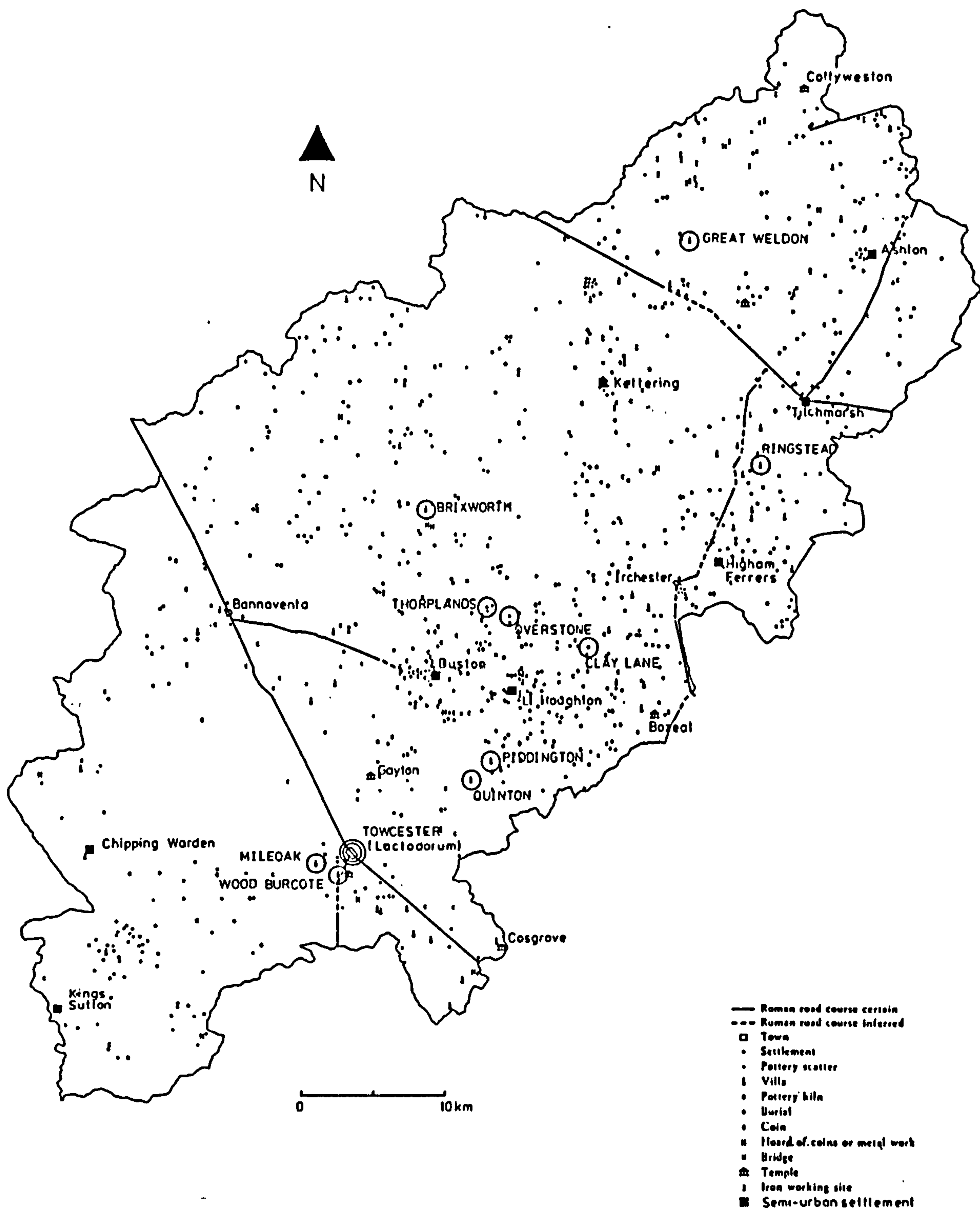
Frere (ibid) suggests a spot close to the Watling Street north west of Towcester in Northants as a possible site for Paulinus' victorious stand against Boudicca and her rebels following the sacking of Camulodunum, Londinium and Verulamium.

Salway writes that, "... winning and maintaining the confidence and cooperation of the provincial upper classes was crucial to the peace, administration and structure of the empire " (1981 111). Men of influence had to have it made clear to them the positive advantages of being within the empire. Under the governor Turpilianus and the procurator Classicianus in the early sixties A.D., the Romans seemed to have got it right in Britain and the south never rose again.

d) Roman Settlement Patterns (See Map 4)

Northamptonshire is fortunate in having an extremely up-to-date Royal Commission for Historic Buildings and Monuments (RCHM) survey of its archaeological sites with an excellent and informative series of map overlays to go with it (RCHM 1975-1985 and 1980). The map of Roman Northants is startling for the sheer amount of Roman material that has been recovered. As Taylor & Fowler note in their commentary to the overlays (RCHM 1980 Map 12), for a county that has hitherto been ignored, the distribution of Roman material is remarkable:

"There are no less than nine hundred symbols on the map, more than have been plotted for any other comparable area of Britain..." (ibid).



Map 4 Roman Northamptonshire
(after RCHM 1980 Map 12)

The gaps that do appear on the map are almost all directly attributable to lack of fieldwork and this along with the very real likelihood that only a fraction of the original number of settlements has been found leads Taylor and Fowler to conclude that "... Roman occupation in some form existed almost everywhere regardless of soils or other geographical constraints " (ibid Map 12). One of the most often quoted constraints used by Romanists to explain the lack of settlement in an area is the presence of land too heavy to be worked by ancient ploughs. In Northants particularly south of Towcester and within the Rockingham Forest area this is entirely refuted by the concentration of settlements, particularly large villas near Towcester. This land was all heavily forested and virtually deserted in medieval times.

e) Roman Towns and Other Settlements

The county boasts three Roman 'small towns', all walled in later life. They are Irchester; Towcester (Lactodorum) and Whilton Lodge, Norton (Bannaventa).

The last two are both mentioned in the British section of the Antonine Itinerary (see Rivet 1970), both lying on the major route joining London to Wroxeter and the west known as Watling Street (see above). All three have had various small excavations but only a series at Towcester have been published extensively. (Lambrick 1980, Woodfield & Brown 1983).

Lactodorum (Fig. 7) actually sat on a road junction. The Watling Street ran right through the town from north-west to south-east

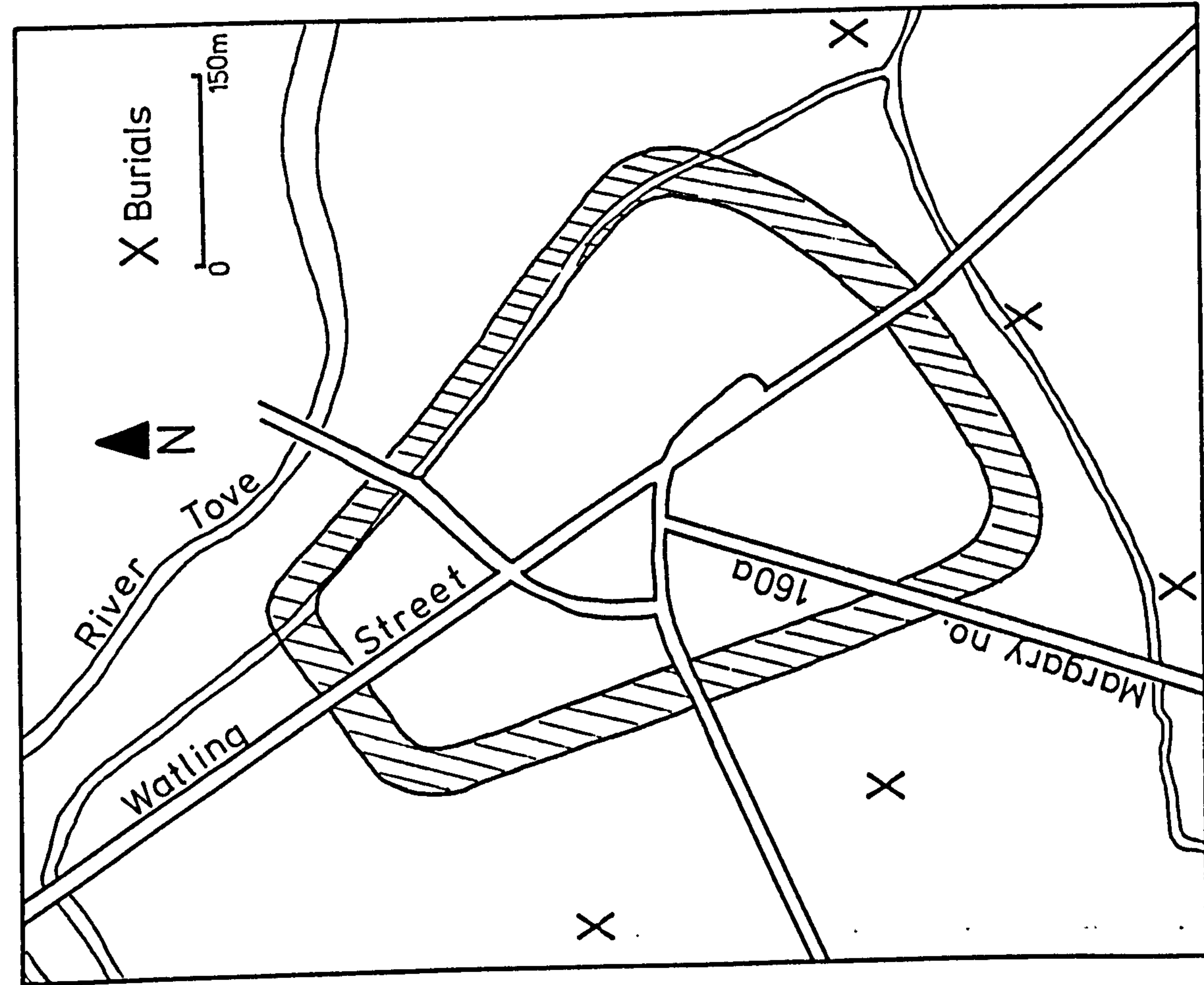


Fig.7 Plan of Lactodorum

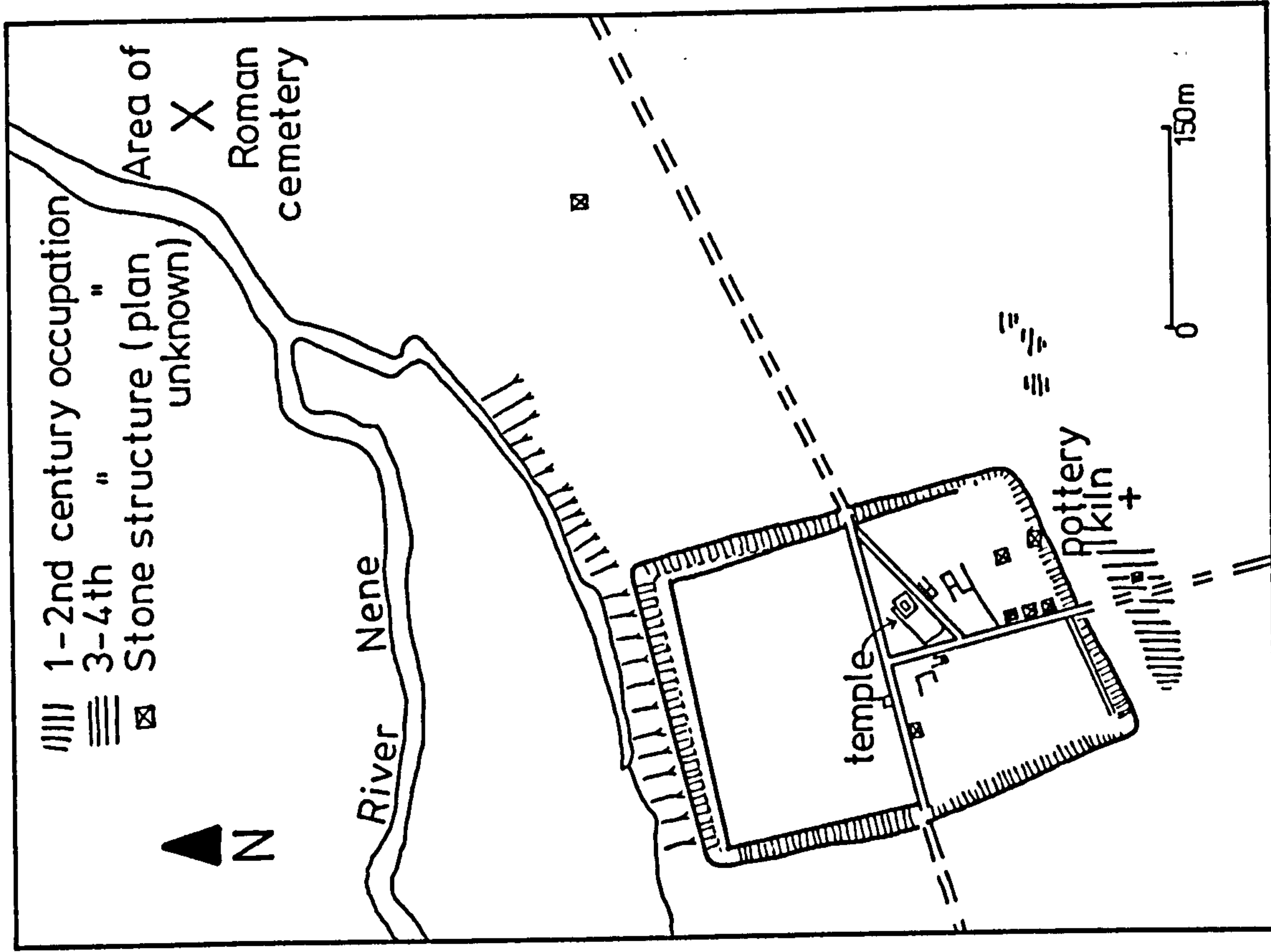


Fig.8 Plan of Irchester

and another road linking Alchester and Dorchester ran from the town southwards. Both roads undoubtedly had military origins (see above).

The town though low-lying is in a strategically important position as it controls the crossings of the River Tove and one of its smaller tributaries to the south. A military origin for the town itself is so far unproven (Frere in Rodwell & Rowley 1975 5), though recent finds go some way to doing so (C. Woodfield pers. comm.).

Excavations have revealed first and second century occupation, with the town being walled in the later second or early third centuries. Evidence for extensive extra mural occupation from the second to the fourth centuries has been found all round the town, most particularly an industrial site along the Alchester road (see Woodfield & Brown 1983). Three cemeteries are known to have existed north-west and south of the town all dating from the first to the third or fourth centuries. Watching briefs and recent rescue excavations within the walled area have indicated a flourishing, well-to-do community with well-appointed houses and public buildings (C. Woodfield pers. comm.).

The site of Irchester (Fig. 8) faces north on the south bank of the River Nene at its confluence with the River Ise. Strategically, the town lies some nineteen miles east of the Watling Street and some twenty-three miles south-west of Water Newton (Durobrivae) and Ermine Street. Knight discusses the possibility of a Claudian auxiliary fort on the site and

concludes that inspite of a lack of evidence there is a strong likelihood of, "A line of forts along the Nene valley, close to the boundary of the Coritani and Catuvellauni, which would have provided a valuable rearward line of defence for the right wing of the Severn-Trent frontier, as well as policing an area where native unrest could have taken the frontier dangerously in the rear " (Knight 1967 113). A fort at Water Newton (Durobrivae) and at Towcester or Duston with Irchester in the middle would complete the line as far as the Watling Street.

Excavations at Irchester have concentrated on the extra mural settlement which lies to the south of the walled town. The total extent of Roman occupation was found to be about 125 acres (Hall & Nickerson 1967) much of it clayland. The walled area itself is some seventeen and a half acres in size.

The town was enclosed some time in the period A.D. 150-200 by a bank forty feet wide composed of ironstone and occupation soil. There was no evidence for the date of the addition of the stone wall to the defences. Towers were added in the late fourth century. The extra mural settlements mentioned above stretched three hundred yards west to east and seems to have been abandoned around A.D. 370. Various buildings with pitched limestone foundations were found in the excavated area.

In the nineteenth century, ironstone quarrying within the town revealed long narrow shops-cum workshops, a temple and possibly a cobbled market place one hundred feet square (Baker 1875 & 1878).

Even less is known about Bannaventa. (See Fig. 9). The town lies north of Lactodorum on the Watling Street. A short rescue excavation was conducted in 1967. A section was put across the defences and another trench was dug in the centre of the town. In the latter trench, patches of mortar floor and sleeper beam slots of at least two timber frame buildings were found. A later building had at least one room with painted wall plaster (Wilson 1972). The defences enclosed an area of over twelve acres. The section across the northwest defences revealed the ditch. A rampart of turf and clay was inferred from material in the upper fill of the ditch. The ditch was deliberately filled probably in the early fourth century to provide the base for a stone wall. Two new ditches were cut, the inner of which was subsequently filled probably to allow the addition of towers. The outer ditch silted and by the later fourth century had become a rubbish tip (Wilson *ibid* & 1973).

The lack of finds, particularly figured samian and the timber buildings led the excavator to conclude that the community was a poor one. (See Taylor 1972).

All three settlements have evidence for a continuity of occupation from pre-Roman times.

As well as these three 'small' towns, Northants has a number of what might be termed 'semi-urban' settlements. These sites, many remaining unexplored are clearly too large to be single farmsteads, but are too amorphous to be clearly defined as 'village' or 'town'. The RCHM (1980 Map 12) lists the following sites under this category; Titchmarsh; Ashton; Kettering; Higham

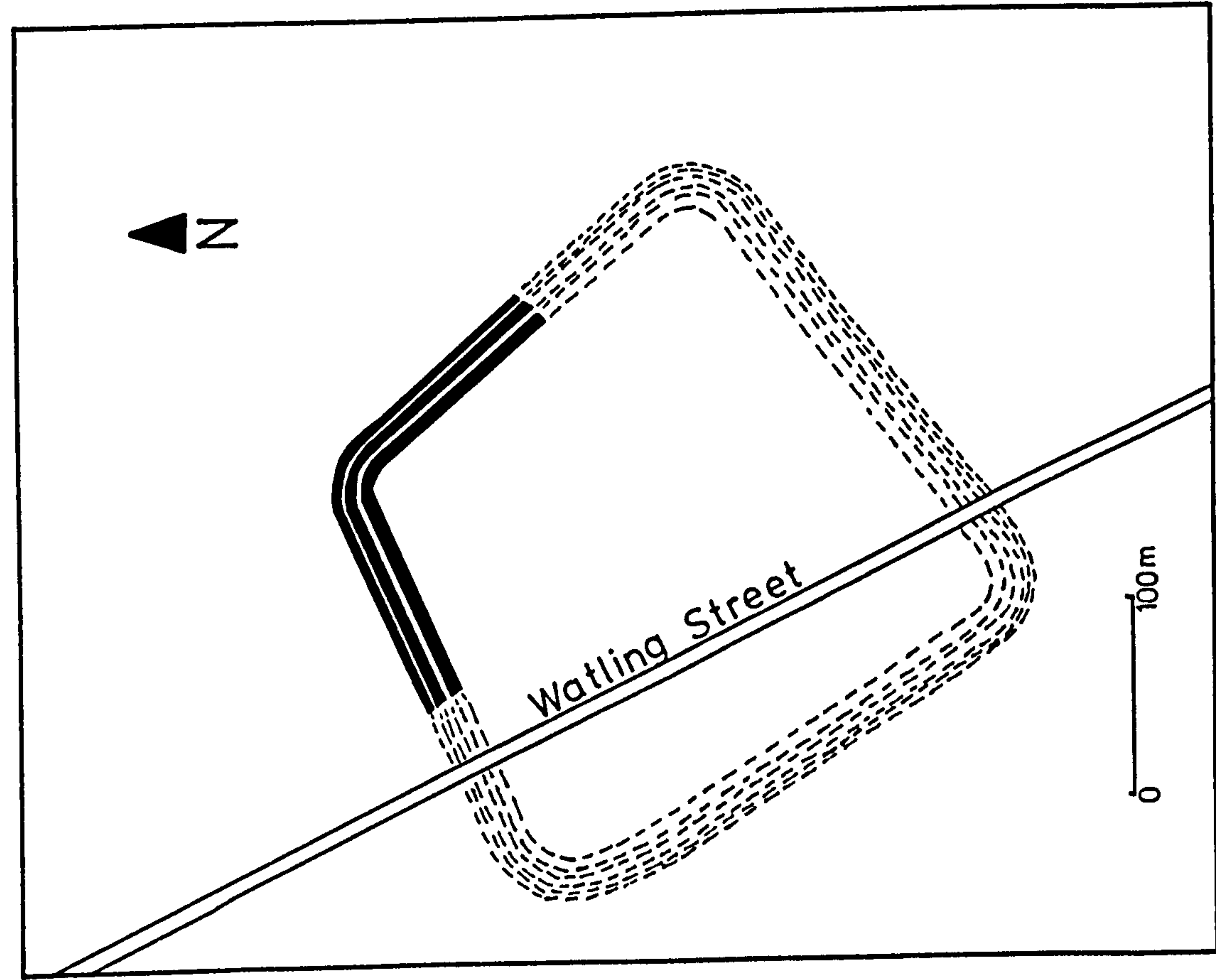


Fig.9 Plan of Bannaventa

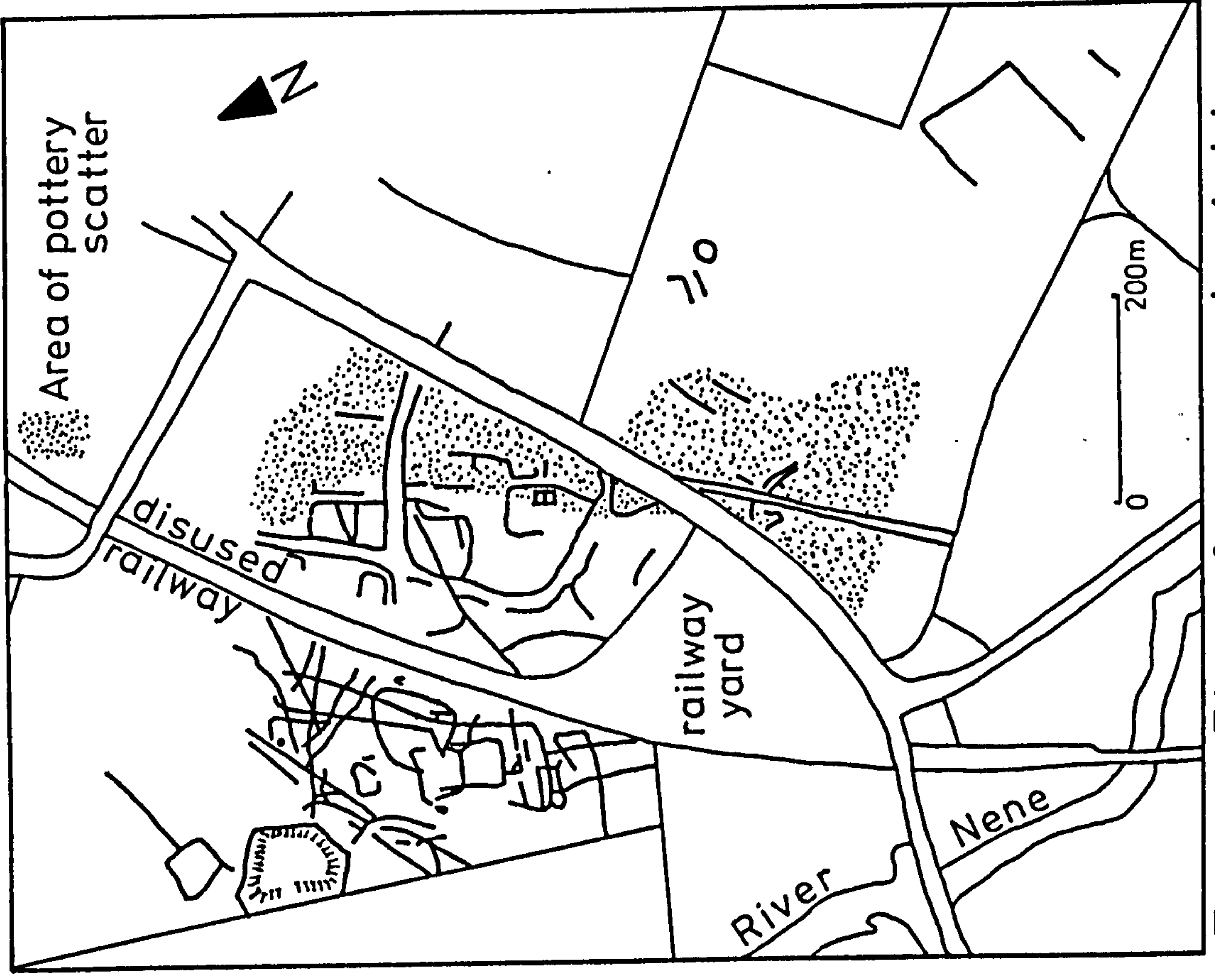


Fig.10 Plan of crop marks, Ashton

Ferrers; Little Houghton and Duston. Taylor & Fowler write that the recent excavations at Ashton "... following the hints from earlier work at Kettering have shown a complexity perhaps now to be expected from all these sites " (ibid).

The 'semi-urban' settlement at Ashton is still under investigation. (See Fig. 10). Excavations so far have revealed that the site extends for some seventy-five acres. A road running through the settlement runs towards a bend in the Nene and the excavators suggest that there was probably a bridge or ford at this point with the road then possibly continuing on to an area where evidence of a Roman cemetery was found in the nineteenth century near to Oundle station (Hadman & Upex 1975).

The position and distance of the site from Durobrivae hints at an early strategic importance and a similar settlement at Thrapston leads the excavators to propose that these settlements may lie at regular intervals between Durobrivae and Ircchester. Both Thrapston and Duston are within 1500 metres of a Roman road (Margary no. 570) (Hadman & Upex 1975 & 1977).

In the area excavated at Ashton stone buildings were found aligned on the road mentioned above and another running at right angles to it. A stone built iron-smith's workshop of the second century was investigated (Hadman and Upex 1979). In 1982 the area under investigation was extended. To the north stone buildings of a simple plan were found to have been erected in the second half of the second century, overlying an earlier system of land division. These buildings lined each side of a continuation

of the metalled street found earlier. Occupation continued until the late fourth century. More evidence for iron smithing was found. To the south an area of enclosures laid out in the mid first century was partly replaced in the fourth century by a cemetery (Frere 1983). In 1983 the cemetery was explored and 114 graves excavated (Frere 1984).

The excavators wrote that, "Life was not always of a humble nature as the abundant finds of imported pottery, the glass and metal work bear witness. Agriculture on the rich soils of the river valley and its surrounding uplands would have brought prosperity, reflected perhaps by the large villa at Cotterstock less than 2.5 km away " (Hadman & Upex 1977 9).

Excavation at Ashton also revealed evidence for "an important Catuvellaunian centre" on the site, mainly from the evidence of early imported fine wares and a bronze coin minted at Verulamium by Tasciovanus (ibid 1979).

Little is known of the other 'semi-urban' settlements in the county though evidence for industrial activity seems common.

Taylor (1975) introduces a further settlement type to the list, that of the 'village' an example of which he cites at Fotheringhay. Here the Roman settlement is nearly half a kilometre long with buildings lying either side of a street with a villa at the southern end (ibid 113). Due to the lack of archaeological investigation, such sites, along with hamlets, all have to be lumped together simply as 'settlements' on the RCHM maps. Villas (clearly Romanised farm houses) and temples have

been distinguished where possible, as have iron-working and pottery production sites.

The following rural Romano-Celtic temples are known in the county; at Collyweston; at Cosgrove, at Bozeat, at Brigstock and at Gayton (see Appendix C for other possible temple sites).

The Northamptonshire County Council Archaeological Unit have fifty-one known villas in their Sites and Monuments Record (County Hall, Northampton) with eight more possibles. These are only those excavated or with extensive fieldwork investigation. Clearly more remain to be discovered. For instance Taylor notes that the lack of fieldwork around Irchester has led to an apparent dearth of satellite villas, so different to the pattern round Durobrivae (Taylor 1975 113). The known villas range from extremely large courtyard types such as Apethorpe; Cosgrove and Cotterstock (two courtyards) through smaller winged corridor villas such as Byfield and Raunds down to very small almost villa 'imitations' like Earls Barton (Clay Lane). (For complete villa list see Fig. 11 below).

Numerous rural 'native' settlements are also known, again included with village, hamlets and so on by the RCHM. The majority of 'native' sites consist of single farm units with one or more circular buildings, timber or stone built, for example at Ringstead and Thorplands.

Apart from the problems of terminology, identification and field work biases, Taylor & Fowler (RCHM 1980 Map 12) emphasise the

FIG. 11 VILLAS IN NORTHAMPTONSHIRE

<u>SITE NAME</u>	<u>DESCRIPTION</u>
Aldwinkle	possible villa
Apethorpe	large villa
Ashley	possible villa or semi-urban occupation
Barnwell	villa/farmstead?
Billing	farm buildings
Brackley	villa
Brixworth	villa
Burton Latimer	villa
Byfield	villa
Castle Ashby	small? villa
Chelveston-cum-Caldecot	two buildings
Chipping Warden	large villa & bath block or small town
Cogenhoe	large? villa
Corby	aisled building & circular hut
Cosgrove	large villa, bath block & shrine
Cotterstock	large villa
Daventry	bath block & large villa?
Deanshanger	villa
Easton Maudit	villa
Easton Weston	villa?
Evenly	villa
Fotheringhay	aisled house & outbuildings
Gt. Doddington	small villa
Gayton	temple or villa?
Hackleton	large villa
Harlestone	possible villa
Harpole	villa & bath block
Harpole	villa
Harringworth	buildings/ovens
Higham Ferrers	building
Irthlingbro'	villa? & corn-drying oven
Isham	villa?
Lt. Addington	small villa? & road
Lt. Houghton	villa
Lt. Houghton	tessera etc. villa?
Lt. Houghton	villa
Lowick	villa
Marston Trussell	tessera etc. villa?
Mears Ashby	villa & oven

contd. overleaf/

Nether Heyford	villa
Northampton, Booth Rise	villa
Pottersbury	villa
Quinton	farmstead(s)
Raunds	villa
Kingstead	villa
Stanion	farmstead
Stoke Bruerne	villa
Thenford	villa & bath block
Towcester, Mileoak	villa
" , Wood Burcote	villa/industrial complex?
Weekley	villa
Weldon	villa
Whittlebury	?villa & bath block
Wollaston	small villa
Woodford	villa
Woodnewton	villa
Wootton	small villa & bath block
Yarwell	probable villa
Yarwell	villa

Villa list supplied by Northants County Council Archaeology Unit.
Other rural farm buildings taken from the county Sites and
Monuments Record, currently housed in County Hall, George Row,
Northampton.

lack of precise dating evidence for any but the handful of excavated sites, (around ninety, including unexcavated but known villas). Most of the settlements on the RCHM map can only be assigned a first to fourth century date range.

Clearly, much work remains to be done before any real idea of the changing settlement patterns of the Roman occupation can be obtained.

Taylor, as well as his work published by the RCHM (ibid) has further produced a short article just on the Roman settlement of the Nene Valley in Northants which has already been referenced above. His conclusions on settlement density are largely relevant for the whole county:

"The true density of Roman settlement has by no means been established yet... The only part of the region where, even after detailed fieldwork has been carried out, Roman settlements appear to be few and of relatively small size are on the extremely heavy clayland of the Upper Lias and Oxford Clay deposits. Even then such areas cannot be written off. At Aldwinkle, south west of Oundle on Oxford Clay, five sites, all apparently small farmsteads, are known. Indeed, one of the largest villas in the region, at Cotterstock, north of Oundle, lies on Upper Lias Clay" (Taylor 1975 116).

Taylor includes the following statistics for the proportion of settlements per soil type:

Soil Type	% Settlement
River Gravel	20%
Cornbrash/Oolitic or Lincs. Limestone deposits	30%
Loams and Clays (glacially derived deposits)	23%
Light Sandy Soils	18%
Heavy Clayland	5%
Upper and Lower Estuarine Beds (very variable deposits)	3%

Fig. 12

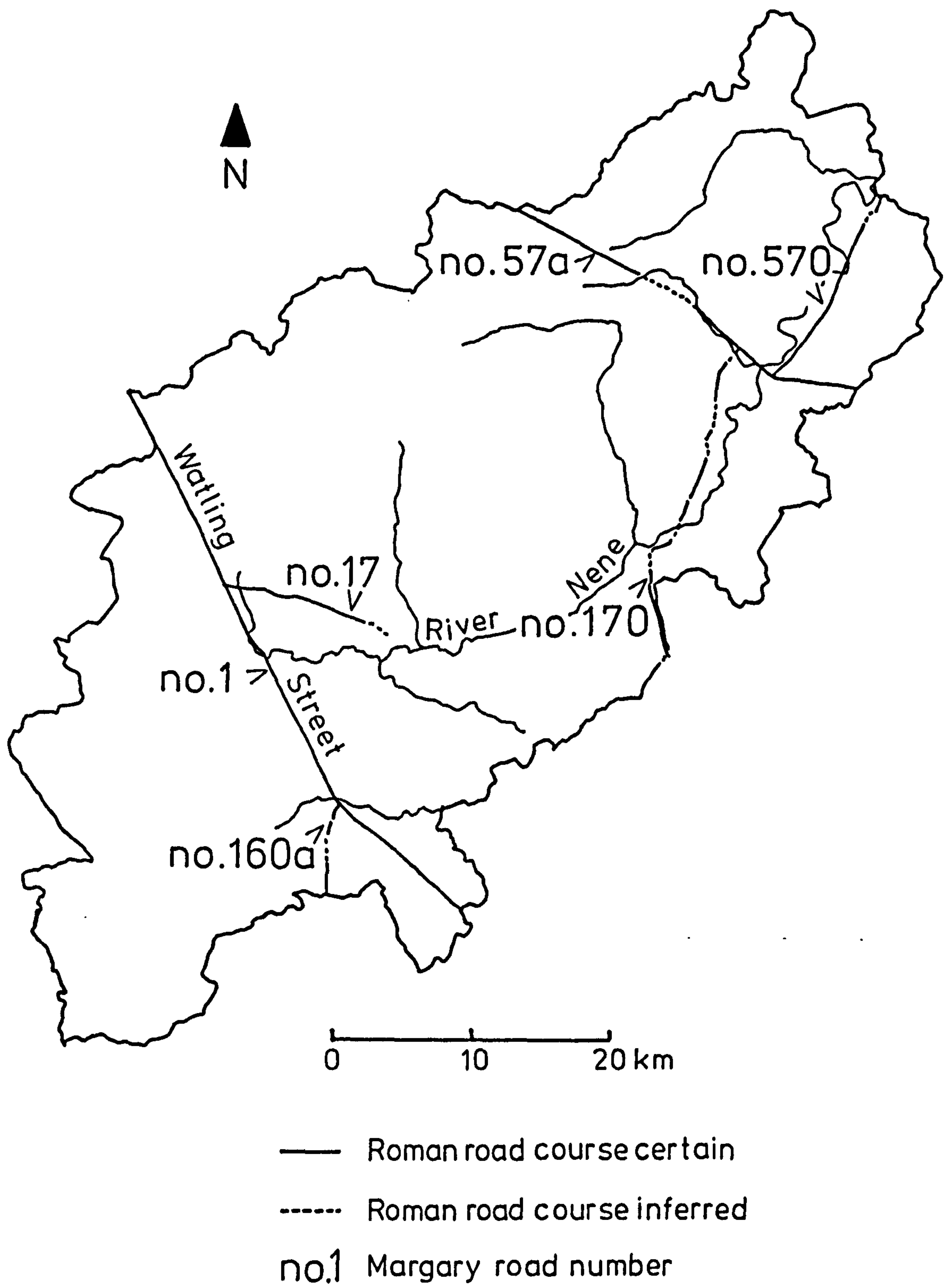
The figures are of course not really comparable as Taylor points out, since the actual areas of the soil types are very different. General conclusions can however be made for the Nene Valley and its surrounding, "...there is every indication of a preference for lighter soils where possible and the suggestion that on the whole the larger settlements developed on such soils. Even so, heavier soils could be and indeed were occupied, often intensively, if only by smaller settlements" (ibid 117).

Taylor suggests that a true estimate of settlement density in the region might be near to one settlement per kilometer square rising to five per kilometre square in certain favourable areas. "The true interpretation of such densitites in terms of

population and economy will mean much rethinking by contemporary and future workers in the field" (ibid 116).

f) Roman Roads (See Map 5 and Appendix E).

The valley of the river Nene is bounded to the west by the Watling Street and on the east by the Ermine Street, both major arterial roads in Roman times. Minor roads indicate that they were once linked though the use of the Nene itself as an alternative transport route between Lactodorum and Irchester cannot be ruled out.



Map 5 Communications in Roman Northants

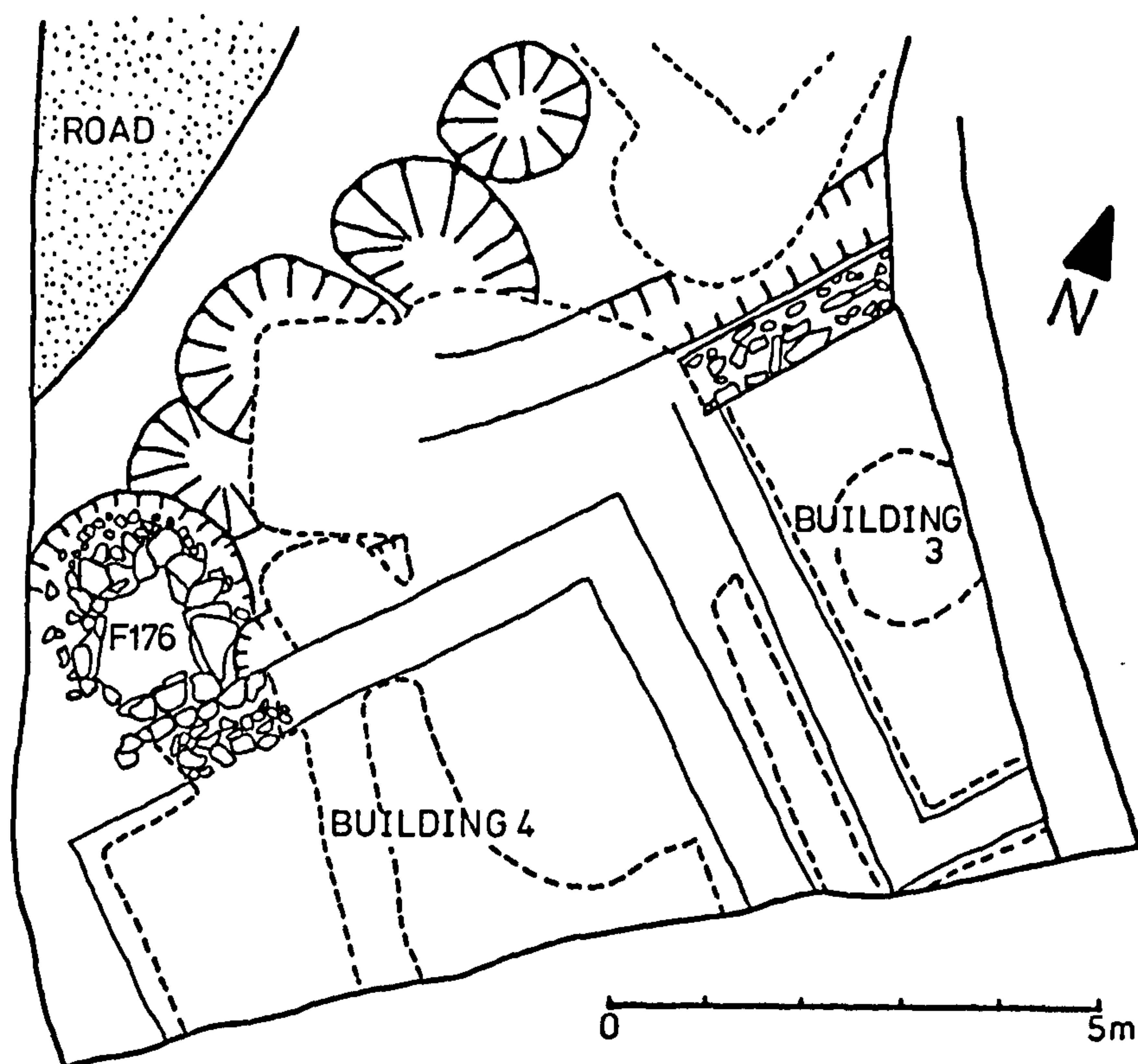
Section iv - The Sites Used in the Analysis

a) Towcester: Park Street (see fig. 13).

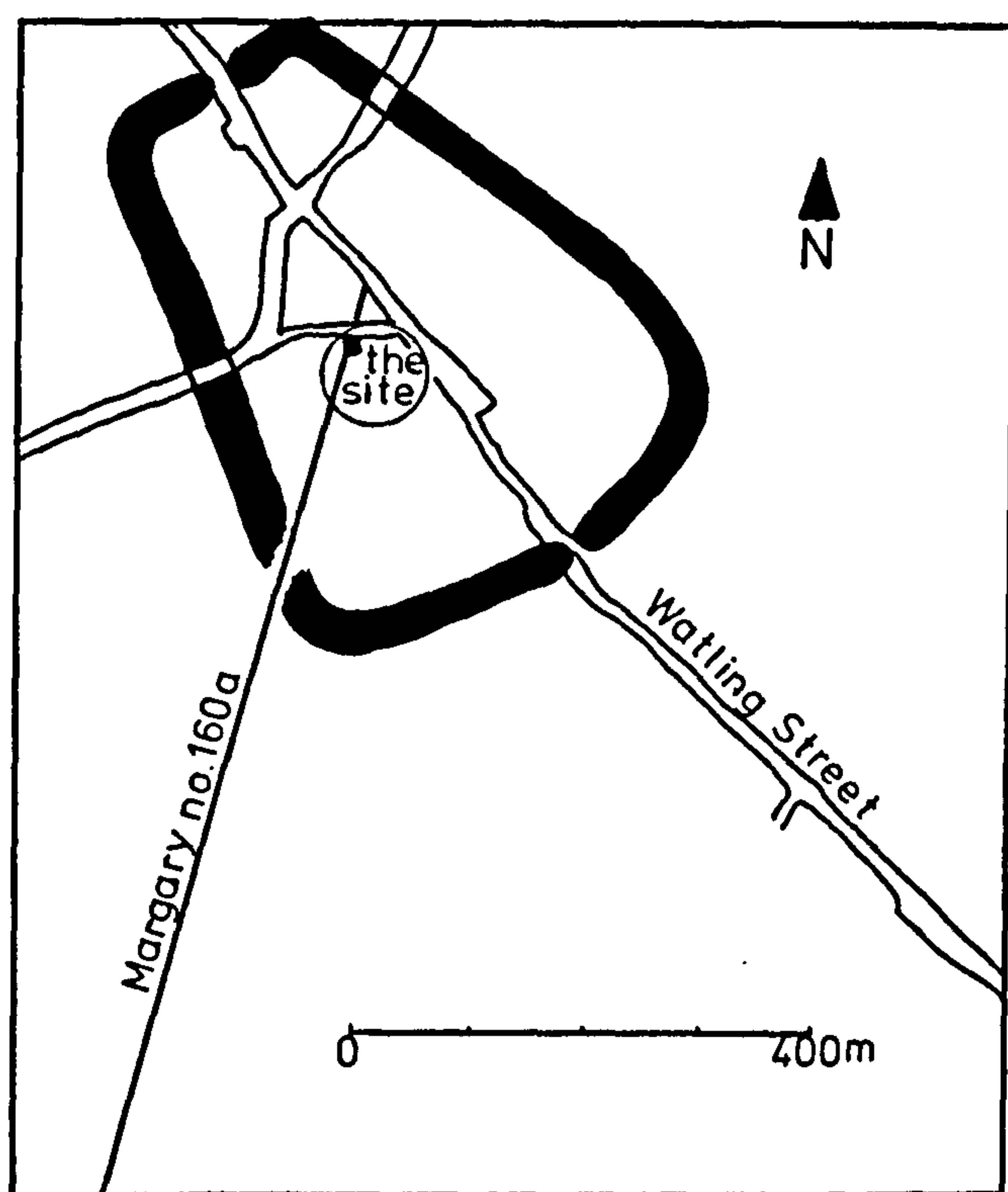
The site in Park Street, Towcester was excavated in 1976 in advance of redevelopment. The rescue dig was directed by George Lambrick of the Oxford Archaeological Unit for the Department of the Environment. It was published in full in 'Northamptonshire Archaeology' vol. XV (Lambrick 1980 35-118).

The Roman 'small' town at Towcester identified as Roman *Lactodorum* lay on the junction of two major Roman roads, the Watling Street and the road that ran on to the Roman towns at Alchester and Dorchester. (See Chapter 5 section iii) e) above for further details). The site excavated in 1976 was located along the latter road, within the defended area of the town. Occupation from at least AD 70 was found supporting the idea of a military foundation for the town. The excavator summarised the structures found as follows:

"A possible public building constructed partly of stone, not fronting onto the road, dated from c. AD 75, and a possible extension to it in the early to mid second century was associated with high quality tableware c. AD 150-170 (samian, glass and coarse ware vessels) from a pit. This was replaced by a smaller stone building. Later Roman finds were recovered, but none associated with any structure, though a range of timber buildings and then a cottage was built along the Roman frontage " (ibid 35).



The structures: phase 5



Location plan

Fig.13 Towcester: Park Street (after Lambrick 1980)

The pottery from the pit mentioned above was used in the analysis in the next chapter. The structural evidence associated with the pit (pit F176) was poor. Two buildings were recognised in phase 5 (c. AD 140 - late second or early third century), the public building mentioned in the summary, (Building 2) and the second century addition to it, (Building 4). Probably contemporary with the latter's construction was a roughly square well built of large stone blocks, outside its north-western corner. The excavator suggested that Building 4 was perhaps a well house. Both buildings seem to have had stone walls. The earlier structure, Building 2 dating from the third quarter of the first century had stone footings of large pitched stones overlying rubble. Above this the stones were, "... fairly consistent in size and laid in regular courses well mortared together. The wall was only 0.4 m wide and the core was filled with small stones and tile fragments". (ibid 39). Various gravel, clay and mortar floor levels were found with it, "Structurally, the building seems to have been quite large and of good quality: it was probably built of stone at least to first floor level, and possibly had small buttresses or pilasters " (ibid 44). Slots just inside the walls may indicate some sort of panelling or wall cladding. No other evidence of internal decoration was found and there was no indication of the building's roofing materials in the excavation report. The second century addition had no surviving floor levels and its walls were badly robbed.

The area north of the buildings probably remained backyards or gardens according to the excavator. The road must have continued in use.

Pit F176 resulted after the robbing and abandonment of the phase 5 well. From the evidence of the samian the excavator surmised that the pit was both dug and refilled soon after the middle of the second century. The pottery and glassware thrown away in the pit "... may represent most of a set of mid second century tableware" (ibid 45).

The Roman pottery from the excavation was quantified by sherd count and published in a table (ibid 82 Table 3) as percentages of the total in various phases and layers. Both forms and fabrics were quantified and a useful attempt was made to illustrate graphically relationships between these two (ibid 81 Fig. 21).

As will be seen from Fig. 5 the fabric divisions used by the excavator correspond closely to those developed here. The second century small finds are summarised along with the ceramic specialists' reports in Appendix B.

The finds are stored in the Central Museum, Northampton.

b) Great Weldon (see Fig. 14).

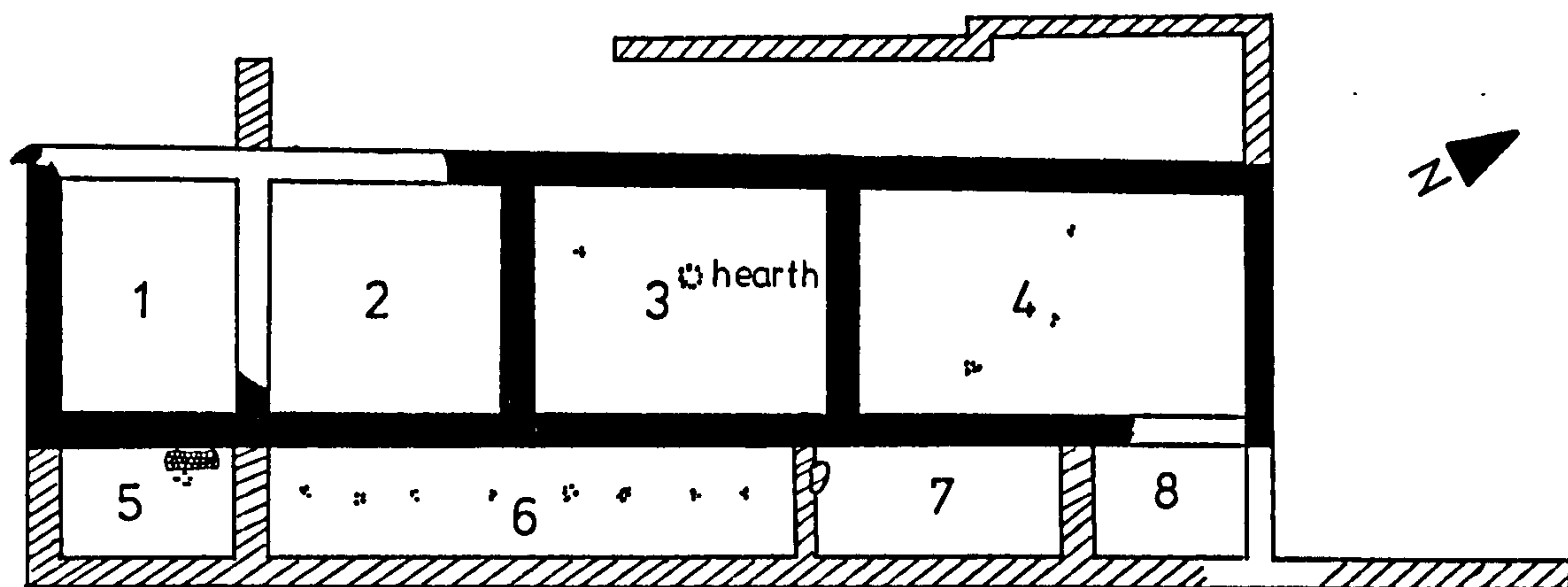
The villa at Great Weldon was excavated in 1953-1956 in advance of ironstone quarrying. The director of the excavation was Dr. D.J. Smith for the Ministry of Public Buildings and Works. The site as yet has not been published. The following is based on typescripts and notes kindly lent by the excavator.

The site is located just under twelve kilometres north of the 'semi-urban' settlement of Kettering. It is midway between Medbourne and Ashton, around twelve kilometres to the east and west, both also 'semi-urban' settlements in the Roman period. It is under five kilometres away from the nearest Roman road. (See map 4).

The villa was built on a terrace above and north of the Ise Brook which lay only 450 ft away down a steep slope. A gulley lies to the south of the site which in wet weather apparently forms a water course draining into the Ise Brook.

Two villas were built on the site, a larger one replacing the first between AD 250-300 possibly after a period of abandonment. Both structures were aligned north east to south west on the long axis. The later villa was destroyed by fire c. AD 350.

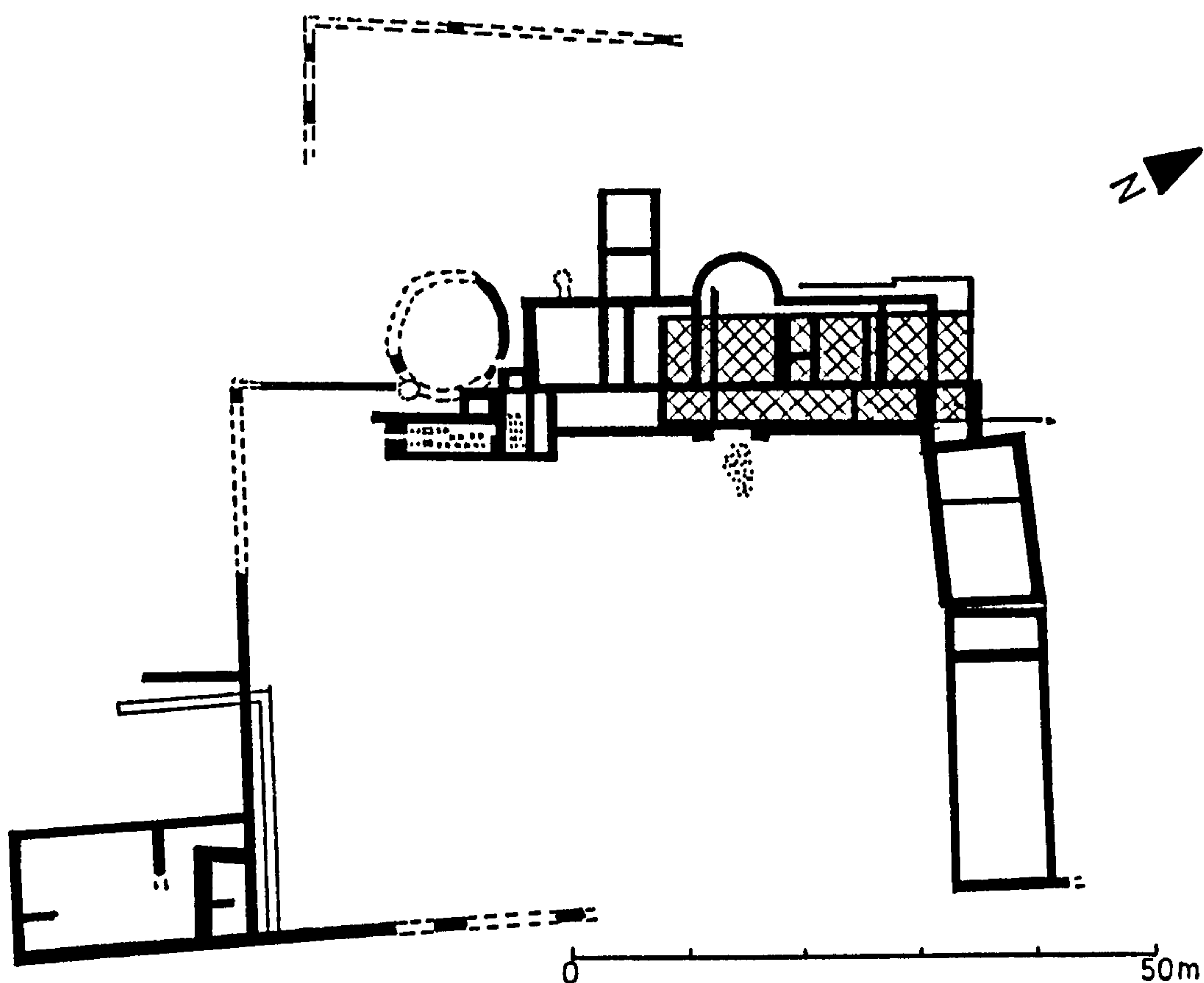
In the second century thus, the Roman 'house' was the smaller of the two villas excavated. It was in fact probably the final phase of this earlier villa since a line of eight postholes was



0 10m

The first house

- Phase one
- ▨ Phase two
- == Robbed wall
- ⋈ Post socket



General plan showing later structures

Fig.14 Great Weldon (after Smith unpublished)

excavated in the natural clay in Room 6 (see Fig. 14). The excavator interpreted these as the remains of an earlier wooden veranda which was replaced by a stone-footed corridor divided into narrow rooms, while a new veranda also with stone-footings, was built onto the other side of the house. This seems to have been completed by c. AD 150.

The foundations of the rest of the second century structure were constructed of pitched stone. From the varying thicknesses of the external and internal wall footings the excavator suggested that Rooms 1-4, the central range in the final phase of the first house, rose above the veranda and Rooms 5-8, allowing the use of clerestory windows to light the inner rooms. The excavator wrote of the superstructure that, "... one or two thin courses of ashlar remained here and there upon the pitched foundations, but there was no evidence to indicate whether the walls were of stone throughout or were dwarf walls for a superstructure of timber framing filled in with wattle and daub" (Smith forthcoming).

The dwelling was apparently roofed with clay tegulae and imbrices, large numbers of which were found at the north end of the veranda. The central rooms, 1-4, were floored with yellow mortar, the veranda had a packed stone surface, while the narrow rooms, 5-8, were left with the natural clay as flooring. There was evidence that at least some of the walls were plastered internally and painted, mainly red and white.

The group of pottery examined for the analysis in Chapter 6 came from a large rubbish deposit found beneath the make-up for the pavement at the north-east end of the corridor of the later

house. The pottery had not been previously quantified.

The second century small finds are summarised along with the ceramic specialists' reports in Appendix B.

The finds are stored in the Central Museum, Northampton.

c) Piddington (see Fig. 15).

The excavation of this site was begun in 1979 and is still continuing. The dig is directed by R and D Friendship-Taylor for the Upper Nene Archaeological Society. Since the site is still under excavation the following is based on the Directors' own comments and an interim report distributed by the UNAS (Friendship-Taylor 1981).

The site is situated midway between Towcester (Roman Lactodorum) and the Roman town at Irchester (c. 15 km), just over 11 km away from Duston to the north east, and only 5 km away from the possible 'semi-urban' Roman settlement at Houghton directly to the north.

The structure so far excavated is the main wing of a large courtyard villa situated on the side of a shallow valley, close to a stream. The first villa on the site was built in the first quarter of the second century. There had been some Belgic occupation but this had ceased by the late first century AD. The first villa had been burnt down by c. AD 200 and rebuilt shortly afterwards. The new structure continued in use, with alterations, until the later fourth or early fifth century AD.

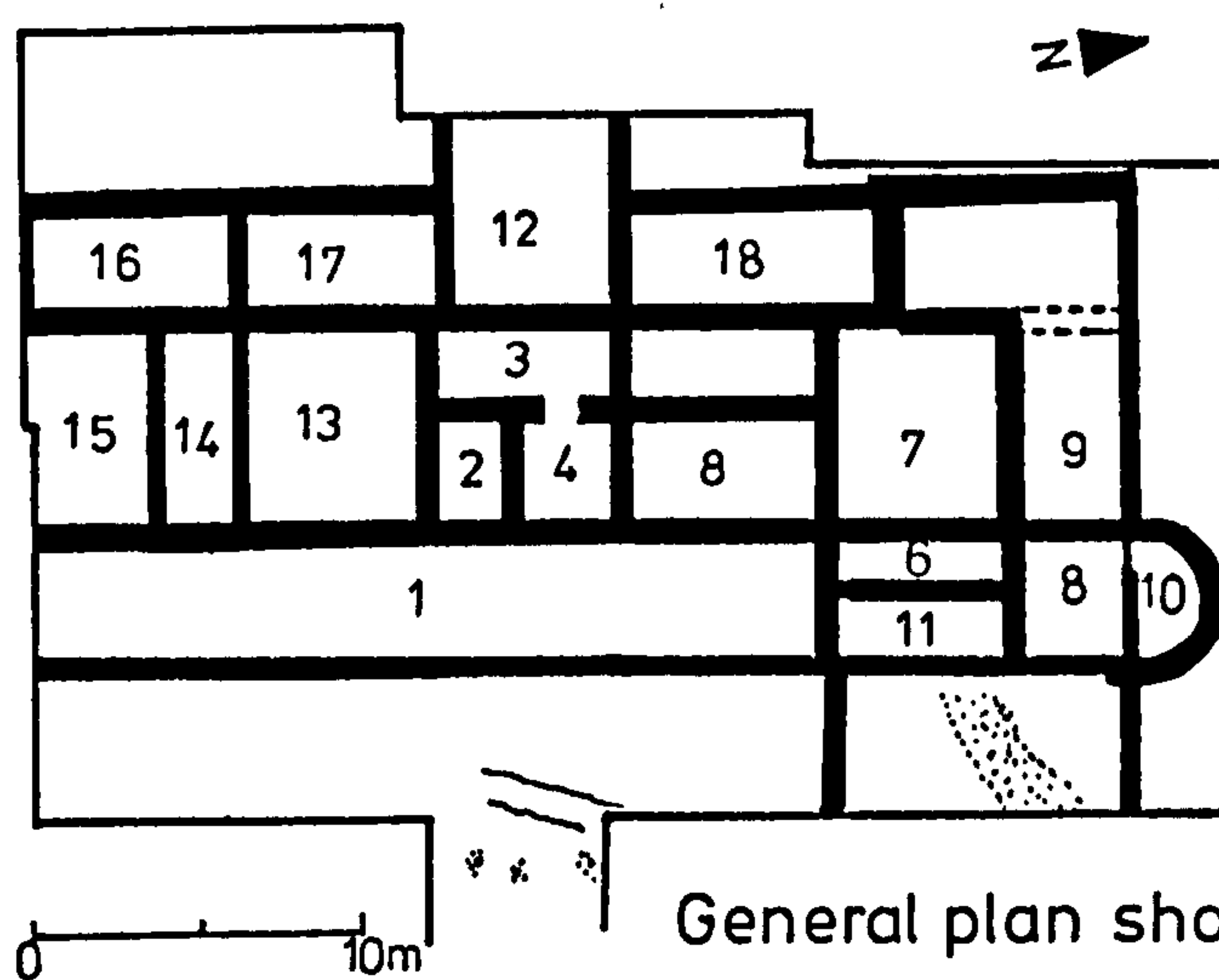
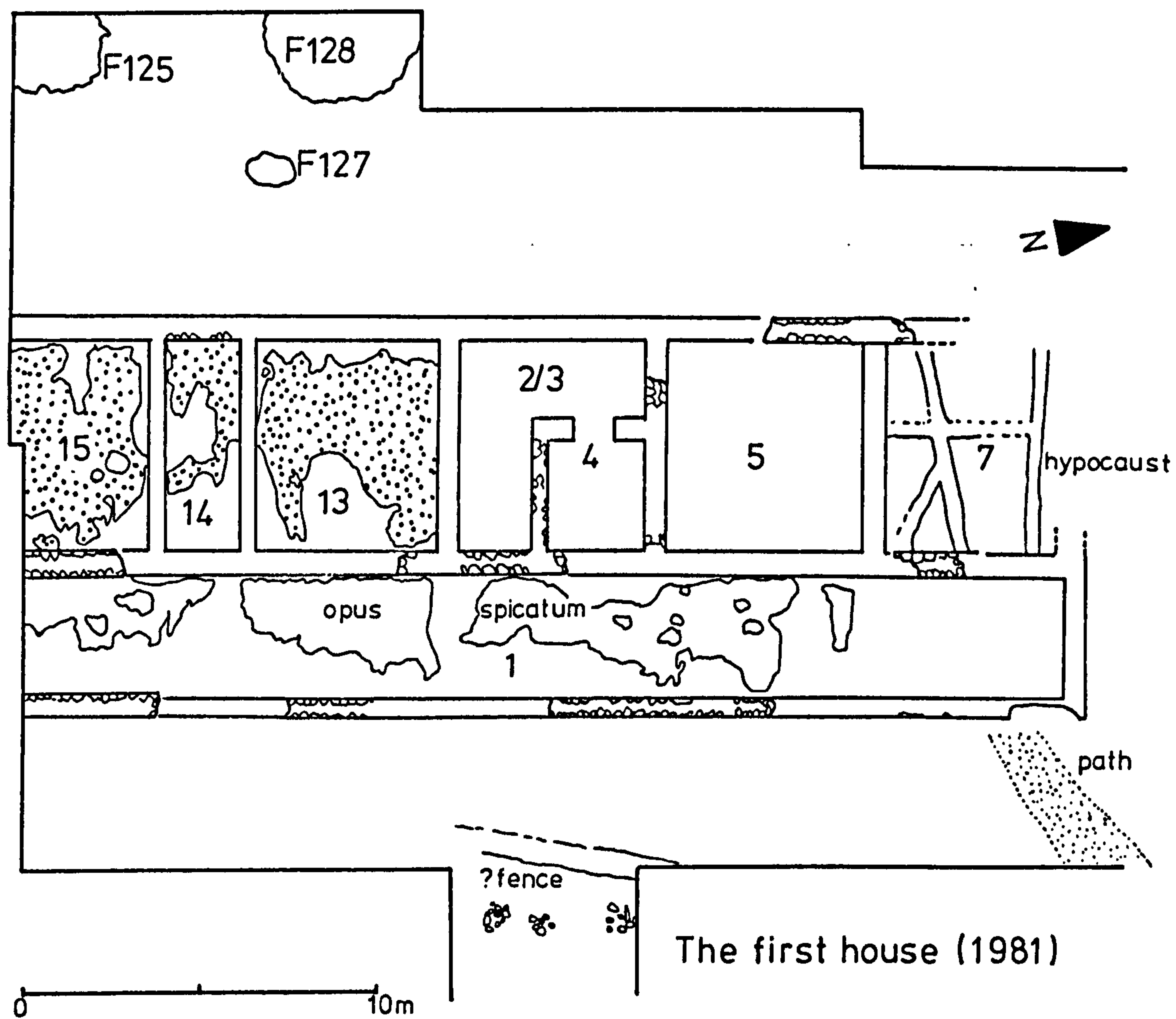


Fig.15 Piddington (after Friendship - Taylor unpublished)

The foundations of the second century corridor villa form the core of the later courtyard structure and so far consist of around eight rooms plus a corridor. The latter, which ran the entire length of the first villa, was floored with *opus spicatum* (yellow and red herringbone - laid clay tiles). This was laid on *opus signinum* over a pitched lime-stone foundation. The discovery of some curved wall plaster in the area led the excavators to suggest that the veranda was "... fronted by a dwarf wall plastered and painted deep red, supporting short stubby pillars, which had also been plastered and then painted in three colours" (Selkirk 1982 348-9).

Flooring materials in the other rooms ranged from mortar to simple tessellated pavements. It was unsure whether hypocaust systems found in some of the rooms were contemporary or later additions.

The excavators believed the walls of the earlier 'house' to have been completely of stone supporting a clay tile roof.

Pottery from three contemporary pits (F 125, F 127 and F 128) was used in the analysis in Chapter 6.

As yet there are no small finds or ceramic specialists' reports for the site. The finds are currently in the possession of the excavators.

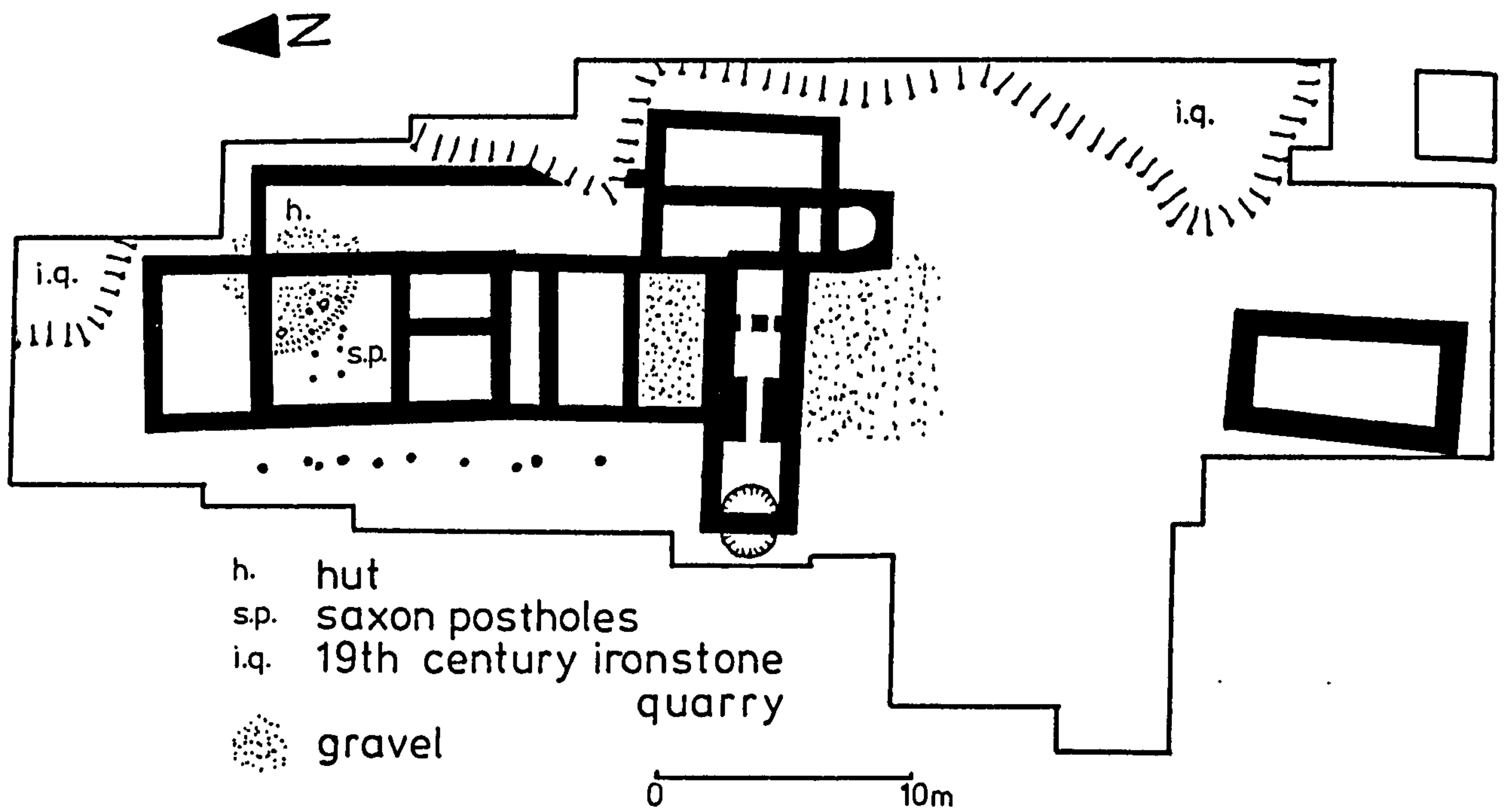
d) Brixworth (See Fig. 16).

The site was excavated for five seasons, from 1965-1970 by Mr. P.J. Woods, a local amateur archaeologist, with the Rev. J.W. Burford for the first season only, under the aegis of the Northants Museum. So far only the Roman coarse pottery and decorated samian has been published in full (Woods 1970).

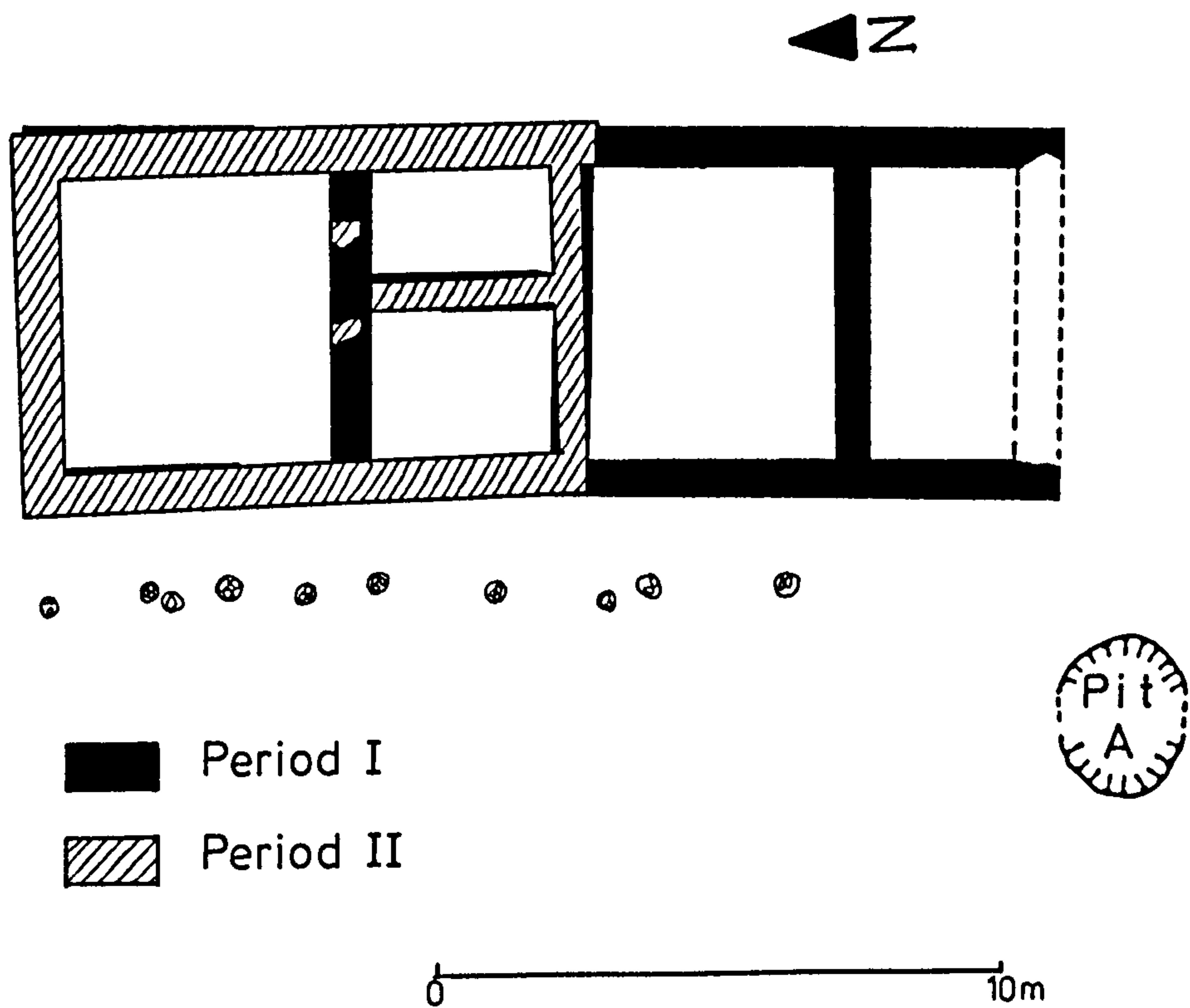
The site is situated on high ground about half a mile to the north of the modern village and very close to the Saxon church of All Saints. It lay about midway between the four Roman towns and settlements of Tripontium (Rugby), Bannaventa (Norton), Kettering and Irchester. (Each about 20 km away) and just over 11 km away from the Roman settlement at Duston.

The bath suite, main building and one out-building of a Roman villa with a first to fourth century AD date range were excavated. The earliest Roman period occupation on the site was part of a wooden hut with a circular drip trench, a rammed gravel and earth floor and two postholes.

The next structure on the site was a masonry 'cottage house' type villa built around 70-100 AD. This building had a timber veranda on its west side. In the second half of the second century major rebuilding took place when a further room was added to the villa's north end. The out-building was also constructed at about this time and according to the excavator was used at some time in its life as a workshop for producing bronze artefacts. The house thus in the second century was a stone-built structure with a range of five rooms and a wooden veranda, oriented north south. From the destruction debris it can be ascertained that it had mortar floors and painted walls. Clay roofing tiles as well



General site plan: all phases



The 'cottage house'

Fig.16 Brixworth (after Woods 1970)

as some of Cotswold slate were found in second century deposits so presumably the 'cottage house' was not thatched.

Occupation of the structures continued with little change until the last years of the third century when extensive alterations were made. The addition of the bath wing and a stone built corridor almost doubled the original size of the villa. The later history of the villa is unknown but from surface finds the excavator proposes occupation lasting possibly into the early fifth century.

The pottery assemblage for the analysis was taken from a large pit (Pit A) which lay under the west wall of the praefurnium of the later bath suite. Nearly all the archaeological layers in this pit contained what the excavator termed 'kitchen refuse' including animal bones, oyster shells and organic matter as well as pottery. The pottery from this pit comprised a fairly closely dated group with nothing later than 160 AD and was published separately (Woods 1967). It was unquantified and only a selection of the total was illustrated and described individually by fabric colour and vessel form.

Only the small finds from pit A have been published (Woods 1967) and these are recorded in Appendix B along with the ceramic specialists' reports. The finds are stored in the Central Museum, Northampton.

e) Mileoak (See Fig. 17).

The Roman villa of Mileoak was excavated by C. Green for the Ministry of Works in the years 1955 and 1956. The reason for the

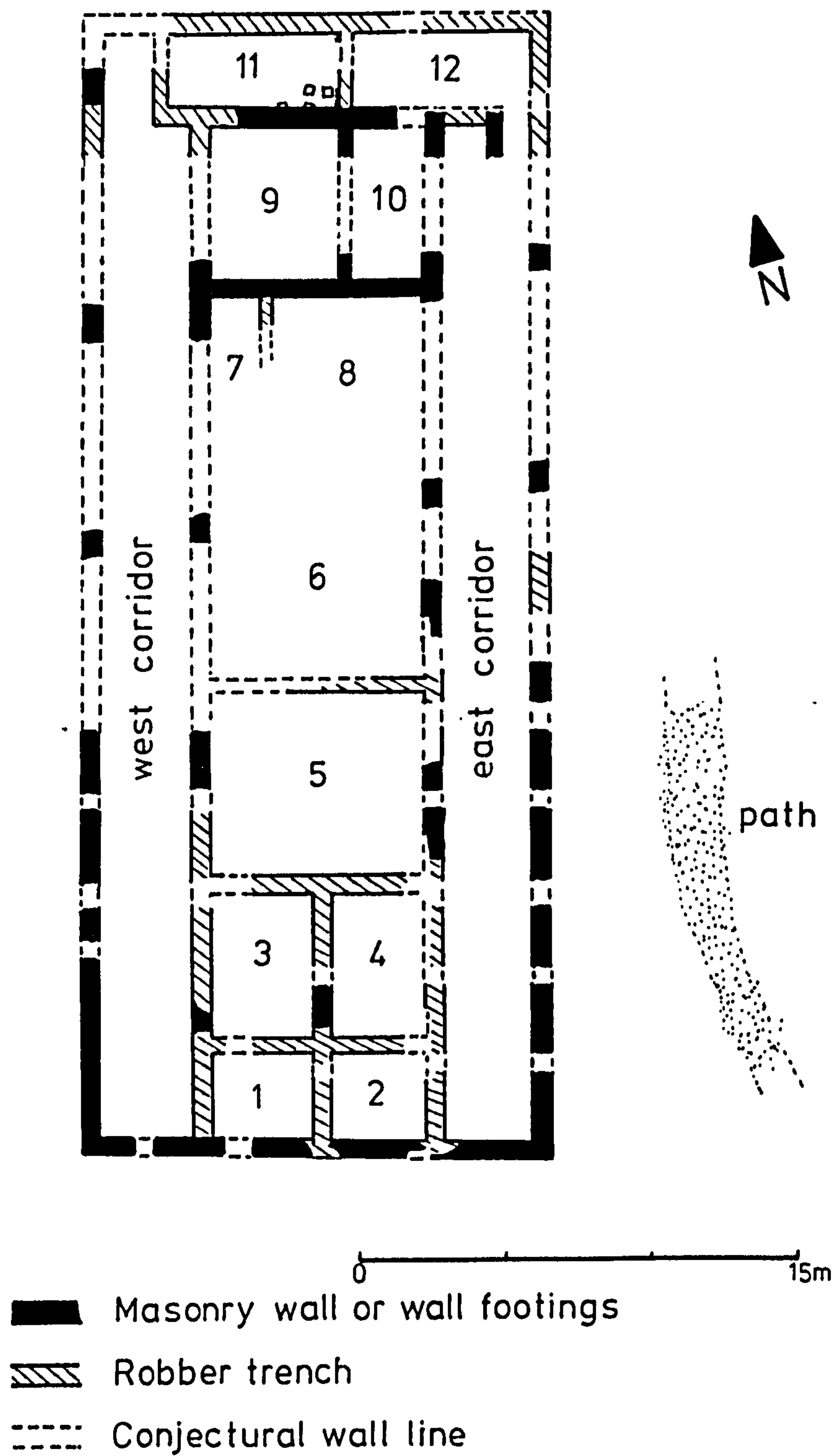


Fig.17 Mileoak (after Green & Draper 1978)

excavation was that the site was suffering badly from plough damage. C. Green died in 1972 and the report was prepared for publication by J. Draper. It appeared in the 1978 volume of Northants Archaeology (Green and Draper 1978).

The site is located about 2.5 km south west of Roman Lactodorum and the Watling Street. The Roman site at Wood Burcote (see below) is only 1.5 km away to the south east and the Towcester - Alchester road is just beyond that in the same direction.

The building at Mileoak is sited on a slight dome of boulder clay on the Northants uplands above the River Tove facing westwards. This dome had been occupied from the late Belgic period. The excavators summarise the Roman occupation on the site as follows:

"Around AD 65-75 a substantial rectangular stone building, c. 40 m by 16 m was constructed on the site. It had corridors on both long sides, twelve rooms, at least one mosaic and a hypocaust and a cellar. This building continued in use without major alteration until c. AD 140-160, when it was demolished" (ibid 28).

The building was not replaced.

Thus in the second century, Mileoak consisted of a rectangular structure with masonry footings 0.6m wide. The excavators suggested that the structure was at least in part half-timbered since a certain amount of timber and iron nails were found along

with what appeared to be part of a wattle and daub 'panel'. This panel was faced with wall plaster. Fragments of painted wall plaster were found in five of the rooms as well as in the two corridors.

The floors which survived were mainly of clay. The floor level of room 11 had been destroyed but the remains of five tile and stone hypocaust pilae were found along with fragments of box or flue tile and many pieces of coarse red clay roof tiles were discovered leaving the excavators in no doubt that the villa was originally tiled. They also found evidence that the outside walls of the structure were rendered with plaster, painted maroon. Because the majority of rooms are bounded by a corridor and do not have outside walls, the excavators suggest that the inner rooms were lit by clerestory windows in the main walls, "The corridor walls have shallower footings than the main walls, which also suggests that they were not carried up to the same height as the main walls" (ibid 64).

The pottery used for the analysis came from the deposits excavated in the cellar mentioned above. The group was dated to c. AD 140-160 from the samian. Only part of the deposit was published and no attempt was made at quantification or fabric analysis.

The second century small finds and ceramic specialists' reports are summarised in Appendix B.

The pottery is stored in the Central Museum, Northampton.

f) Quinton 'A' (see Fig. 18).

The excavation of Quinton site A took place from 1971-1972 after the farmer began deep ploughing the field and turned up evidence of Roman occupation. R. Friendship-Taylor of the Upper Nene Valley Archaeological Society directed the excavation. It was published in Volume II of the Journal of the Northamptonshire Museum and Art Gallery (Friendship-Taylor 1974).

The site is located just over 11 km north of Roman *Lactodorum* and just under 4 km south of the possible semi-urban settlement at Houghton.

Apart from some slight evidence of a Neolithic presence, the first features on the site were immediately pre-Roman and consisted of various ditches and the remains of a circular timber hut. A number of kilns or ovens were also found. Their function was uncertain. Some pottery wasters were found in deposits of this phase but no other kiln furniture. The small size of the kilns led the excavator to suggest they may have actually functioned as domestic cookery ovens.

The next phase of occupation began in the late first century AD with the construction of a rectangular building with pitched-stone foundations. The length of occupation was uncertain but according to the excavator at least part of the building's walls were still standing in the third and fourth centuries.

In the second century the structure is described by the excavator as follows:

"The building consisted of three main rooms.

What is assumed to have been the main living

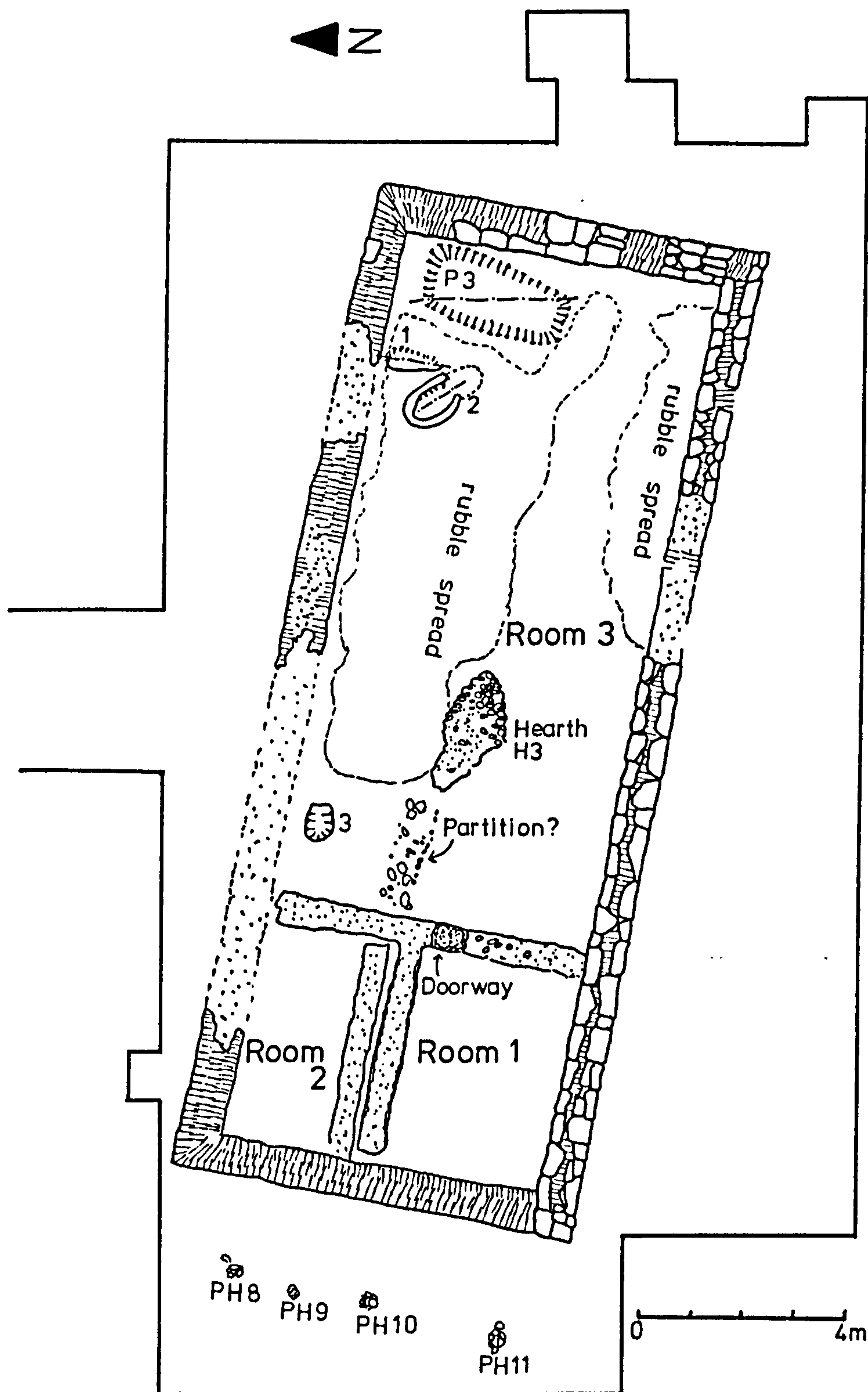


Fig.18 Quinton site 'A' (after Friendship-Taylor 1974)

area was located at the west end of the building, while the east end was probably used as a workshop, barn or cattle shed. There seemed to be a faint hint of a partition at the west end of room 3, running roughly parallel with the dividing wall of rooms 1 and 2. At the west end of the building there appears to have been two east west walls. It seems that the northernmost wall was the earliest, and was probably contemporary with the earliest phase of the stone building, i.e. late first century A.D. A wooden screen probably ran on a similar alignment to the later north south stone dividing wall, but no evidence was found to support this hypothesis " (ibid 16).

Rooms 1 and 2 were floored with clayey mortar and room 3 with a mixture of clayey mortar and rubble. A number of tegulae and imbrices were found leading the excavator to assume the building was completely roofed with clay tiles. In the published report the excavator includes a proposed reconstruction of the building and portrays it with dwarf walls and timber frame upper walls.

The pottery used in the analysis was an amalgam[^] of a number of the phase II contexts from within the building. Only part of this assemblage was included in the report with no attempt at quantification or fabric analysis.

The second century small finds and ceramic specialists' reports are summarised in Appendix B.

The pottery is stored in the Central Museum, Northampton.

g) Wood Burcote (see Fig. 19).

Excavations on this site were begun in 1972 and concluded in 1978 the site being under threat from plough damage. The majority of the excavation was undertaken by R. Turland a local amateur, who is at present preparing it for publication. Most of the following information is taken from an unpublished interim report (Turland 1978 unpublished).

The site is located on the Towcester-Alchester road and not far from the Watling Street which ran through Towcester, Roman *Lactodorum*. Wood Burcote is around 2 km south west of Towcester. Eight separate buildings have been discovered at the site ranging in date from the late first to the fourth century A.D. A natural watercourse runs across the site in an east westerly direction.

The proximity of building A to this latter watercourse along with other structural evidence has led the excavator to interpret it as a Roman mill, built in the late first century AD and in use for about a century. Built at the same time was building C, only partially excavated but apparently a fairly large domestic structure with a veranda, at least six rooms, a possible half-timbered construction and painted wall plaster. It had fallen out of use by the end of the second century.

In the mid-second century, building D was built and had at least

four construction phases. The first was a small squarish room (room 1). Its walls were probably half-timbered with a lower course of smallish stones laid on the rubble stone footings. The only flooring found was part clay and part cobble. In phase 2 a second room was added (room 2). The walls were built in the same manner as in room 1 but were of slightly larger stones and the walls were narrower than the footing. The floor was of thin mortar laid over a mixed mortar, soil and stone base which in turn covered an earlier thin mortar or weathered clay floor. Phase 3 consisted of the addition of room 3. It too had a mortar floor, and its walls were of slightly smaller stones than those of room 2. The footings were the same as in rooms 1 and 2. In phase 4 the veranda was added. This was probably some time after AD 160. It may not have continued the entire length of the building. It had a 'heavy stone wall', a masonry floor foundation and possibly a tessellated pavement, "... for hundreds of tessera of both red tile and limestone have been recovered from all around this building. Small fragments of red wall plaster have also been found" (ibid 9). Building D was thus in its final phases, a small, three-roomed 'cottage' with a modest, south facing veranda. It probably had half-timbered walls, a certain amount of painted wall plaster and at least one tessellated pavement. The excavator gave no indication of the length of use of this building.

Building B, nearby, contained corn-drying kilns and was built after AD 200. Buildings E, F, G, H, J, K and L were not discussed by the excavator.

The pottery used in the analysis below came from a pit (F271) and a ditch (F205). The excavator had quantified the assemblages by weight and sherd count using a simple fabric series for the coarse wares similar to the one used here (see Fig. 5).

The samian report (from the two features only) is summarised in Appendix B.

The pottery is currently in the possession of the excavator.

h) Clay Lane (see Fig. 20)

This site was dug in 1980 in advance of quarrying by D. Windell for the Northamptonshire County Archaeology Unit. The site report is at present being prepared for publication. The following is based on the manuscript and an abstract kindly provided by the excavator.

Clay Lane is located just over 7 km south west of the Roman walled town of Irchester and about the same distance north east of the 'semi-urban' Roman settlement at Great Houghton. The site is situated on a raised triangle of land caused by the joining of the River Nene and a tributary. Close by the Roman structures was an Iron Age farmstead and associated field system. In the abstract the Roman structures are described as follows:

"Stone built structures of a late first to late second century farmstead, including a rectangular building of three phases and an adjacent circular structure, all bounded by a stone wall. Surrounding this was a

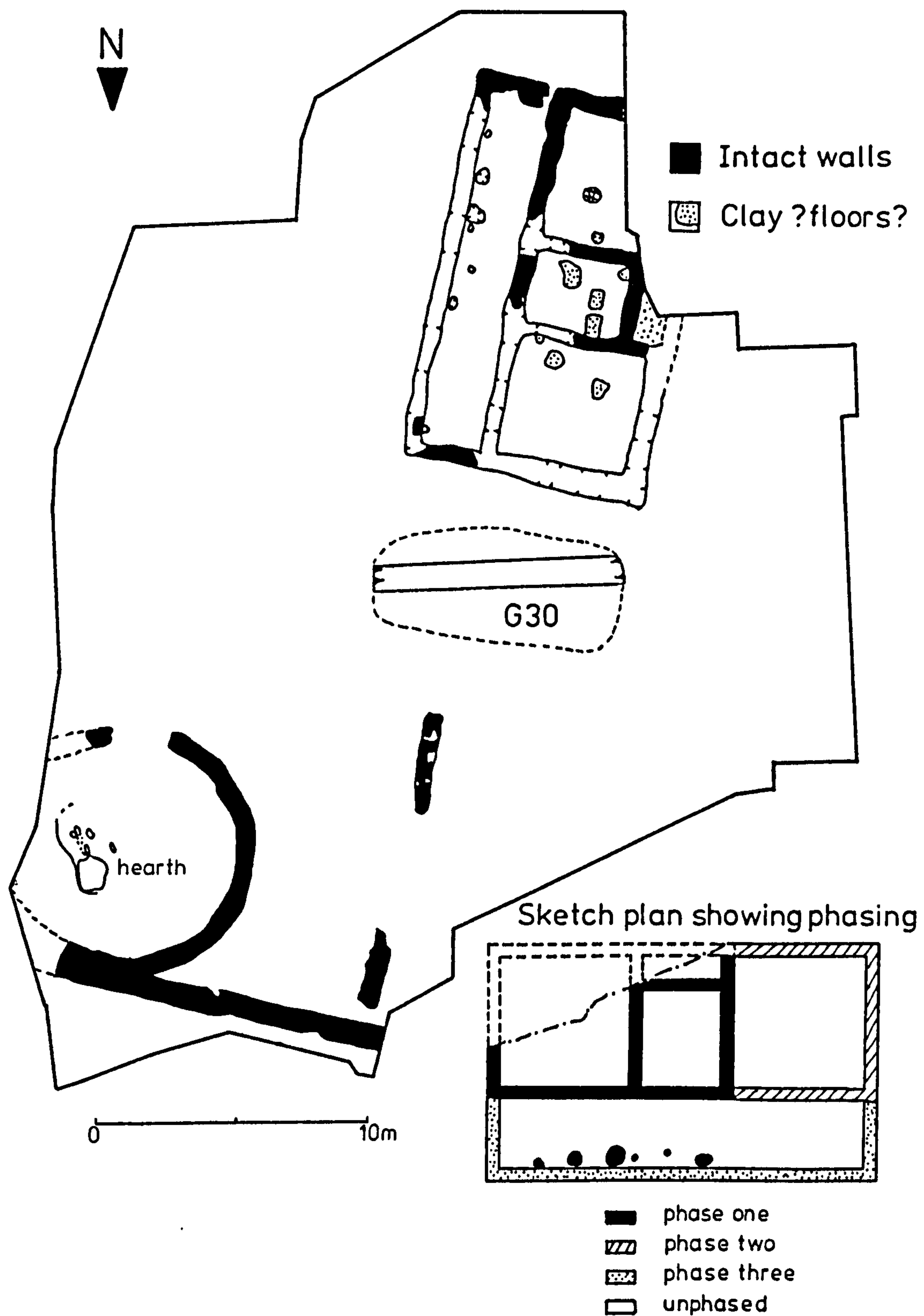


Fig. 20 Clay Lane (after Windell unpublished)

rectilinear system of field boundaries which had been much modified throughout the Roman period. A small area of third to fourth century occupation" (Unpublished abstract).

The rectangular building was built originally (phase 1) as a two roomed 'cottage' with a timber veranda. In phase 2 the building was extended by an additional room. In phase 3 a stone veranda or corridor was added. These phases could not be closely dated but all three fall between the late first or early second and the late second or early third centuries AD. Some traces of earlier timber structures were found, probably of a mid to late first century date, possibly of a circular building and another post-built structure. The circular stone building mentioned above was built sometime in phase 2 or 3.

The walls of the farmstead and adjacent circular building were built on pitched limestone foundations. A certain amount of clay flooring was found in the rectangular building.

Pottery from two separate contexts was used for the analysis below. Group 30 was a large pit located close to the north wall of the rectangular building. Group 31 was a group of minor contexts external to the phase 3 buildings but which the excavator considered to be contemporary with them.

The coarse pottery from the site had been quantified by sherd count using a simple fabric series similar to the one used here (see Fig 5).

The second century small finds and ceramic specialists' reports are summarised in Appendix B.

The pottery is stored with the Northamptonshire County Archaeology Unit, County Hall, Northampton.

i) Towcester: Alchester Road (see Fig. 21)

The excavation of the Alchester Road suburb area was a lengthy operation involving trial trenching in 1967 in advance of building, area excavation and trial trenching combined in 1974-76 and in 1977-78 the recording of features exposed during the excavation of service trenches and roads and the erection of further housing. The total area examined was 5.7 ha. The excavators were A.E. Brown and C. Woodfield with D.C. Mynard and the site was fully published in 'Northamptonshire Archaeology' vol. xviii (Woodfield and Brown 1983).

The site is located along and includes the Roman road linking the Roman small towns of Alchester and Towcester, and is about 1/2 km outside the walled area of Lactodorum (Towcester).

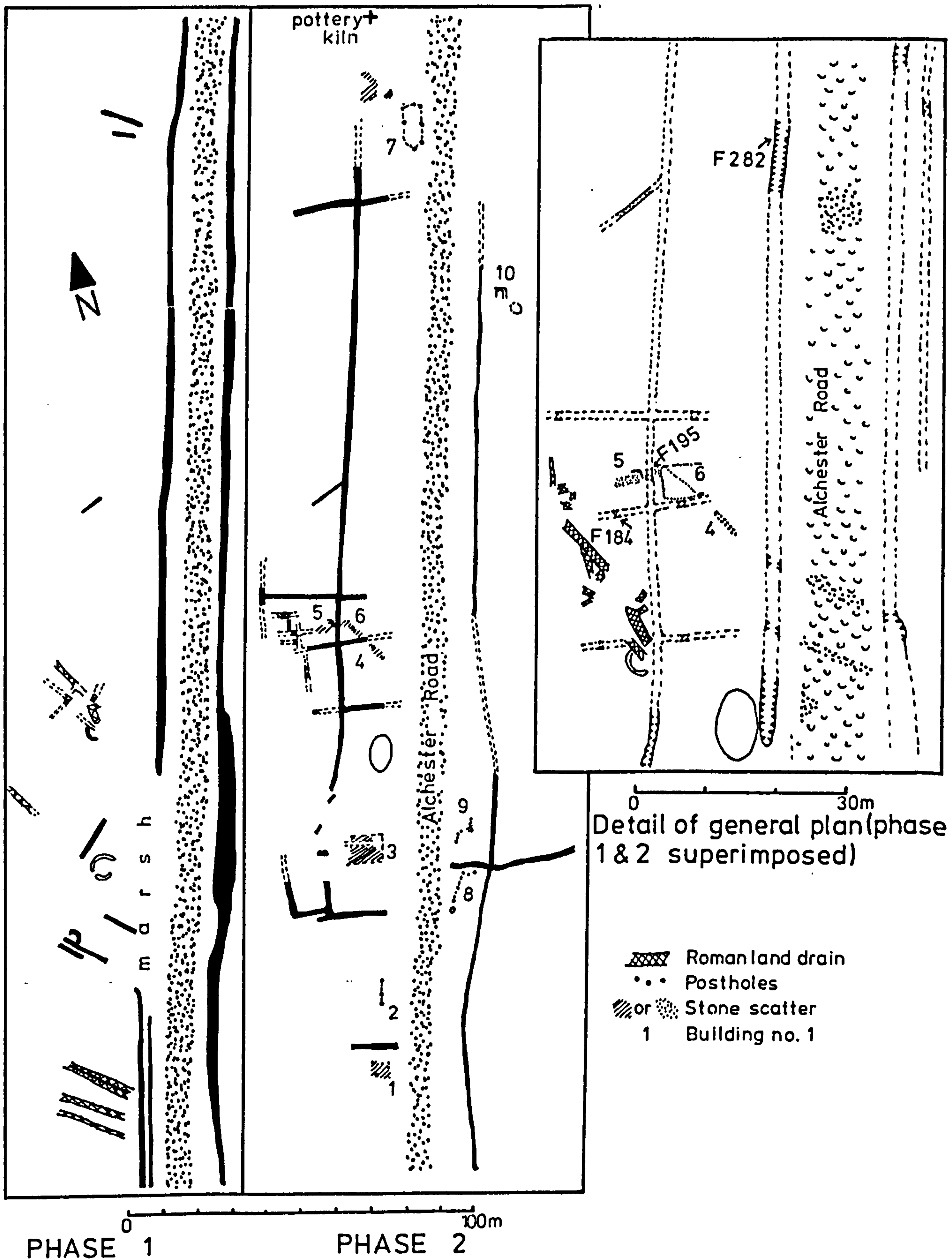
The Roman road running across the site was first laid out apparently in the late first century A.D. Occupation ran along this road in a narrow strip some 45m wide on the west side and around 25m on the east. Previous to this on the western side were found "... ditched fields, sometimes containing small circular structures, probably related to the villa at Wood Burcote 1 km to the south west" (ibid 43).

The excavators summarise the next stages in the occupation as follows:

"The side ditches were recut or redug throughout the first half of the second century, but after they had largely silted up the character of the site underwent a dramatic change. About AD 170 a series of ditched plots, apparently forming a planned scheme, was laid out along both sides of the Alchester Road, on a different alignment from the earlier fields. This lay-out provided deeper plots to the west of the road than to the east... Buildings of timber or of cob on stone foundations were erected within the plots; they were all generally rectilinear. There is evidence for iron-working. There was much activity until c. 230 when there appears to have been a marked fall-off in the intensity of occupation" (ibid 43).

The road and ditches were modified and redug in the following century, a new branch was added to the main road about AD 270. In the mid fourth century new ditched enclosures were laid out with buildings within them and there was much evidence for continuing industrial activity. Faunal evidence indicates that stock was kept.

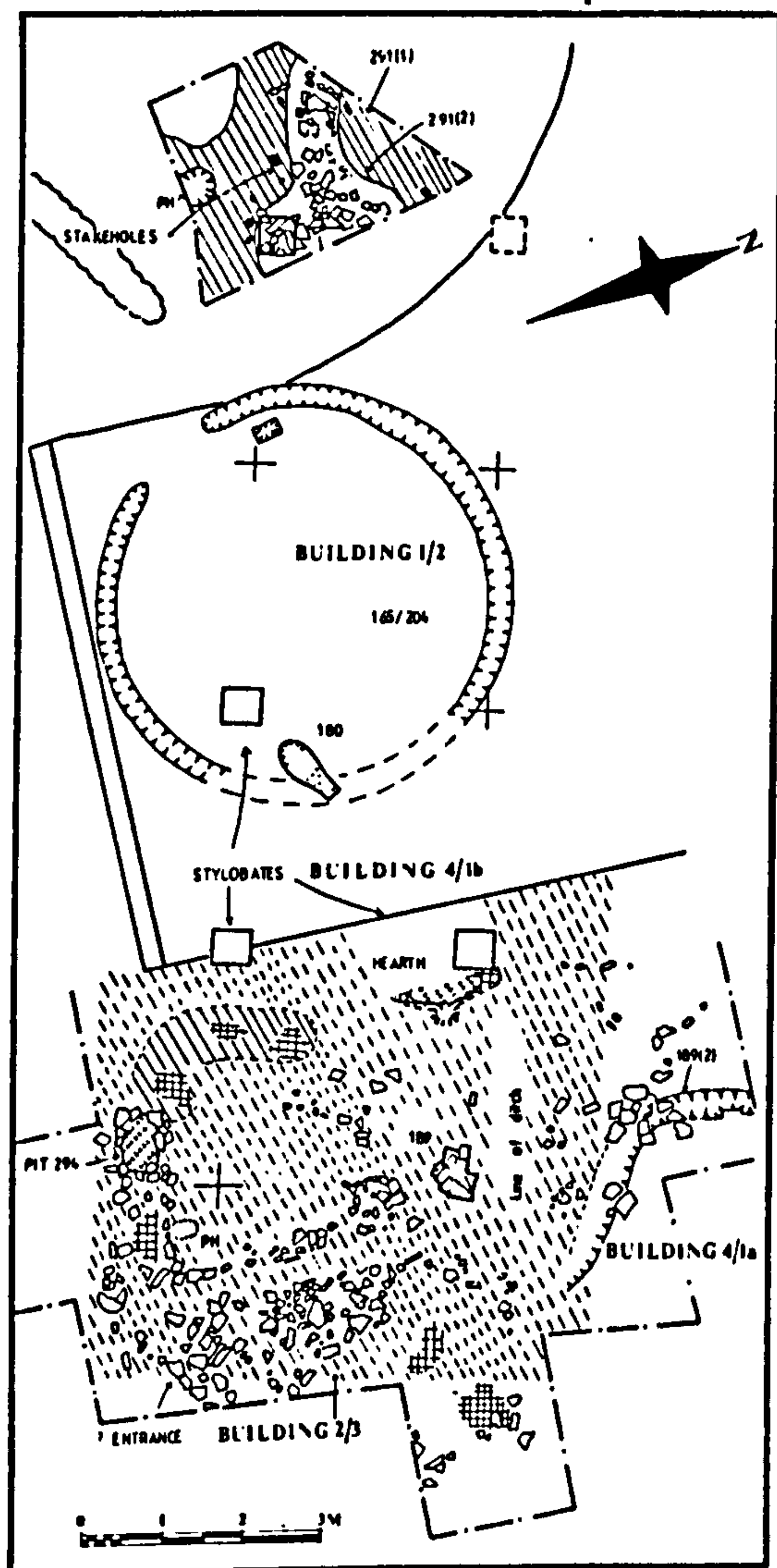
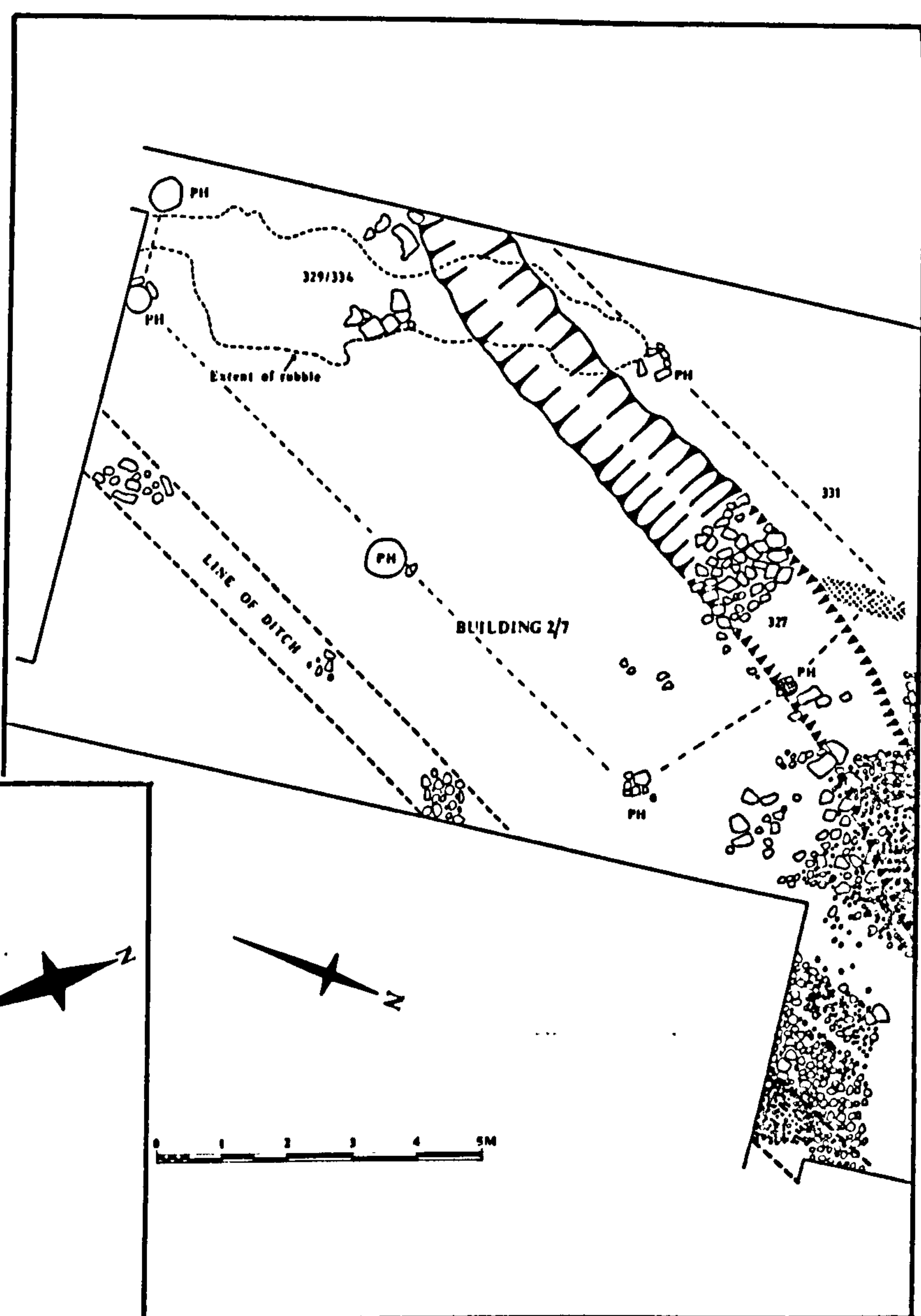
Phase 2 (c. A.D. 170- c. 270) provided the pottery for the analysis below. As described above, the beginning of this phase was marked by the setting out of new land boundaries around a series of regular, possibly planned plots. Ten buildings were



General plans showing early phasing

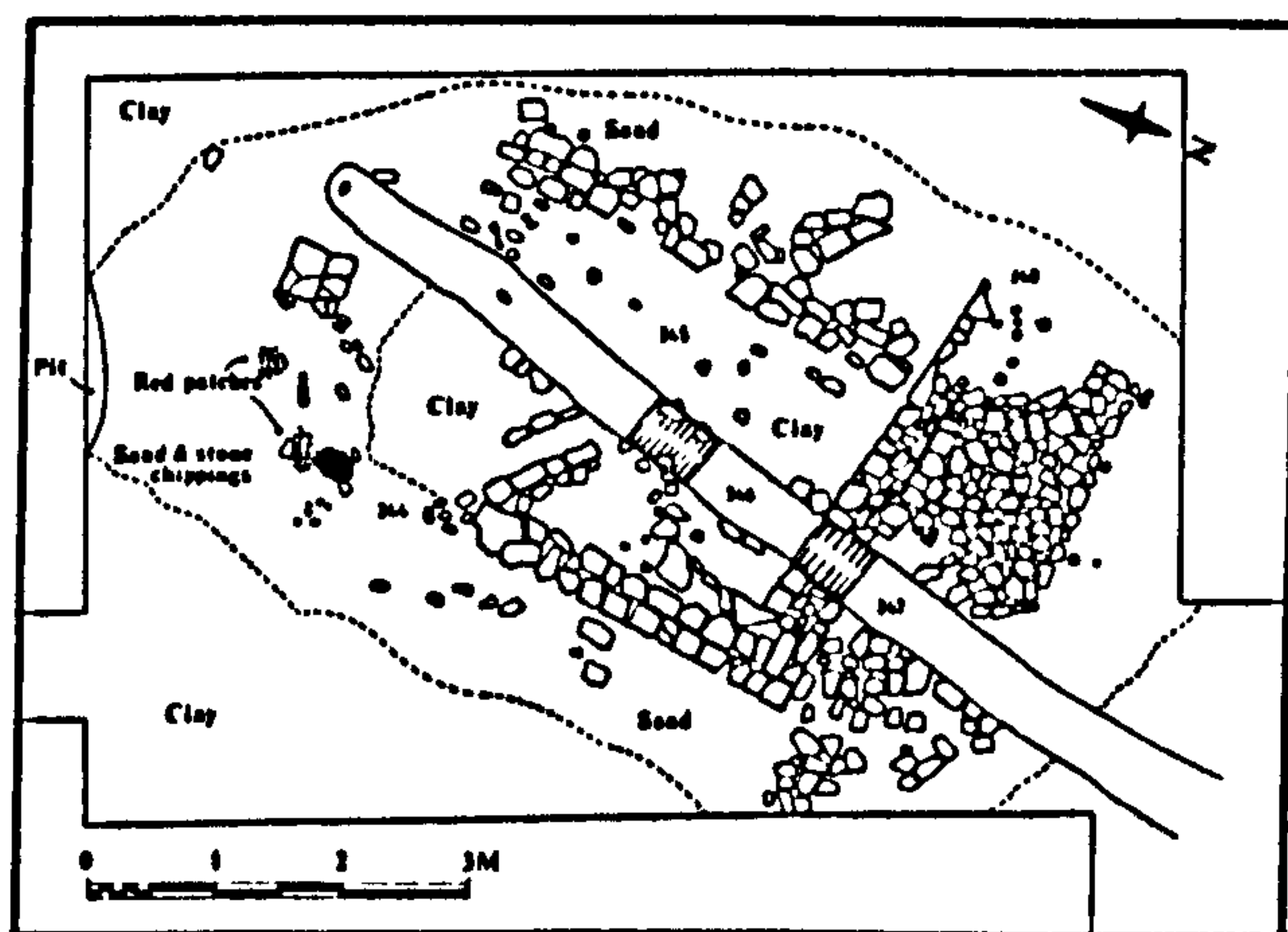
Fig. 21 Towcester: Alchester Road
(after Woodfield & Brown 1983)

PHASE 2 STRUCTURES



Building no.3 phase 2 (and
three others)

Building no.7 phase 2



Building no.10 phase 2

Fig.21 (contd.) Towcester: Alchester Road

attributed to this phase, most of which were contained within or near the ditched plots.

Most of the structural remains were rather fragmentary. Building 2/1 for example survived as "... a roughly rectangular spread of pieces of limestone" (ibid 49), five postholes and a possible hearth. The most substantial building was building 2/10. This was a rectangular structure, with walls of roughly dressed limestone possibly supporting a cob wall since a spread of sandy earth was found above the unmortared limestone. The floor was of clay. The building may have had two rooms and was set end-on to the road. Buildings 2/4; 2/6 and 2/5 had "substantial cobble and clay floors" (ibid 51) while buildings 2/3 and 2/7 had plain clay floors. Building 2/3 also had a paved entrance way. Only two other buildings, 2/5 and 2/6 had stone foundations like building 2/10. The rest it seems, were of timber construction though from none of them was a complete plan recovered. The stone walled buildings may have been tiled while the excavators suggest thatched roofs for the timber buildings. The diagonal stone work excavated in building 2/10, "... suggested some sort of drains or even heating channels, perhaps secondary..." (ibid 132).

The iron-working debris found on the site was interpreted by the excavators as evidence for the smithing of iron. A pottery kiln was also found in the vicinity. It was producing coarse dark grey jars on a fairly small scale probably in the early second century and possibly supplying Lactodorum itself (ibid 133).

Pottery from three phase 2 features was used in the analysis below. F 184 was a section of boundary ditch associated with building 2/5, F195 and F195a was a section of a boundary ditch which ran between building 2/5 and building 2/6. F282 was a fairly large section of the western road ditch.

The pottery was quantified by C. Woodfield in the report by estimated numbers of vessels present. The fabric series used is discussed in Chapter 5 section ii).

The second century small finds and ceramic specialists' reports are summarised in Appendix B.

The pottery is currently in the possession of C. Woodfield.

j) Ringstead (See Fig. 22)

This site was excavated during the late autumn and winter of 1971-2 following the discovery of Roman features during trenching prior to gravel extraction. Since the area was under threat the then Ministry of Public Buildings and Works supported a rescue excavation under the direction of Mr. D. Jackson now of the Northamptonshire County Council Archaeology Unit. The site was published in 'Northamptonshire Archaeology' Vol XV (Jackson 1980 12-33).

The site is located about mid-way between the two 'semi-urban' sites at Higham and Titchmarsh (c. 7.5 km) and just over 11 km away from the 'semi-urban' settlement at Kettering to the north-west.

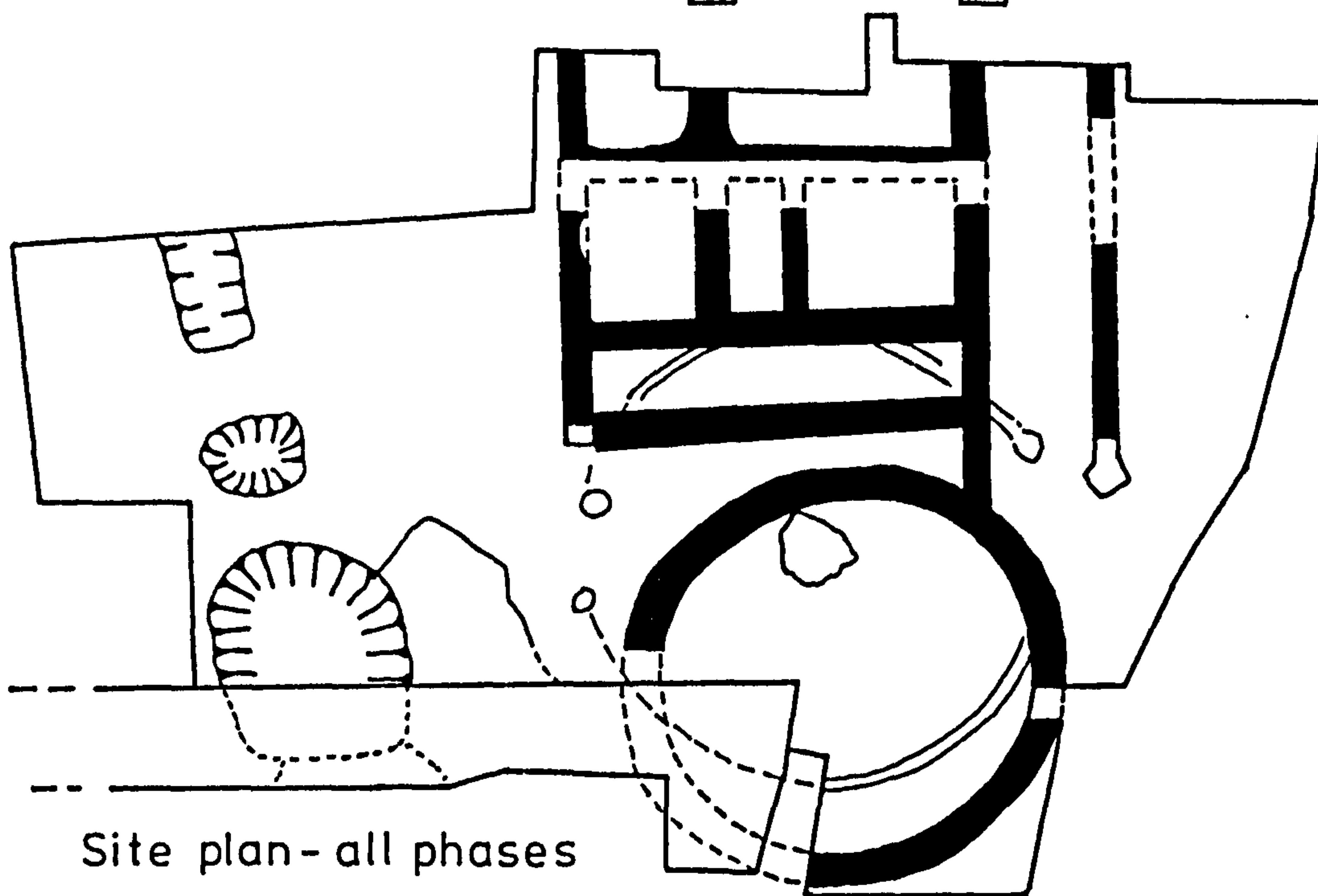
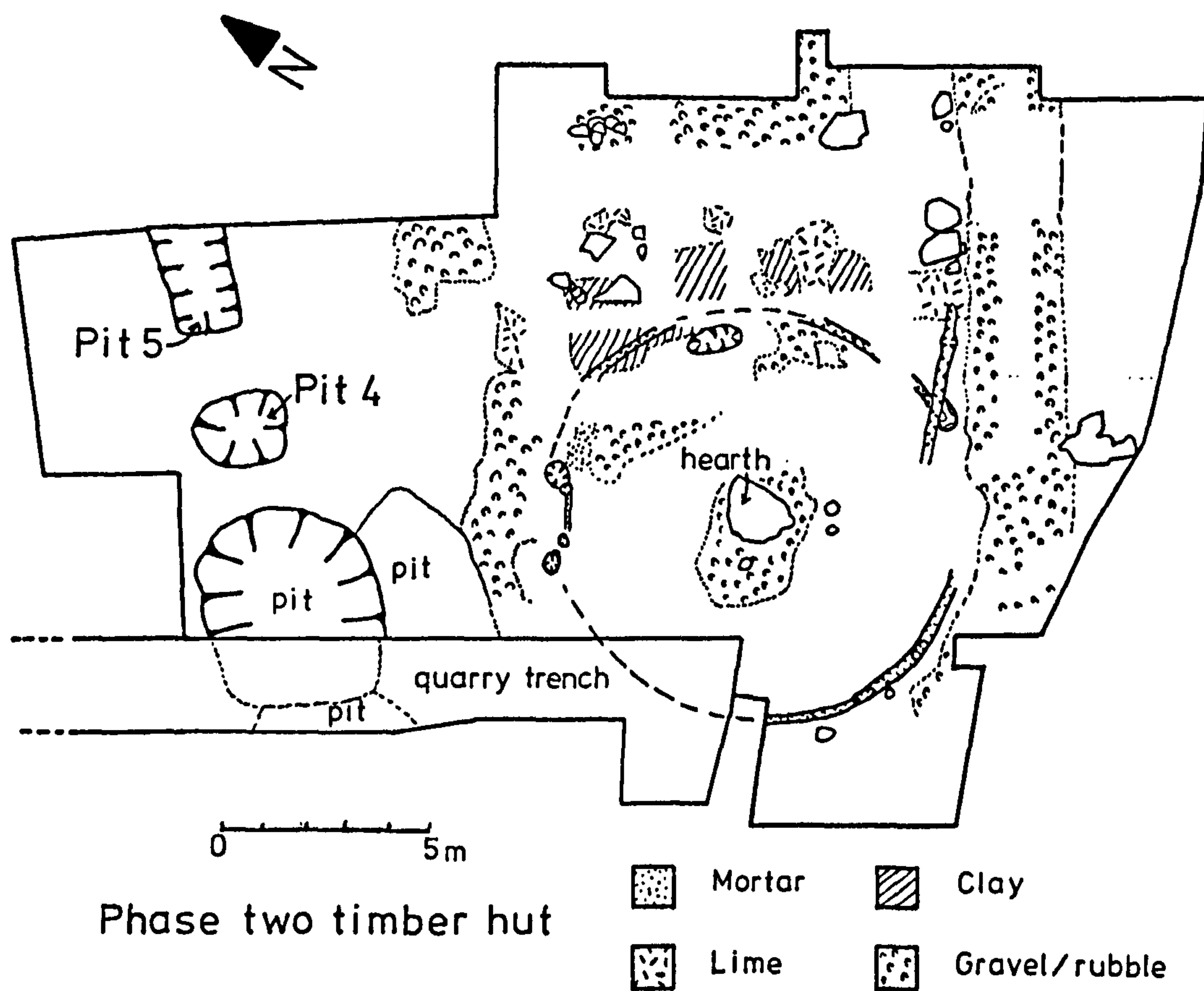


Fig.22 Ringstead (after Jackson 1980)

Only a small part of the total settlement scatter could be investigated. In the area that was explored a certain amount of first century B.C. occupation evidence was found including a possible hut site. In the Roman period the excavator distinguished three main phases of activity. In the first, the area seems to have been used as a 'builder's yard' presumably when buildings sited to the north-east were constructed or altered. In phase two a circular timber hut was constructed and there was also evidence of tracks or floors laid out with gravel surfaces. This hut survived as vestiges of a shallow gully with a probable entrance to the south east and another to the north west flanked by a double pair of post holes just over 1 m apart. The hut had a central area of burnt stone, probably a hearth around which was a spread of gravel, probably the remains of a floor. Outside the north west doorway was a contemporary floor surface or yard surfaced with limestone chippings.

The excavator is reluctant to commit himself over the dating owing to the paucity of evidence. However the evidence of a brooch associated with phase one dates that phase to the late first or early second century A.D. The second phase, that with the circular timber hut, follows straight on and can presumably be dated to sometime in the second century A.D.

Sometime in the late third century the timber hut was replaced by a circular structure with stone foundations abutting a roughly rectangular structure of similar construction. The circular building had a tessellated pavement and within the rectangular building some fragments of painted wall plaster were found. The

coin evidence suggested that the circular building at least was still in use in the fourth century.

The pottery from the site was quantified as percentages of the whole assemblage (all periods) and divided into four fabric categories, grey wares, samian, colour coat and other fabrics.

The pottery from two second century pits (pits 4 and 5) was examined and quantified for the pottery analysis in Chapter 6. Both pits were located to the north west and close by the Roman structures.

The second century small finds and ceramic specialists' reports are summarised in Appendix B.

The pottery is located in the Northamptonshire County Council Archaeology Unit store in Wellingborough.

k) Thorplands (see Fig. 23)

This site was excavated during two separate seasons, 1970 and 1974. The excavation was mounted in advance of development, by the Northampton Development Corporation Archaeology Unit and was directed first by Mr. D. Mynard and then Mr. R. Hunter. The site was published in 'Northamptonshire Archaeology' Vol. XII (Mynard and Hunter 1977 97-154).

Thorplands is situated about 8 km to the north and north east respectively of the 'semi-urban' settlements at Houghton and Duston. Irchester lies about 14km to the east. The site itself

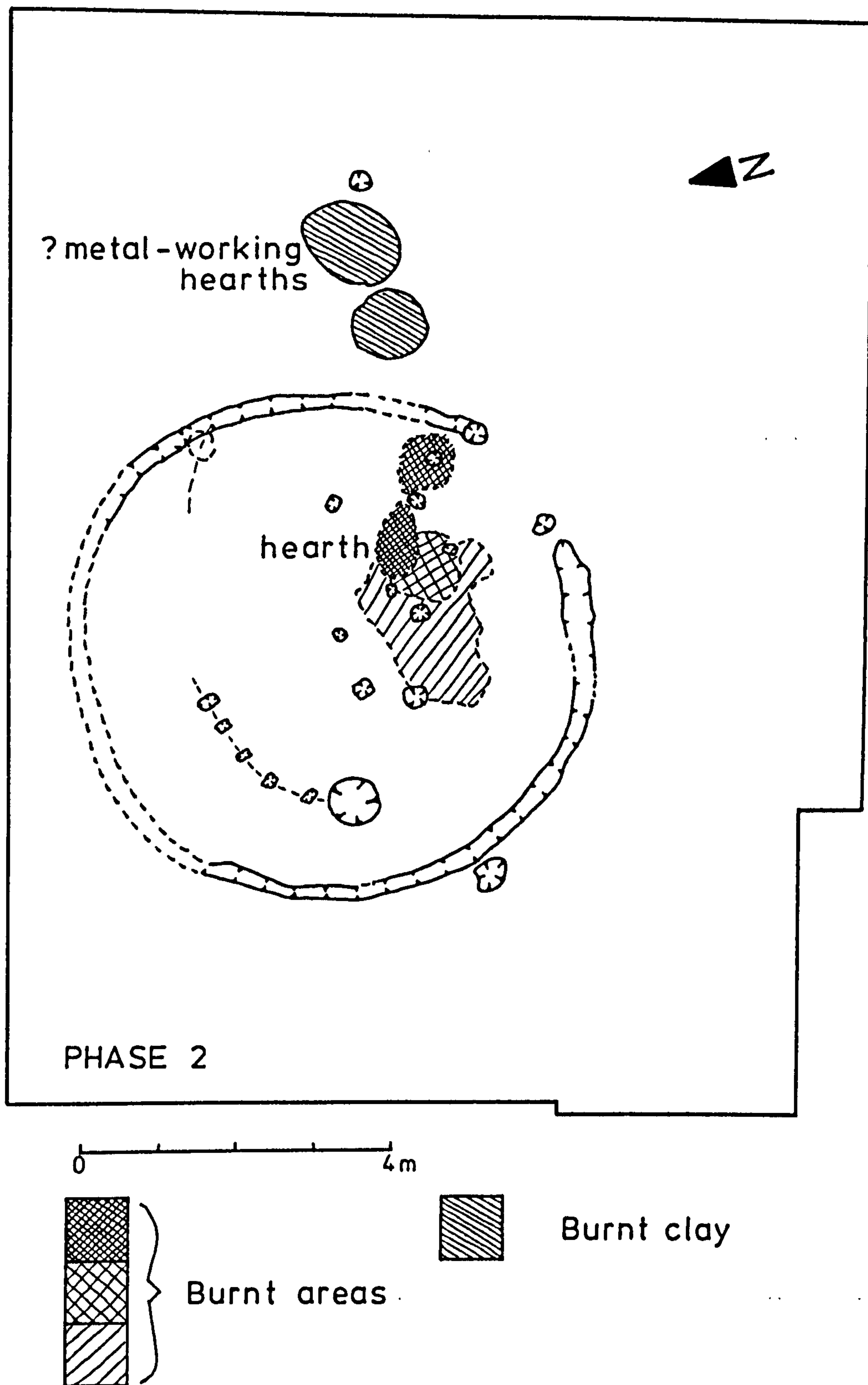


Fig. 23 Thorplands (after Hunter & Mynard 1977)

"... occupies a relatively commanding position at about 340 feet above sea level on the brow of a gentle south eastward facing slope" (ibid 97).

A certain amount of Iron Age and earlier material was found but with no associated structures. The excavators distinguished four phases of occupation during the Roman period. The first phase consisted of a number of late first to second century ditches, possibly boundary ditches. Phase two was mainly represented by the remains of one or possibly two circular timber buildings. These remains consisted of a penannular gully and an arc of postholes. Both structures cut the fill of a phase one ditch and were sealed by phase 4 structures. The penannular gully was assumed to represent a building since two associated postholes are positioned to suggest an entrance on the south-east side. There was a possible hearth related to one or other of these buildings. Only one tile fragment was found in a phase two context and it seems reasonable to assume that the timber building(s) were not tiled. From the pottery found in phase 2 contexts the timber structure(s) were given a late first to second century date range possibly extending into the third century. Phases three and four were dated to the third century. The latter is represented by a stone built circular structure erected on the site of the phase two timber building. Coin evidence from the destruction layer indicated that the phase four building went out of use in the late fourth to fifth century A.D.

Finds from all periods indicated to the excavators a chiefly domestic usage for the buildings and "... the presence of quern fragments, whetstones, a spindle whorl and the possible evidence

for small scale iron working, are quite consistent with a small farm" (ibid 106). The evidence for iron-working, two bowl-shaped clay hearths situated close to the building(s), probably belonged to phase two.

Only the pottery from a large phase three pit was quantified separately by percentages based on sherd counts in the published report. The pottery from all the other phases was combined into a single set of figures. Simple fabric divisions were used for the coarse wares (see Fig. 5).

The pottery from a number of phase two contexts was used in the analysis in Chapter 6.

The second century small finds and ceramic specialists' reports are summarised in Appendix B. The pottery is stored with the Northampton Development Corporation Archaeology Unit, Northampton.

1) Overstone (see Fig. 24)

This site was excavated in July 1972 in advance of road construction. The director was Mr. J. Williams and the work was undertaken for the Northampton Development Corporation. It was published in 1976 (Williams 1976).

The Roman occupation lies "... towards the top of a north facing slope on a slight rise three and a half kilometres north of the river Nene " (ibid 100). The area was apparently heavily occupied from prehistoric times onwards. The site is located

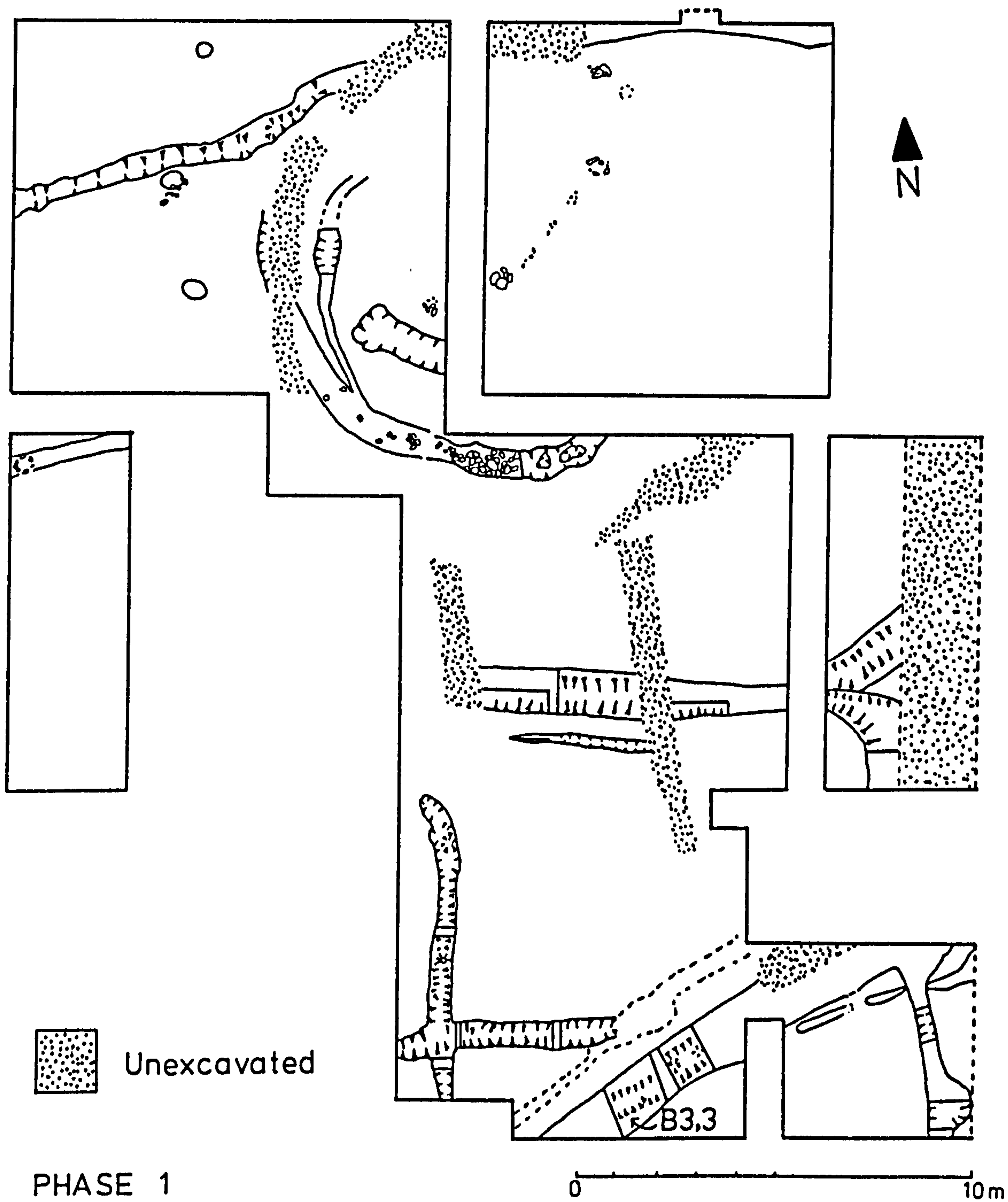


Fig. 24 Overstone (after Williams 1976)

midway between the Roman settlements at Irchester and Duston (each about 11.25 km away).

The site itself consists of a Roman farm occupied from the first to the fourth centuries A.D. The first phase of occupation consisted of one or more circular timber structures which from rather slim evidence was given a tentative construction date some time in the period AD 80-150. The architectural evidence for the phase one structures was limited and consisted of a handful of post-holes forming the wall-line (or lines). No floor levels were found.

Two adjacent gullies indicated a further structure or structures with posts set in a continuous trench. The evidence for roofing consisted of a very small number of un-assignable tegulae fragments. It seems likely that the phase one structures were not tiled. In the second phase the timber hut was replaced by a masonry or part-masonry structure with the same ground plan and an adjacent rectilinear stone structure. These were built some time towards the end of the third century. The phase two structures continued in use "... at least up to the middle of the fourth century, after which the quantity of pottery and coins declines noticeably" (ibid 111).

The pottery report was only quantified to the extent of giving total percentages of pottery fabric types from both phases, based on sherd counts. Simple fabric divisions were used for the coarse wares (see Fig. 5).

The pottery for the analysis in Chapter 6 was a group found in a second century gully (Gully B3, 3) near to the phase one timber structures.

The second century small finds and ceramic specialists' reports are summarised in Appendix B. The pottery is stored with the Northampton Development Corporation Archaeology Unit, Northampton.

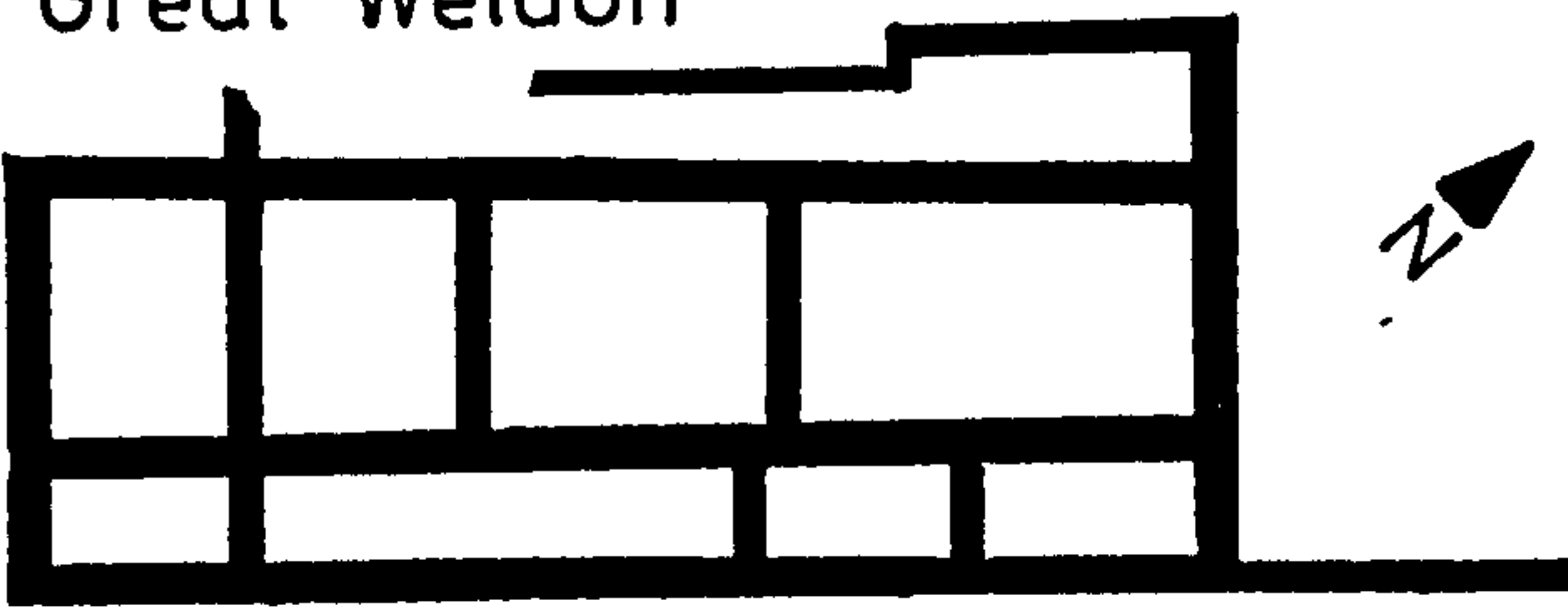
Towcester: Park Street



Quinton 'A'



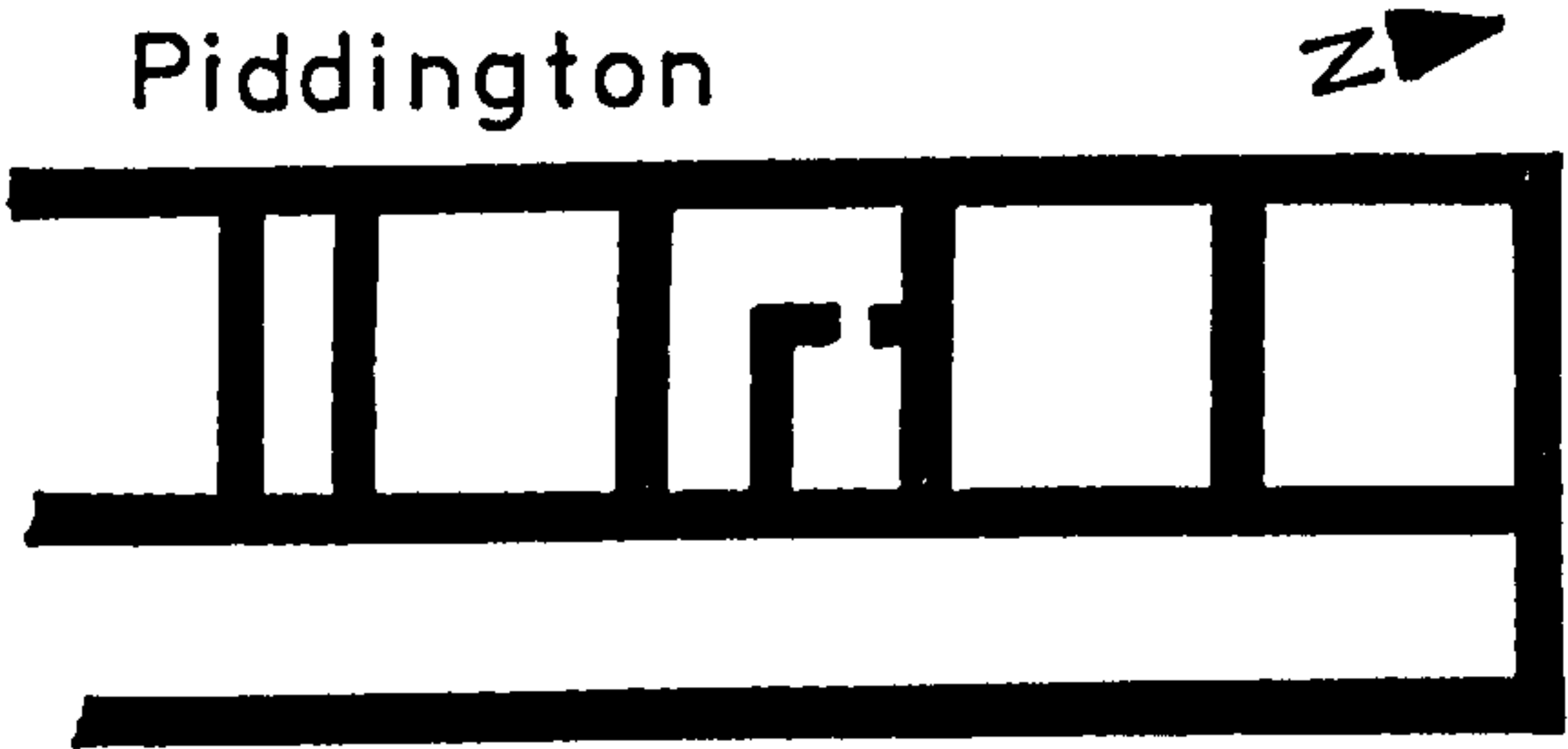
Great Weldon



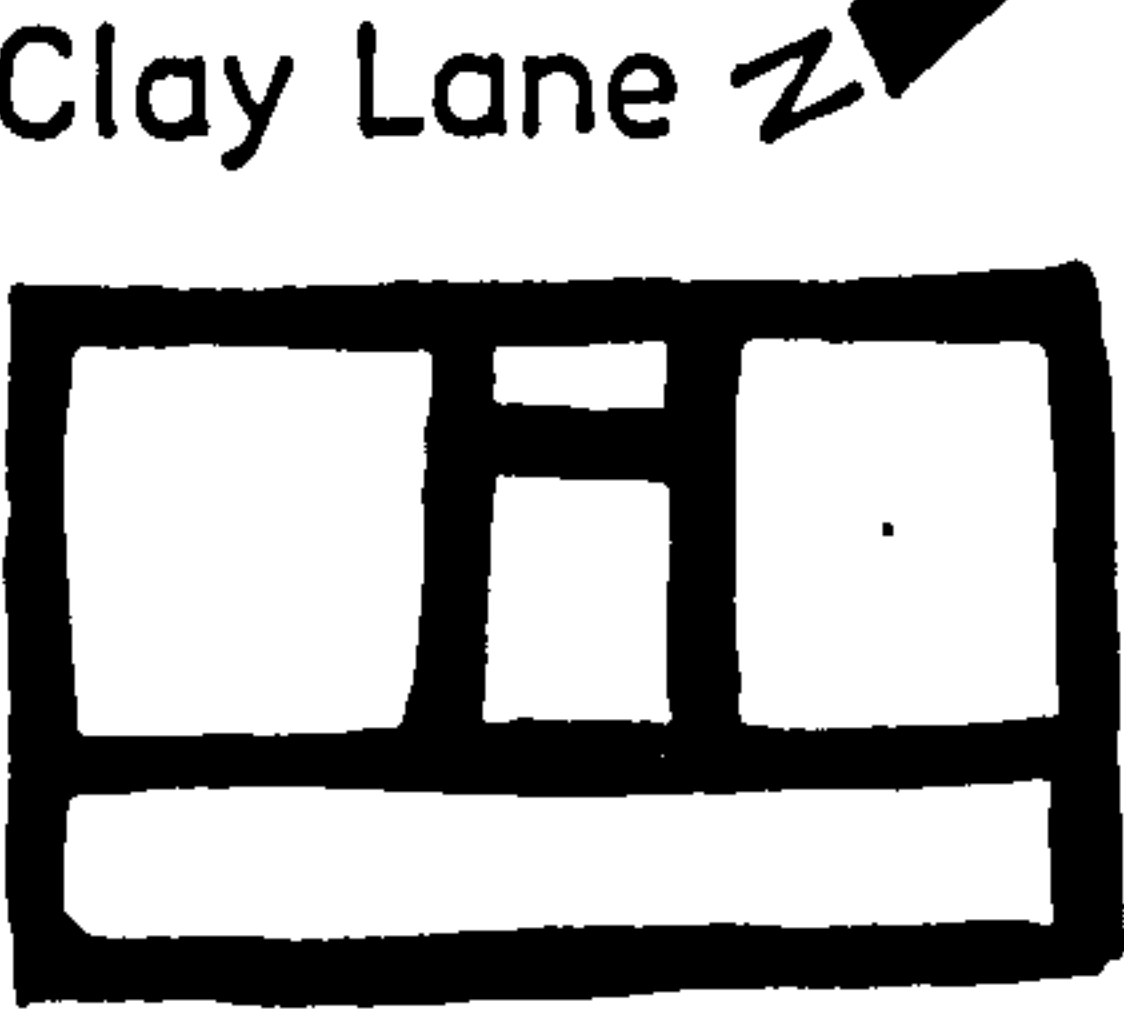
Wood Burcote 'D'



Piddington



Clay Lane



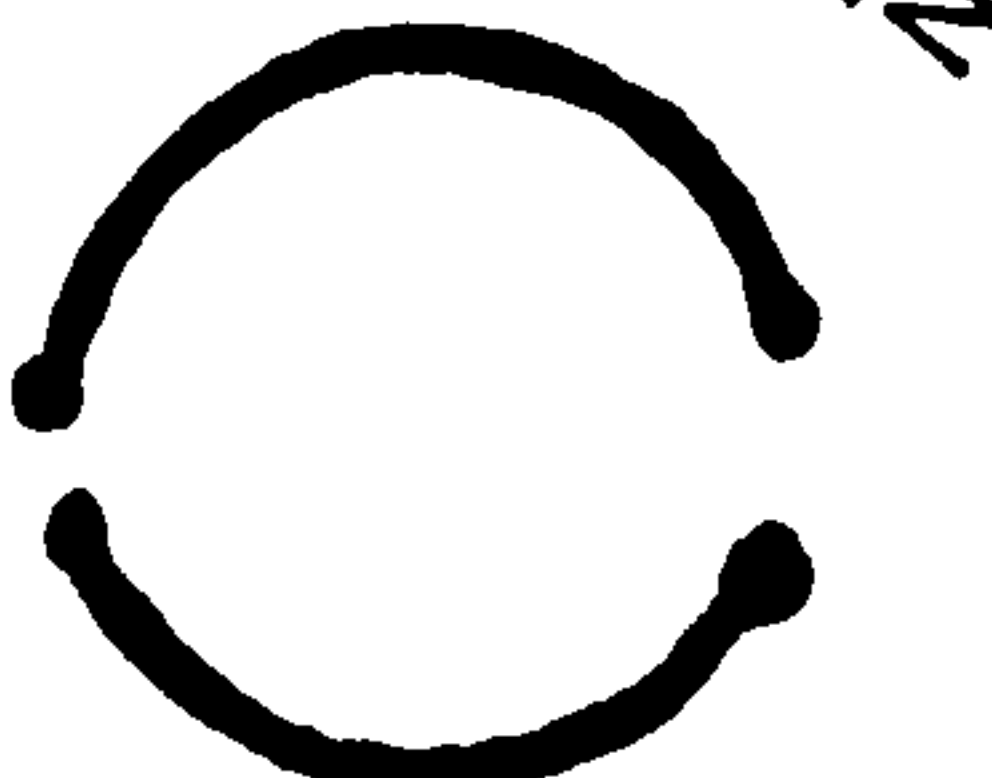
Towcester: 2/10 Alchester Road



Brixworth



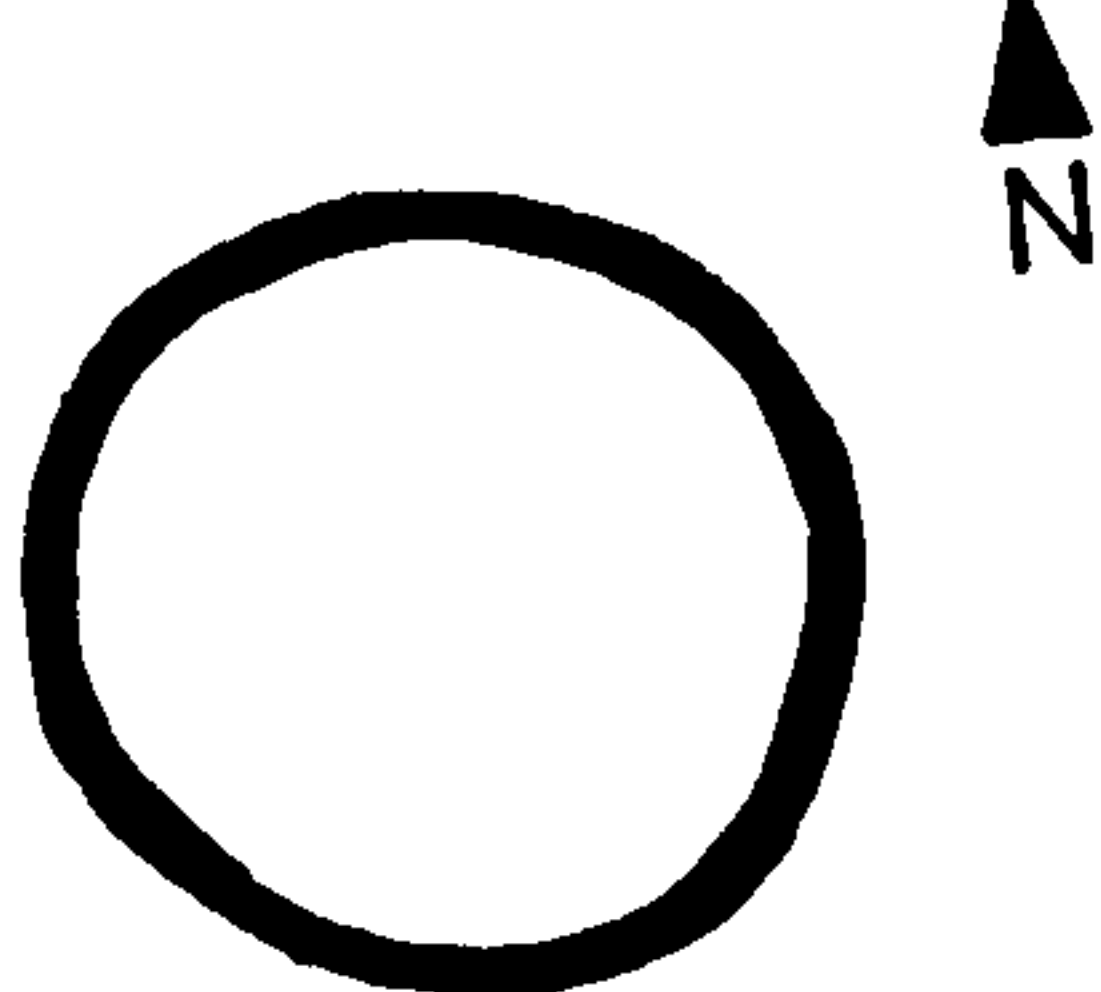
Ringstead



Thorplands



Overstone



Mileoak

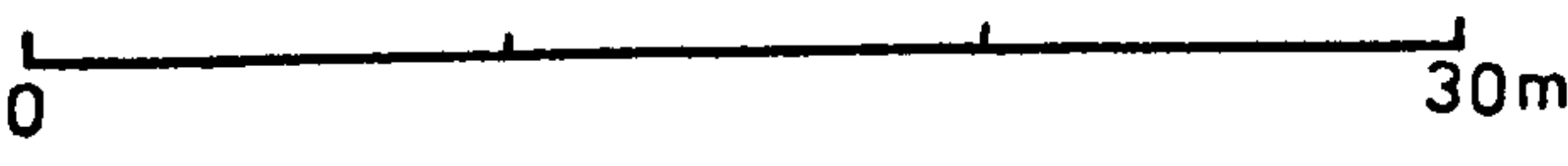
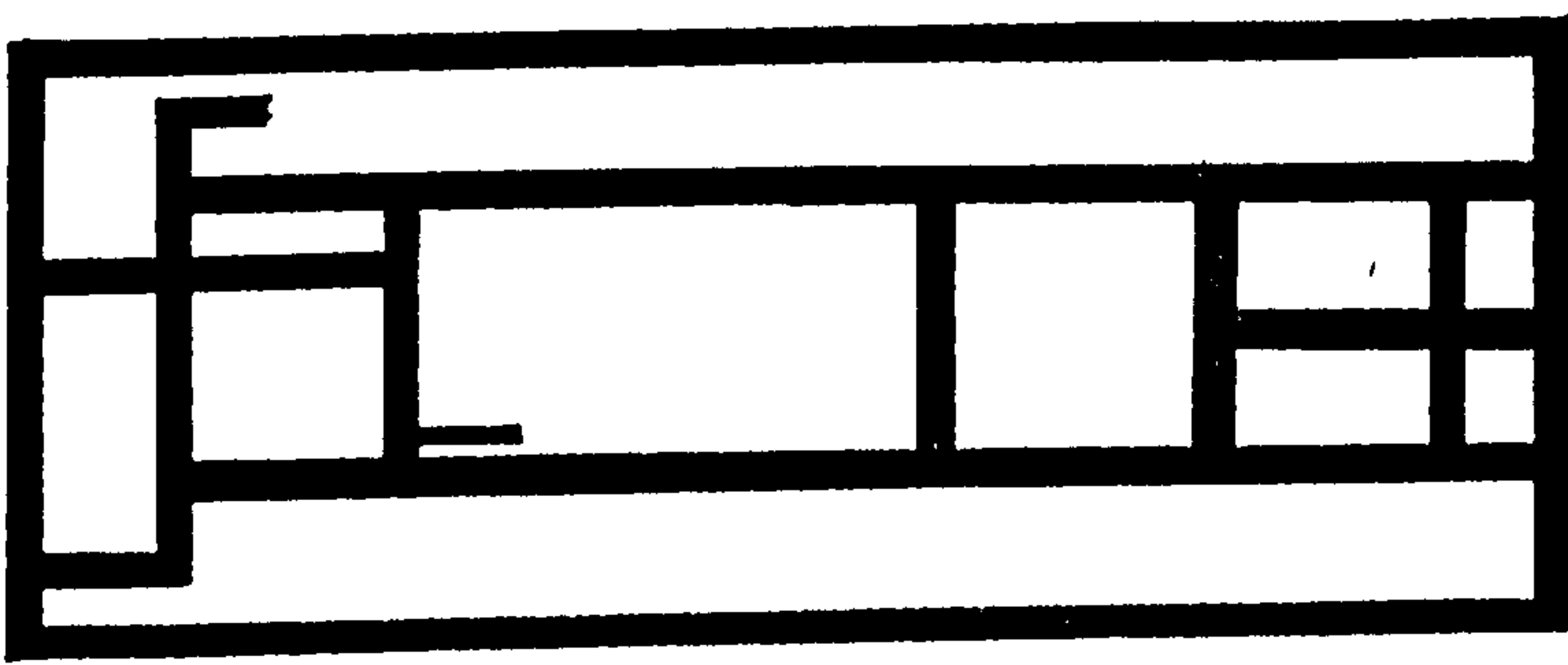


Fig. 25 Comparison of domestic structures

CHAPTER 6

THE DATA ANALYSIS

Section i) - Introduction

Each of the methods of presenting the data, bar charts, cumulative graphs and pie charts are discussed in detail by Doran and Hodson (1975 Chapter 5). Percentages rather than raw data are obviously used here since these presentation methods depend on the uniformity of the values of the variables. The size of the samples from which the percentages are calculated are included in all the diagrams following Doran and Hodson's recommendation, "Only if such totals are given..., is the reader able to assess the likely significance of the presentation" (ibid 121).

In the subsequent analysis of the data the following methods were used, scatter plots or diagrams, Pearson correlation coefficients, average-link cluster analysis and serialization graphs.

The usefulness and applicability of all these methods to archaeological problems has been discussed and demonstrated by a small number of interested archaeologists, most comprehensively by Doran and Hodson (ibid) and most accessibly by Orton (1980). More specifically, Hodson, Sneath and Doran (1966) have demonstrated the superiority of average-link cluster analysis over single-link cluster analysis using the well-known Iron Age Münsingen fibulae as the data base. Their aim was to produce classifications of demonstratable archaeological significance, this being related to differences in the dating of the brooches.

Hodson (1969) also uses average-link cluster analysis to simplify complex archaeological data and reveal the structure latent in it. His data base was fifty Upper Palaeolithic assemblages of stone tools. He concludes that the potential of numerical clustering methods is clear, but also makes the point that although such methods of analysis are useful in generating hypotheses, the false safety of using statistics must be recognised. Lateral thinking may produce equally valid hypotheses (see for example de Bono 1977). The diagrams produced by such analyses, according to Hodson will help to make judgements, rather than to provide proof. In a later paper he expands on this point, writing that whether the resulting 'clusters' or types are regarded primarily as an arbitrary summary of the data or as a direct reflection of significant patterns, it is clear that no interpretation of archaeological finds can be attempted until this initial stage of organisation has been completed (Hodson 1970). In this latter paper Hodson tests single-link, average-link and k-means cluster analysis using the Münsingen fibulae data again. He concludes that though single link has revived in popularity it still cannot be used for the usual archaeological groups of objects with their intermediate transitional units. k-means turns out to provide the most archaeologically significant groupings among the fibulae. Hodson also uses the techniques known as matrix ordering and contouring (see Doran and Hodson 1975 169) but describes their usefulness as very dubious.

Doran, writes a year later (Doran 1971) that in spite of recent work, particularly on the Münsingen fibulae, no fully convincing

way of deciding which of a range of automatic classification procedures available is the most appropriate, has been developed. He criticizes the past use of serialization on the fibulae as not rigorously enough applied. He suggests that a simple measure of similarity, such as a Matching Coefficient would have provided answers for a large part of the fibula classification process. In the case of classifying objects with large numbers of form and decoration attributes, Doran concludes that some exercise of judgement, intuitive or otherwise is necessary in the assigning of different weights to different categories of evidence. This is hardly the case with the Northamptonshire data, though as will be seen, intuitive judgements are forced upon the researcher at a number of points in the analysis. Doran closes by suggesting a continuous and flexible interaction between the archaeologist and the computer as the only answer to such problems, something with which this researcher would concur.

Doran (1973) returns the debate to the question of generating and evaluating by computer complex explanatory hypotheses for archaeological data. Unlike Hodson (1969) he believes that progress is definitely made when intuitive ideas are brought to the level of objective clarity necessary for the computer generation and evaluation. The programme he designs (SOLCEM), used the Münsingen data to produce a probabilistic model of the formation of the cemetery itself. He points out that the computer is very good at forcing elegant thoughts to come to terms with awkward facts. The alternative of course is that statistics may be made to support any hypothesis if sufficiently elegantly manipulated. Doran does realise that his programme has more to do with the archaeological practice than the theory of

automatic hypothesis formation and decides that much work remains to be done. He reasons in conclusion however, that such developmental work should be undertaken and that archaeologists should not be content with using second hand statistical programmes designed for other purposes. Unfortunately such suggestions are still far from realization and it was felt that inspite of such drawbacks, the NUNET MIDAS programme (see below) was perfectly adequate for the analysis proposed here.

Section ii) - The Analysis

a) Model I

The first model to be tested by the data was proposed in the last chapter. It went as follows, On (a small-number of) high-status sites, large amounts of luxury goods and regional specialities would be expected. On (a large number of) low-status sites, very few such goods would be expected. Instead a majority of low-quality, locally-produced goods would be found.

This may be represented by the following sketch (Fig. 26), the area within the triangle indicating relative amounts of the population.

The model must obviously first be translated into ceramic terms before it can be tested against the ceramic data from Northants. To do this reference will be made to the two-fold pottery classification developed in the last chapter. This was summarised as follows:-

- a) 'Fine' wares (ie table and specialist)

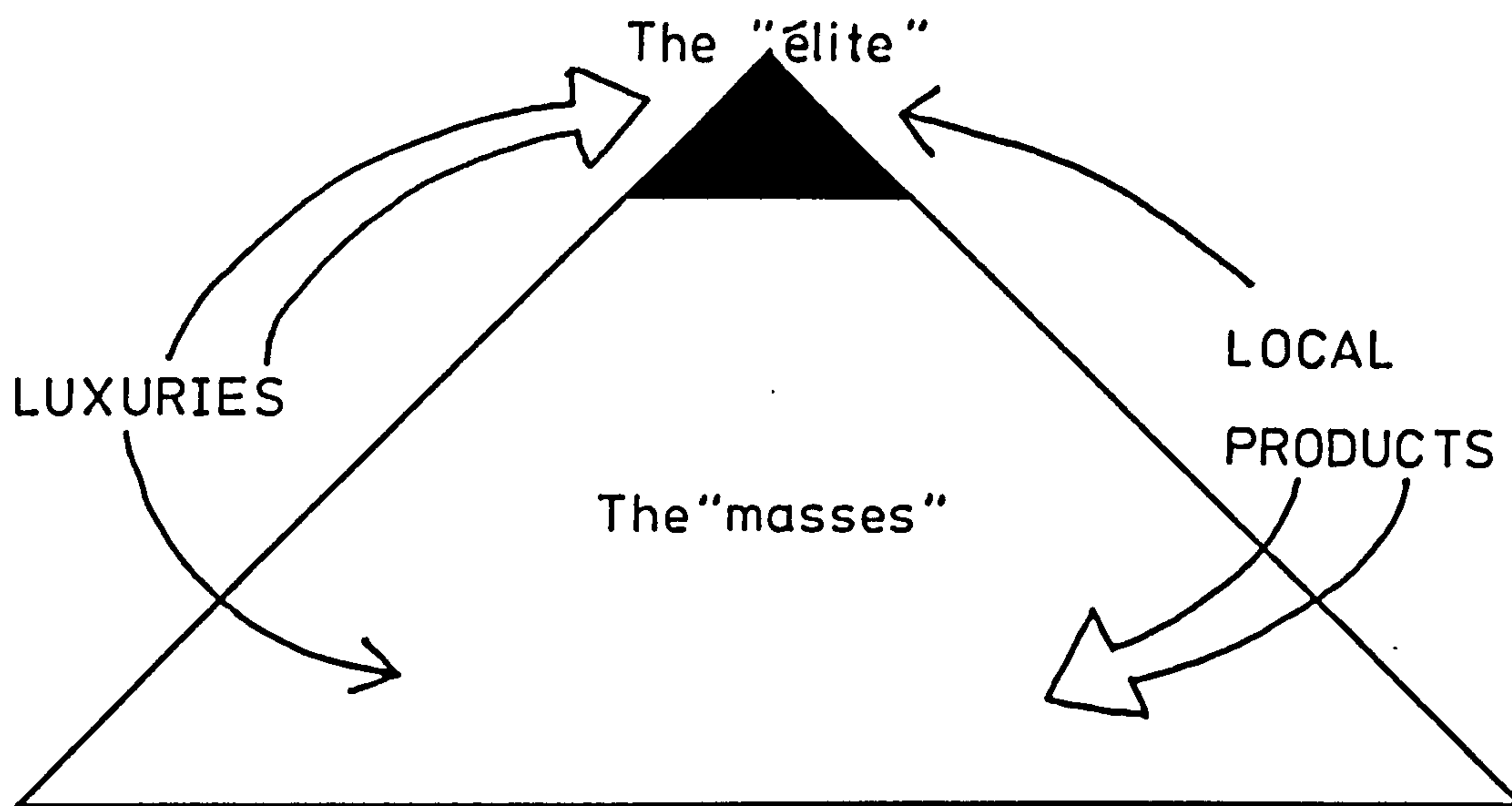


Fig. 26 Sketch of Model I

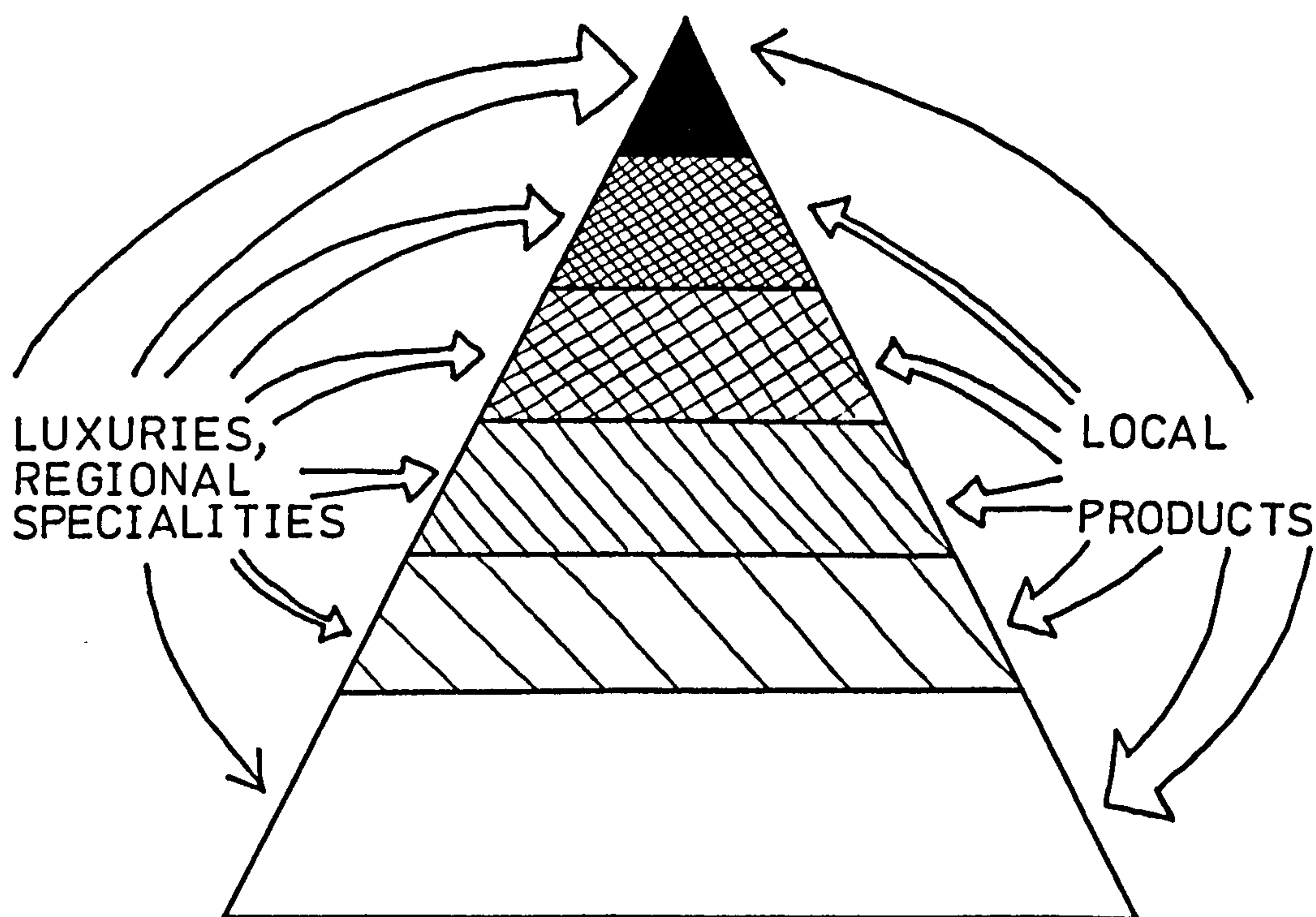


Fig. 47 Sketch of Model II

i) imports ii) regional iii) local

b) 'Coarse' Wares (ie kitchen)

i) regional ii) local

The term 'luxury' has connotations of scarcity and self-indulgence as well as of something desirable but not indispensable. Whether such a description is applicable to even the finest and rarest of the earthenware vessels found on Roman sites is something which will be discussed later. However, for the moment, following time-honoured archaeological tradition it seems appropriate to restrict the term 'luxury' to those wares which were imported in the second century AD into Northamptonshire from abroad. This includes central Gaulish samian, Rhine/Lezoux colour coats (and some produced in the Lower Nene valley and elsewhere) and finally amphora fabrics, which though not luxury wares in themselves may be assumed to have carried luxury products (see Callender 1965).

The regional speciality wares naturally seem to include the white flagon wares and mortaria produced around Verulamium and Oxford. Both types of vessel are clearly Romanised introductions to Britain. Two further much smaller categories are the mica-dusted wares and the painted wares (which may possibly be incorporated with the 'white' wares).

The orange beaker wares and the apparently ubiquitous grey wares are less easy to assign. The latter particularly have in the past been categorised as 'coarse' by excavators, though examination of the fabric and vessel types would perhaps belie

this description.

The black-burnished (BB), 'Belgic', calcareous and sandy wares are all fitted much more easily into the 'coarse' ware category, though BB1 in particular is far from a locally-produced ware with its source in Dorset.

The next stage in the analysis was assigning social statuses to the twelve sites and assemblages. As already suggested the nature of the construction and decoration of the twelve structure (see Chapter 5 section iv)) and the finds associated with the assemblages seemed to be a reasonable indicator of the social status of the people who lived in them and used the pottery.

In an attempt to reduce the relative 'wealth'/sophistication/Romanisation and thus social statuses of the sites into a numerical statement for purposes of comparison, the Table illustrated in Fig. 27 was designed and completed for all the sites. This gave details of construction, decoration and finds where such details were available for each second century structure. The various answers were then assigned numerical scores (see Fig. 28). The one town site was treated as a special case, since though the actual structural evidence was meagre, the excavator's suggestion that it was part of a mansio or rich town house could not be ignored (even though this suggestion was based partly on the ceramic evidence).

The total 'scores' for each site were then used to rank the sites. Wood Burcote was the only real problem site since two apparently second century domestic structures were excavated, One

Size : largest area=highest score out of 11
 Building shape : rectangular=2
 circular =1
 Veranda : yes=3
 no =1
 Porch : yes=2
 no =1
 Wall construction : stone + buttresses =4
 stone =3
 stone + half timbered=2.5
 half timbered =2
 timber =1
 Veranda/porch construction : ditto
 roofing : tile or slate=2
 thatched =1
 Flooring : mosaic + opus spicatum=4
 mosaic =3
 mortar =2
 clay =1
 wall plaster : yes=2
 no =1
 Other decoration : yes=2
 no =1
 Hypocaust : yes=2
 no =1
 Number of rooms : highest number=highest score
 Finds, C2 coins : number=number of actual coins found
 other : highest number=highest score

Fig. 27 Site hierarchy: the points system

	Towcester: Park Street	Great Weldon	Piddington	Brixworth	Mileoak	Quinton	Wood Burcote	Clay Lane	Towcester: Alchester Road	Ringstead	Thorplands	Overstone
STRUCTURE												
Size	?	9	10	7	11	8	5	6	4	3	1	2
Building shape	2	2	2	2	2	2	2	2	2	1	1	1
Veranda	1	3	3	3	1	1	3	3	1	1	1	1
Porch	1	1	1	1	1	2	1	1	1	1	1	1
Wall construction	4	2.5	3	3	2.5	2	2	2	2	1	1	1
V/P construction	-	2.5	3	1	-	1	2.5	2	-	-	-	-
Roofing material(s)	2	2	2	2	2	2	2	2	1.5	1	1	1
Flooring material(s)	?	2	4	2	3	2.5	3	1	1	?	?	?
Wall plaster	1	2	2	2	2	1	2	1	1	1	1	1
Other decoration	2	1	2	2	2	2	1	1	1	1	1	1
Hypocaust system	1	1	2	2	2	1	1	1	2	1	1	1
Number of rooms	?	7	7	6	8	3	4	5	2	1	1	1
FINDS												
C2 coins	1	1	?	?	2	0	?	0	4	0	0	0
Cu alloy	0	1	?	1	1	3	1	1	1	0	0	0
Glass	3	4	?	2	0	1	1	2	0	1	0	0
Window glass	0	1	?	0	0	0	0	0	0	0	0	0
Other	0	0	?	4	0	3	1	1	1	2	5	0
TOTALS	18	42	41	40	39 ⁵	34 ⁵	31 ⁵	31	24 ⁵	15	15	11

Fig. 28 Site hierarchy: table of scores

(building C on Fig. 19) somewhat larger, though less completely excavated than the other (building D on Fig. 19). Since at the time of collecting the data, most details were available about the latter, this is the structure used in the ranking procedure. The presence of the other larger 'richer' structure must however be borne in mind during the following analyses.

The ranking procedure, far from producing a distinct two-fold division as suggested in the hypothesis seemed instead to reflect a broad spectrum of social statuses, with a fairly even gradation from very rich to very poor. The possibility that these twelve sites do not encompass the entire social range of sites in second century Northants is of course strong. Far wealthier contemporary sites are known from elsewhere in the province, for example at Fingringhoe in Essex, and of course, the early structure at Fishbourne, Sussex. From the sites so far excavated, and thus securely dated within Northants however, the assumption at least that the top end of the scale is representative, seems reasonable. Just how poor the residences of the most poor members of Romano-British society were is rather harder to say. It seems that for model I to stand up, huge numbers of undiscovered sites must be hypothesised, to house the 'impoverished masses'. For the moment this must be dismissed as archaeologically unlikely. Thorplands and Overstone, thus, will be taken to be the homes of some of the poorest members of rural Romano-British society in second century Northants.

The broad social spectrum, already noted above was the first test of the model I. The social statuses assessed independently of

the pottery do not reflect a two-fold division between very rich and very poor. Although a division between rectangular structures with stone footings and circular structures built of timber alone was possible, it did not seem to reflect the diversity among the sizes and appointments of the rectangular, more 'Romanised' structures.

It seemed logical to approach the model from another direction, that of the pottery itself, to test for the proposed two-fold division and its associated distribution of luxury, regional and coarse wares. To this end the raw data of weights and sherd counts (Fig. 29) was first converted into percentages and then a series of simple bar charts were drawn showing the percentages of each ware/fabric in the total assemblages from each site.

The 'luxury' wares

Samian - Fig. 30

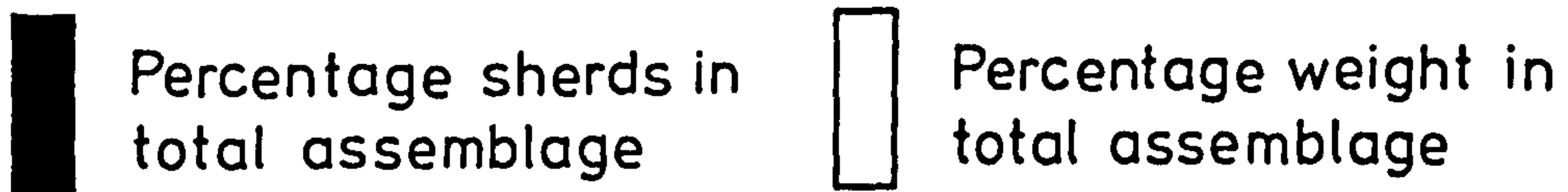
This for the moment is classed as a luxury ware. The distinction between the town house and even the richest rural structure is obvious. By weight, over 21% of the Towcester : Park Street assemblage consisted of samian from central Gaul, while Great Weldon had only 0.68%. The picture is far from simple however. The two poorest sites had no samian in their respective assemblages as indicated by the model I, on the other hand, the richest rural site, Great Weldon is far from having the most samian. Indeed, most of the sites immediately below it in the hierarchy have more, for example by sherd count Piddington has 2.4%; Brixworth has 4.89%; Mileoak has 3.03% and Quinton 'A' has

	TIPS	UV	P	B	M	Q	VB	CL	TiAR	R	T	O	TIPS	UV	P	B	M	Q	VB	CL	TiAR	R	T	O
sherd count:manian	102	009	027	018	003	020	062	010	044	003	000	000	17.96	0.84	2.40	4.90	3.03	4.87	3.23	2.11	3.75	1.80	0.0	0.0
weight:	5.410	0.100	0.450	0.610	0.025	0.300	0.980	0.235	0.312	0.100	0.000	0.000	21.43	0.68	1.84	6.31	0.58	4.74	3.44	2.18	1.39	0.89	0.0	0.0
atmosphera	031	000	004	000	000	000	001	000	008	006	000	000	3.46	0.0	0.36	0.0	0.0	0.0	0.03	0.0	0.68	3.59	0.0	0.0
vi	7.775	0.000	0.450	0.000	0.000	0.000	0.150	0.000	2.160	1.620	0.000	0.000	30.80	0.0	1.84	0.0	0.0	0.0	0.53	0.0	9.61	14.34	0.0	0.0
si:colour coat	072	112	069	002	000	000	120	003	151	017	002	000	12.68	10.42	6.13	0.34	0.0	0.0	6.23	0.60	12.88	10.18	0.24	0.0
vi	0.980	1.200	0.400	0.050	0.000	0.000	0.325	0.065	0.850	0.350	0.025	0.000	3.88	8.12	1.64	0.52	0.0	0.0	1.14	0.56	3.78	3.10	0.30	0.0
si:white	142	241	030	052	012	032	203	015	034	030	068	000	25.00	22.42	2.66	14.13	12.12	7.79	10.67	3.16	2.90	17.96	8.18	0.0
vi	2.350	2.125	0.650	0.800	0.350	0.475	2.825	0.395	0.385	1.950	0.500	0.000	9.31	14.38	2.66	8.28	8.14	7.51	9.90	3.37	1.71	17.26	5.92	0.0
si:marterium	001	005	012	000	000	003	002	003	003	008	001	000	0.13	0.47	0.36	0.0	0.0	0.73	0.10	0.63	0.43	4.79	0.12	0.0
vi	0.325	1.050	1.600	0.000	0.000	0.100	0.250	0.145	0.350	1.200	0.100	0.000	1.29	7.11	6.55	0.0	0.0	1.58	0.88	1.24	1.56	10.62	1.18	0.0
si:micen dusted	000	027	000	000	000	000	001	000	009	000	000	000	0.0	2.51	0.0	0.0	0.0	0.0	0.05	0.0	0.76	0.0	0.0	0.0
vi	0.000	0.550	0.000	0.000	0.000	0.000	0.010	0.000	0.225	0.000	0.000	0.000	0.0	3.72	0.0	0.0	0.0	0.0	0.035	0.0	1.00	0.0	0.0	0.0
si:grey	139	303	401	177	044	130	1026	154	192	031	566	255	24.47	28.19	35.61	48.10	44.44	31.43	53.41	32.49	16.38	18.16	68.11	69.10
vi	4.775	2.300	6.100	4.150	1.350	1.350	11.876	2.870	2.835	1.075	4.800	3.050	18.91	15.57	24.97	42.96	33.72	21.34	41.64	24.51	12.41	9.52	56.80	59.80
si:orange beaker	000	000	000	000	000	000	000	000	000	000	000	000	0.0	0.0	0.0	4.62	1.01	0.0	0.0	0.0	12.46	0.0	0.0	0.0
vi	0.000	0.000	0.000	0.500	0.025	0.000	0.000	0.000	0.860	0.000	0.000	0.000	0.0	0.0	0.0	5.18	0.58	0.0	0.0	0.0	3.83	0.0	0.0	0.0
si:imitation manian	000	001	000	000	000	000	000	000	000	000	000	000	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
vi	0.000	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
si:painted	000	011	002	000	000	000	018	000	000	001	000	000	0.0	1.02	0.18	0.0	0.0	0.0	0.94	0.0	0.0	0.0	0.0	0.0
vi	0.000	0.125	0.050	0.000	0.000	0.000	0.460	0.000	0.000	0.025	0.000	0.000	0.0	0.85	0.20	0.0	0.0	0.0	1.61	0.0	0.0	0.0	0.0	0.0
si:mic. fine	000	000	004	000	000	000	028	000	043	001	002	000	0.0	0.0	0.36	0.0	0.0	0.0	1.46	0.0	3.67	0.60	0.24	0.0
vi	0.000	0.000	0.050	0.000	0.000	0.000	0.280	0.000	0.638	0.050	0.050	0.000	0.0	0.0	0.20	0.0	0.0	0.0	0.98	0.0	2.84	0.44	0.59	0.0
si:black burnished	047	225	118	011	004	013	012	000	089	035	011	005	8.27	20.93	10.48	2.99	4.04	3.16	0.62	0.0	7.59	20.96	1.32	1.36
vi	1.410	3.350	1.675	0.500	0.150	0.275	0.500	0.000	1.360	0.950	0.175	0.050	5.59	2.67	6.86	5.18	3.49	4.35	1.75	0.0	6.05	8.41	2.07	0.98
si:graped	017	032	049	064	013	093	267	189	258	008	080	049	2.99	2.98	4.35	17.39	13.13	22.63	13.90	39.87	22.01	4.79	9.63	13.28
vi	1.910	1.550	1.050	2.350	1.250	1.875	6.560	4.220	9.655	1.950	1.050	0.800	7.57	10.49	4.30	24.33	19.07	29.64	23.00	34.04	42.96	17.26	12.43	15.69
si:'Helgie'	000	000	004	000	000	000	001	000	007	000	000	000	0.0	0.0	0.36	0.0	0.0	0.0	0.05	0.0	0.60	0.0	0.0	0.0
vi	0.000	0.000	0.100	0.000	0.000	0.000	0.025	0.000	0.375	0.000	0.000	0.000	0.0	0.0	0.41	0.0	0.0	0.0	0.09	0.0	1.67	0.0	0.0	0.0
si:calcareous	000	078	173	004	008	066	046	094	132	022	072	003	0.0	7.26	15.36	1.09	8.08	16.04	2.39	19.83	11.26	13.17	8.66	0.80
vi	0.000	1.800	3.350	0.200	0.450	1.075	0.510	3.645	1.500	1.950	1.525	0.050	0.0	12.18	21.90	2.07	10.47	17.00	1.79	31.13	6.67	17.26	18.03	0.98
si:sandy	017	030	233	023	014	046	110	005	050	005	029	057	2.99	2.79	20.69	6.25	14.14	11.19	5.73	1.05	4.27	2.99	3.49	15.45
vi	0.310	0.550	6.500	0.500	0.600	0.650	3.695	0.065	0.885	0.075	0.225	1.150	1.23	3.72	26.61	5.16	13.95	10.28	12.96	0.56	3.95	0.66	1.66	2.55
si:mic. coarse	000	001	000	000	000	008	022	001	004	000	000	000	0.0	0.09	0.0	0.0	0.0	1.05	1.15	0.21	0.34	0.0	0.0	0.0
vi	0.000	0.025	0.000	0.000	0.000	0.225	0.075	0.050	0.085	0.000	0.000	0.000	0.0	0.17	0.0	0.0	0.0	3.56	0.56	0.45	0.38	0.0	0.0	0.0
si:Total	568	1075	1126	368	099	411	1921	474	1172	167	831	369	25.245	14.775	24.425	9.660	4.300	6.325	28.521	11.710	22.475	11.295	8.450	5.100
vi:Total																								

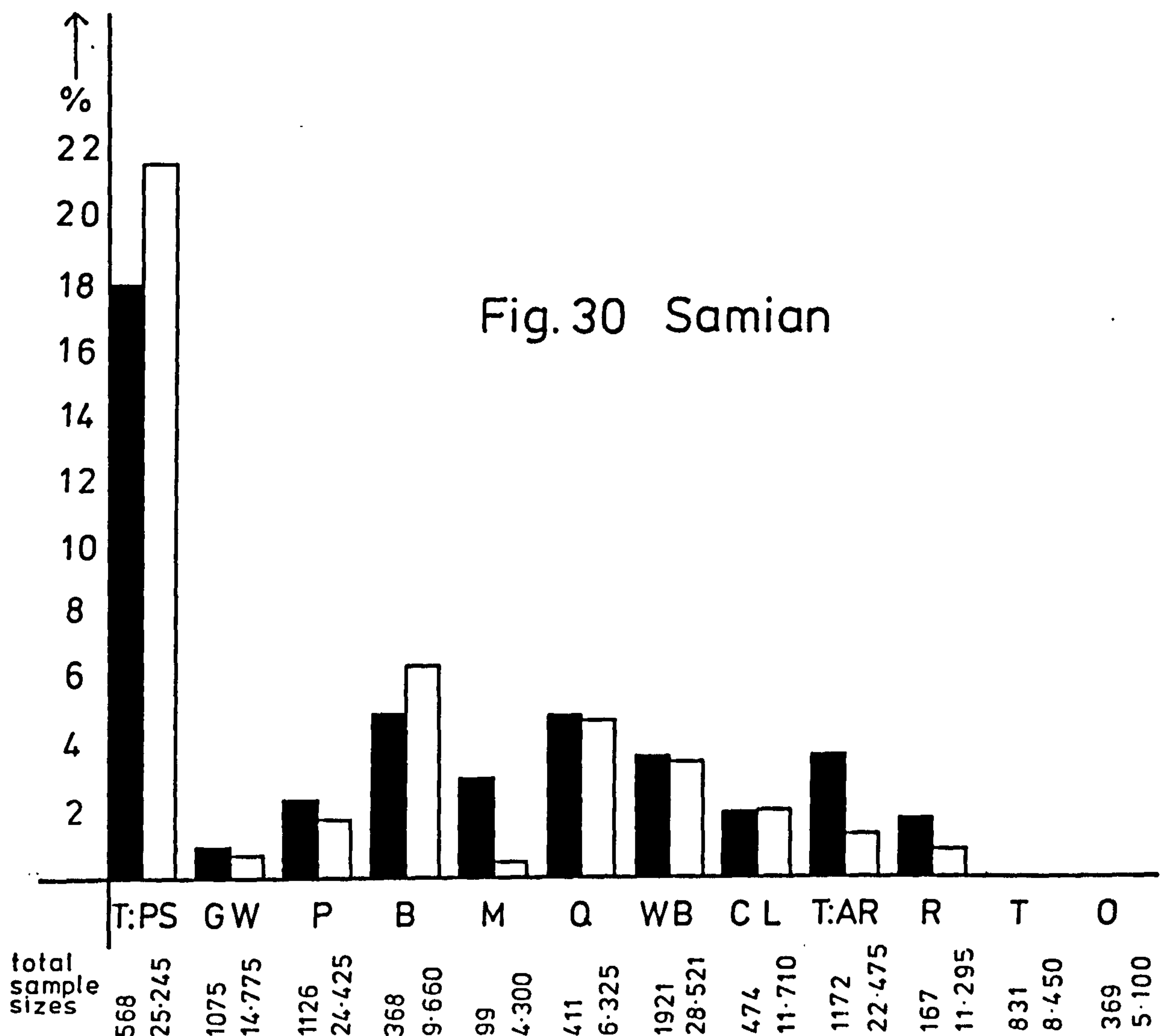
Fig. 29 The raw data

The data converted to percentages

Fig. 44
Key to Figs 30-43



T:PS	Towcester: Park Street	WB	Wood Burcote
GW	Great Weldon	CL	Clay Lane
P	Piddington	T:AR	Towcester: Alchester Road
B	Brixworth	R	Ringstead
M	Mileoak	T	Thorplands
Q	Quinton	O	Overstone

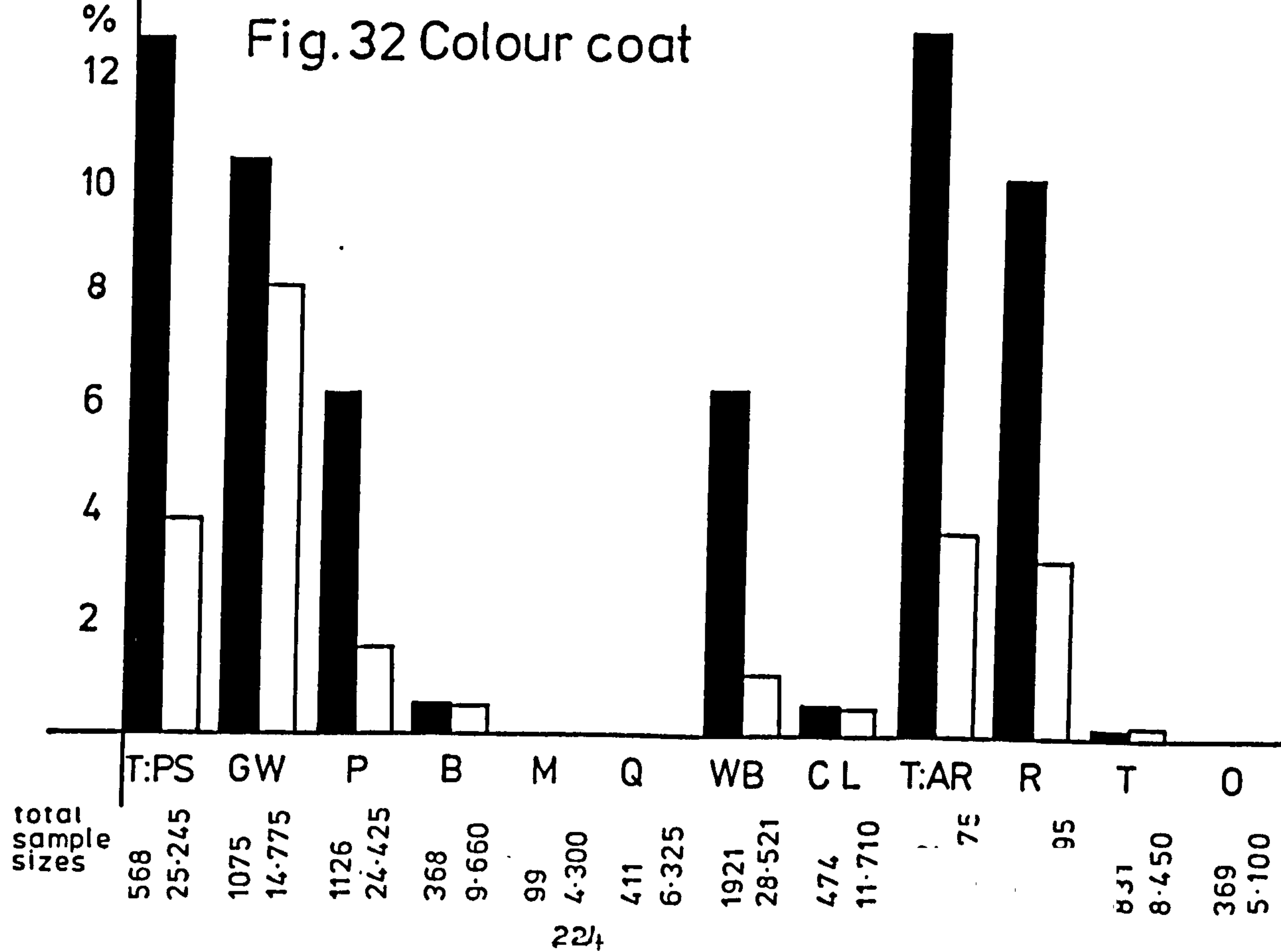
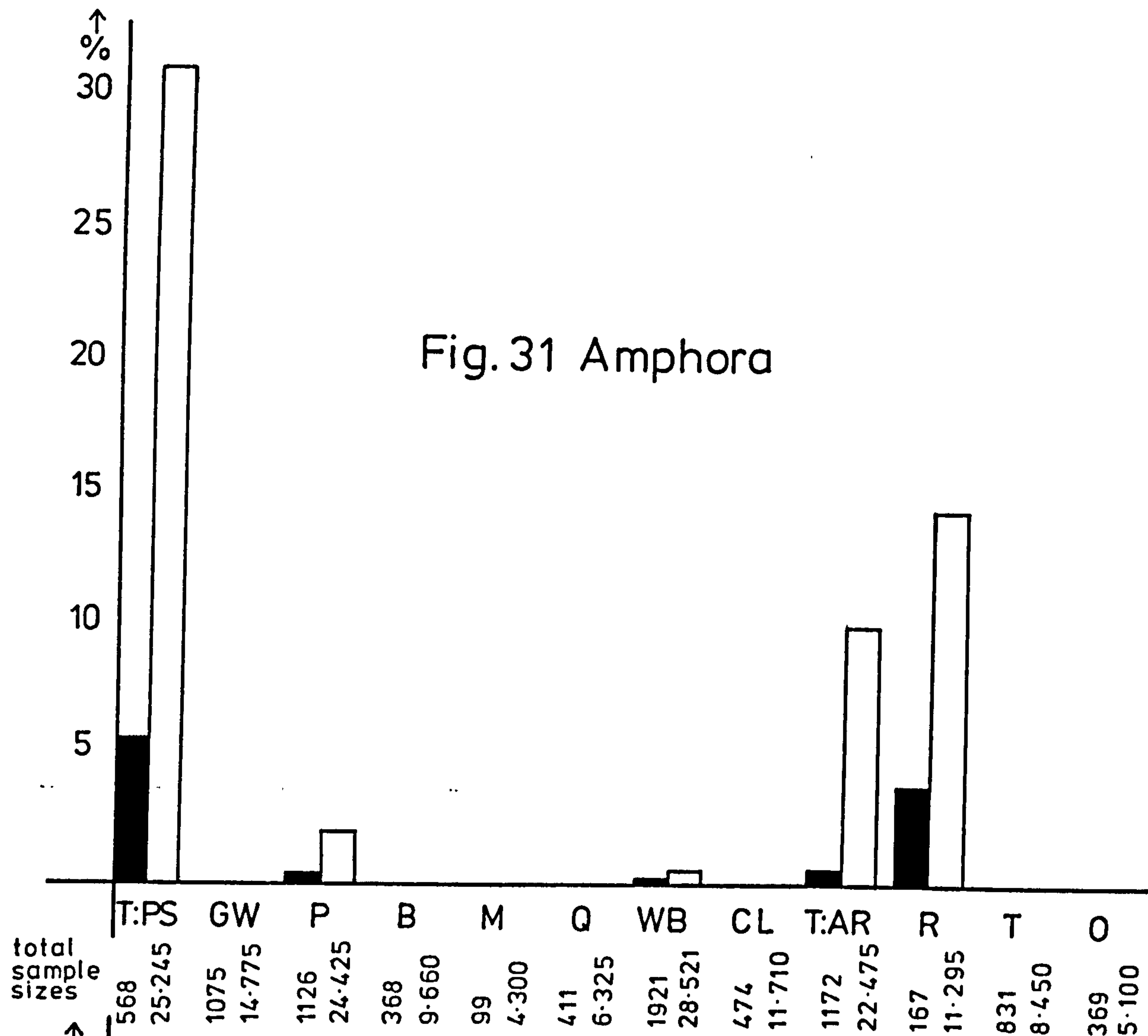


4.87%. If Mileoak is ignored or moved further up the hierarchy for the reasons given above, there is a slight but distinct favouring by the samian on the 'middle-range' sites. Whether or not this is significant as yet cannot be said. The large difference between the one town site and the eleven rural sites may suggest that it is not.

Since the vessel forms of samian are the only ones to be generally adequately recorded out of all the wares from an excavation, a table and graph indicating the range and numbers of different second century forms found from each site were drawn (Fig. 45 and Fig. 46). These include all published unstratified and residual second century samian vessel forms as well as those from second century contexts (see also Appendix B). Clearly the likelihood of heirloom survival, particularly on the poorer sites cannot be ruled out (see hypothesis V below). Even so it is interesting how the overall range of vessel types seems to hardly vary very widely from the richest site (23 different forms from Towcester, Park Street) to the poorest (14 different forms from Overstone).

Amphora - Fig. 31

This class of vessel (rather than ware or fabric) had a sporadic occurrence. The town site, as with samian had by far the most, but even a relatively low status site such as Ringstead had 3.54% by sherd count. At least on the rural sites, social status did not seem to affect the distribution of amphorae, although, again, if Mileoak is ignored or moved further up the hierarchy, there is an apparent negative bias towards the 'middle-range' sites. Thus



neither Brixworth, Mileoak nor Quinton 'A' have amphorae, nor Clay Lane for that matter. An examination of the specialist pottery reports produced for each site, indicates a complete absence of second century amphorae from anywhere on these sites (see Appendix B for summary of specialist reports).

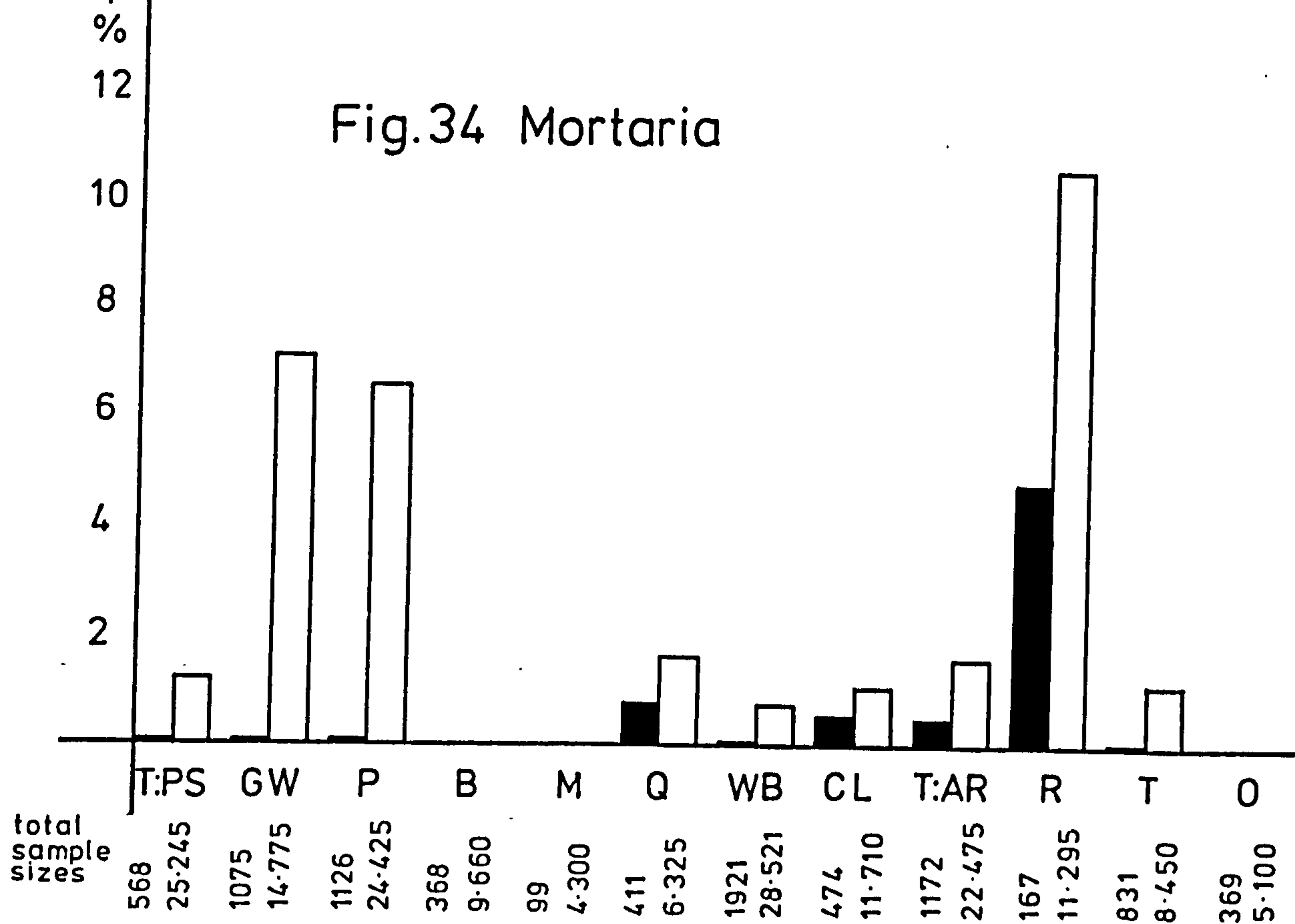
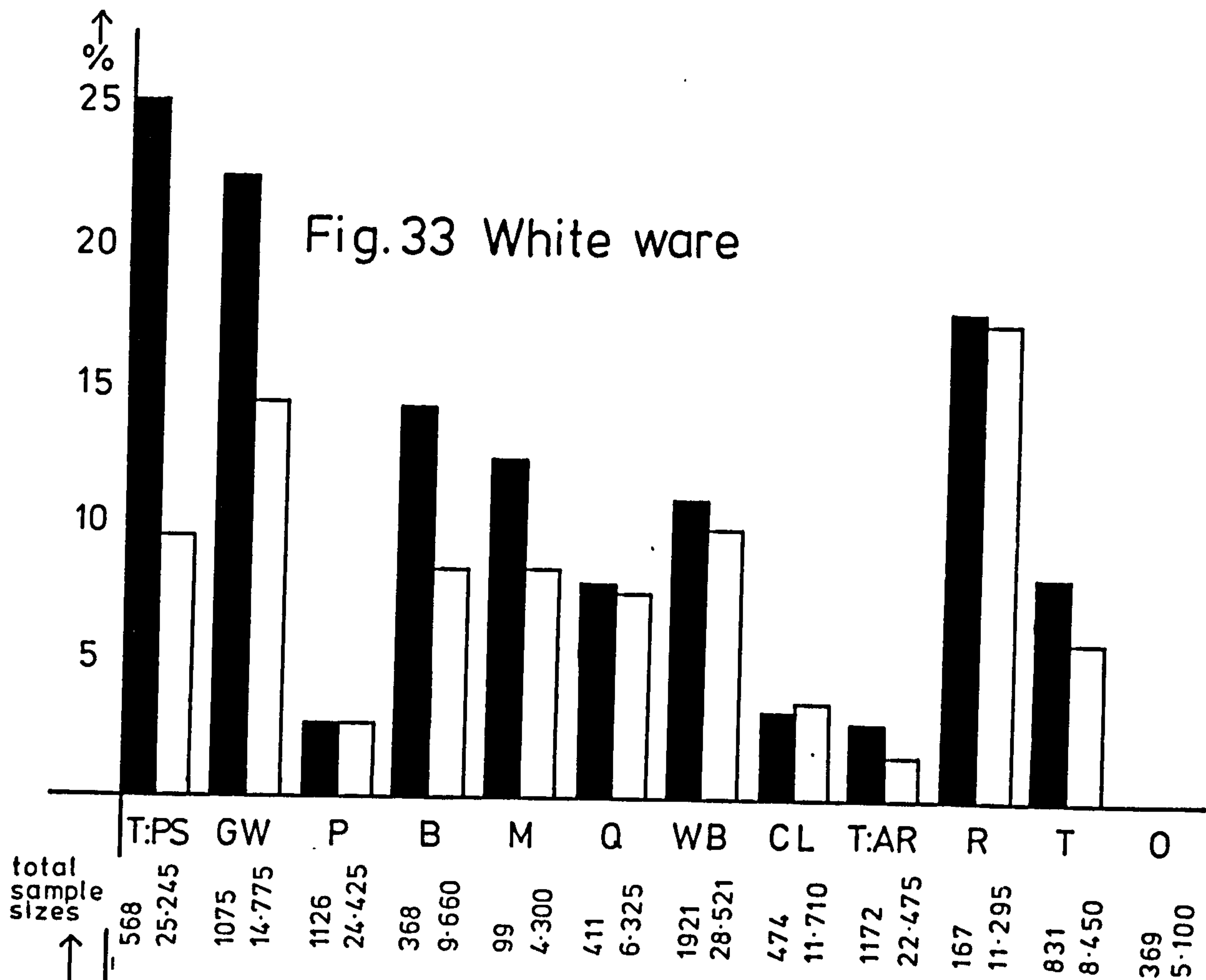
Colour coated wares - Fig. 32

These wares comprise the final wares in the 'luxury' category. Unlike samian and amphorae, the town site did not have grossly differing amounts of this ware. The two poorest sites had little or no colour coat as indicated by the model. However, the same could be said for 'middle-range' sites, Brixworth, Mileoak, Quinton 'A' and Clay Lane. The richer sites, Great Weldon and Piddington, had relatively large amounts as predicted, but then so did Towcester, Alchester Road and Ringstead, two fairly low status sites. Of the three 'luxury' wares, colour coated wares seem to 'fit' the proposed model the least well. (See Appendix B for summary of specialist reports).

The 'regional speciality' wares

White (flagon) wares - Fig. 33

The percentages for the town site are somewhat ambiguous since the difference between that of weight and sherd count is some 15.69%. It does seem that, though the richer sites in general have more white wares than the poorer ones, there is in fact little difference between them and the result is further complicated by the small amounts, 2.66% by weight, on the rich site, Piddington, and the much larger amount, 17.26% by weight on



the much poorer site, Ringstead.

Mortaria - Fig. 34

Ringstead is again very much in contradiction with the proposed model I. Very few mortaria sherds were found on any of the sites, even the richest. Great Weldon had 0.47% by sherd count and Piddington, 0.36% by sherd count. The town site had even less, 0.13% by sherd count.

Mica-dusted and painted wares - Figs. 35 and 36

The richest rural site, Great Weldon has the most mica-dusted wares but the overall amounts for these and the painted wares are really too small to make any significant contribution to testing the model.

The 'coarse' wares

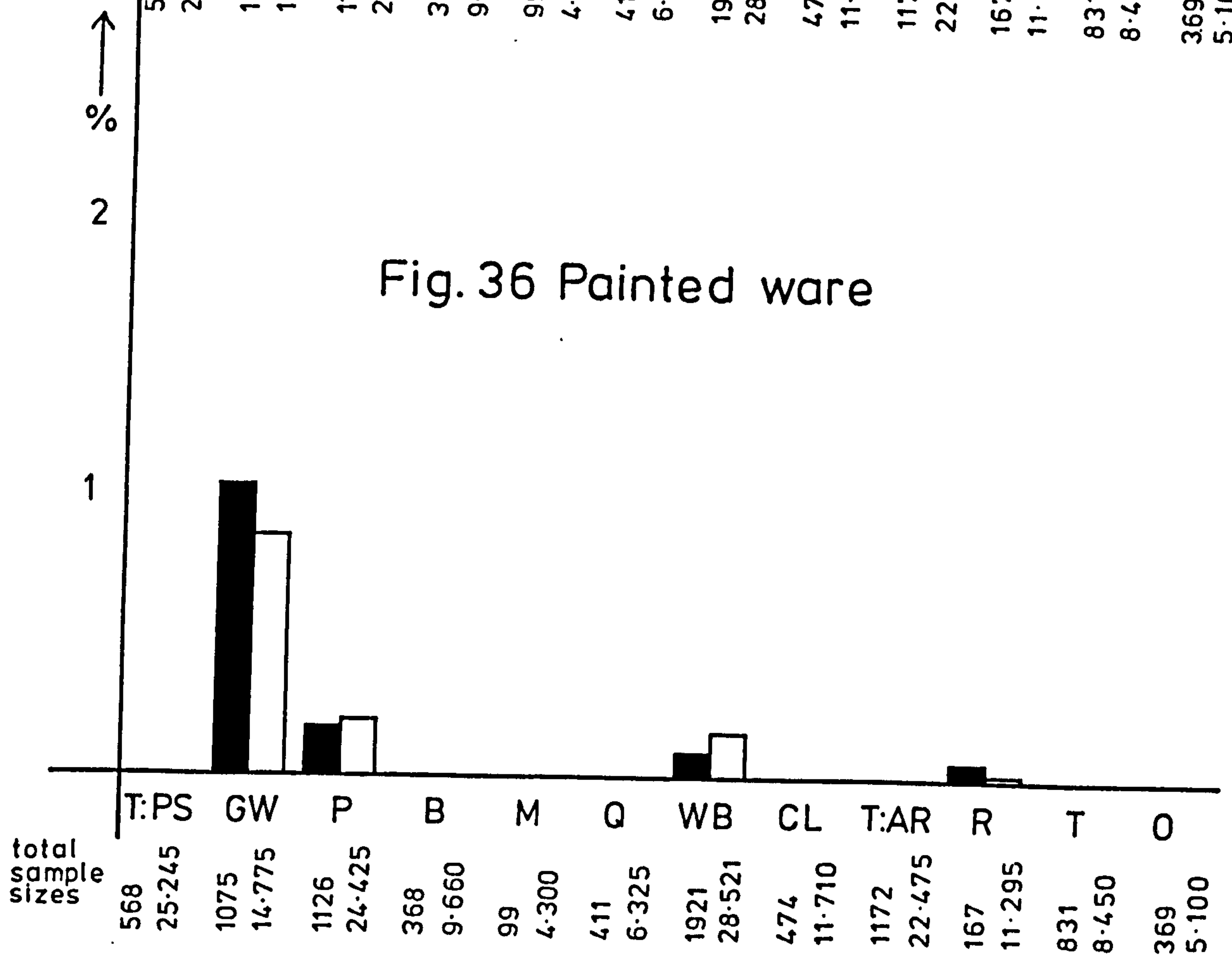
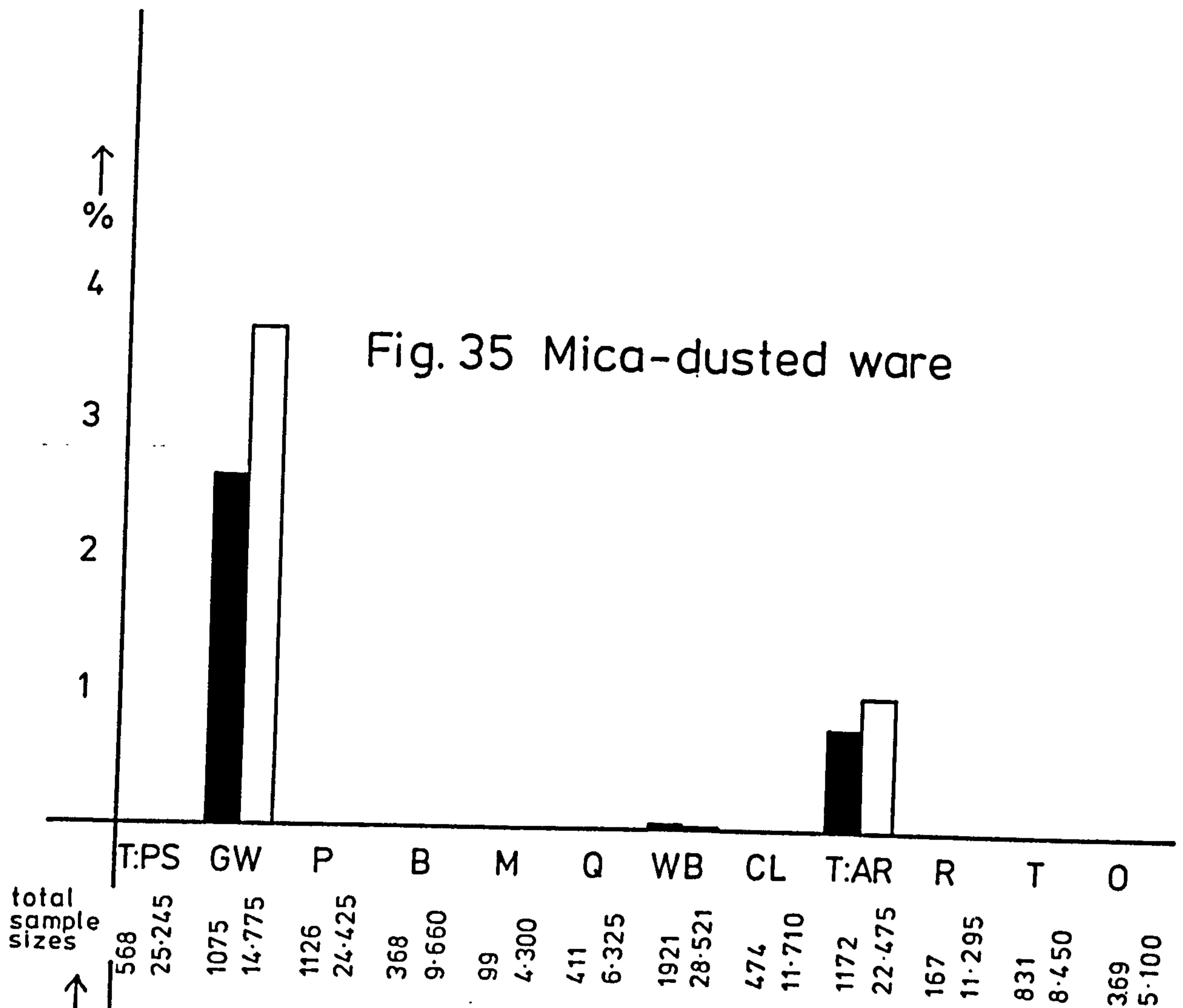
Grey wares - Fig. 37

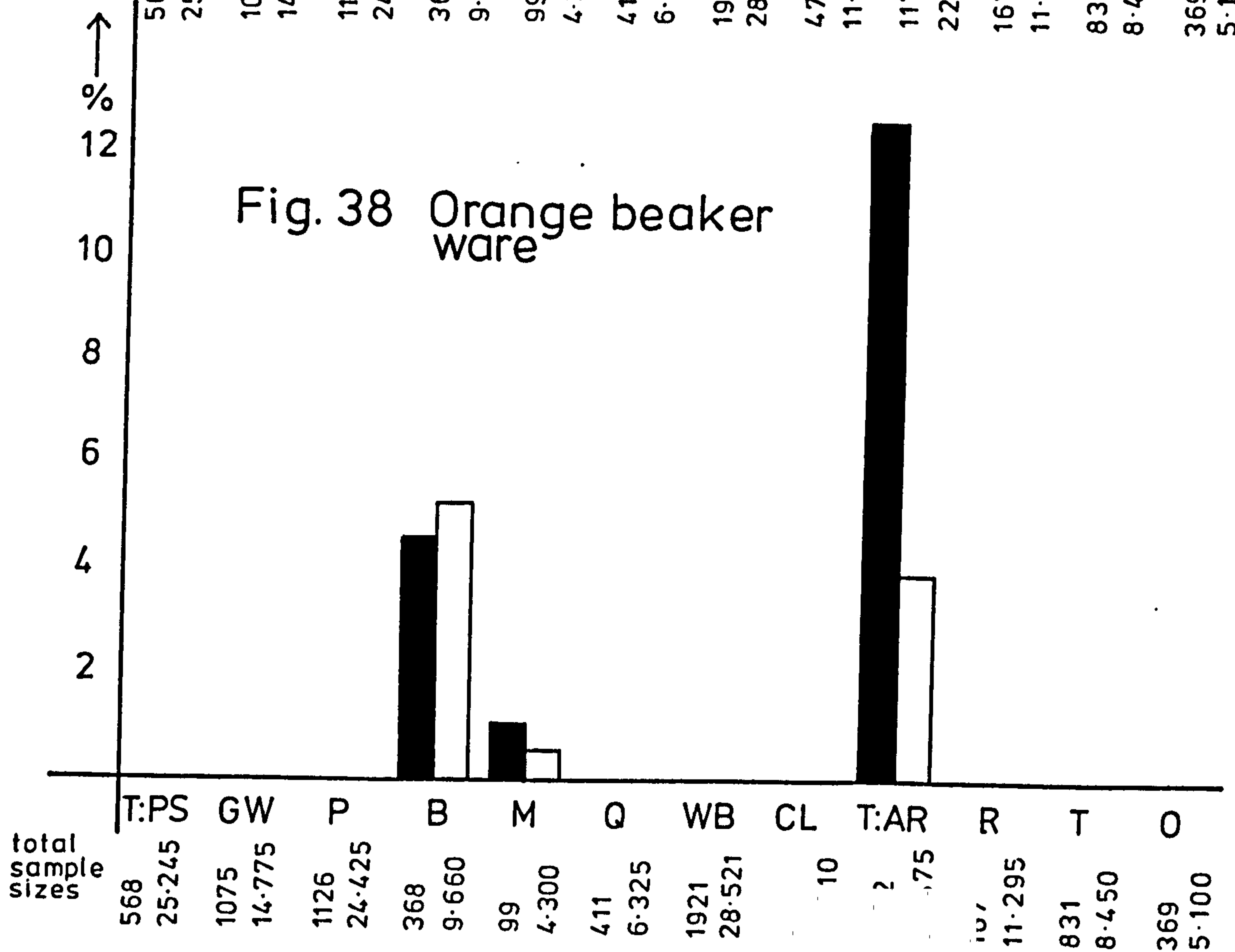
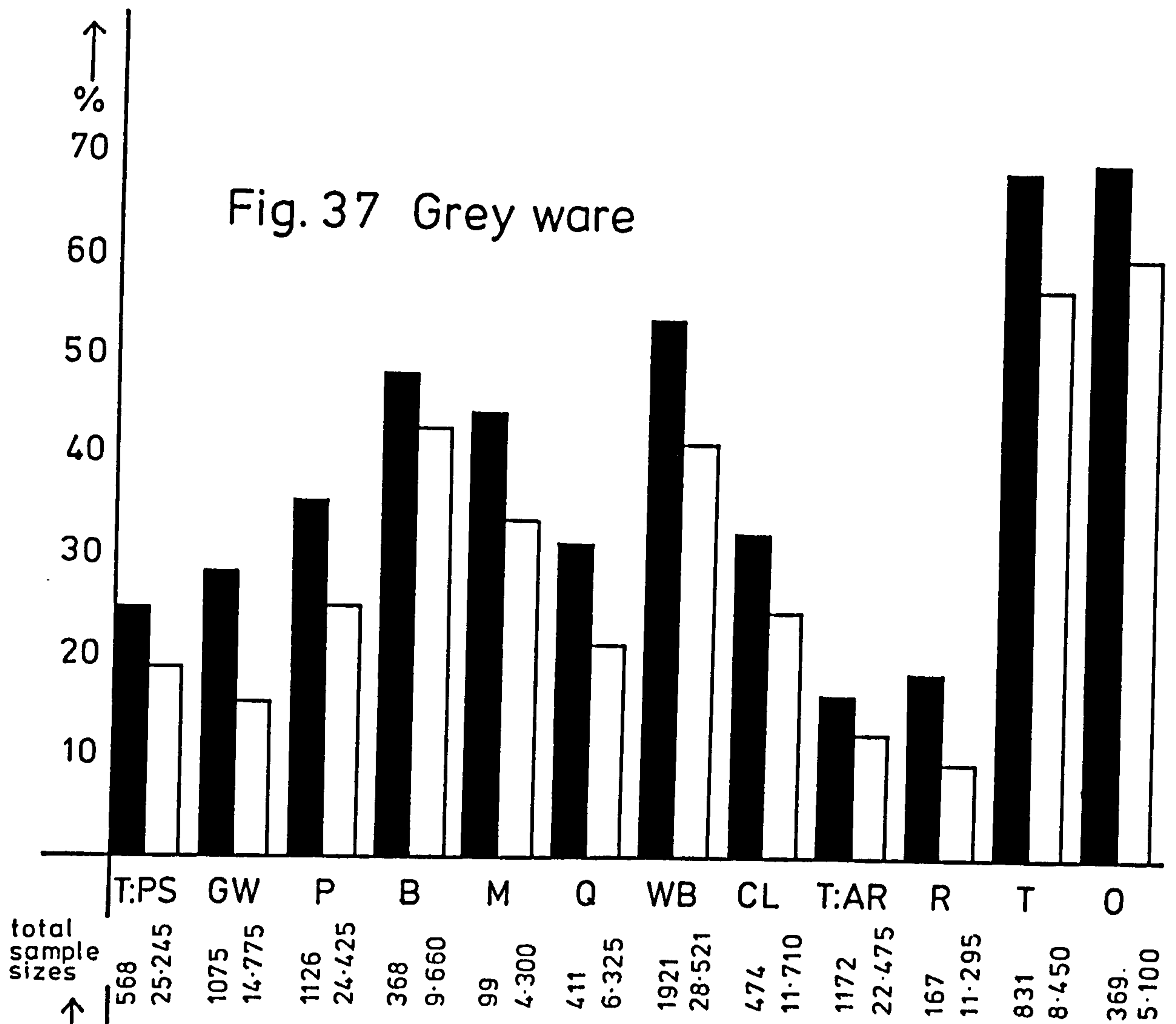
This will be included in the 'coarse' ware category for the moment inspite of reservations expressed above and by Woodfield (Woodfield and Brown 1983).

The grey wares support the model I in so far as the richest sites have far less grey ware than the poorest sites. However, Towcester : Alchester Road and Ringstead provide the most obvious exceptions to this pattern.

Orange beaker wares - Fig. 38

Since these are probably not 'kitchen' wares as such, these might





also be included in the 'specialist' section. The occurrence of these wares, like amphorae is sporadic. Neither the richest nor the poorest sites have this ware while 'middle-range' sites like Mileoak and Brixworth do. Towcester : Alchester Road is again exceptional in having, at least by sherd count, by far the largest amount (12.46%). The model I thus receives no support from this ware.

Black burnished wares - Fig. 39

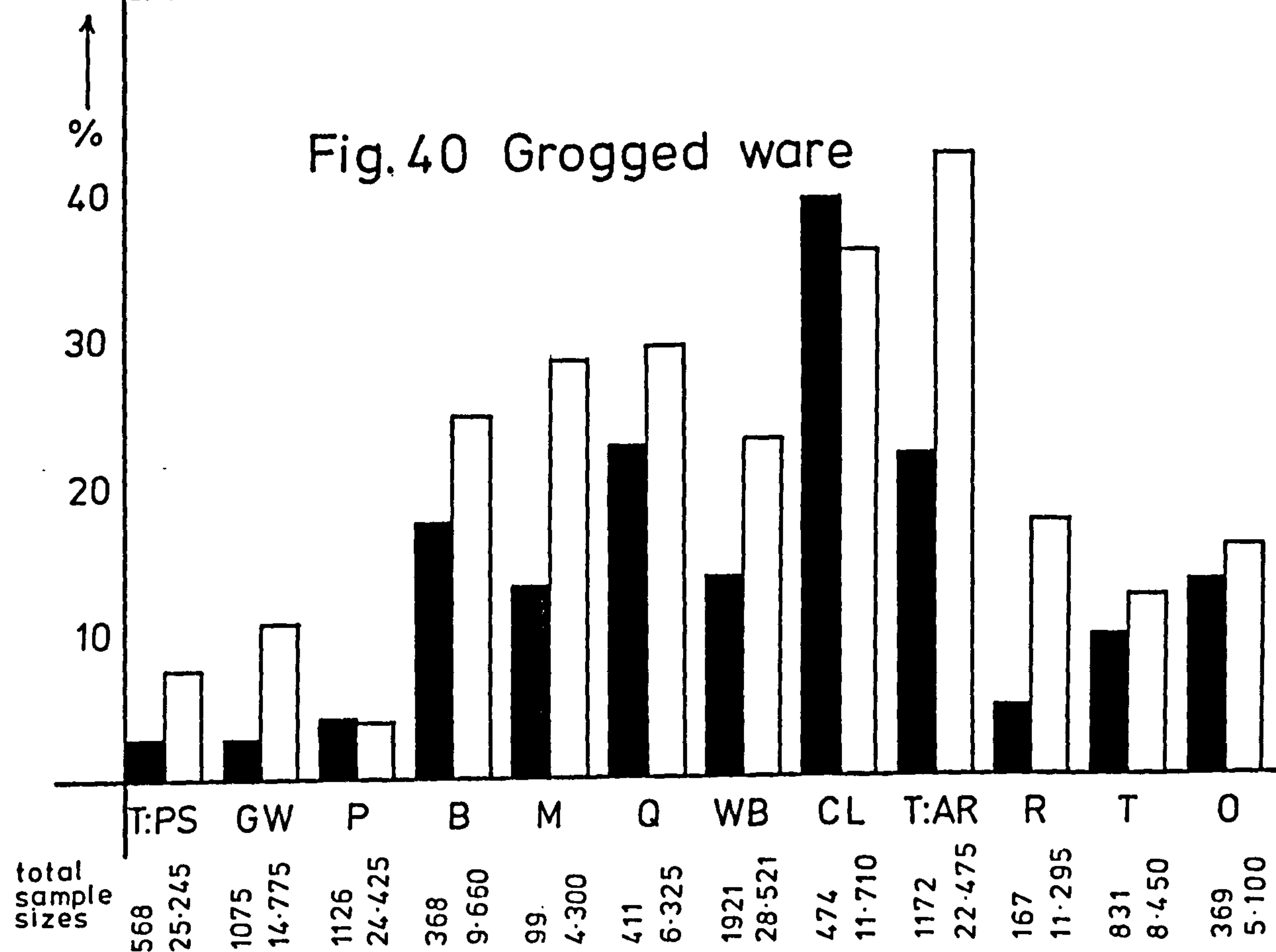
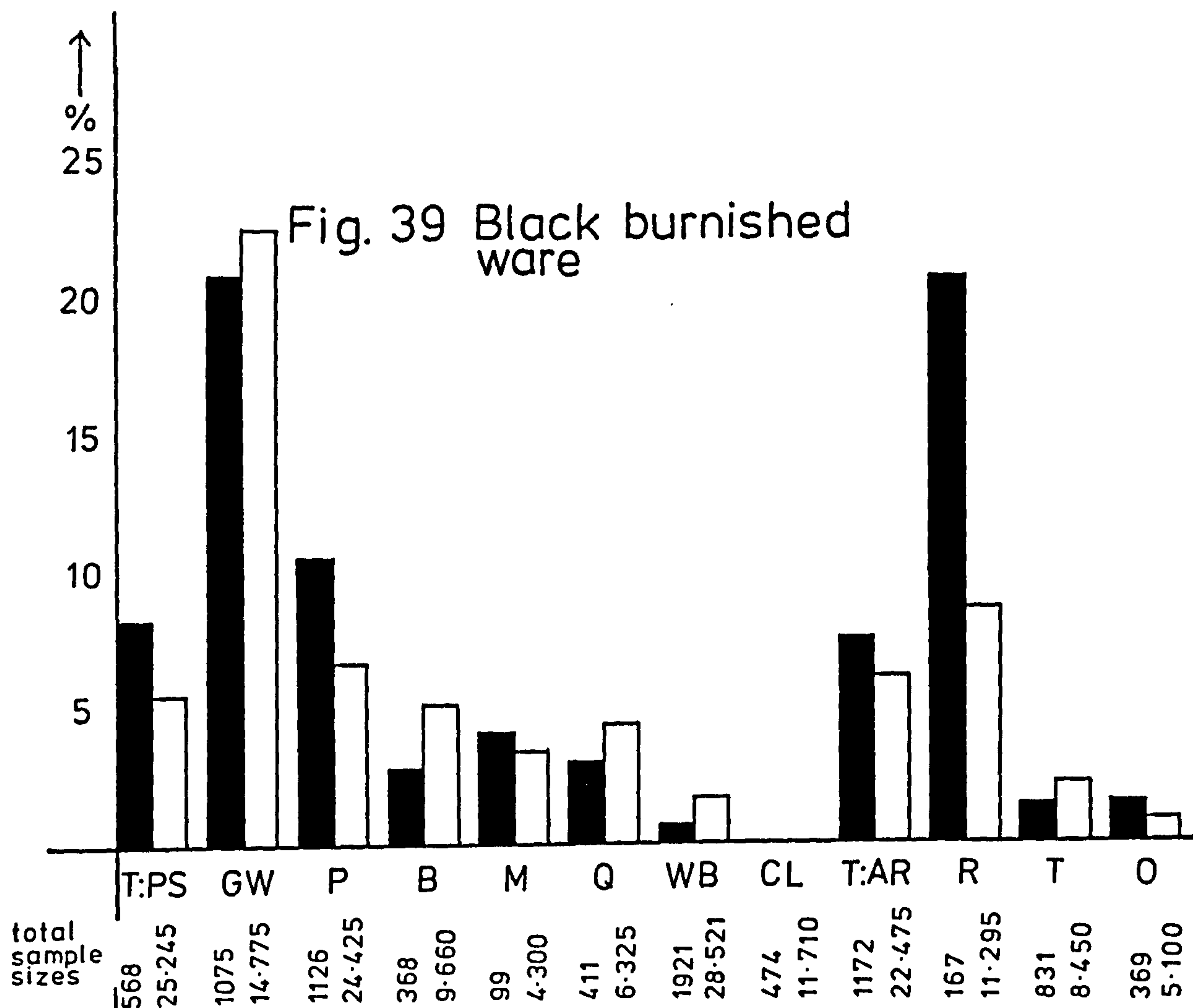
The bar chart for these wares presents a complex distribution between the sites. The two poorest sites, as proposed by model I have relatively small (but not the smallest) amounts, while the richest rural site has a relatively large amount. However, neither the town site, nor Towcester : Alchester Road and Ringstead fit the proposed model I. The 'middle-range' sites, Brixworth, Mileoak, Quinton 'A' and Clay Lane have a distinct dearth of this ware rather like the bar chart for the colour coated wares (Fig. 32).

Grogged wares - Fig. 40

This graph supports the model I only so far as that the richest sites have relatively small amounts of this ware. On the other hand, the poor sites also have only small quantities. It is in fact the 'middle-range' sites, Brixworth, Mileoak, Quinton 'A' and Clay Lane who have by far the largest amounts.

'Belgic' wares - Fig. 41

The overall amounts of these wares were so small that the graph



was not really considered to be significant. Towcester: Alchester Road had the largest percentages of this ware. Most sites had none at all.

Calcareous wares - Fig. 42

The 'middle-range' site Clay Lane had the largest quantities of these wares. The overall distribution seemed to follow no obvious pattern.

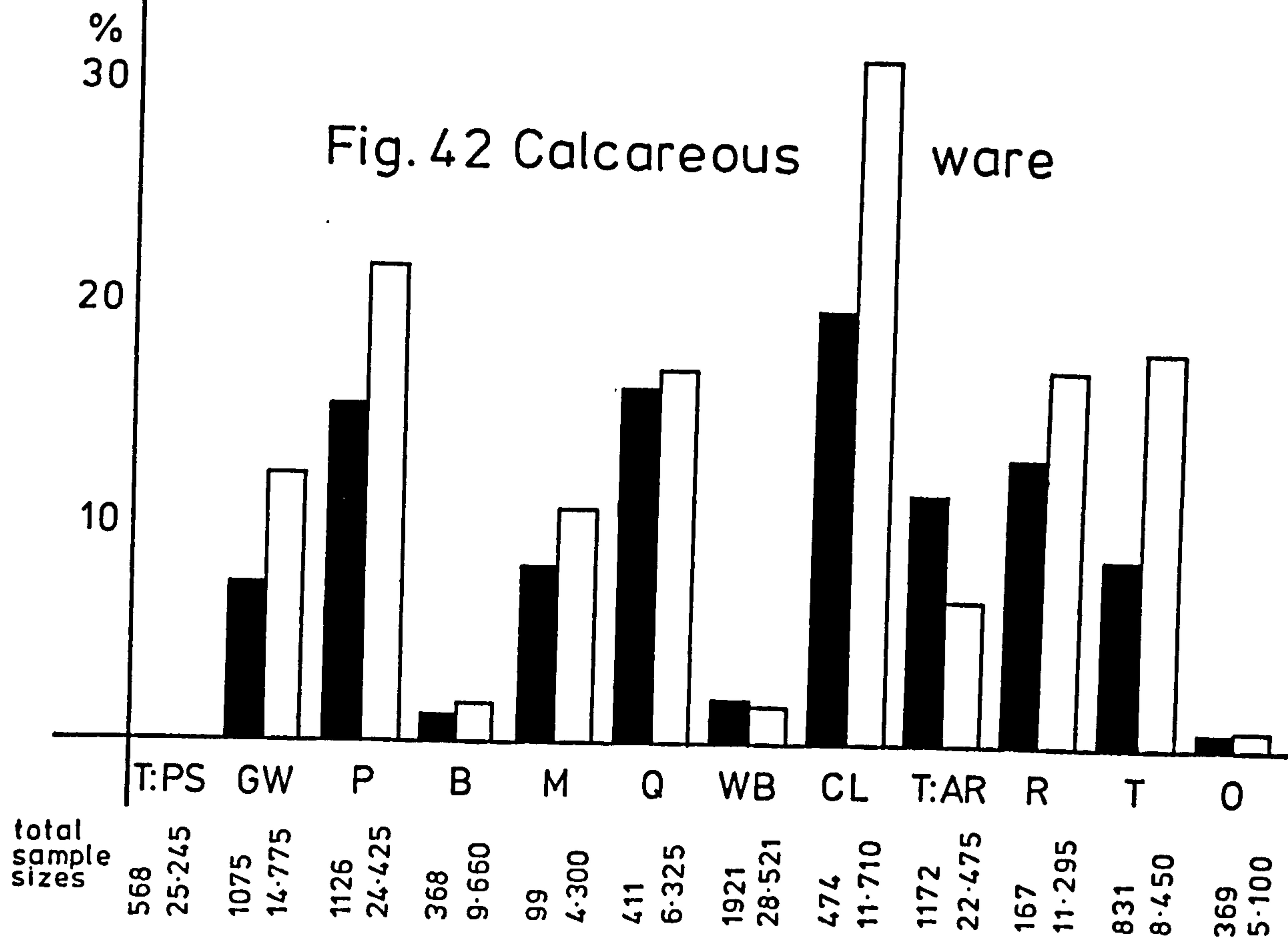
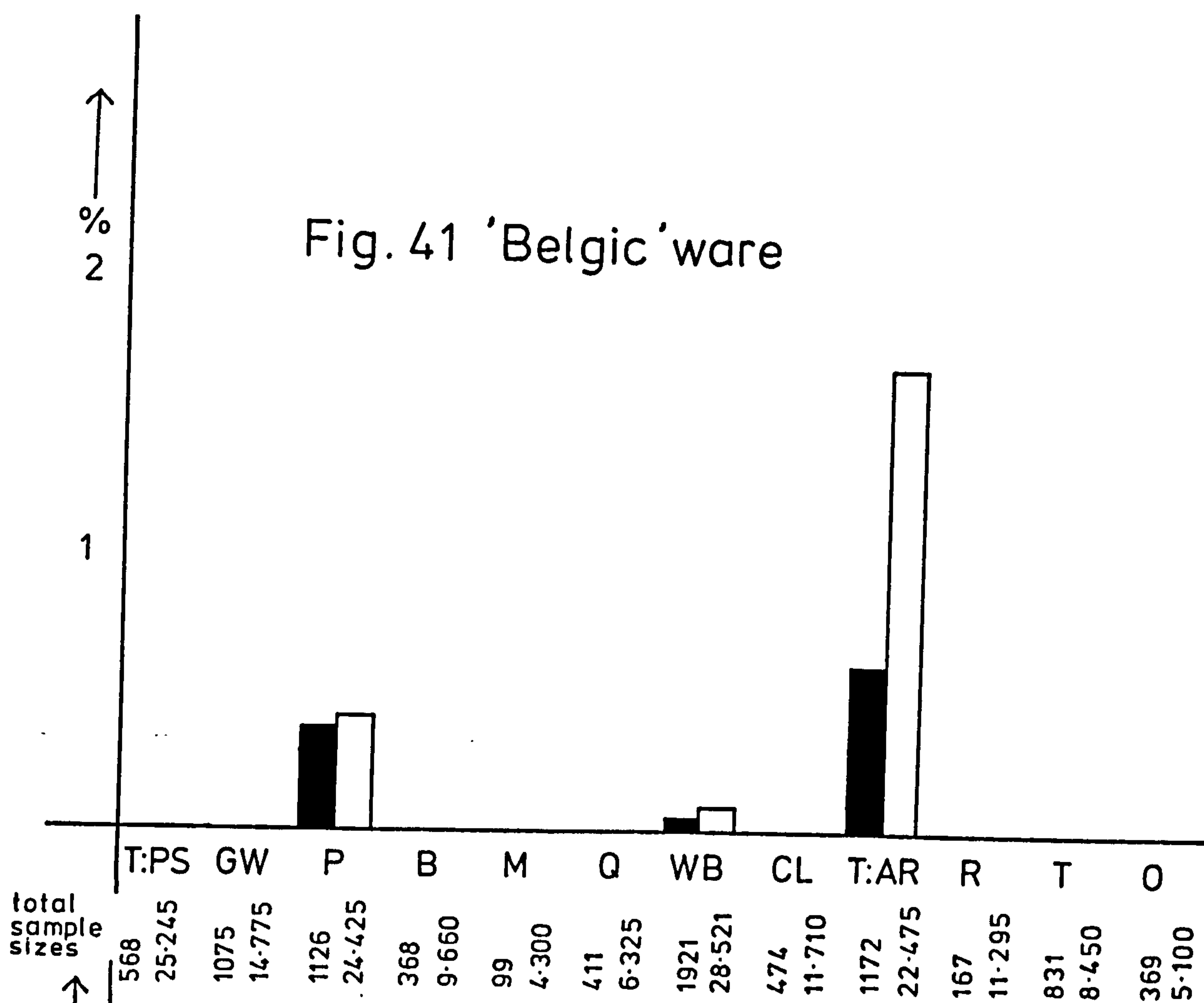
Sandy wares - Fig. 43

This graph supported the model I only in that the poorest site had far more sandy ware than the richest (town and rural). However, the next richest site, Piddington had a huge jump of 22.89% by weight while other ('middle-range') sites ran from 0.56% by weight for Clay Lane to 13.95% by weight for Mileoak.

* * * * *

The 'luxury' ware that most closely fitted the model was samian, if all rural sites in second century Northants may be termed very poor. Amphorae wares might also then be included as support. The 'regional speciality' wares did not come close to the model. Amongst the 'coarse' wares only grey (ambiguously 'coarse') bore any resemblance to the proposed model.

The complexity of the social stratification suggested by the independently assessed hierarchy is borne out by the most simple examination of the data. Even the gross dichotomy between town and rural site indicated by the samian is not entirely supported by other classes of ware, coarse or fine.



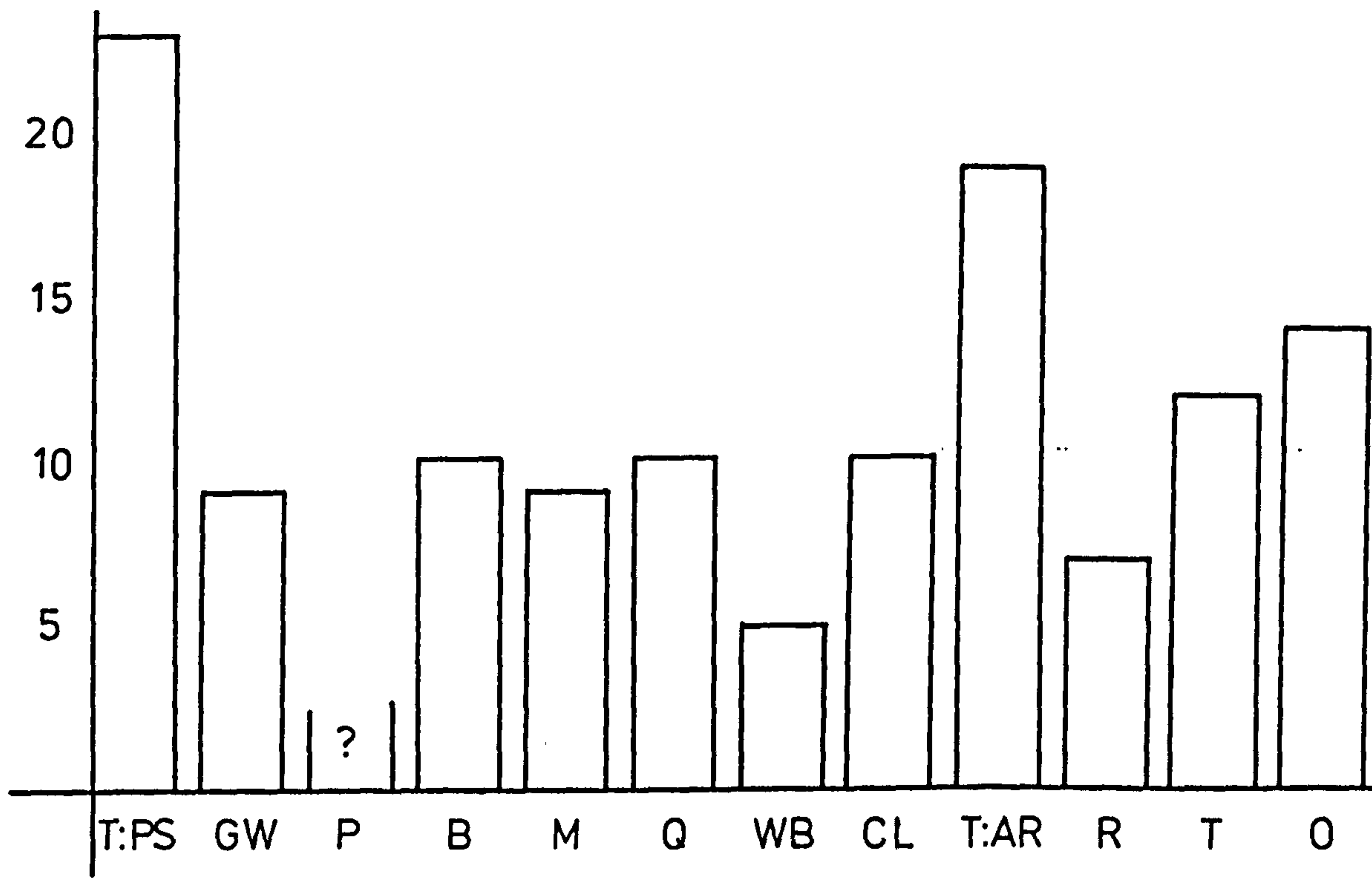
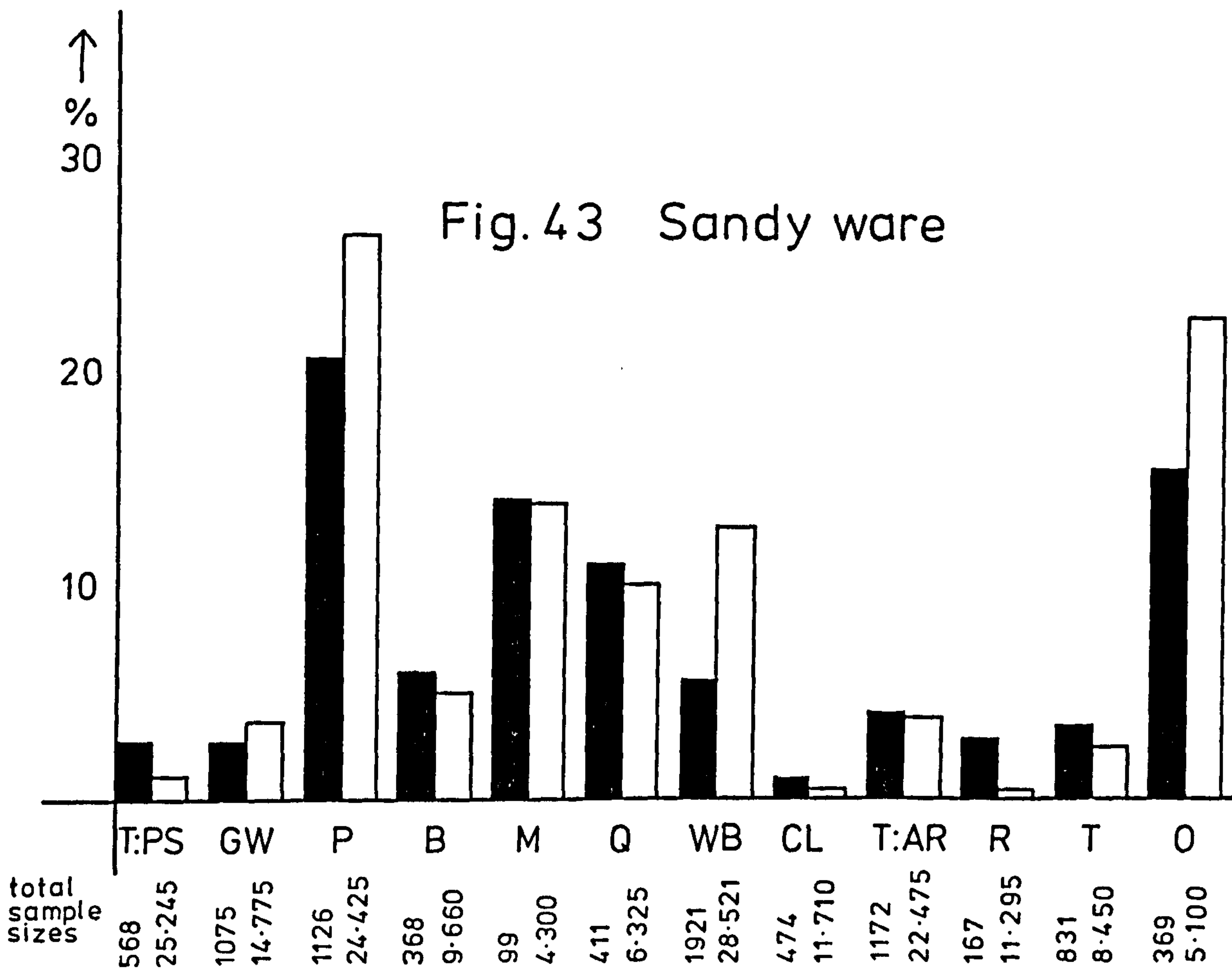


Fig. 46 Number of samian forms

Towcester: Park Street	Great Weldon	Piddington	Brixworth	Mileoak	Quinton	Wood Burcote	Clay Lane	Towcester: Alchester Road	Ringstead	Thorplands	Overstone	
												Dr 15 / 17
											?	Dr 15 / 17R
												Dr 18
											?	Dr 18R
												Dr 18/31
					?						?	Dr 18/31R
												Dr 23
												Dr 27
											?	Dr 29
											?	Dr 30
												Dr 31
												Dr 31R
												Dr 33
												Dr 33a
				?								Dr 35
				?							?	Dr 36
											?	Dr 37
												Dr 38
			?									Dr 42
												Dr 44
			?									Dr 45
												Dr 46
												Dr 67
												Dr 72
												Dr 79
												Dr 79R
												Dr 80
												Dr 81
												Ritterling 1
												Curle 11
												Curle 15
												Curle 21
											?	Curle 23
												Ludowici Tg
												Déchelette 74
												Walters 79
												Long-necked flagon
												Globular cup

Fig. 45 Range of samian forms

b) Model II

A completely 'primitivist' hypothesis may thus be ruled out, and a modified one substituted and retested. Since no new pottery data may be collected for further hypothesis testing (see Fig. 1) it must be assumed from now on that the primary data is adequate for most of the analysis that follows.

The modified hypothesis might be expressed as follows, still using the socio-economic framework of the primitivists:-

Roman society was complexly stratified and contained a broad range of classes (richer classes being numerically smaller) nearly all with access, though variable, to luxury trade networks.

This is illustrated in Fig. 47.

The mathematical model of this would be:-

Richer sites get more 'luxury' imports and more regional speciality wares than poorer sites and thus proportionately fewer coarse wares.

The bar charts have already shown fairly conclusively that this model is far too simplistic, but in order to demonstrate this on a single diagram a form of seriation graph (see Doran and Hodson 1975 Fig. 10.5) was produced attempting to reflect the mathematical model proposed above. (See Figs. 48 and 49). Clearly this proved almost impossible and the diagrams that

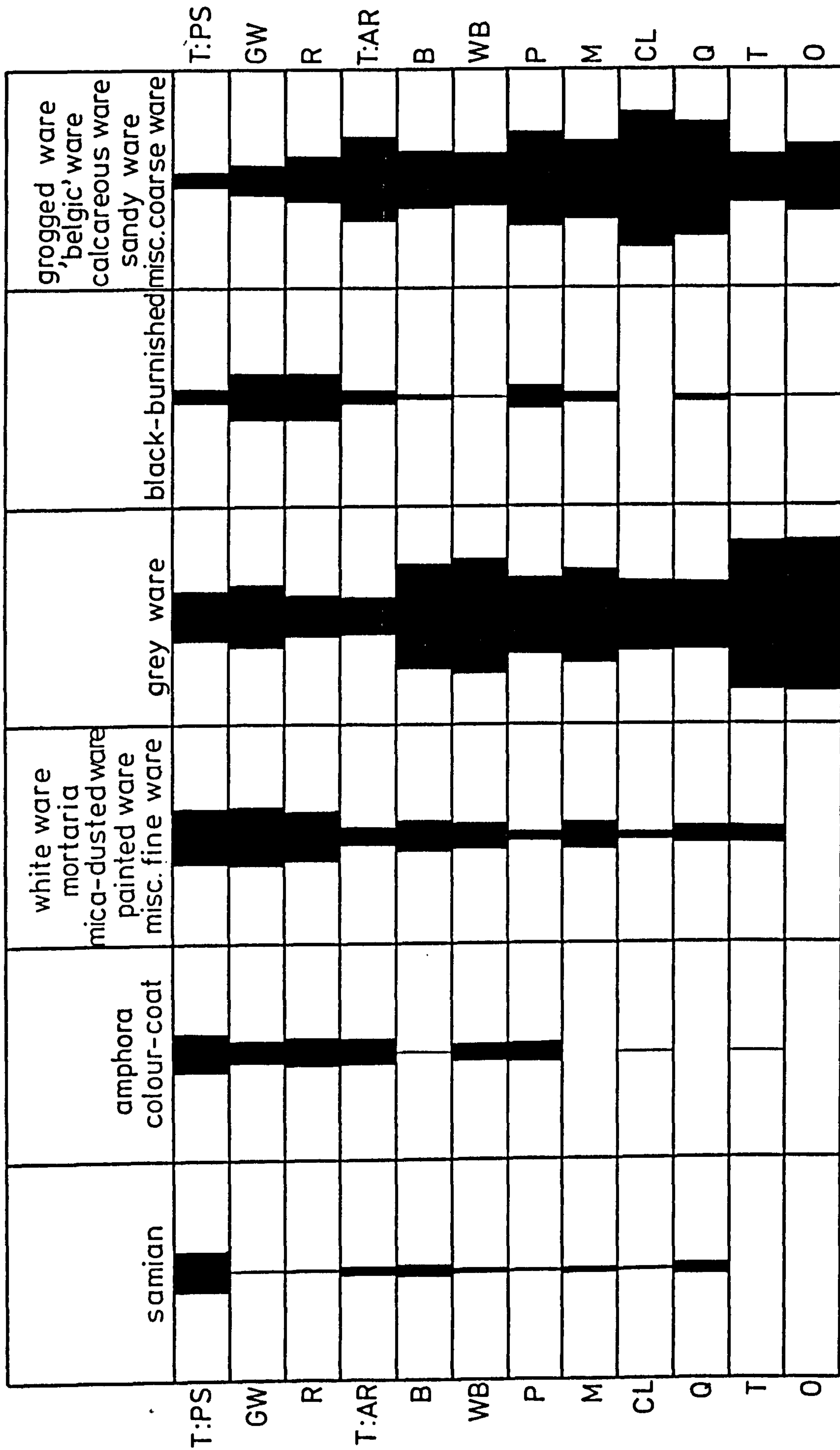
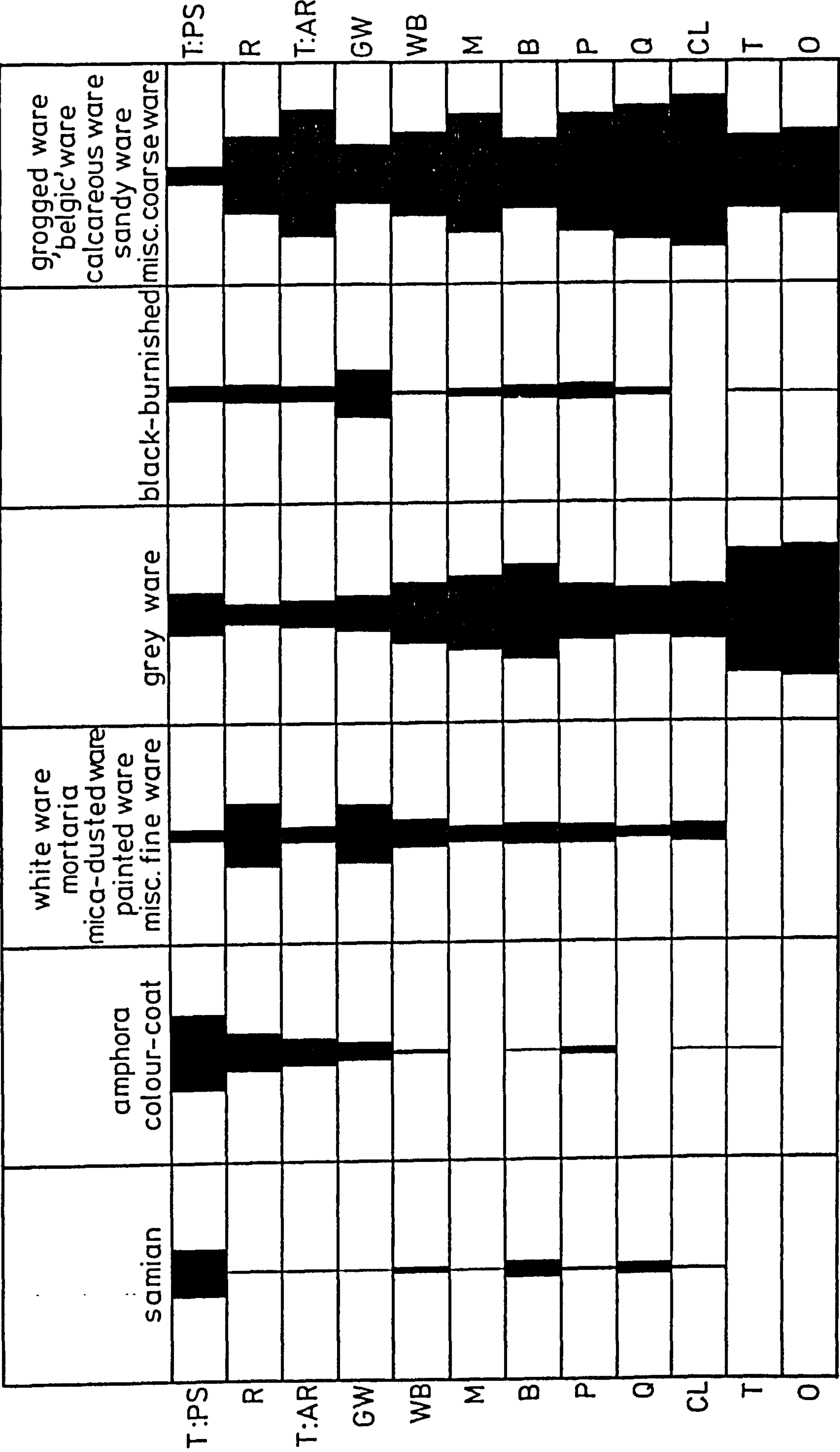


Fig.48 Seriation graph (sherds)



100 %

Fig.49 Seriation graph (weight)

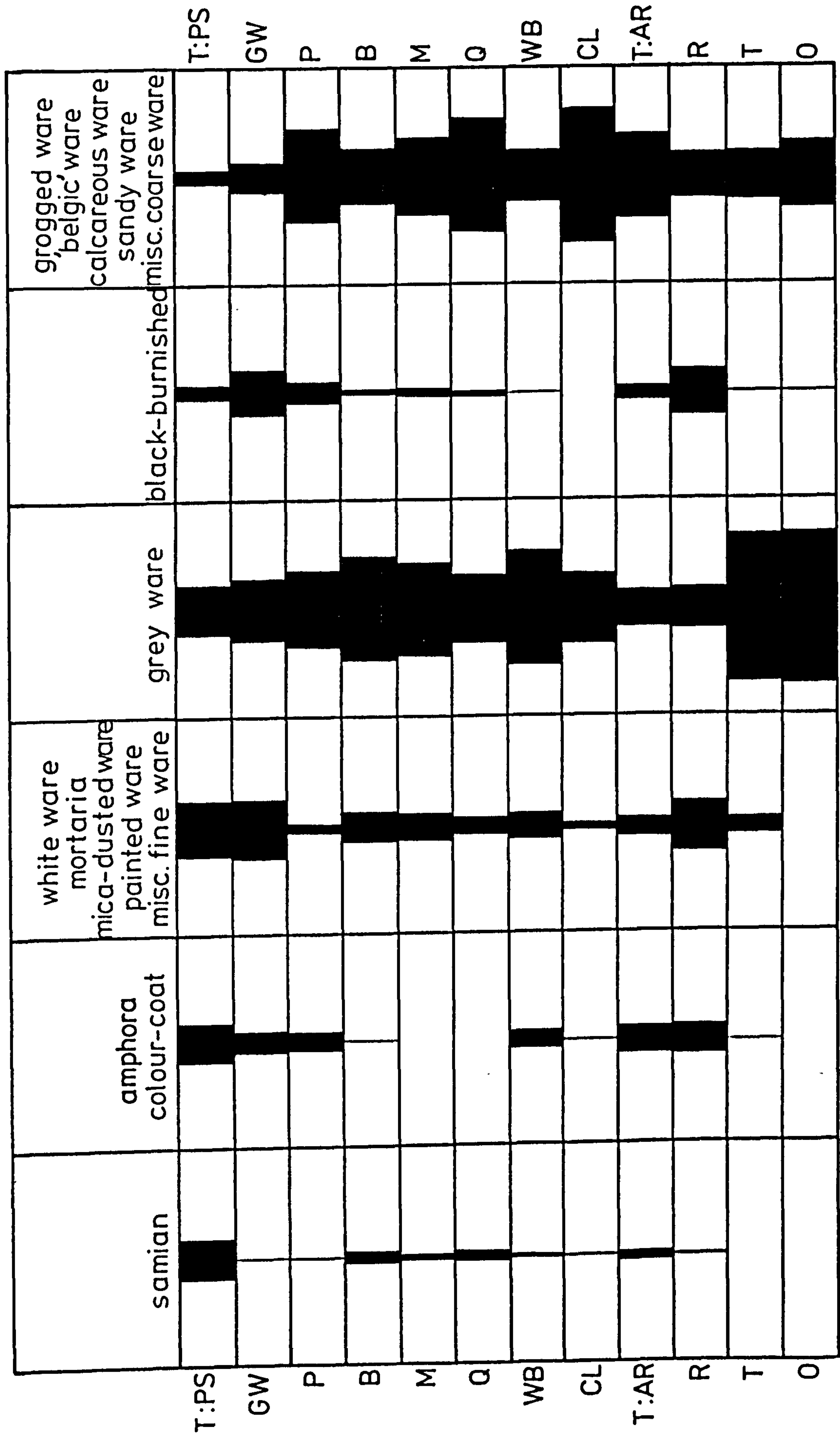
finally resulted only supported the model II in that Towcester, Park Street and Great Weldon were fairly high up in the new hierarchy and Thorplands and Overstone were at the bottom. The most obvious anomaly was Ringstead second and third in the new hierarchy by weight and sherd count respectively. Similarly, Piddington was well down the new hierarchy inspite of being the third richest site by independent assessment.

The Figs. 50 and 51 show the same percentages of wares but arranged in the order of the original independently assessed hierarchy and again show the model II to be too simplistic though correct in its proposal that there are in general no sharp distinctions from one level in the hierarchy to the next.

The proposed model II therefore does not adequately explain the pattern of the assemblages. 'Poor' sites are getting imported and regional speciality wares and their assemblages are not dominated by coarse or kitchen wares. Indeed, if the grey wares may be counted as 'fine' wares as Woodfield does (Woodfield and Brown 1983), the poorest sites, Thorplands and Overstone get proportionately the largest amounts of this ware.

c) Model III - The 'Market'

Since even a modified primitivist model will not stand up to testing by the data it seems appropriate at this point to alter the emphasis of the approach and turn from the primitivist hypotheses to the original modernistic hypothesis introduced as the primary hypothesis at the very beginning of this thesis. The next hypothesis to be tested will thus incorporate some of the



100 %

Fig.50 Seriation graph - by hierarchy (sherds)

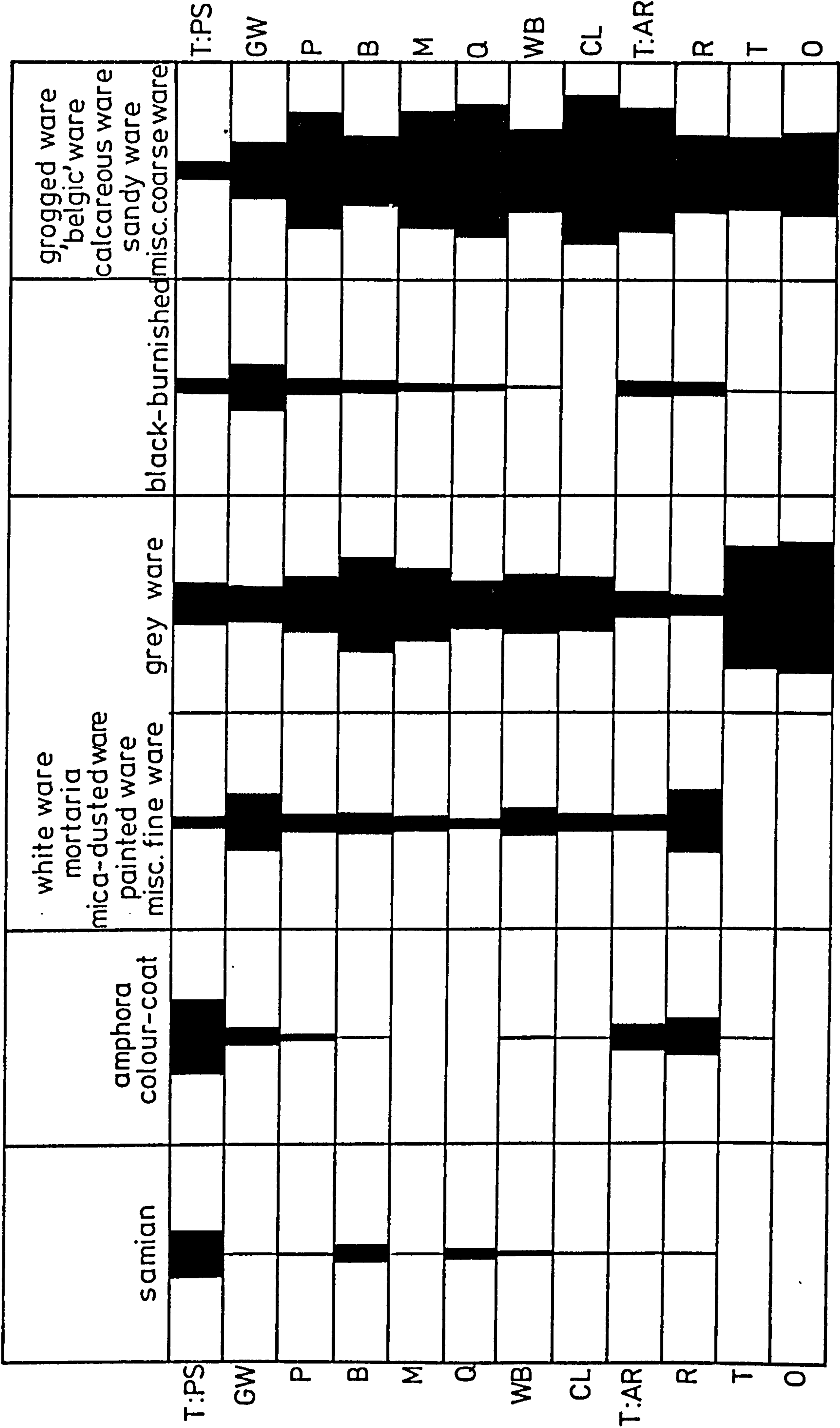


Fig.51 Seriation graph-by hierarchy (weight)

100%

elements of this original hypothesis though still using the same socio-economic framework. The elements to be introduced will be the theoretical tools or classifications of the modern economic historian. These have been mentioned with reference to the economic models of Viljoen (1974), Carney (1975) and Hopkins (1978 etc.) in Chapter 2 above. These are the terms used to describe the modes of exchange likely to be operating in an economy. They are, reciprocal exchange, redistributive exchange, market exchange and mobilizative exchange, a form of redistributive exchange. These were originally defined by Polanyi and for the sake of clarity his definition is quoted in full:

"Empirically we find the main patterns to be reciprocity, redistribution and exchange. Reciprocity denotes movement between correlative points of symmetrical grouping; redistribution designates appropotional movement towards a centre and out of it again; exchange refers here to vice-versa movements taking place as between 'hands' under a market system. Reciprocity, then, assumes for a background symmetrically arranged groupings; redistribution is dependent upon the presence of some measure of centricity in the group; exchange in order to produce integration requires a system of price-making markets. It is apparent that the different patterns of integration assume definite institutional supports " (Polanyi 1957a 250).

The primitivist models and hypotheses proposed above both assume a purely redistributive mode of exchange to be operating in the Roman economy. This is indicated in the case of pottery by the long-distance trade of luxury wares consumed by a tiny social elite and the large-scale exchange of locally produced coarse wares over short geographical distances by the remainder of the subsistence level populace. Market exchange does not figure in this economic system as Finley (1973) so firmly points out (see Chapter 1 section ii) i) above).

The primary hypothesis of this thesis was in fact designed partly as a counter attack on this emphasis on the redistributive mode of exchange in the Roman economy. It attempts to propose that market exchange played a significant role in the Roman economy, at least in the first two centuries of the Principate. The indicators of such a system as far as pottery is concerned would be the 'mass-production' of certain wares and their distribution in quantity through all ranks of society, most particularly among the middle and lower echelons. The crucial point is this latter one, the fact that for market exchange to work it requires a broad range of consumers with the appropriate buying power, most particularly in the middle range of society. This then will be the next hypothesis. The model III that may be built from this is that 'mass-produced' types of pottery will be found in quantity particularly on middle and possibly lower range sites.

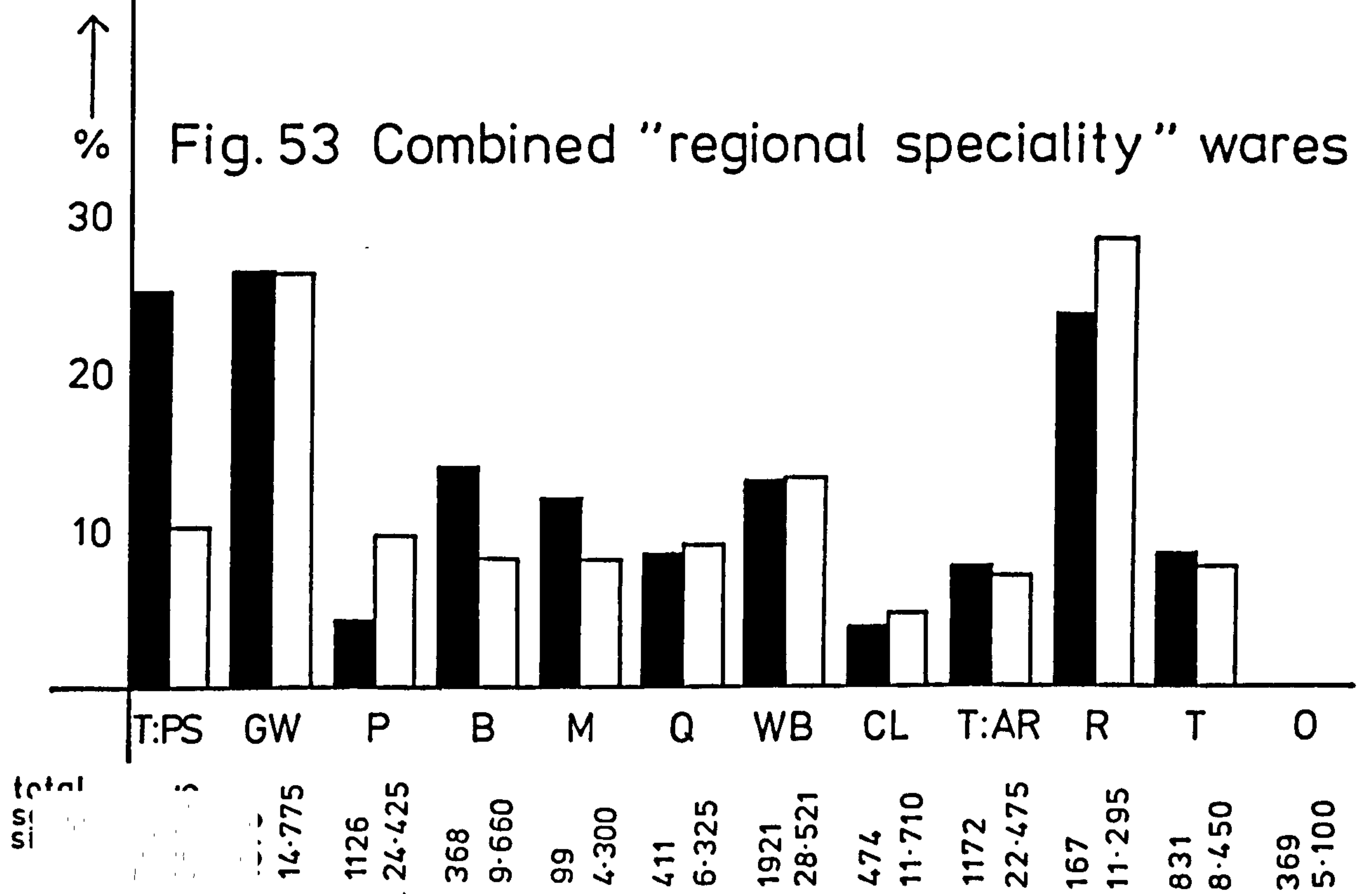
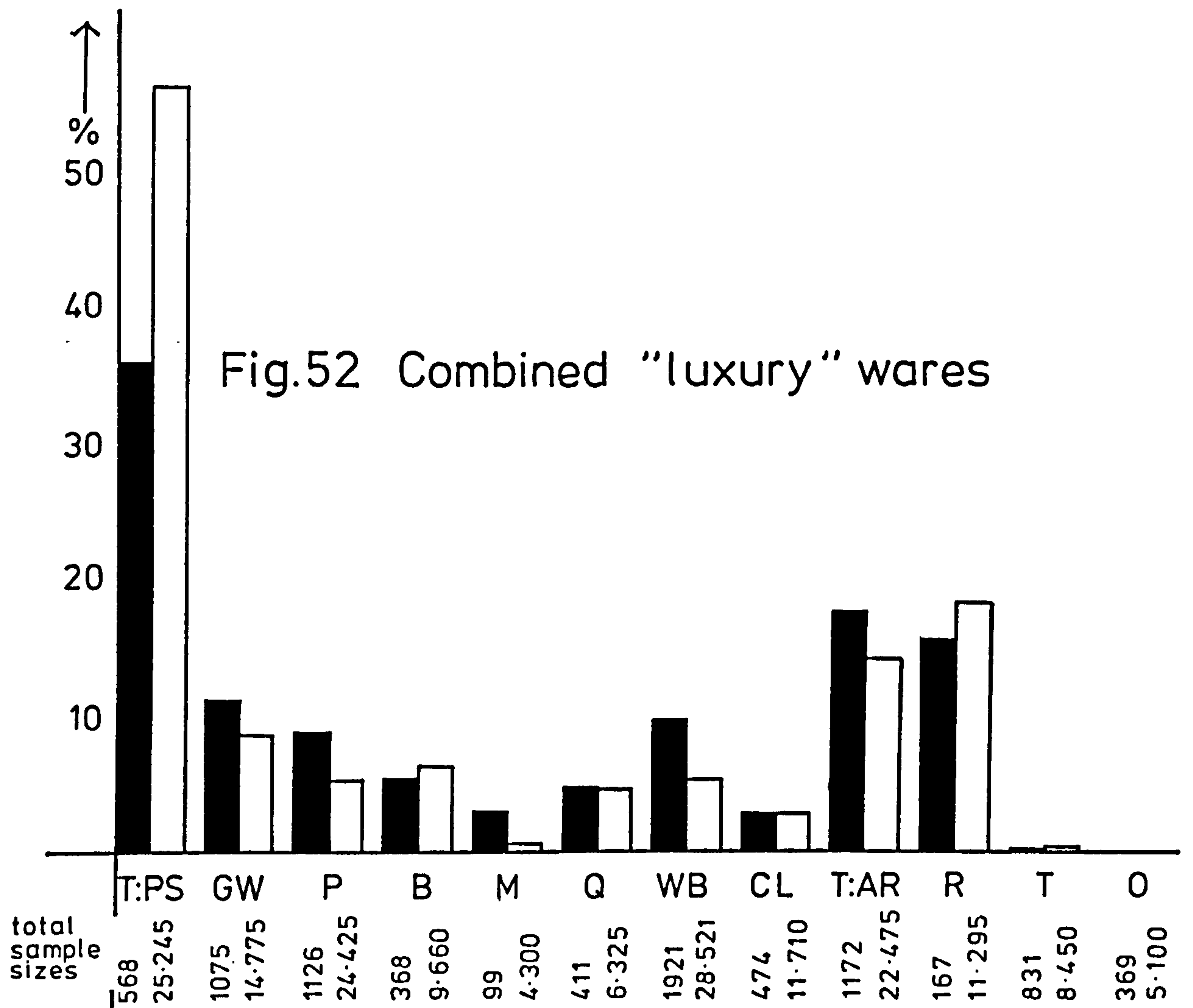
Assuming for the moment that nothing is known about the methods of manufacture of the various wares found then the obvious approach is to test the latter part of the model III, the

concentration of certain types of wares on 'middle-range' sites. For this a return to the bar charts reveals the proposed pattern possibly with samian (on rural sites, see Fig. 30) and again only possibly with grogged and sandy wares (including all sites, see Figs. 40 and 43). Since these results were not conclusive, a series of combined ware bar charts were produced to give a more generalised presentation of the data.

The combined 'luxury' wares (Fig. 52) demonstrated the enormous difference between the town and rural sites. It also highlighted the apparently anomalous percentages of Ringstead and Towcester: Alchester Road. In general a steady decline in amounts of imported wares can be seen from rich urban site to poor rural site. This is less clear in the case of the 'regional speciality' wares (Fig. 53). A fairly uniform distribution of these wares to each site, is interrupted by large amounts on the town site (at least by sherd count) Great Weldon and Ringstead, while Overstone has none whatsoever.

The locally produced 'coarse' wares, excluding the somewhat ambiguous grey and orange beaker wares do however seem to definitely favour the middle-range sites particularly if Wood Burcote is ignored or moved up the social hierarchy as suggested above.

The grey wares (Fig. 37) taken on their own have an almost identical pattern as the 'coarse' wares except that the two poorest sites have very large amounts. Over half their total assemblages constitute grey wares.



d) Model IV

If for the moment the 'coarse' wares (grogged, sandy, 'Belgic' and calcareous) and/or the grey wares are assumed to be the required 'mass-produced' wares of the model III then it may be extended to include that part of the primitivist models I and II which seemed to be supported by the data. This is the dominance of 'luxury' wares on the very richest sites, that is samian and amphorae. This would indicate the likelihood of some form at least of redistributive exchange operating alongside the proposed market exchange system.

The expected pattern for this hypothesis IV may be represented graphically as in Fig. 54.

Line diagrams were plotted to test this model (Figs. 55 and 56). There was in fact a reasonable fit with the proposed model, the exceptions being Towcester : Alchester Road and Ringstead in the case of the combined 'luxury' wares and Thorplands and Overstone in the case of the grey wares.

Two more line diagrams were constructed using combined figures for the 'coarse' wares and adding in the 'regional speciality' wares (Figs. 57 and 58). The most interesting feature of these graphs was the way the distribution of the specialist wares reflected closely that of the 'luxury' wares. If it can be assumed that the latter reached the sites via a redistributive exchange system then it may be proposed that the 'regional speciality' did too.

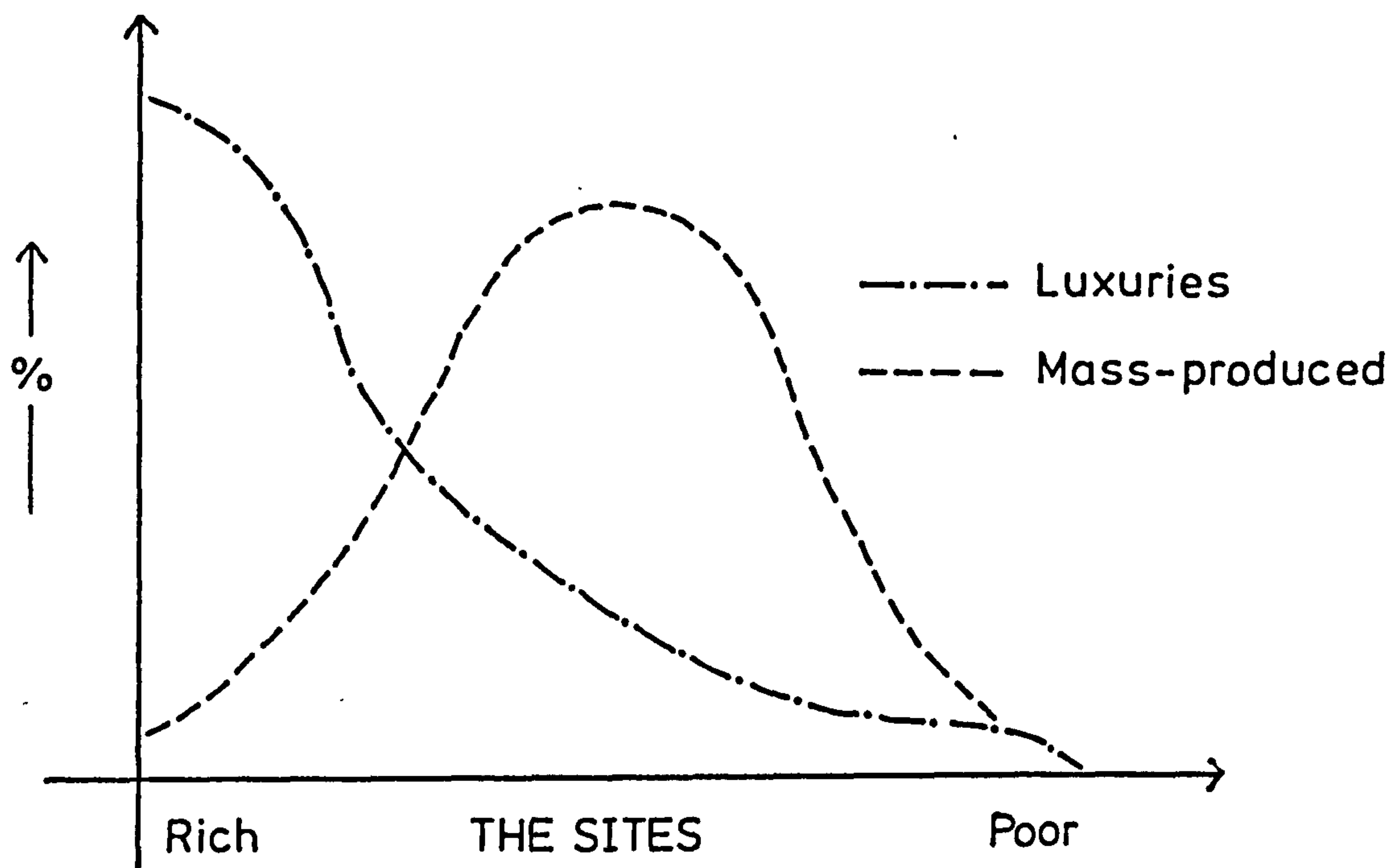


Fig. 54 Sketch of Model IV

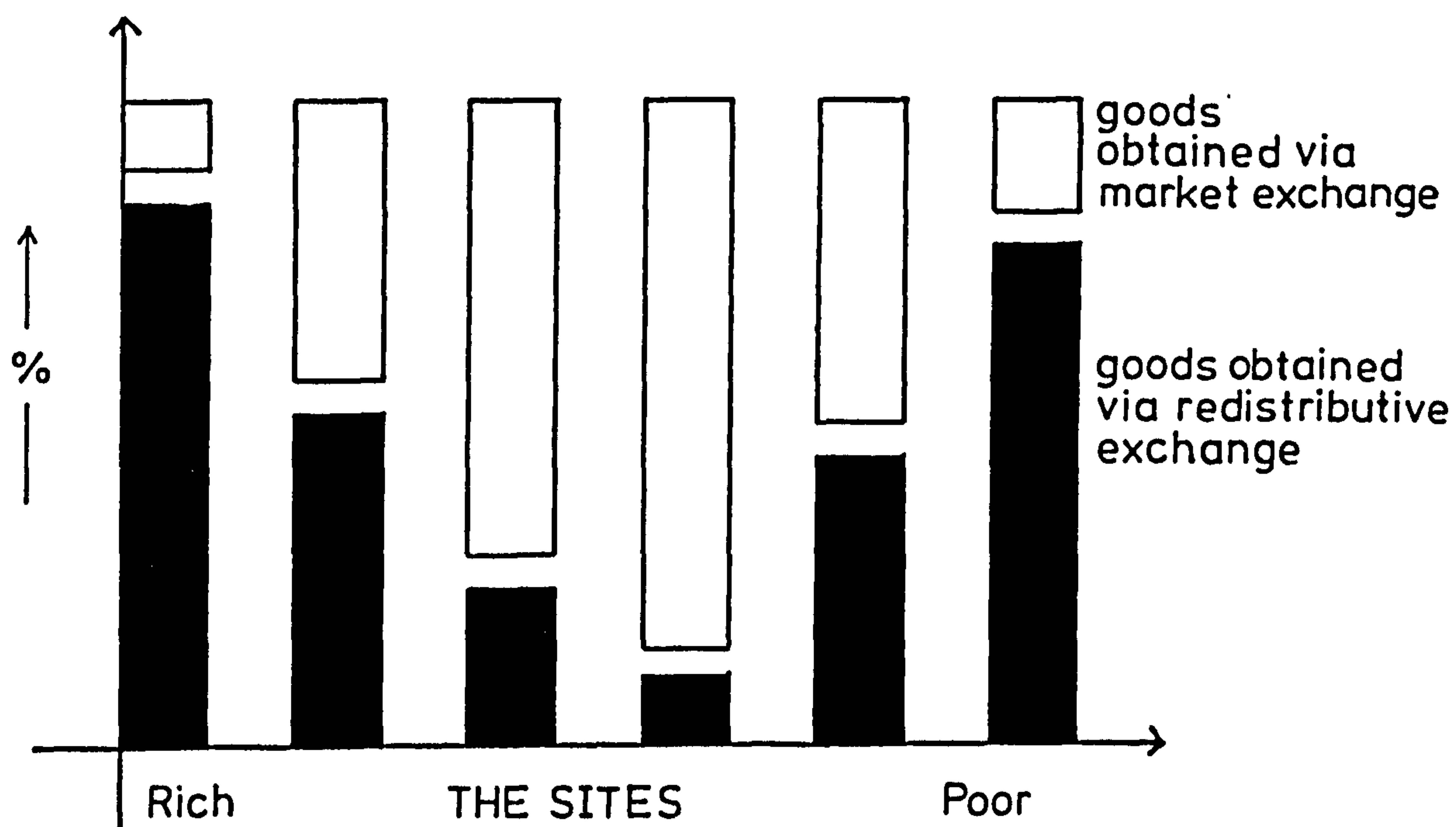


Fig. 62 Sketch of Model IV

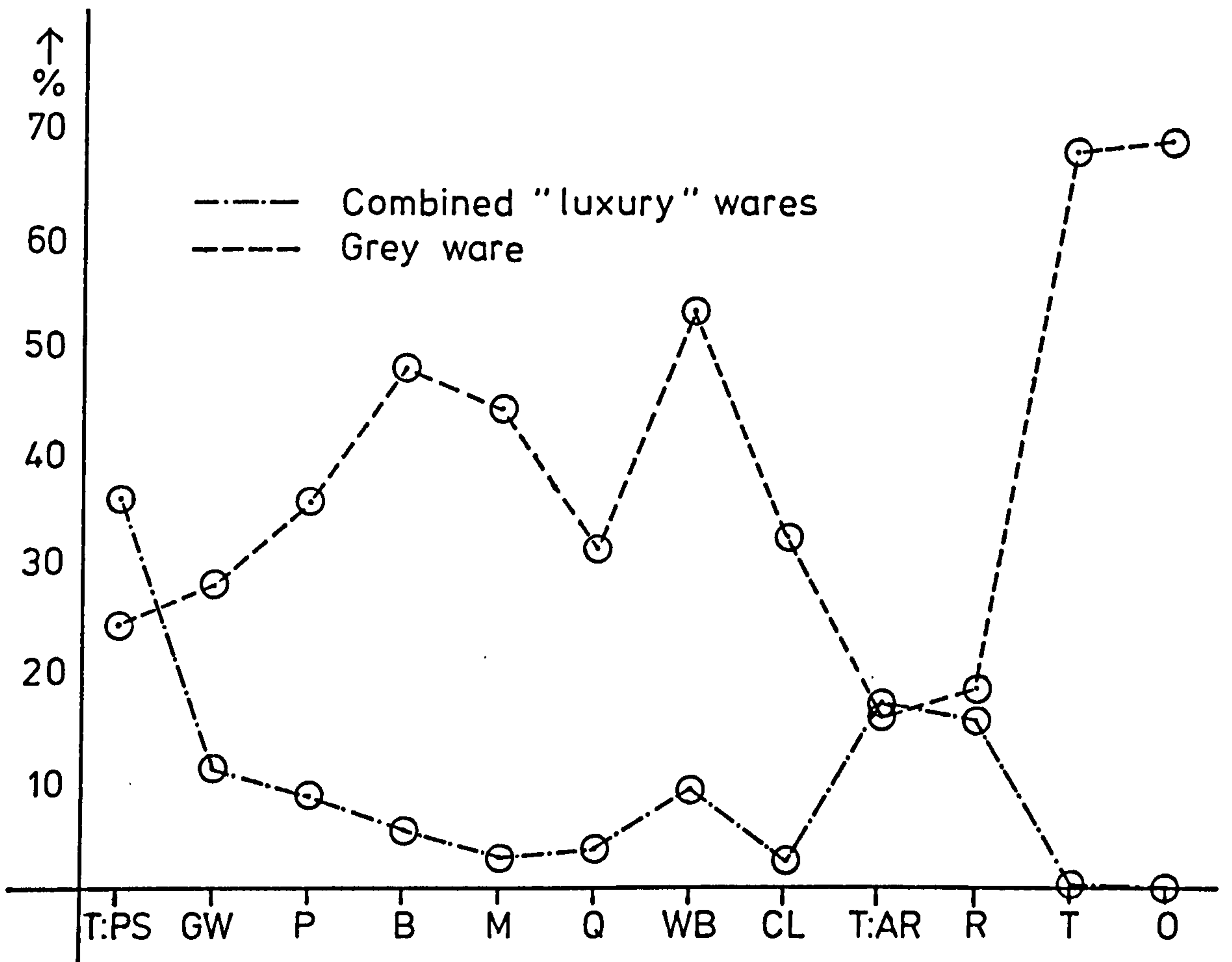


Fig.55 Line diagram (sherds)

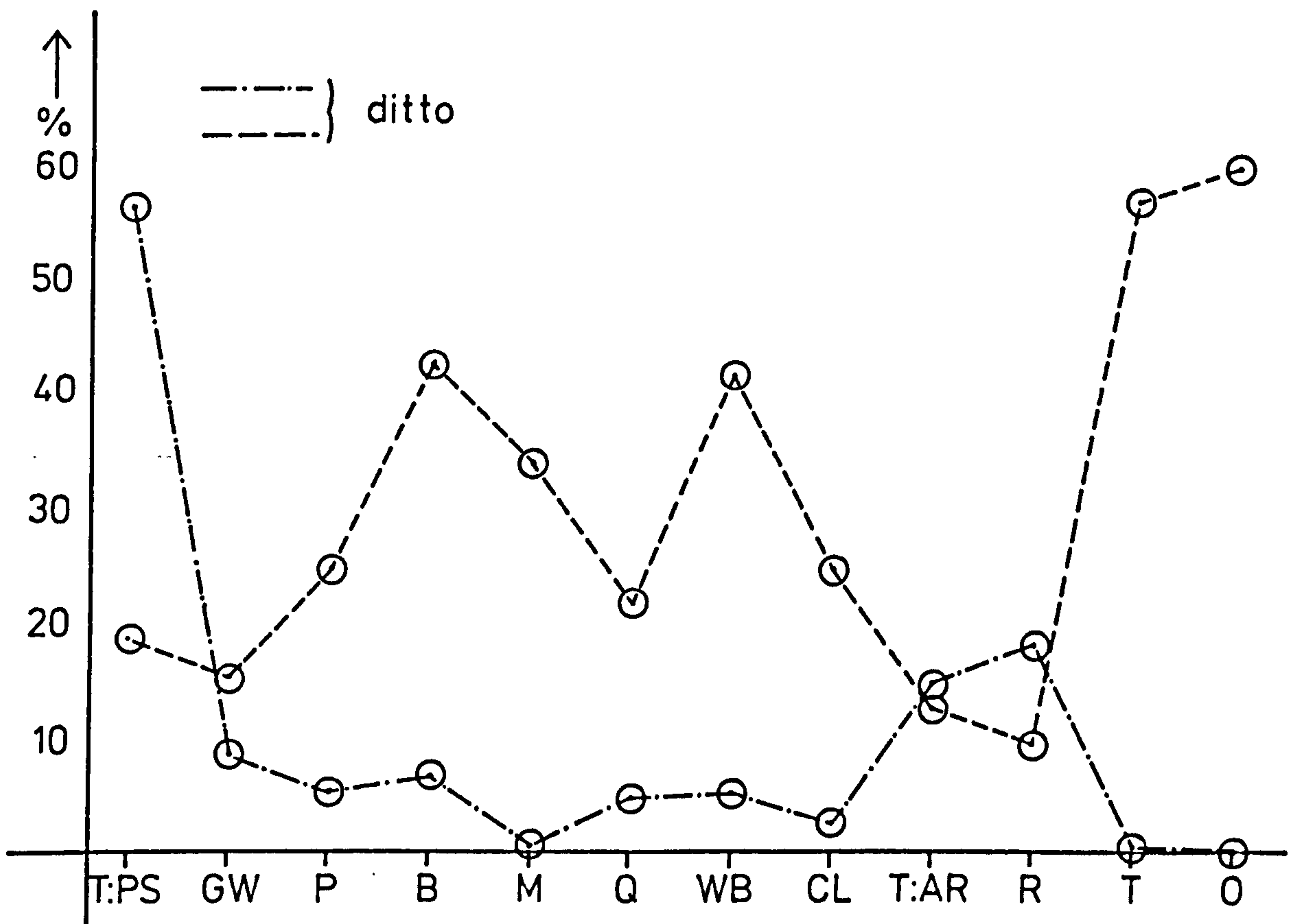


Fig.56 Line diagram (weight)

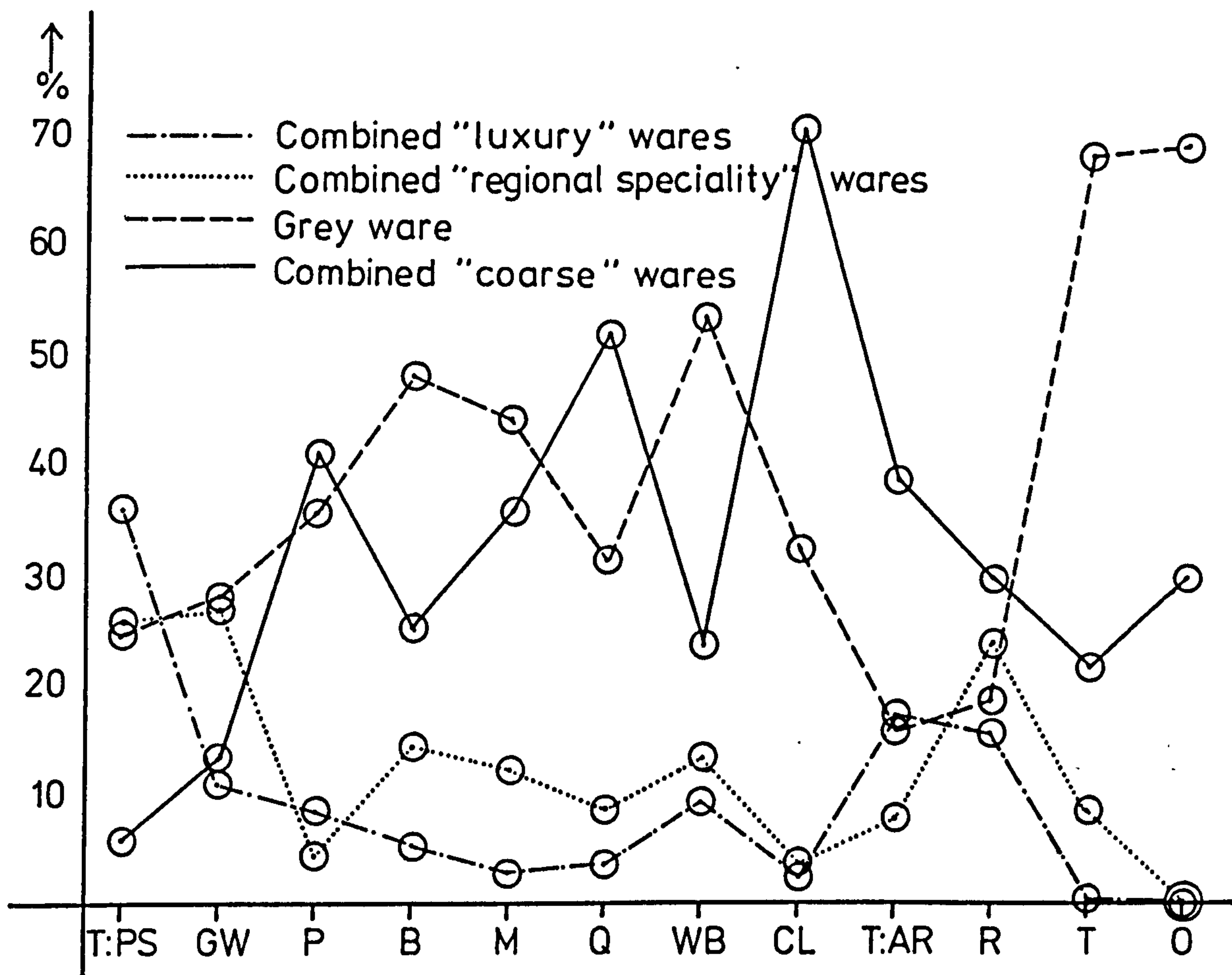


Fig.57 Line diagram (sherds)

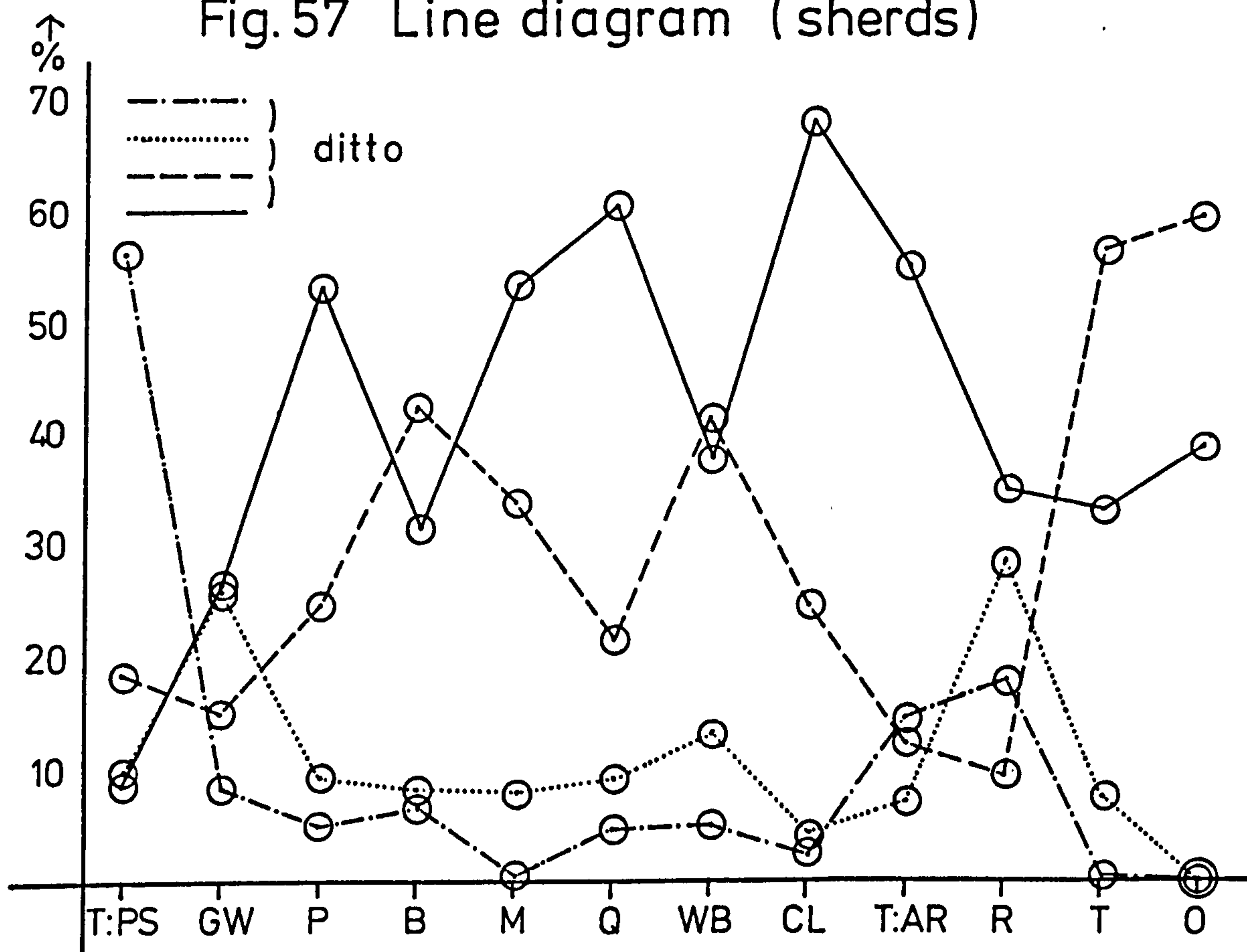


Fig.58 Line diagram (weight)

In order to test whether such correlations existed between other similar sorts of wares a more rapid and sophisticated method of analysis was required and it was decided to make use of one of the statistical manipulation packages available via the NUMAC service (Northern Universities Multiple Access Computer). The particular programme package chosen was MIDAS (Michigan Interactive Data Analysis System) which is an interactive programme package particularly suitable for rapid analyses of relatively small data sets.

As stated in the introduction to this chapter a certain amount of work has already been done by some archaeologists on the suitability of applying mathematical techniques to the analysis of archaeological material. All the authors are at pains to stress the numerous hazards waiting for the uninitiated who wish to use such techniques. The particular pitfalls linked with each of the analytical techniques used below will be outlined before each is used. In spite of such worries there does seem to be a secure place for mathematics in the world of archaeology, for as Orton points out, mathematics in general "...concerns itself with the study of patterns and relationships " (ibid 15), something with which any serious archaeologist is also concerned.

Using MIDAS it was simple to produce a correlation matrix of Pearson correlation coefficients for all the wares (Figs. 59 and 60). This particular coefficient measures the strength of the linear relationships between the two variables being correlated. It may assume any value between -1 and 1. If there is a perfect linear relationship (a straight line on the

KEY to computer printouts

'v' = variable

v2 = samian : sherd count
v3 = samian : weight (kg)

v4 = amphora : s
v5 = amphora : w

v6 = colour coat : s
v7 = colour coat : w

v8 = white : s
v9 = white : w

v10= mortarium : s
v11= mortarium : w

v12= mica-dusted : s
v13= mica-dusted : w

v14= grey : s
v15= grey : w

v16= orange beaker : s
v17= orange beaker : w

v18= imitation samian : s
v19= imitation samian : w

v20= painted : s
v21= painted : w

v22= misc. fine : s
v23= misc. fine : w

v24= black burnished : s
v25= black burnished : w

v26= grogged : s
v27= grogged : w

v28= 'Belgic' : s
v29= 'Belgic' : w

v30= calcareous : s
v31= calcareous : w

v32= sandy : s
v33= sandy : w

v34= misc. coarse : s
v35= misc. coarse : w

v36= amphora + colour coat : s
v37= amphora + colour coat : w

v38= combined 'regional speciality' : s
v39= combined 'regional speciality' : w

v40= combined 'coarse' : s
v41= combined 'coarse' : w

v42= combined 'luxury' : s
v43= combined 'luxury' : w

<COEF VAR=3.5,7.9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41>

CORRELATION MATRIX

N= 12 DF= 10 03 .05000= .5767 02 .01000= .7075

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Fig.60 Correlation coefficient matrix (weight)

corresponding scatter plot) then the correlation coefficient assumes one of the two extreme values. -1 indicates a negative slope to the line, 1 a positive slope. The more clustered about some straight line, the closer the coefficient will be to -1 or 1 . If the correlation coefficient is 0 or near 0 , then there is little or no tendency for the points on the corresponding scatter plot to cluster about any straight line.

The techniques do have limitations. The Pearson correlation coefficient is only a measure of linear correlation. Its principle is that if there is a perfect linear relationship between the two variables then when plotted on a scatter plot all the points would fall on a straight line. Clearly not all strong relationships are linear and the computing manual 'Elementary Statistics Using Midas' (SRL University of Michigan 1979 87) strongly recommends the supplementing of the information conveyed by the correlation coefficient with the use of scatter plot which would indicate the presence or absence of other strong (non-linear) relationships (see also Doran and Hodson 1975 61). A number were thus produced (Graph 61).

It was decided to use as significant only those correlations satisfying the criteria for them to have only a 1% chance of being coincidence. This criteria is set at or over 0.7079 .

The correlation already suggested between the 'luxury' wares and the 'regional speciality' wares was confirmed but only in the weight data. The correlation between two of the 'luxury' wares, samian and amphorae, on the other hand was very clear in both weight and sherd count.

Among the 'coarse' wares, 'Belgic' and calcareous (sherd count) and 'Belgic' and grogged (weight) had significant correlations as might have been expected. Unexpected was the correlation between some of the 'regional speciality' wares and some of the coarse wares. These were as follows; mica-dusted and black burnished (sherd count and weight); miscellaneous fine wares and 'Belgic' (sherd count and weight); miscellaneous fine wares and grogged (sherd count and weight); mortaria and calcareous (sherd count), black burnished and combined 'regional speciality' wares (sherd count), and even a correlation between colour-coated and black burnished wares (weights).

The scatter plots mentioned above were then examined (see Fig. 61). On nearly every plot the distinctiveness of the Towcester: Park Street assemblage was very apparent, closely followed by Wood Burcote; Great Weldon; Towcester; Alchester Road and Piddington. Opposing these there seems to be a core number of sites which behave fairly similarly. These turn out to be the 'middle-range' sites, Brixworth; Mileoak; Quinton and sometimes Clay Lane, and the poor sites Thorplands and Overstone and possibly Ringstead. This leaves thus the rich town site and two richest rural sites each behaving independently, along with Wood Burcote, which for reasons given above may be richer than classified, and Towcester: Alchester Road, a 'poor' site yet very different in its assemblage makeup to the other 'poor' sites, Ringstead included.

Model IV proposed that rich sites would have many luxuries and few 'middle-range' 'mass-produced' wares. Middle-range sites

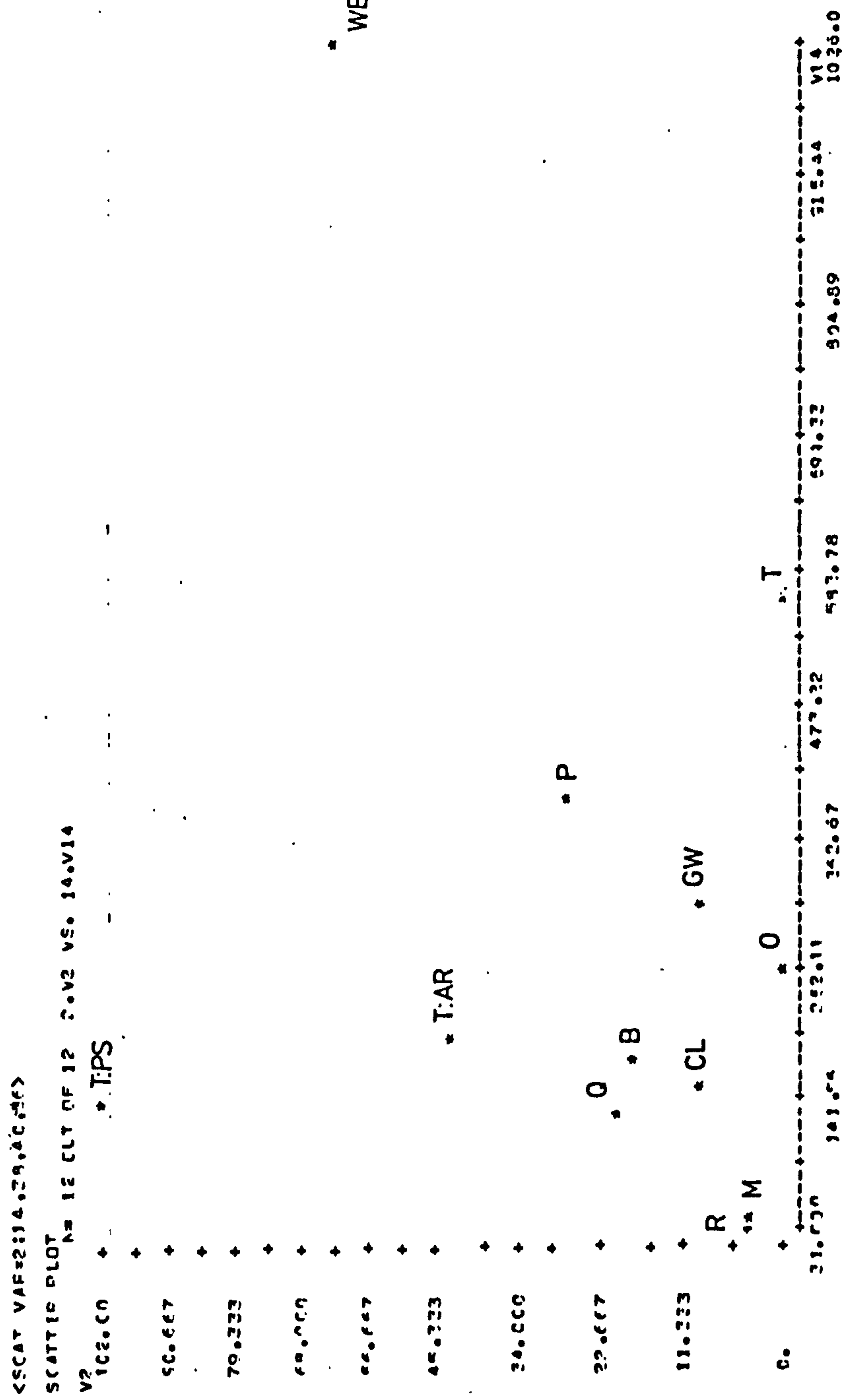


Fig. 61a Samian vs grey (sherds)

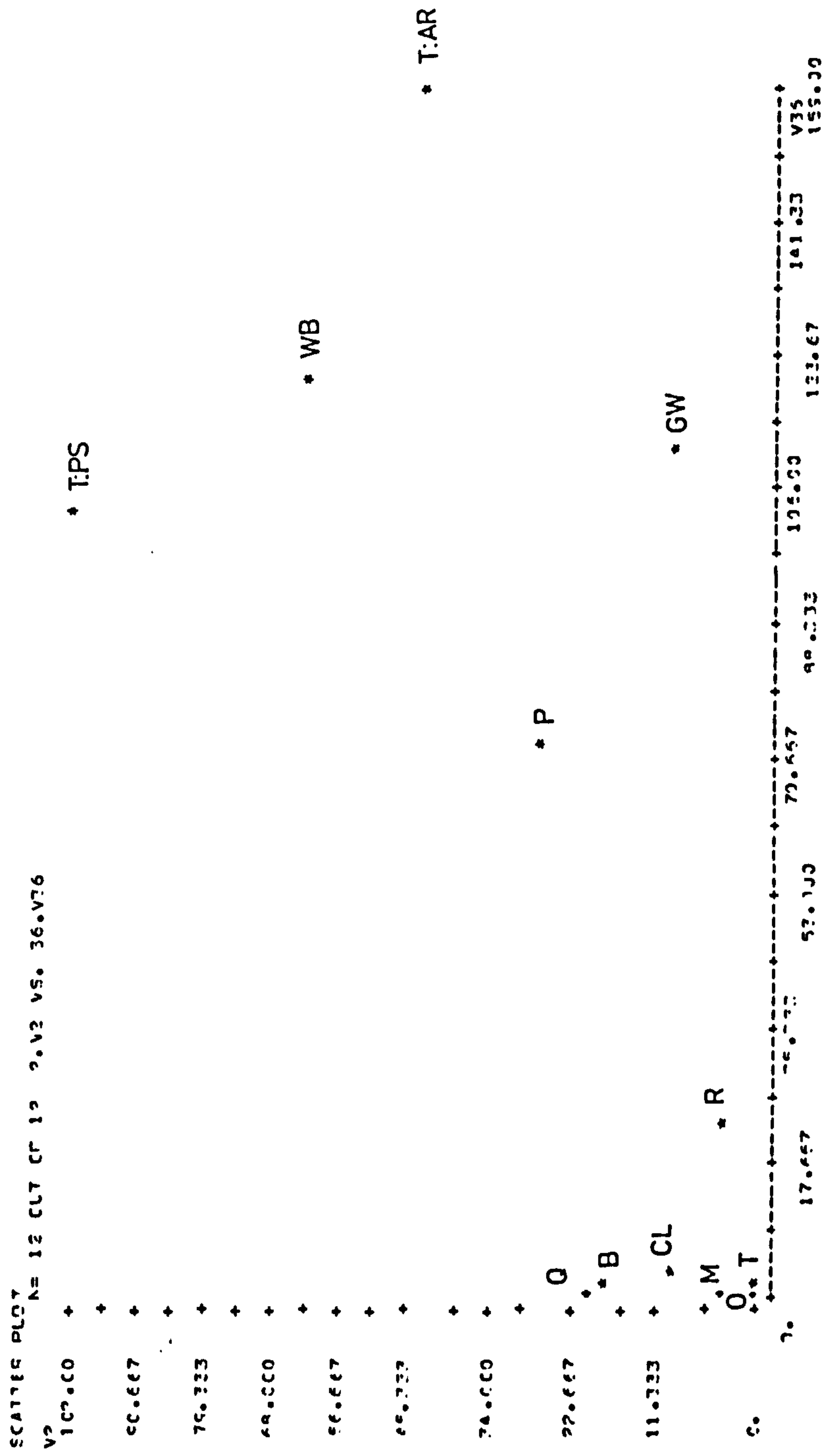


Fig. 61b Samian vs combined "luxury" (amphora + colour coat) (s)

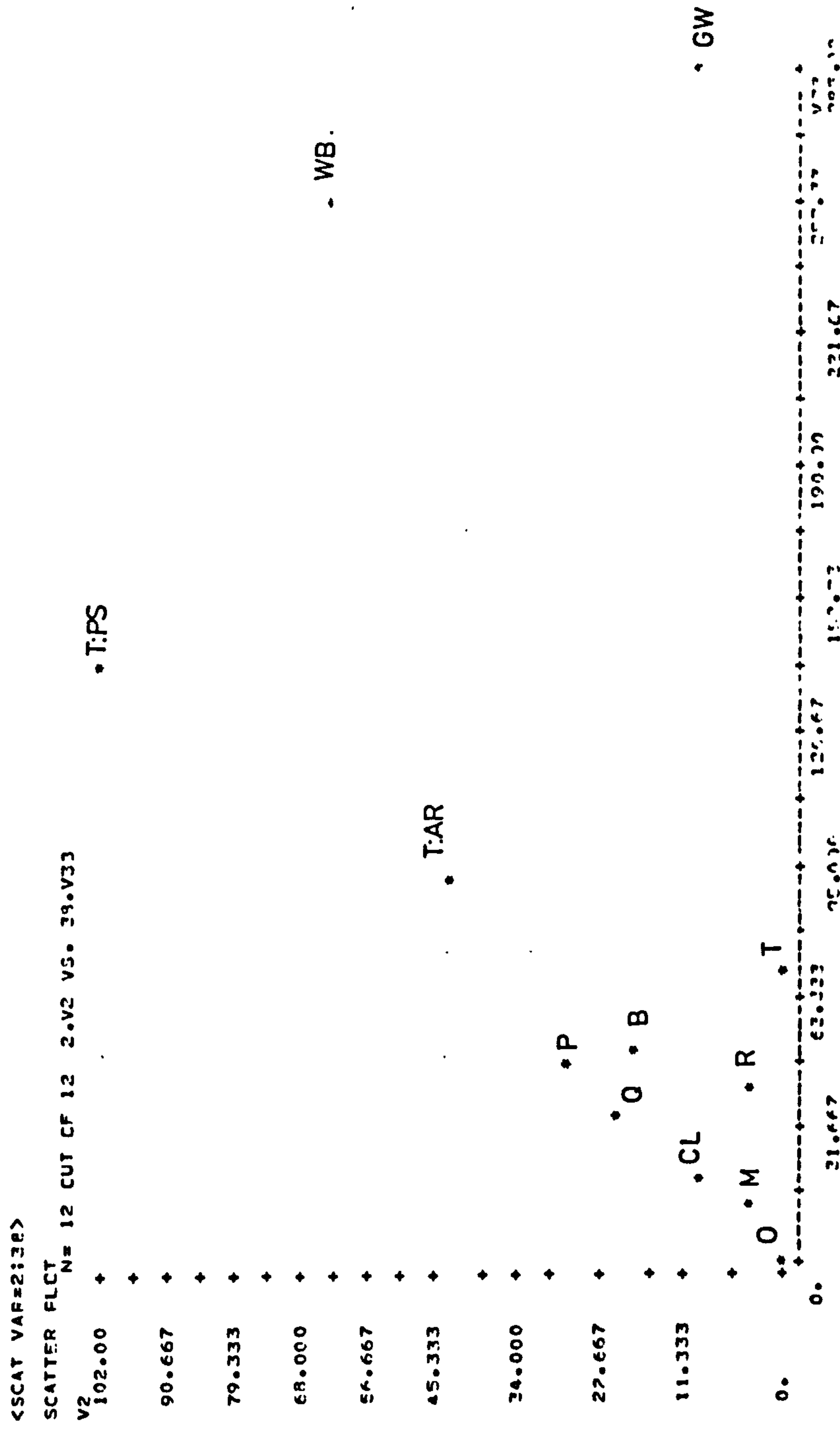


Fig. 61c Samian vs combined "regional speciality" (s)

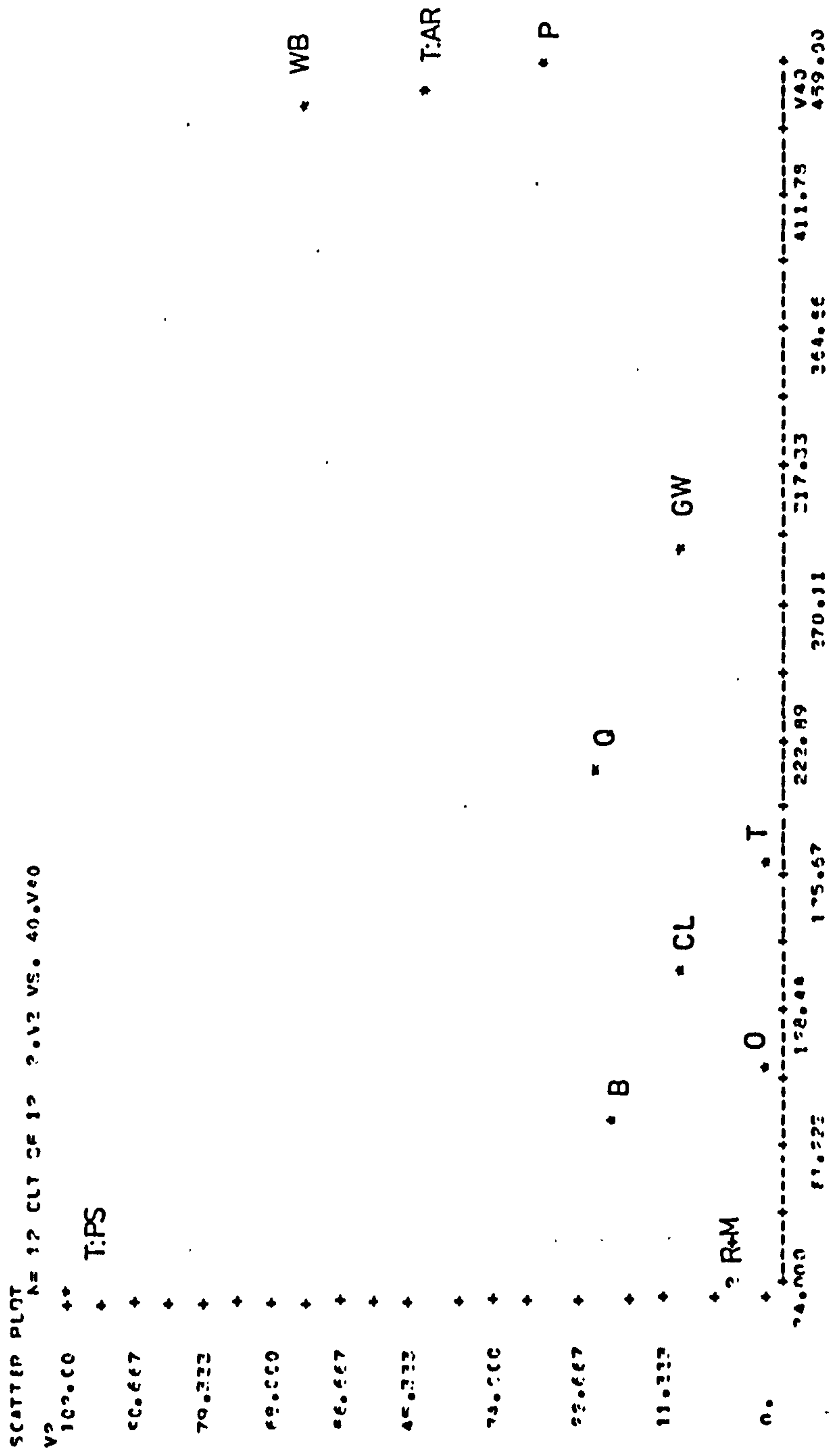


Fig.61d Samian vs combined "coarse" (s)

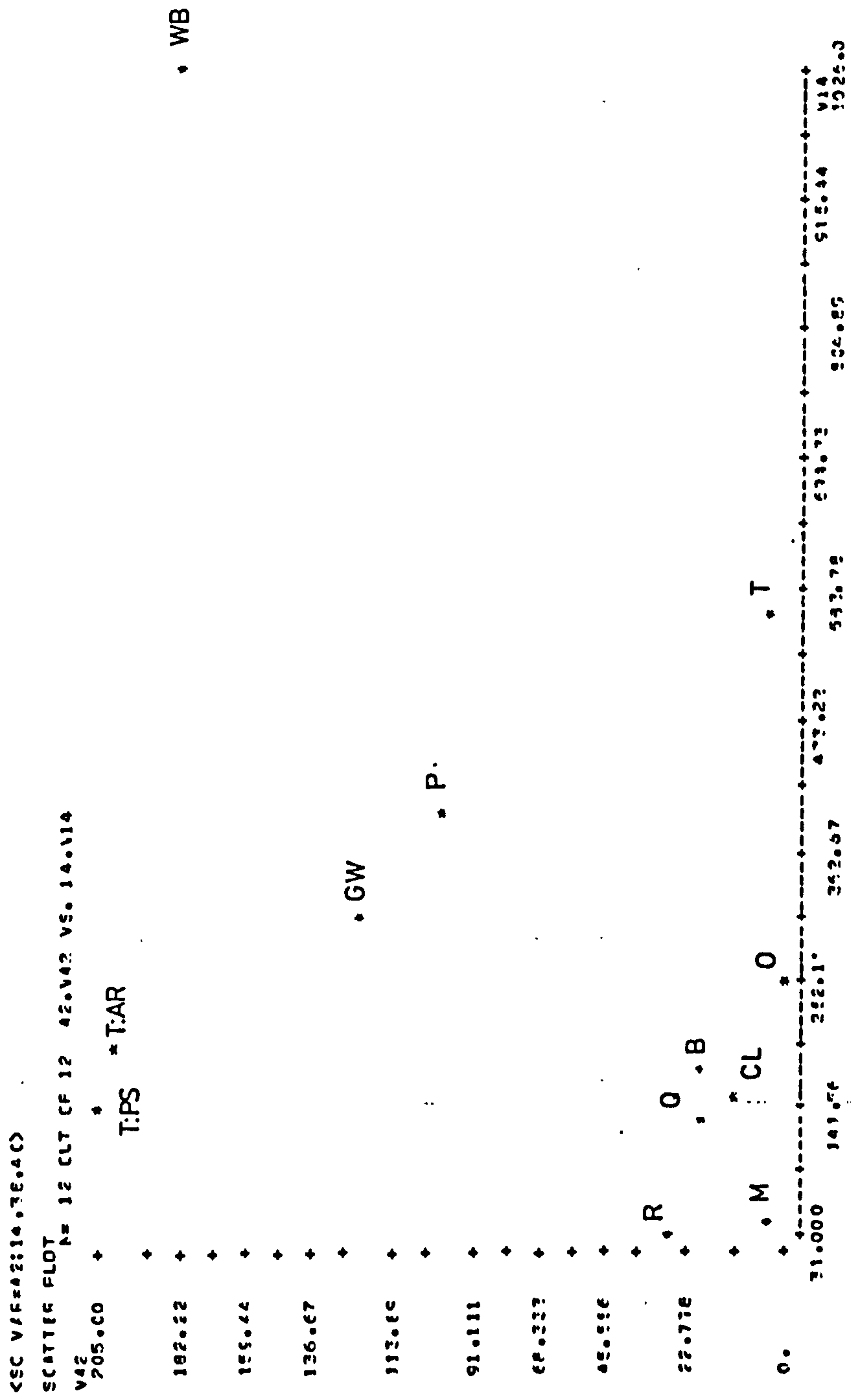


Fig.61e Grey vs combined "luxury" (s)

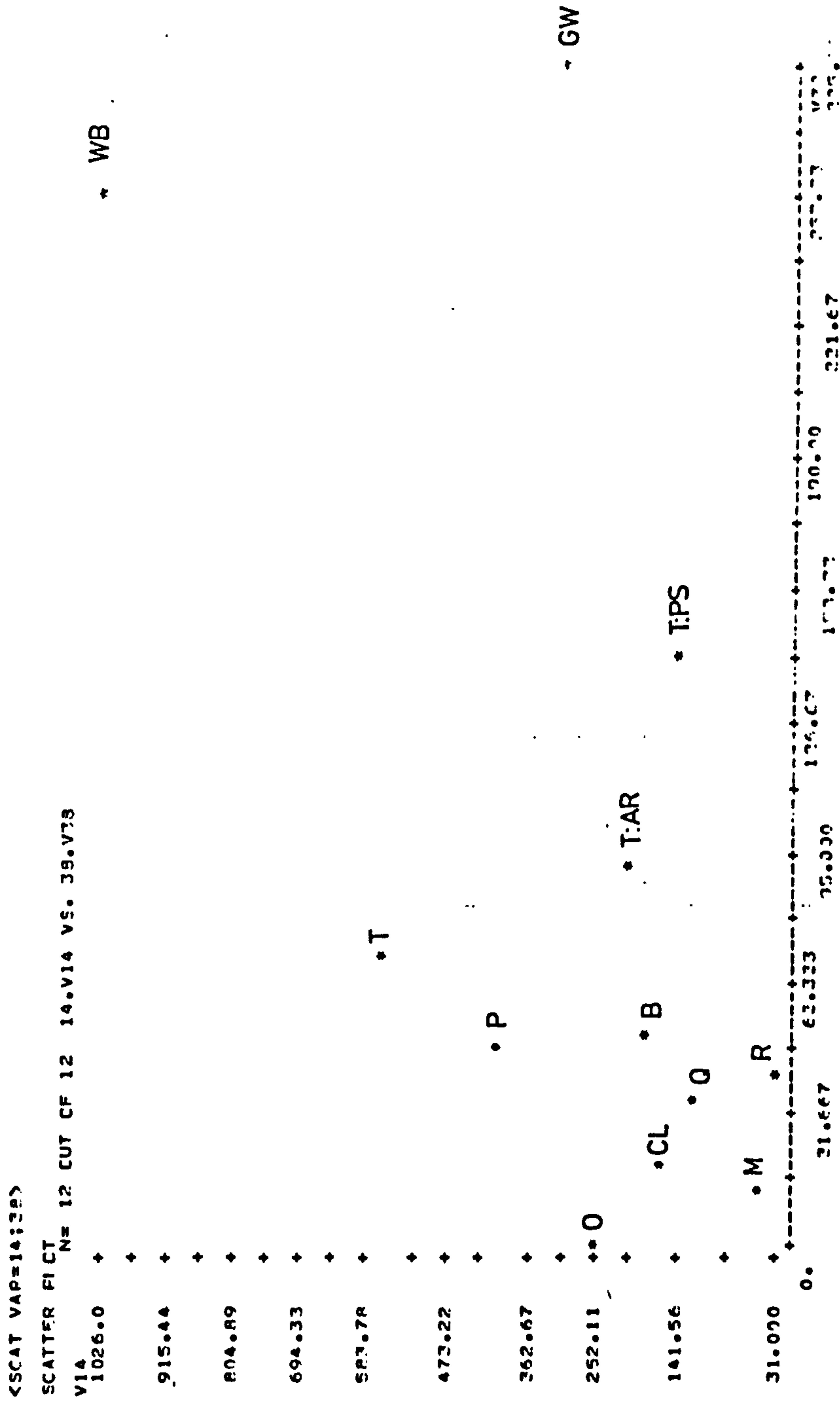


Fig.61f Grey vs combined "regional speciality" (s)

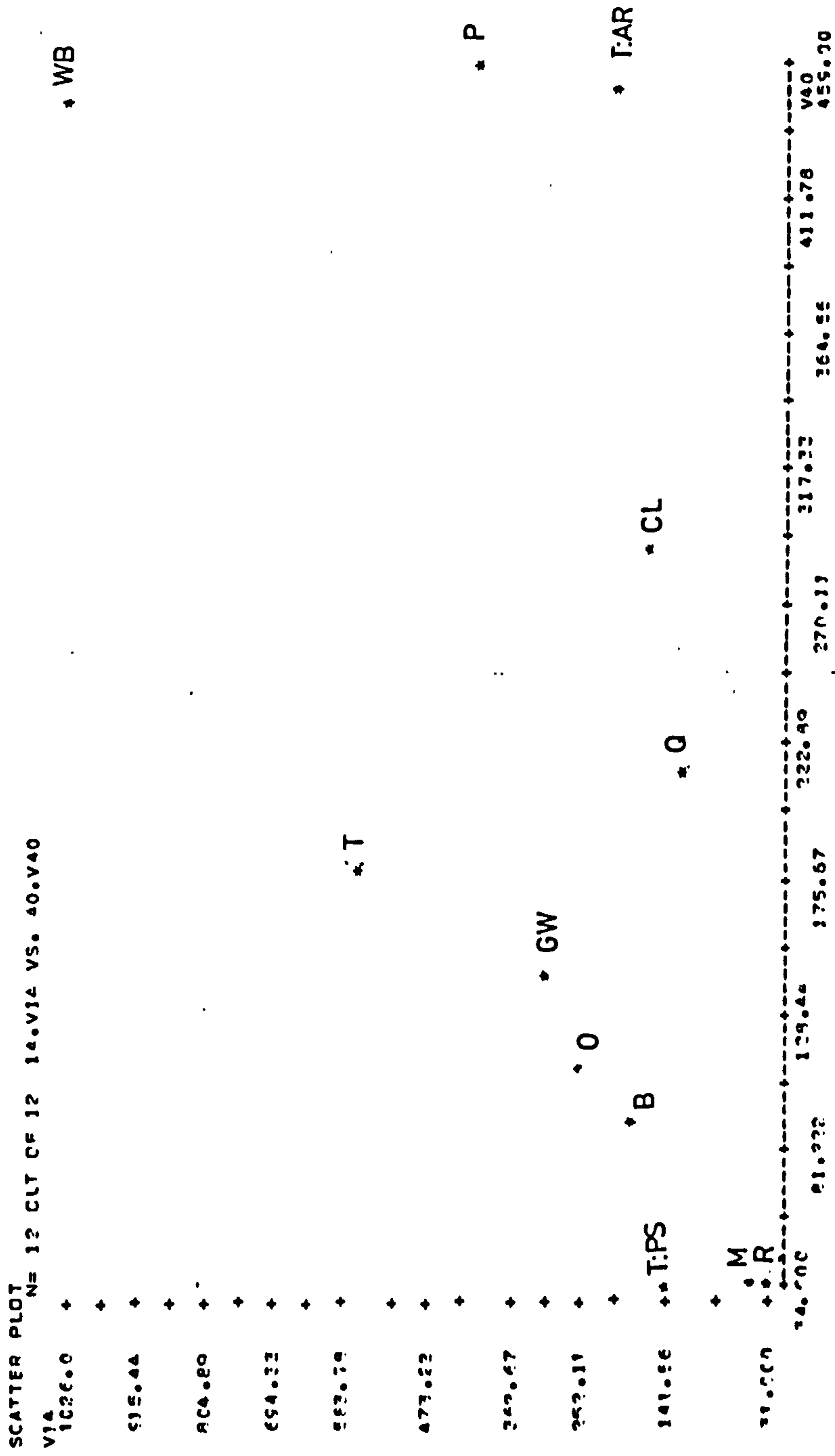


Fig. 61g Grey vs combined "coarse" (s)

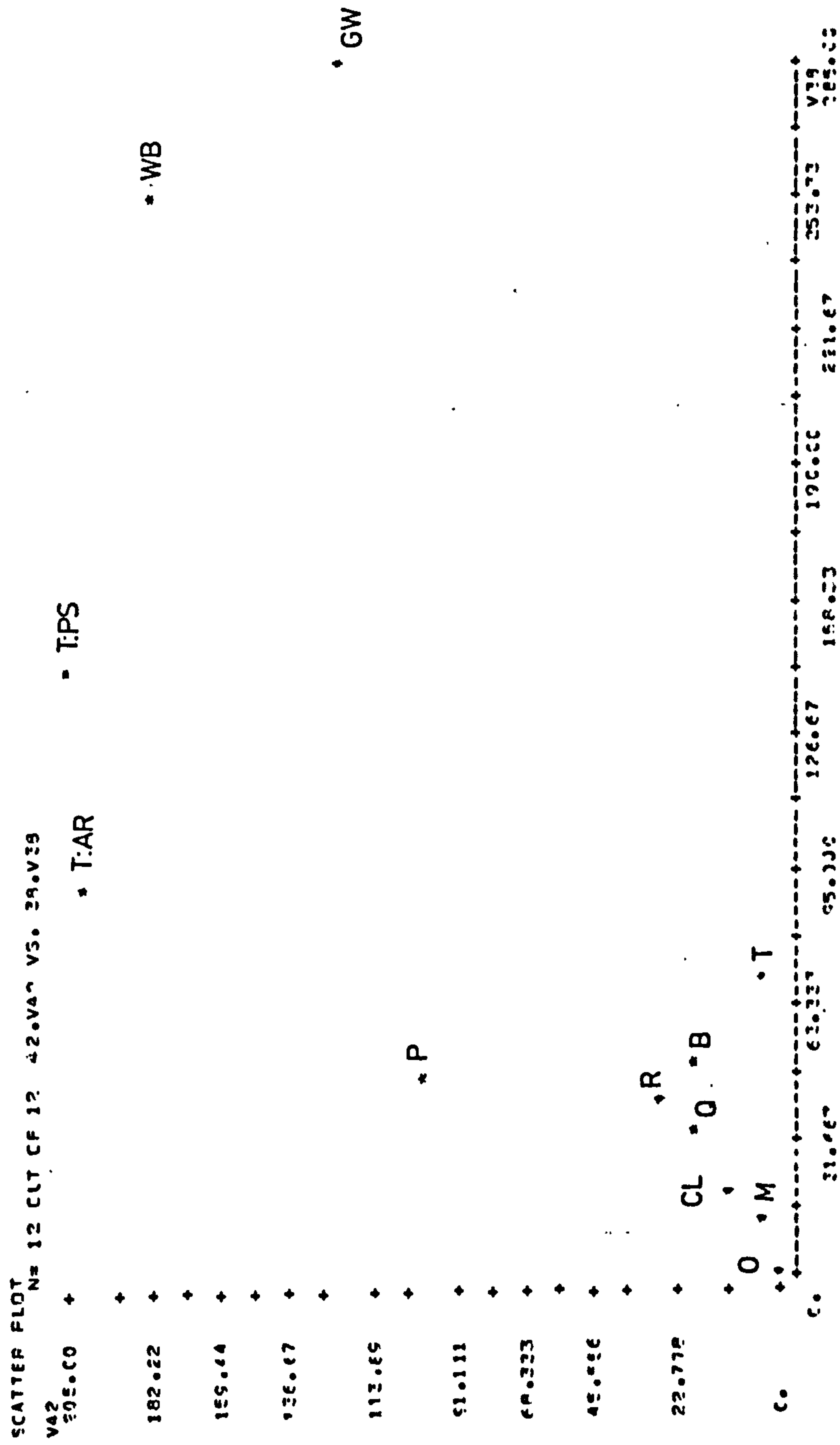


Fig.61h Combined "luxury" vs combined "regional speciality" (s)

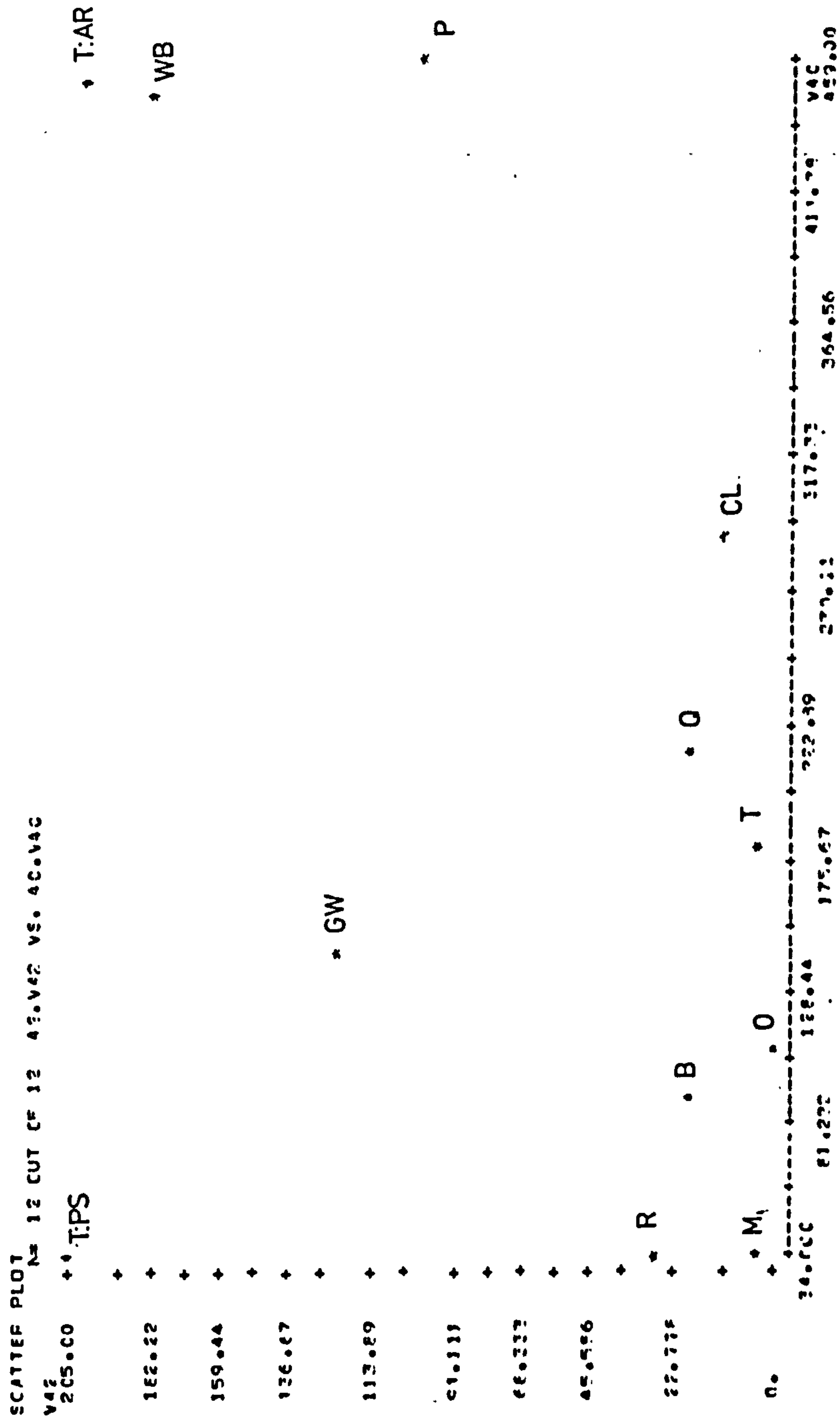


Fig.61i Combined "luxury" vs combined "coarse" (s)

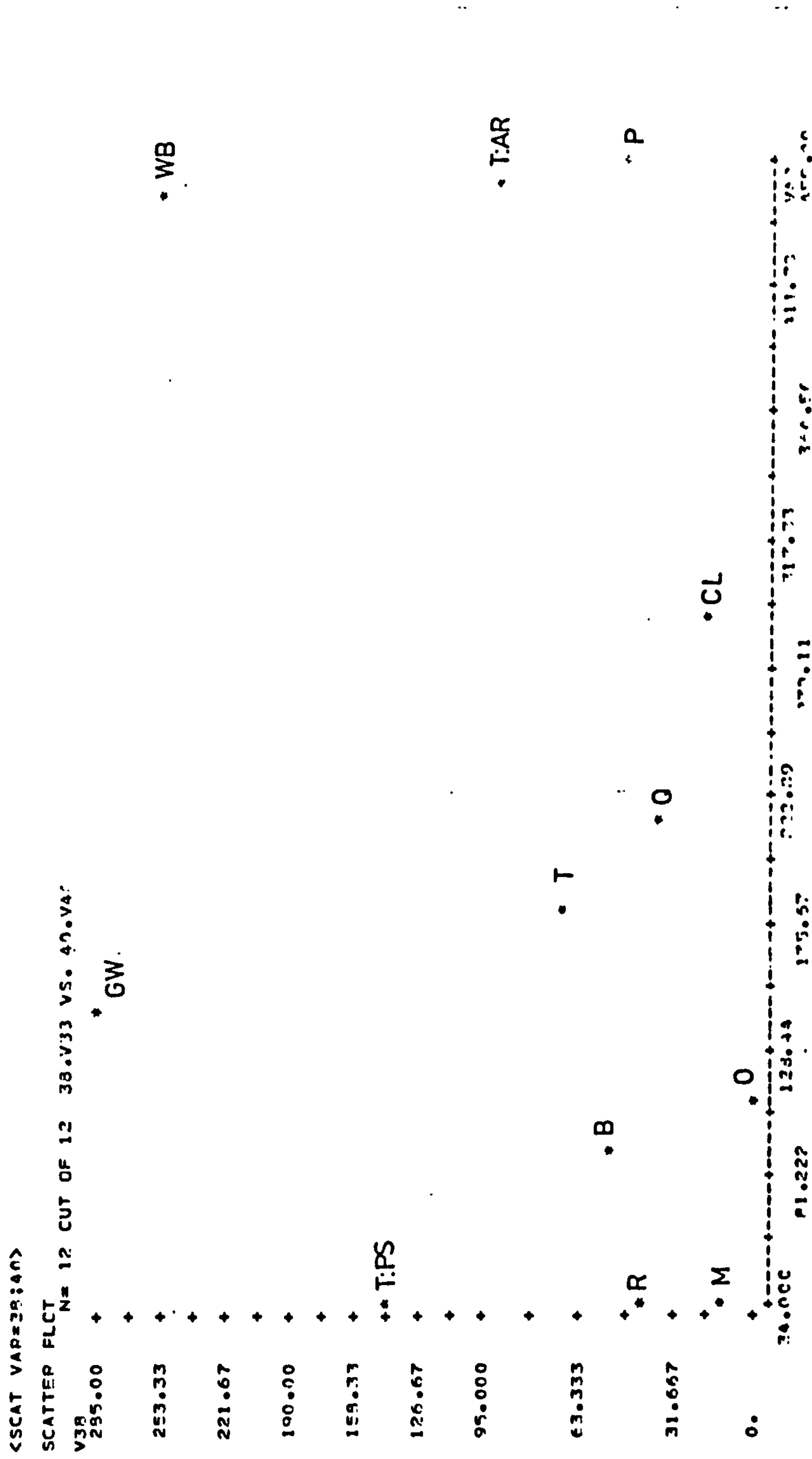


Fig. 61j Combined "regional speciality" vs combined "coarse" (s)

WB



WB

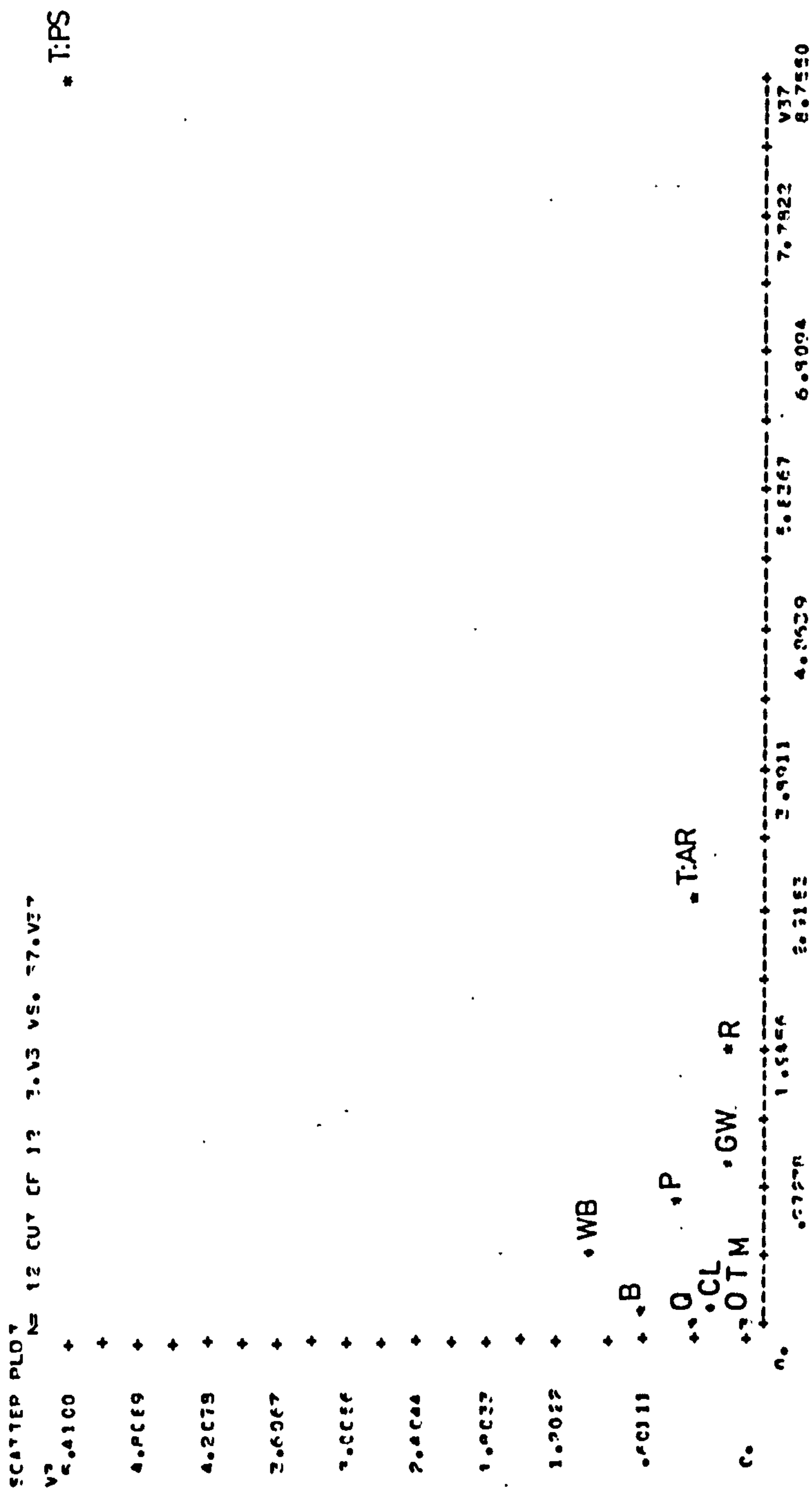


Fig. 61l Samian vs combined "luxury" (amphora + colour coat) (w)

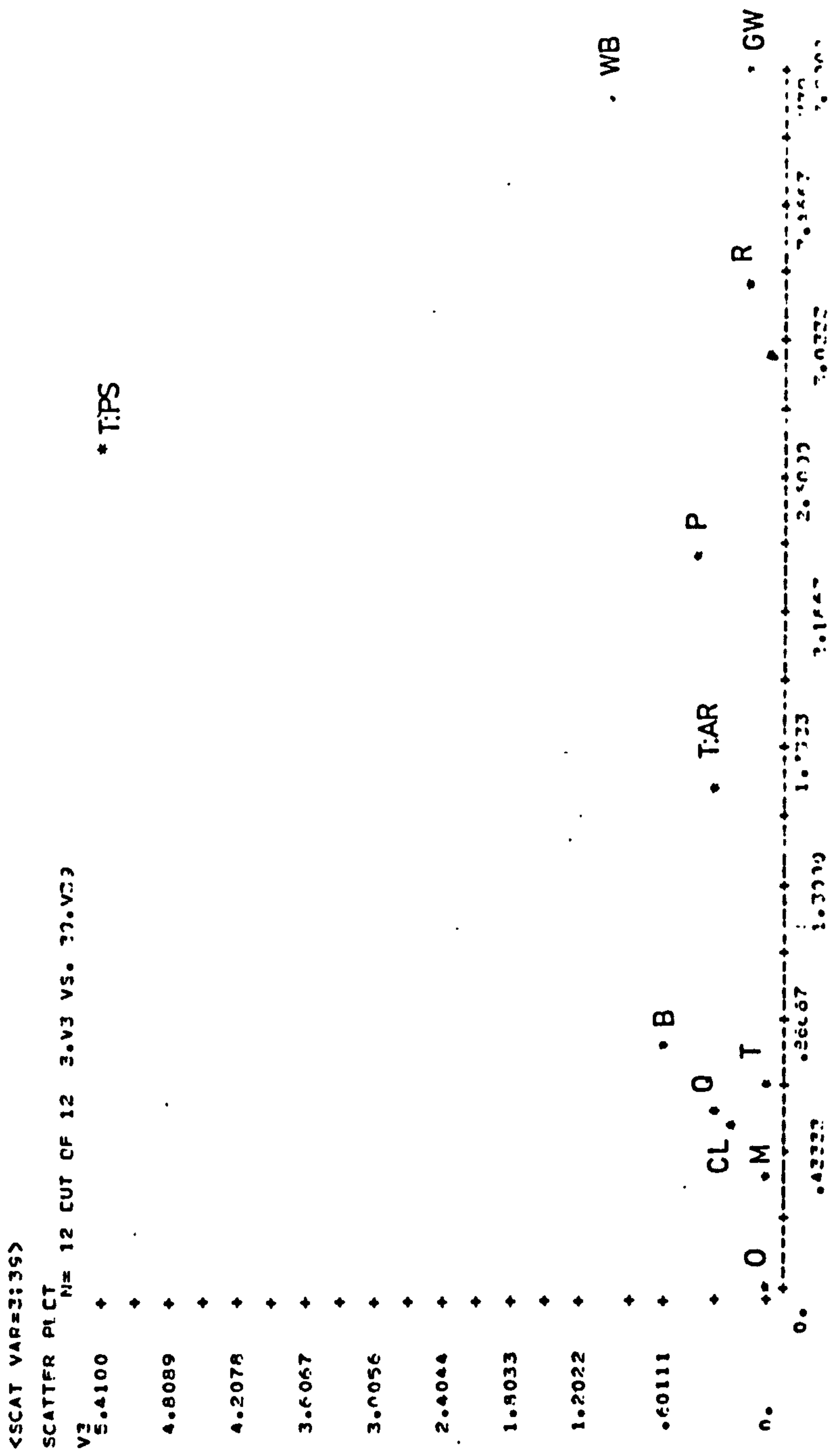


Fig.61m Samian vs combined "regional speciality" (w)

Fig. 61n Samian vs combined "coarse" (w)

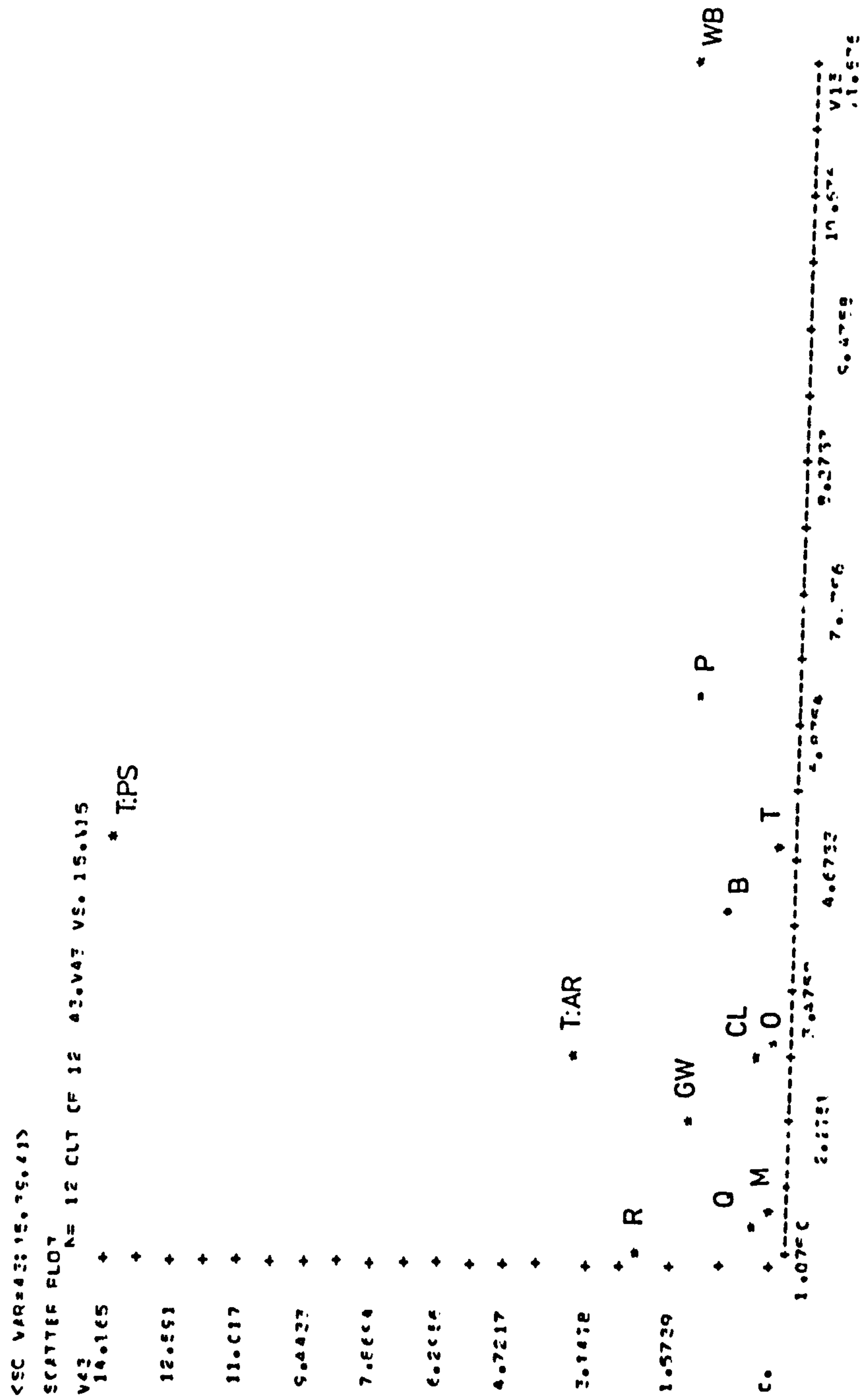


Fig. 610 Grey vs combined "luxury" (w)

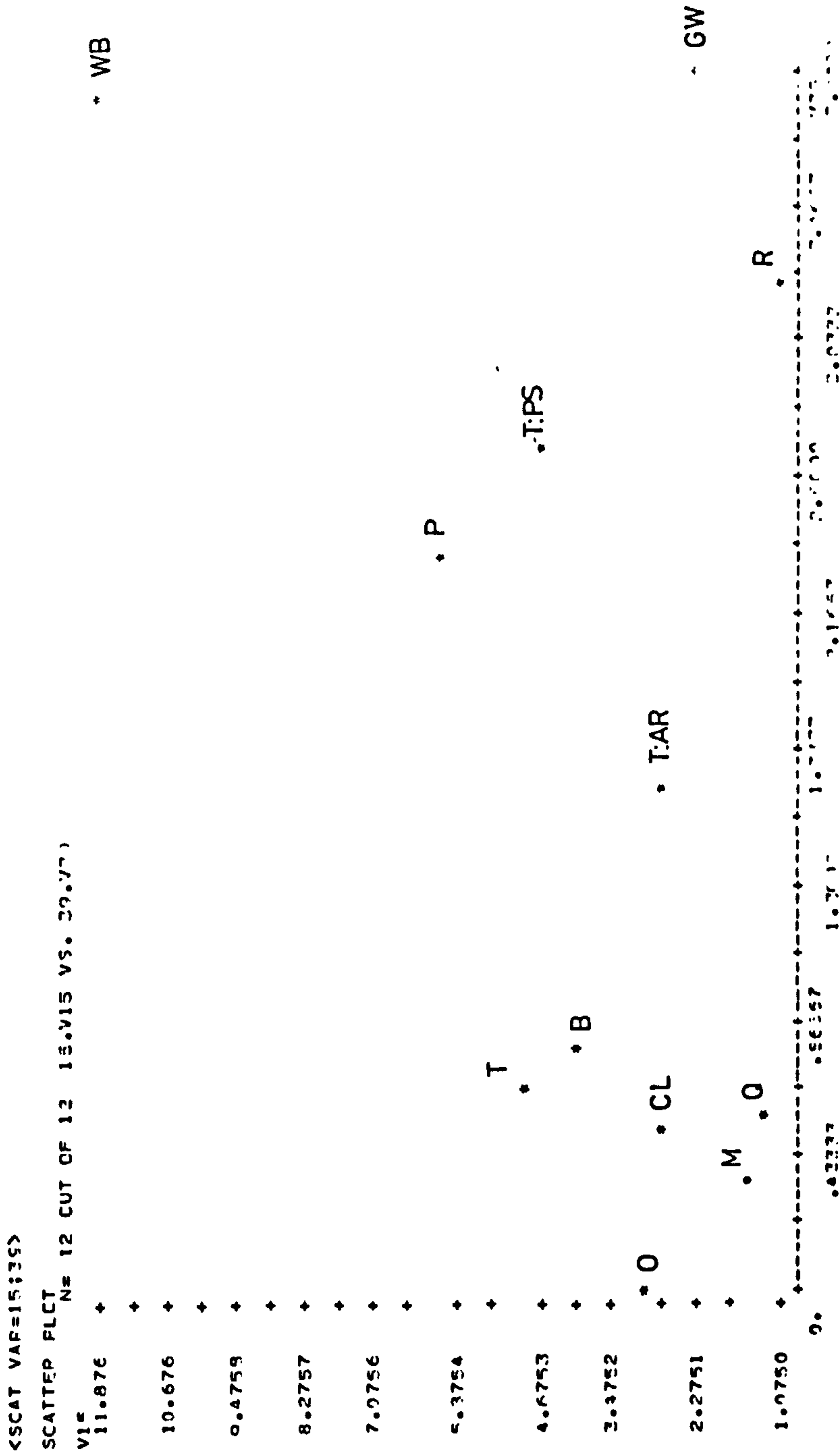


Fig.61p Grey vs combined "regional speciality" (w)

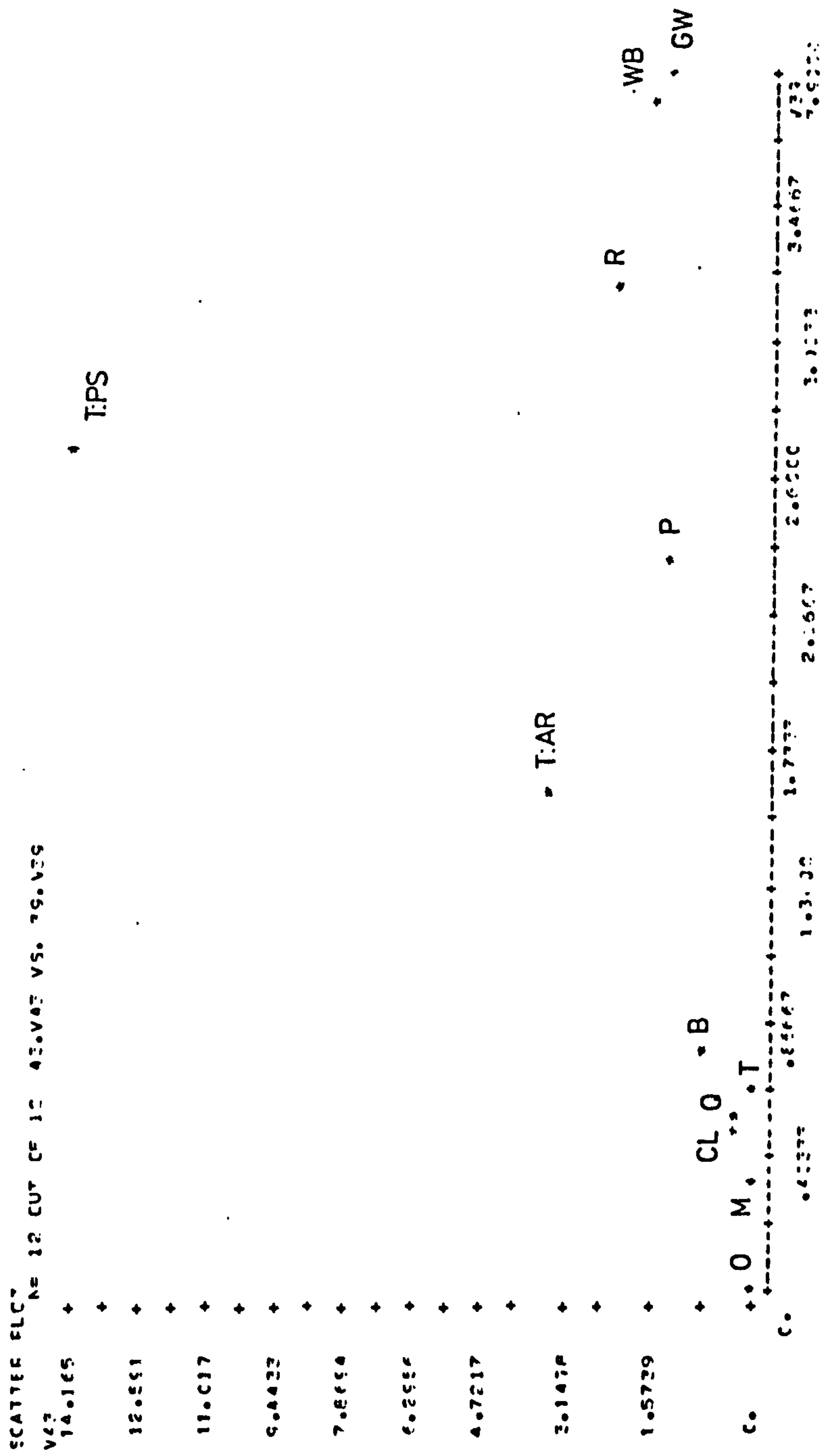


Fig.61r Combined "luxury" vs combined "regional speciality" (w)

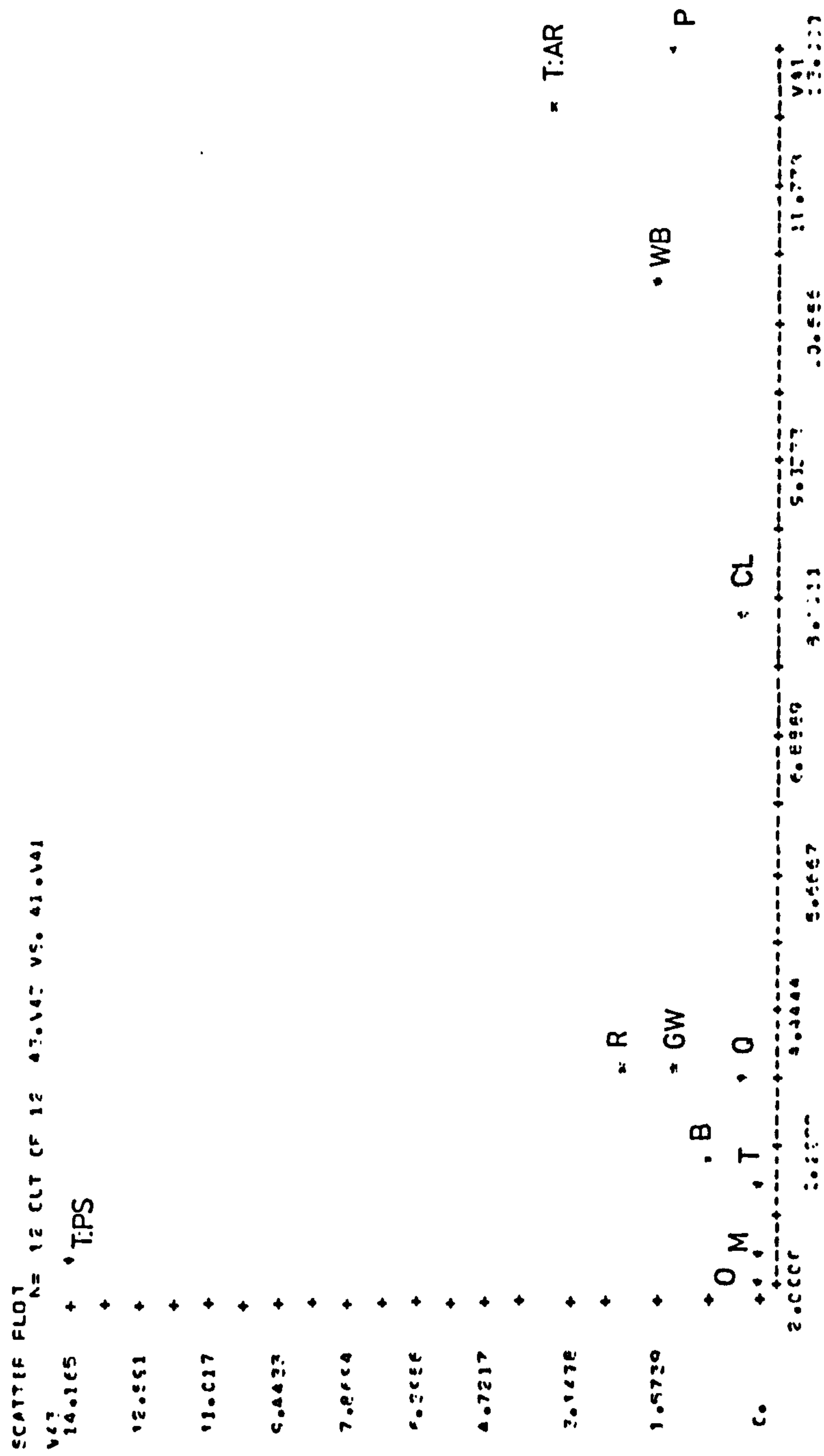


Fig. 61s Combined "luxury" vs combined "coarse" (w)

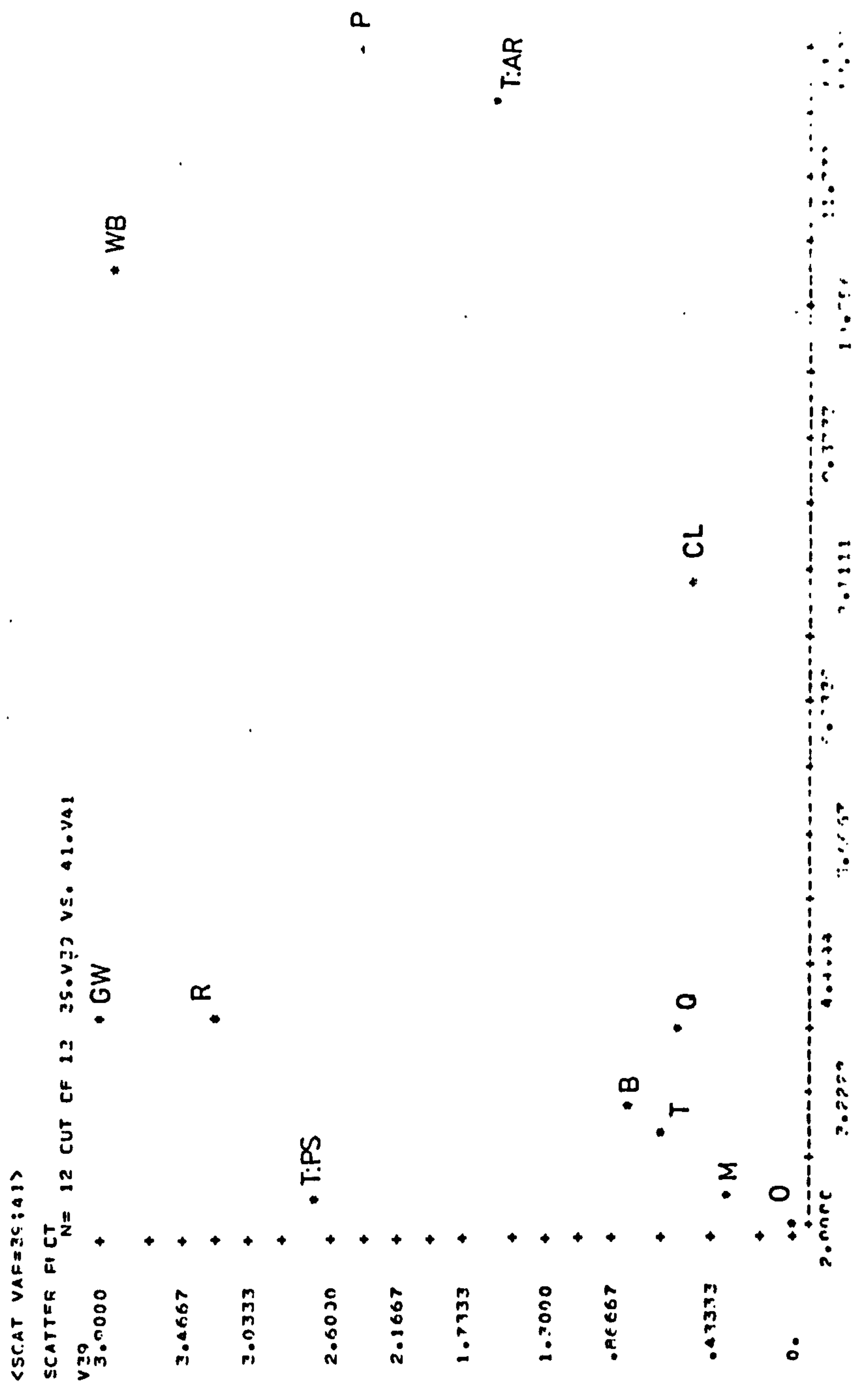


Fig. 61t Combined "regional speciality" vs combined "coarse" (w)

would have some luxuries and many 'middle-range' 'mass-produced' wares while poor sites would have few luxuries and few 'middle-range' wares. The assumption in the latter case is that the pottery assemblages on the poor sites will be made up almost exclusively of poor-quality locally-produced wares supplied by a primitive redistributive exchange system.

The results from testing model IV suggest that the middle range sites seem to have different pottery supply systems to the town and richest sites and lower status sites. This could perhaps be modelled as in Fig. 62.

This suggestion was further backed up by running a series of cluster analyses. As recommended by Doran and Hodson (1975) k-means or centroid cluster analysis was used and with the aid of MIDAS the diagrams illustrated in Fig. 63 were produced.

The links between high and low status sites as modelled in Fig. 62 were clear for example between Great Weldon (2) and Ringstead (10) and between Brixworth (4) and Thorplands (11). It may very tentatively be suggested that the 'middle-range' sites differ from the high and low status sites in the weighting of their pottery supply systems towards marketing exchange. The high and low status sites have an alternative emphasis on redistribution over market exchange.

e) Model V and VI - Introduction

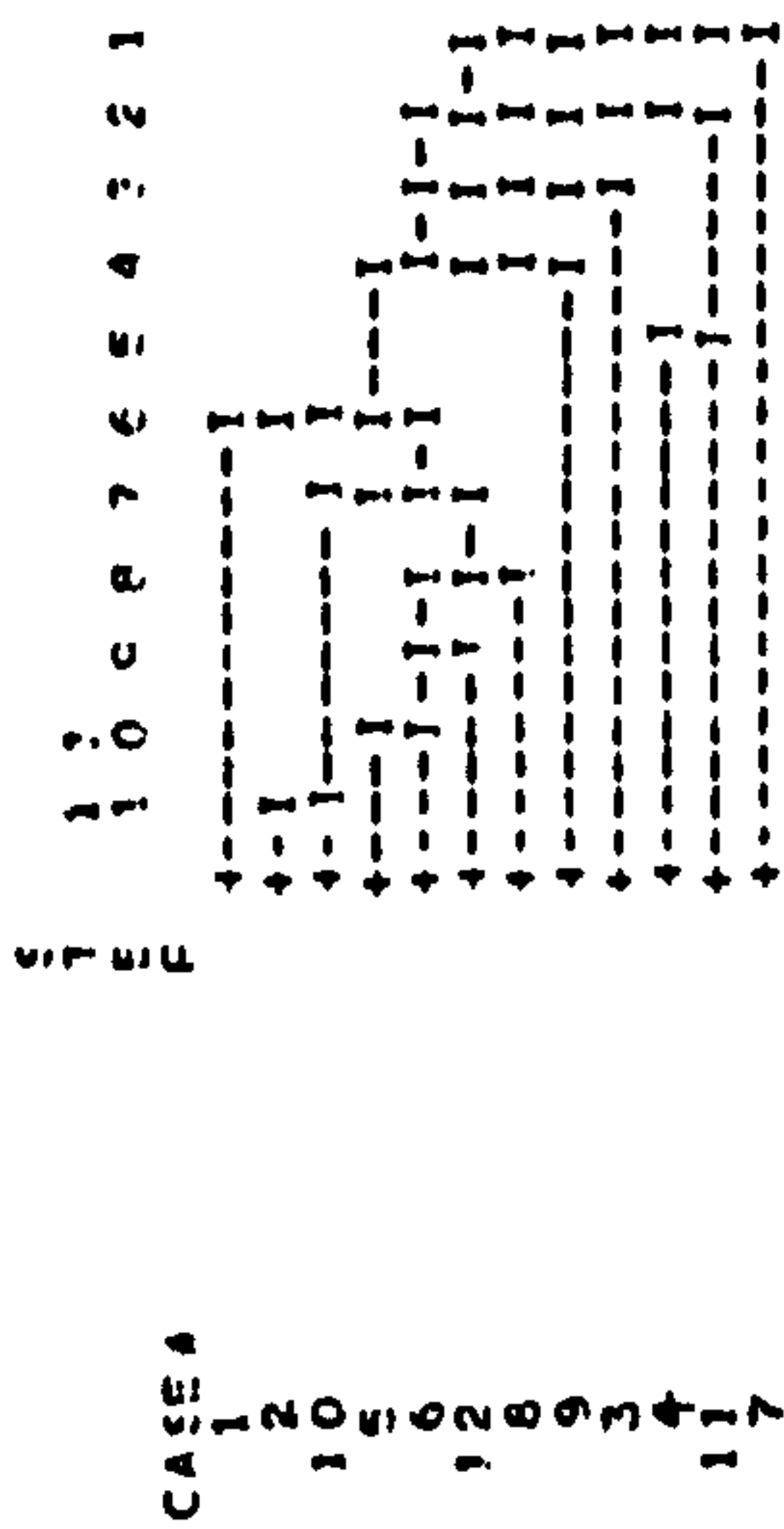
Before continuing to test hypothesis IV it seems appropriate at this point to digress and discuss other factors working on the

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USING: 2.V3. 4.V4. 6.V6. 8.V8. 10.V10. 12.V12. 14.V14. 15.V15. 17.V17. 20.V20. 22.V22. 23.V23. 25.V25. 29.V29. 30.V30. 32.V32.
34.V34

```

sherd count



```

CASES
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
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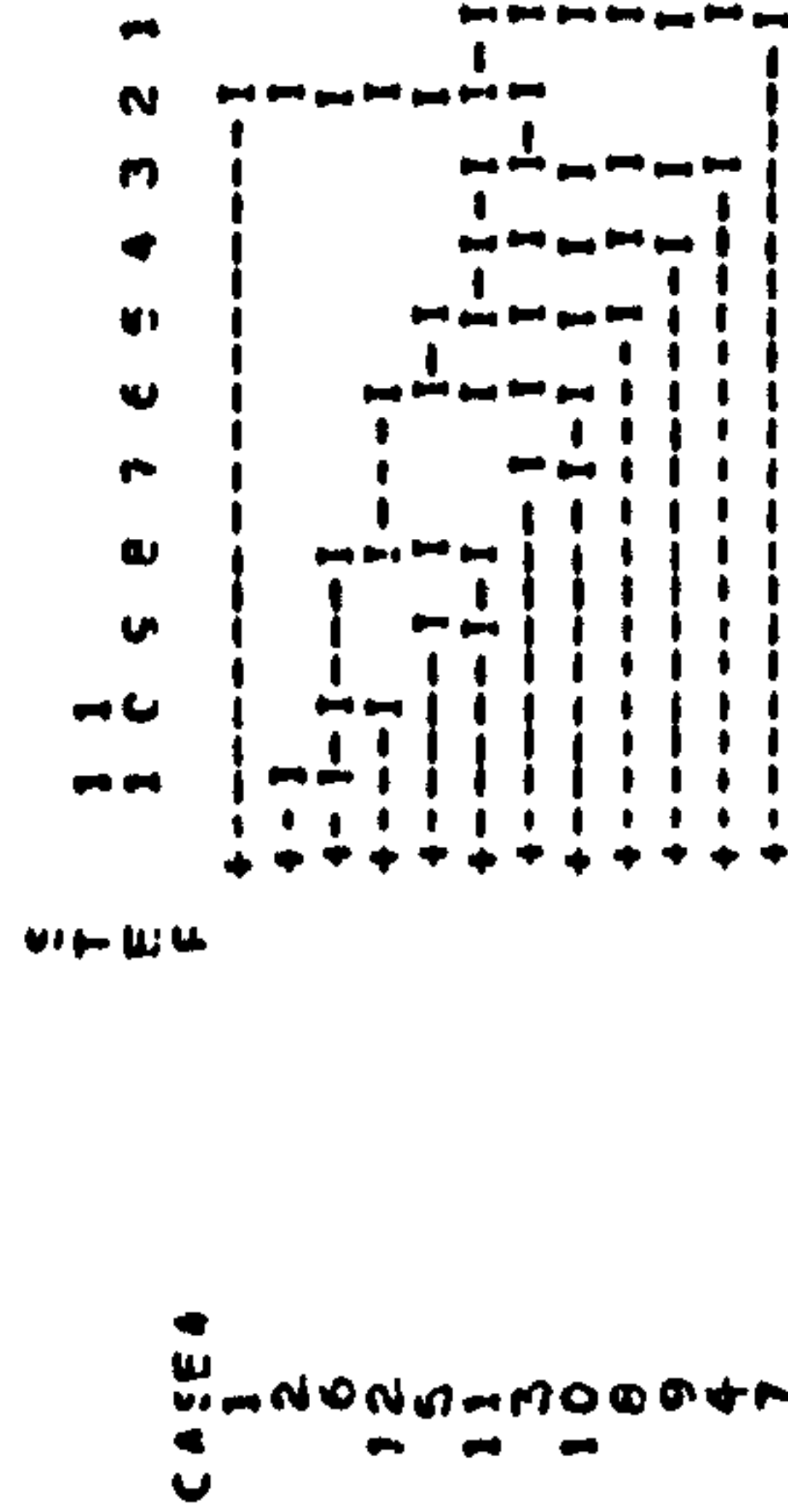
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USING: 3.V3. 5.V5. 7.V7. 9.V9. 11.V11. 13.V13. 15.V15. 17.V17. 19.V19. 21.V21. 23.V23. 25.V25. 27.V27. 29.V29. 31.V31. 33.V33.
35.V35

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weight



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CASES
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
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1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12

```

Fig. 63 Cluster analyses

patterning of the pottery assemblages, namely the actual mechanics of the pottery distribution system rather than the modes of exchange concerned. Two rough methods may be distinguished and thence hypothesised;

- a) That pottery was distributed via urban centres = hypothesis V.
- b) That pottery was distributed direct to the consumer from the kiln sites = hypothesis VI.

To test these, other sources of data are clearly required. This data may be classified under two headings, one for each of the two hypotheses;

- a) The geographical distances of the sites from the nearest urban centres (see under the individual sites in Chapter 5 section iv)).
- b) The geographical distances of the sites from the kilns.

f) Model V - The Role of the Roman Town in the Economy

The hypothesis V may be modelled as follows; sites closer to towns have a greater diversity of wares and possibly greater amounts of 'luxury' and/or 'regional speciality' wares and/or marketed goods than might be expected for their social status.

The ancient town as a centre of consumption, preying parasitically on the surrounding countryside is a powerful and much cherished view among ancient historians. Sombart defines this model as follows:

"By a consumption city I mean one which pays for its maintenance ... not with its own products, because it does not need to. It derives its maintenance rather on the basis of a legal claim such as taxes or rents, without having to deliver return values " (cited by Hopkins 1978 72).

This is the definition accepted by early archaeologists such as Collingwood who wrote that from a strictly economic point of view the towns were a luxury for the Romans (Collingwood and Myers 1937 198-9). Since then the model has been modified. Fulford (1982) points out that such explanations are really only applicable to the major towns of Roman Britain, the *colonia*, *municipia* and *civitas* capitals. He then makes out an interesting case for the small towns and so-called 'urban nucleations' so common in the Romano-British countryside, being more industrial producers than pure consumers. In Northants, the iron-working settlement at Ashton is a case in point (see Chapter 5 section e) above). He goes on to use fourteenth century English comparisons to try and assess the balance between food-production and other specialist activities in the small Roman towns, a process which Hopkins (1978) criticises as leading to false conclusions. The latter author points out that in the Roman world, town and countryside could not be separated. There was no political organisation specific to the town which excluded the surrounding countryside. Furthermore, there were "... no institutions which fostered specifically urban commercial or manufacturing activity and gave traders or manufacturers a status

independent of, or parallel to, the traditional status of landowners" (ibid 74). In this Hopkins sees a very different situation to that of the post-medieval European towns whose merchants had little chance of becoming part of the landed aristocracy.

Hopkins' conclusion is thus that Roman cities were quite definitely consumer cities (confusingly he seems to use the terms 'town' and 'city' interchangeably), but that the use of such a simplistic term should not conjure up a picture of the parasitical city, "...consisting exclusively of idle consumers fed from the countryside and giving nothing in return" (ibid 75). The toiling rural peasants who produced what the city consumed did obtain returns from their efforts. Hopkins lists; law: protection; peace; rituals; ceremonies and medical advice as well as the opportunity to buy additional food and service, necessities and luxuries (ibid 75).

As to the role of the manufacturers in the economy of the town, Hopkins would not support Finley's and Jones' completely dismissive views that trade and industry make a negligible contribution, "... the small scale of most units of (non-agricultural) productions should not be taken as evidence of their aggregate unimportance " (ibid 75).

It must be assumed that Hopkins' definition of 'town' is not as generalised as Fulford's (1982) which includes all classes of nucleated settlements (except military establishments) where the communities were not engaged primarily in food production. These

included 'small' towns (see Rodwell and Rowley 1975) as well as *coloniae* and so on. Fulford's starting point is Finley's summary of the relationship between town and countryside in the ancient world in general:

"Essentially the ability of ancient cities to pay for their food, metals, slaves and other necessities rested on four variables; the amount of local agricultural production...; the presence or absence of special resources (such as minerals); the invisible exports of trade and tourism; and fourth the income from land owner-ship and empire, rents, taxes, tribute..." (Finley 1973 139).

As pointed out above the contribution of manufactures is dismissed.

Fulford takes these four variables in turn and applies them to the archaeological evidence from Roman Britain. His argument is thus slightly circular in that Finley appears to be only referring to the cities and major towns of the ancient world whereas Fulford's application is much more generalised. His conclusion that the lesser settlements do not necessarily fit Finley's model is thus somewhat specious. This aside, his evidence is interesting for the economic situation in those settlements below the level of *civitas* capital. He is quick to point out that the amount of data is far from satisfactory, though he does feel able to conclude that, given the ".... comparative scarcity of public buildings in these settlements, it

seems probable that much of this success was due to their relative strength as craft and market centres. The role of craft-specialisation and the provision of services had probably been underestimated for these settlements" (Fulford 1982 417).

Peacock (1982) in his discussion of how Roman pottery could have been distributed and sold, comments on how little is known about the arrangements for short distance marketing in the Roman world. Using what little archaeological evidence there is, he suggests that permanent pottery 'shops' in towns (apparently of the larger variety) were "... more akin to the china specialist of a Western European High Street " (Peacock 1982 156), in other words they seem to have acted as specialist outlets for 'luxury' wares like imported glazed wares, central Gaulish samian, lamps and so on. From this he goes on to suggest that the everyday coarse wares would have been distributed by potters or itinerant merchants and purchases would have been made, "... at the pottery, from peddlers or through periodic fairs and markets" (ibid 156). These latter not necessarily in towns. Alternatives which have archaeological support include rural temple sites and Peacock cites Lewis on the temple 'market' at Woodeaton (Lewis 1966 130).

In the case of markets in towns, Peacock notes how in the Roman world "... an attempt was made to stagger market days in the neighbouring towns so that merchants and peasants could do the rounds " (Peacock 1982 156). The evidence of inscriptions and a calendar used to mark off the daily round of markets in towns between Capua and Rome supports this (see MacMullen 1970).

The distance a rural consumer had to travel to a market is seen by Peacock as crucial. He cites MacMullen's description of marketing in modern day Antioch where the peasants expect to spend no more than three or four hours on the road to and from a market (cited in Peacock 1982 156). Peacock applies this to the Roman situation and concludes that with a good road route peasants might be expected to travel up to c.15-25 km (2-3 hours travelling) into a market centre, obviously less where communications were poor.

In conclusion it may be stated that the larger towns and cities of Roman Britain more than likely acted as consumer centres. Smaller nucleated settlements may have relied more heavily on manufactures to support themselves having less ability to command obligations of taxes and rent. All towns and cities acted as redistributive and/or marketing centres for town and countryside though the rural consumer may have had a greater role to play in the economy of the smaller settlements.

In order to test hypothesis V the status of the various nucleated settlements in the study area must first be assessed. Clearly the unwalled 'semi-urban' nucleations such as Ashton still fall under Fulford's category of 'small' town (Fulford 1982) while walled Lactodorum and Irchester, hitherto referred to as 'small' towns are of substantially higher status, though still apparently lacking the normal attributes of a Roman town such as public baths, fora and so on. The problem cannot be solved here. For the moment it will have to be assumed that 'large' unwalled nucleations like Ashton, and 'small' walled towns such as Lactodorum both fall under Fulford's definition of lesser

settlements with their greater reliance on the production of manufactures and the provision of market facilities for the rural as well as their own populations, to support their economies.

The presence of rural markets in Northants is difficult to prove or disprove. A handful of temple sites are known but there seems to be little evidence from any of them for the presence of fairs or markets (see Appendix C and Map 4).

It must be stressed finally, that using the term 'market' to describe the sites where goods were exchanged does not imply the existence of a 'market' economy. The assumption of hypothesis V is that smaller towns generally acted as redistributive and/or marketing centres for the surrounding countryside (their function as centres of production will not be discussed here). No assumption is being made about the modes of exchange in operation. Larger towns may be seen as having the same function but to a much greater degree acting as centres of consumption.

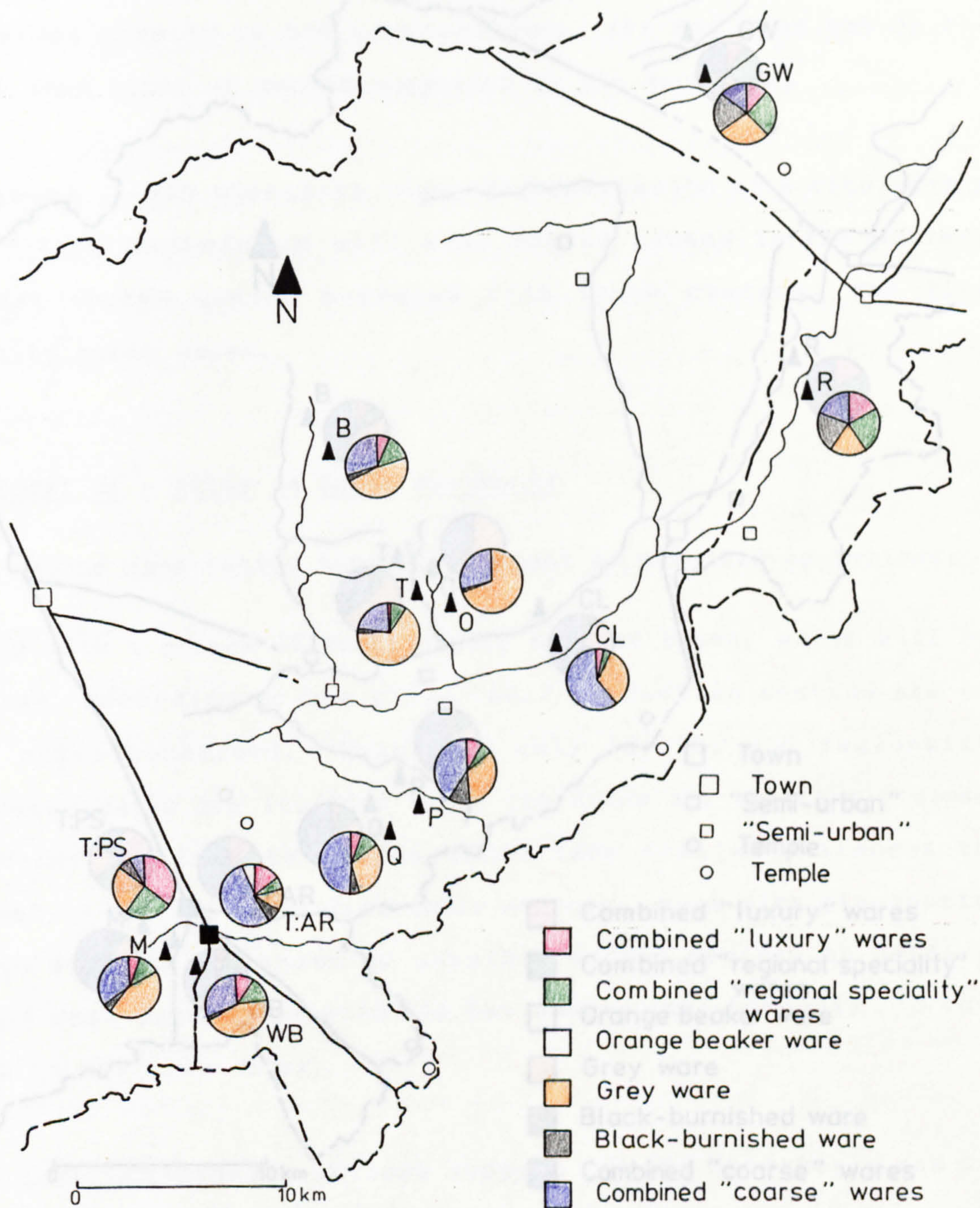
If as Peacock (1982) suggests, a rural consumer can only be expected to travel 15-25 km at most with a good road (or river) route available, this is a useful way of distinguishing which of the sites in the Northants study area were relying on which centres of exchange if at all.

Maps with the makeup of the site assemblages represented as pie-charts were prepared to test the hypothesis V (Maps 6 and 7), and reference was also made to the bar charts and scatter plots.

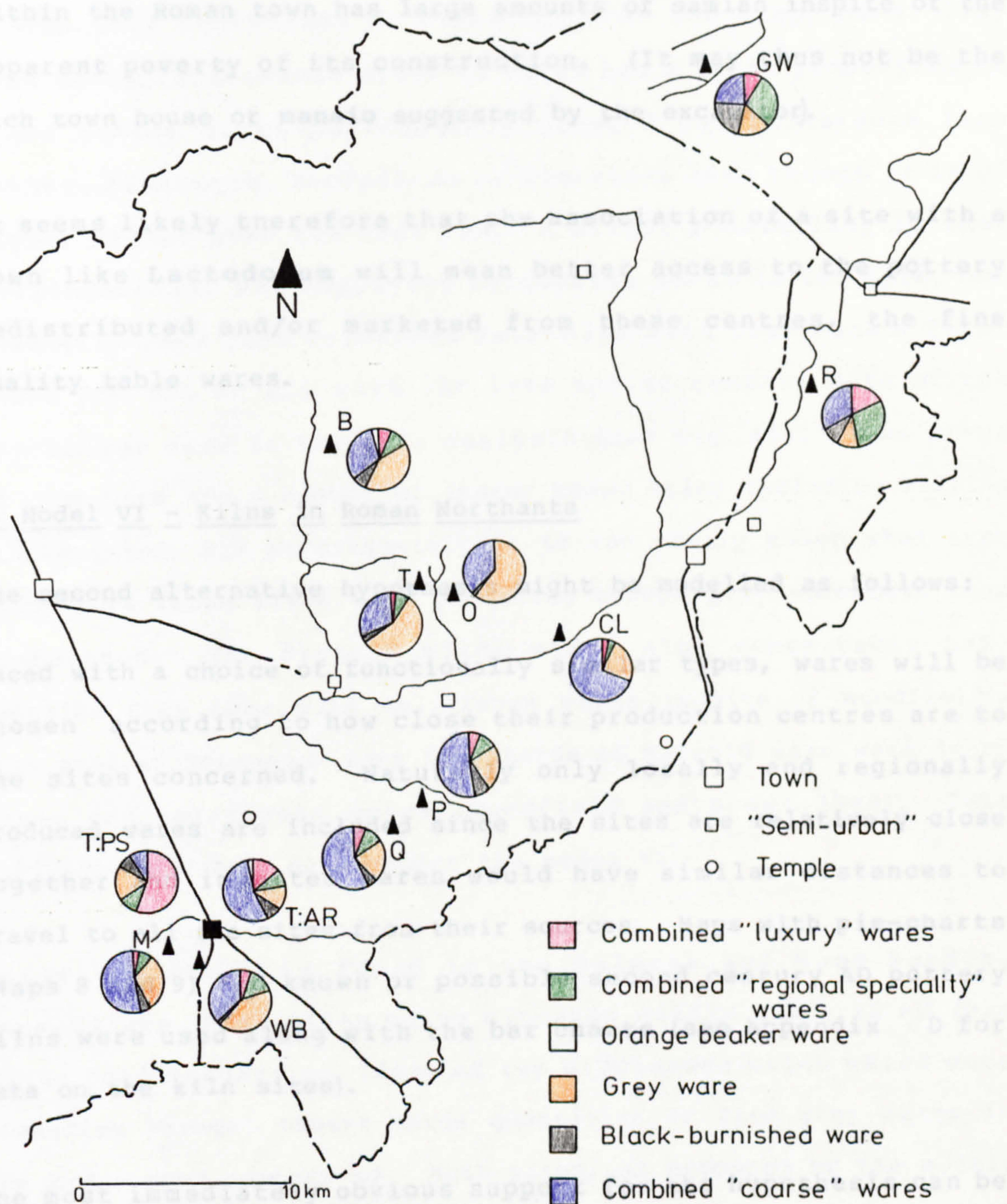
The most immediate support for the hypothesis V came from Towcester ; Alchester Road. This relatively poor site was situated on the outskirts of Lactodorum along a main road into the town (see site description in Chapter 5 section iv) above). The scatter plots particularly showed again and again that this assemblage was very different to the 'core' sites. Its diversity can be demonstrated by the range of vessel types graph showing a range greater than all other sites along with a very large number of unidentified fine wares (Fig. 64).

The only other sites close to a 'town' were Mileoak and Wood Burcote. The latter was particularly distinguished by the scatter plots as different to the 'core' sites. Mileoak on the other hand was not, though this site admittedly does not lie near to a main Roman road into Lactodorum as Wood Burcote does. Thus Wood Burcote's 'oddness' previously explained as being possibly due to a wrong placing in the social hierarchy, might in fact be due to its siting near a Roman town.

Further support for the hypothesis comes from Ringstead which has unusually large amounts of fine and specialist wares. The 'poor' site lies a short distance south of the semi-urban settlement of Titchmarsh, alongside the Nene and Roman road Margary no. 570 and only c. 10 km up river from Irchester, a quite reasonable distance for a peasant to travel in a day as noted above. Against this must be contrasted Clay Lane, a comparatively richer and clearly more Romanised site, lying just 6 km upstream of Irchester and yet with much smaller amounts of fine and specialist wares than Ringstead.



Map 6 Pie charts & market sites
(by sherd count)



Map 7 Pie charts & market sites (by weight)

The hypothesis V is thus in part supported by testing, particularly in the Towcester area. Towcester : Park Street, within the Roman town has large amounts of samian inspite of the apparent poverty of its construction. (It may thus not be the rich town house or mansio suggested by the excavator).

It seems likely therefore that the association of a site with a town like Lactodorum will mean better access to the pottery redistributed and/or marketed from these centres, the fine quality table wares.

g) Model VI - Kilns in Roman Northants

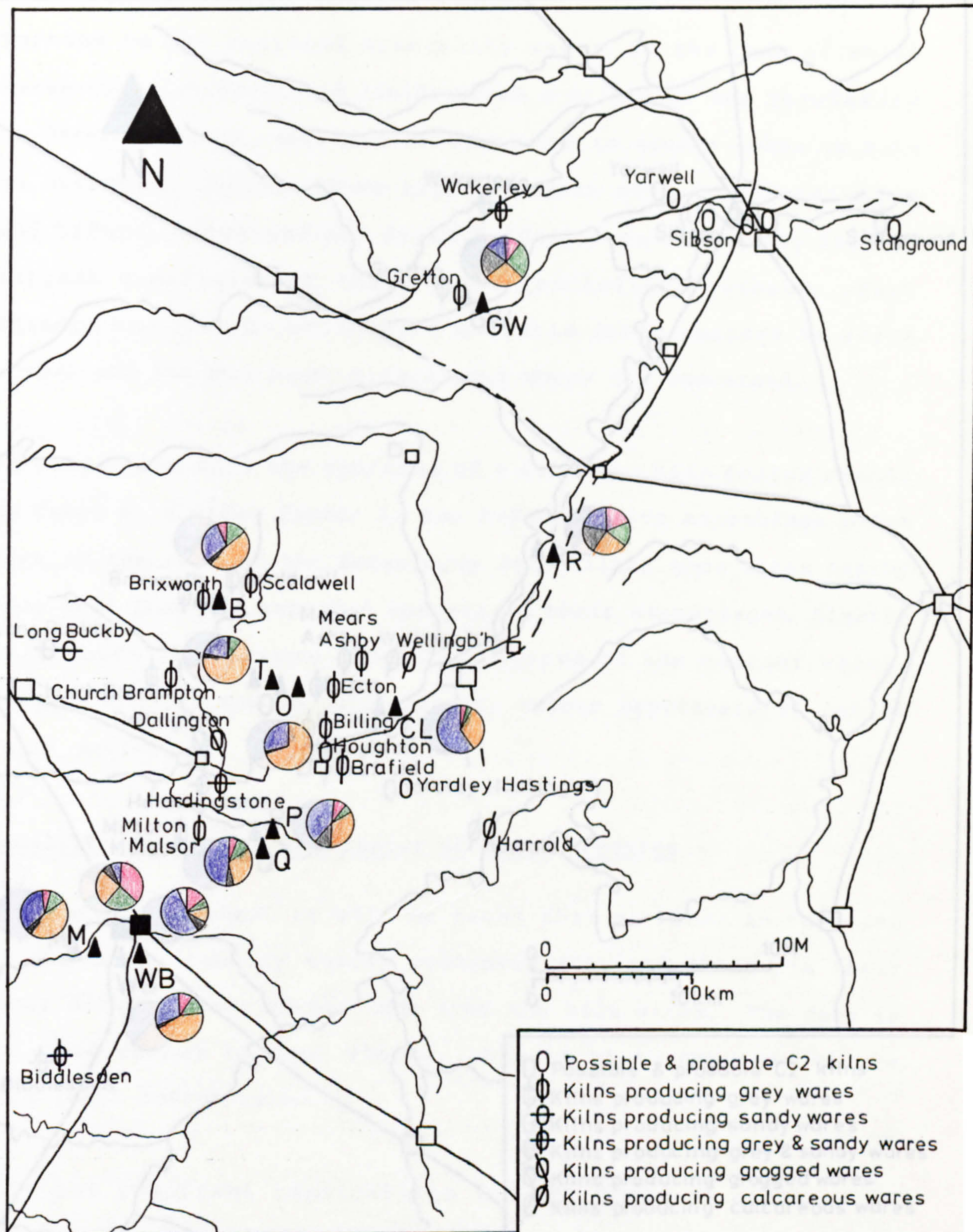
The second alternative hypothesis might be modelled as follows:

Faced with a choice of functionally similar types, wares will be chosen according to how close their production centres are to the sites concerned. Naturally only locally and regionally produced wares are included since the sites are relatively close together and imported wares would have similar distances to travel to all the sites from their sources. Maps with pie-charts (Maps 8 and 9) and known or possible second century AD pottery kilns were used along with the bar charts (see Appendix D for data on the kiln sites).

The most immediately obvious support for the hypothesis can be seen in the sites closest to the large, grey ware production centre at Ecton. Both Thorplands and Overstone have very large amounts of fine quality grey wares, inspite of being two of the poorest sites. Similarly Brixworth is close to two other kiln

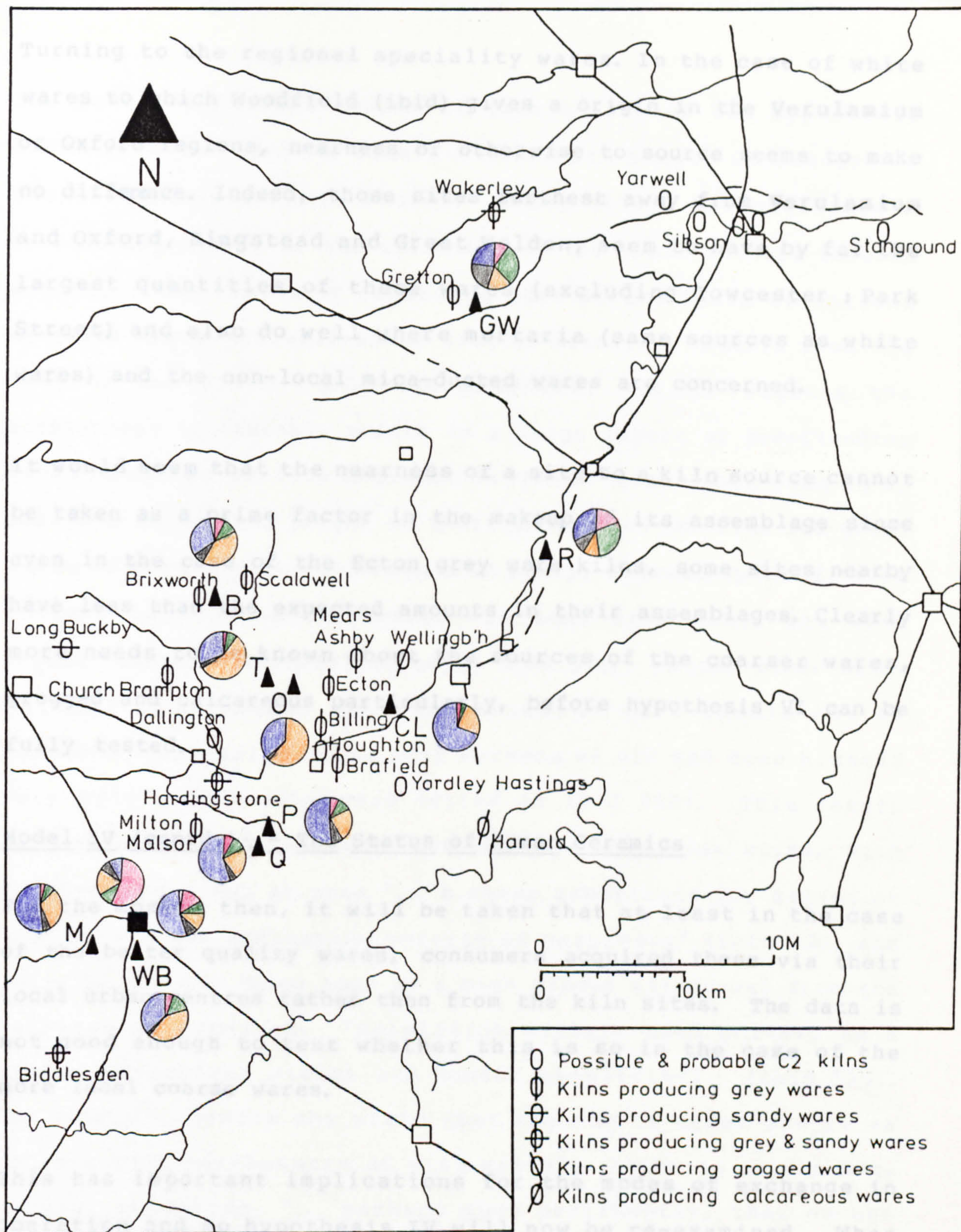
sites possibly producing grey wares and it too has a large proportion of grey wares, though it is also of a much higher status than Thorplands or Overstone. On the other hand, Clay Lane though reasonably close to Ecton has a large proportion of other coarse wares particularly grogged and calcareous than either, Brixworth, Thorplands or Overstone even though it is of higher status than the last two. A slight possibility is that Wellingborough was supplying calcareous wares to the site, but this kiln only just coincides date-wise with Clay Lane's first years and not at all with the late second century date of the assemblage used in the data analysis (see Fig. 65). Down river of Clay Lane are a number of lesser known kilns including Billing and Houghton, but unfortunately it is not really known what type of pottery these kilns were producing though grey wares have been postulated. The Harrold kilns might also conceivably have supplied Clay Lane with calcareous wares inspite of Woodfield's note that at Towcester very few sherds of Harrold ware were found among the calcareous wares (Woodfield and Brown 1983). This still however does not support the model VI.

Better evidence is found in the Mileoak and Wood Burcote assemblages, both sites being situated within about 10 km (via Roman road Margary no. 160a) of the Biddlesden kilns which were producing amongst others large quantities of fine grey wares in the mid second century AD. Both sites, as proposed by the model, have large quantities of grey wares, presumably mostly from this source, though Woodfield (ibid) does not recognise any Biddlesden wares at Towcester itself which is unexpected.



For rest of key see Maps 6 & 7

Map 8 Pie charts & kiln sites (by sherd count)



For rest of key see Maps 6 & 7

Map 9 Pie charts & kiln sites (by weight)

Turning to the regional speciality wares. In the case of white wares to which Woodfield (ibid) gives a origin in the Verulamium or Oxford regions, nearness or otherwise to source seems to make no difference. Indeed, those sites furthest away from Verulamium and Oxford, Ringstead and Great Weldon, seem to have by far the largest quantities of these wares (excluding Towcester ; Park Street) and also do well where mortaria (same sources as white wares) and the non-local mica-dusted wares are concerned.

It would seem that the nearness of a site to a kiln source cannot be taken as a prime factor in the makeup of its assemblage since even in the case of the Ecton grey ware kilns, some sites nearby have less than the expected amounts in their assemblages. Clearly more needs to be known about the sources of the coarser wares, grogged and calcareous particularly, before hypothesis VI can be fully tested.

Model IV (contd.) - The Status of Roman Ceramics

For the moment then, it will be taken that at least in the case of the better quality wares, consumers acquired these via their local urban centres rather than from the kiln sites. The data is not good enough to test whether this is so in the case of the more local coarse wares.

This has important implications for the modes of exchange in operation and so hypothesis IV will now be re-examined. When first tested it was assumed that nothing was known of the production and quality of the pottery in the assemblages. If this data is now supplied, hypothesis IV can be further tested.

The most independent source of data to retest the hypothesis comes from the ancient literature and its meagre references to the ubiquitous ceramic vessel. Evans (1981) has published a fascinating survey of the attitudes of the Roman authors towards pottery. She starts by remarking that Strabo fails to include ceramics among his well-known list of Britain's imports from the rest of the Roman world (*Geographica*, 4.5,3), whereas the archaeology irrefutably points to a large import of pre-Claudian continental wares into Augustan Britain. Evans then goes on to show how during the height of their production the fine red-gloss wares of Arezzo were much valued in Italy, whereas by AD 86, such pottery is seen to "... lower the tone of a table set with crystal vessels" (Martial cited in *ibid* 20). On the other hand, Martial also points out that Arretine ware should not be despised, "...a prince like Lars Porsena of old had done himself very well with earthenware" (cited in *ibid* 520). This rather ambivalent attitude seems to set the tone for later works, with earthenware being at once "... a cheap substitute for silver or bronze, its use indicating poverty or parsimony" (*ibid* 520) and yet also its use being seen as a high minded withdrawal from the rat-race of ambition, "Moralising writers used pottery as a symbol of ancient virtue and honest simplicity" (*ibid* 520). For example, Seneca who wrote that the man is great who is as content with earthenware as with silver. As Evans points out, Juvenal commented, "... perhaps more pertinently, that no-one bothers to poison you if your cups are earthen-ware" (*ibid* 520).

Evans stresses that the description 'Samian' was used generically in the Roman world. Thus when Plautus writes that "... the rich

can drink out of elaborate goblets; those who aren't rich use Samian" (ibid 521), he is referring to earthen-ware in general. Pliny offers another clue when he writes that the majority of people use earthenware dishes (Natural History XXV, 46, 160-1) and Juvenal confirms this in his third satire (168):

"To drink or eat in earthenware we scorn,
which cheaply country cupboards does adorn."

Evans concludes the section by writing that:

"The impression given is that if earthenware was generally regarded as cheap and common, its use in polite society needed the excuse of indigence or deliberate austerity " (ibid 520-21).

Thus it can be inferred that at least in the aristocratic circles of Italy, vessels such as the samian ware produced at Lezoux would have hardly counted as a luxury ware by the second century AD. Silver and bronze were far more appropriate for the elegant dinner table. Only the poor majority, particularly the rural poor consistently used earthenware vessels in their daily life. Juvenal, again in the third satire gives an amusing picture of the part pottery had to play in the lives of the urban poor, in this case of Rome:

"There are other nocturnal perils, of various
sorts,
Which you should consider. It's a long way up

to the roof tops,
And a falling tile can brain you - not to
mention all,
Those cracked or leaky pots that people toss
out through windows "

(Juvenal Satire III 1967 96).

The problem is whether such opinions can be extrapolated to the situation in the province of Britannia, home of half-civilized barbarians as far as the average Italian was concerned. The answer it seems must be in the affirmative. Both archaeology and the meagre literary evidence that survives, points to a whole-hearted acceptance of all that was considered *de rigueur* by polite Roman society. Tacitus describes this process in disparaging terms:

"And so the population was gradually led into
the demoralising temptations of arcades, baths
and sumptuous banquets" (Tacitus 1977 73).

The archaeological evidence for these arcades, baths and town and country house dining rooms is well-known from Britain though they clearly cannot match the most wealthy examples from Italy. It seems reasonable to imagine that the same questions of status and material wealth occupied the minds of the British upper classes as of the less than wealthy free-born citizen of Juvenal's Rome:

"... still the first and foremost question
would be: 'what's he worth'?
How many slaves does he keep?
What's his acreage? What sort of dinner

service appears on his table - how many pieces, how big?"

(Juvenal, Satire III 1967 92).

Whether or not it can be inferred from this that 'luxury' wares as defined above should not be found on the very richest sites is another matter.

The model IV rests on the implicit assumption that the one town site, by definition of being in a town is the richest site of the twelve being studied. As already seen in testing hypothesis V this may not necessarily be so. Walthew (1975) has published a necessarily brief (in view of the data) account of the difference between town and villa houses in Roman Britain. He makes the very interesting observation that up until the mid second century AD, town houses in Britain seem to lag far behind their contemporary rural counterparts. His description of the very slow rate at which all but the simplest house plans appear in the towns, leads him to conclude that initial attempts to win the British over to town life failed:

"It is difficult to conceive of the Catuvellaunian... nobles occupying the Insula XIV timber buildings at Verulamium... although it is perfectly possible that they owned such property [shops and manufactures] and drew revenue from it. It would rather seem that they continued to live on and invest in their country estates " (Walthew 1975 203-4).

Only after the mid second century does Walthew see the town houses catching up in style, size and appointments with the rural villas of Britain. With reference to the situation in Northants, Walthew's date is rather unfortunate in that a number of the sites span or fall either side of it (see Fig. 65). The town site assemblage is of exactly mid second century date whereas the assemblage of the richest villa site would seem to be later. Thus Walthew's interesting hypothesis cannot be incorporated in to this study other than to suggest that the town site is perhaps not of such high social status relative to the rural sites as previously assumed.

Hypothesis IV thus remains to be thoroughly tested. So far it can only tentatively be suggested from the historical evidence that the richest sites would have scorned to use earthenware of any sort, preferring to use silver or bronze vessels at table (if not in the kitchen). Any finer distinctions among the various categories of pottery can only really be made through an objective examination of the pottery itself which now follows.

Romano-British and imported wares: form, fabric and manufacture

Samian

Bulmer describes samian as follows:

"The most obvious characteristics are its red colour, refined fabric, and lustrous surface. The gloss is produced, not by a true glaze, but by a highly refined, rich slip, in which

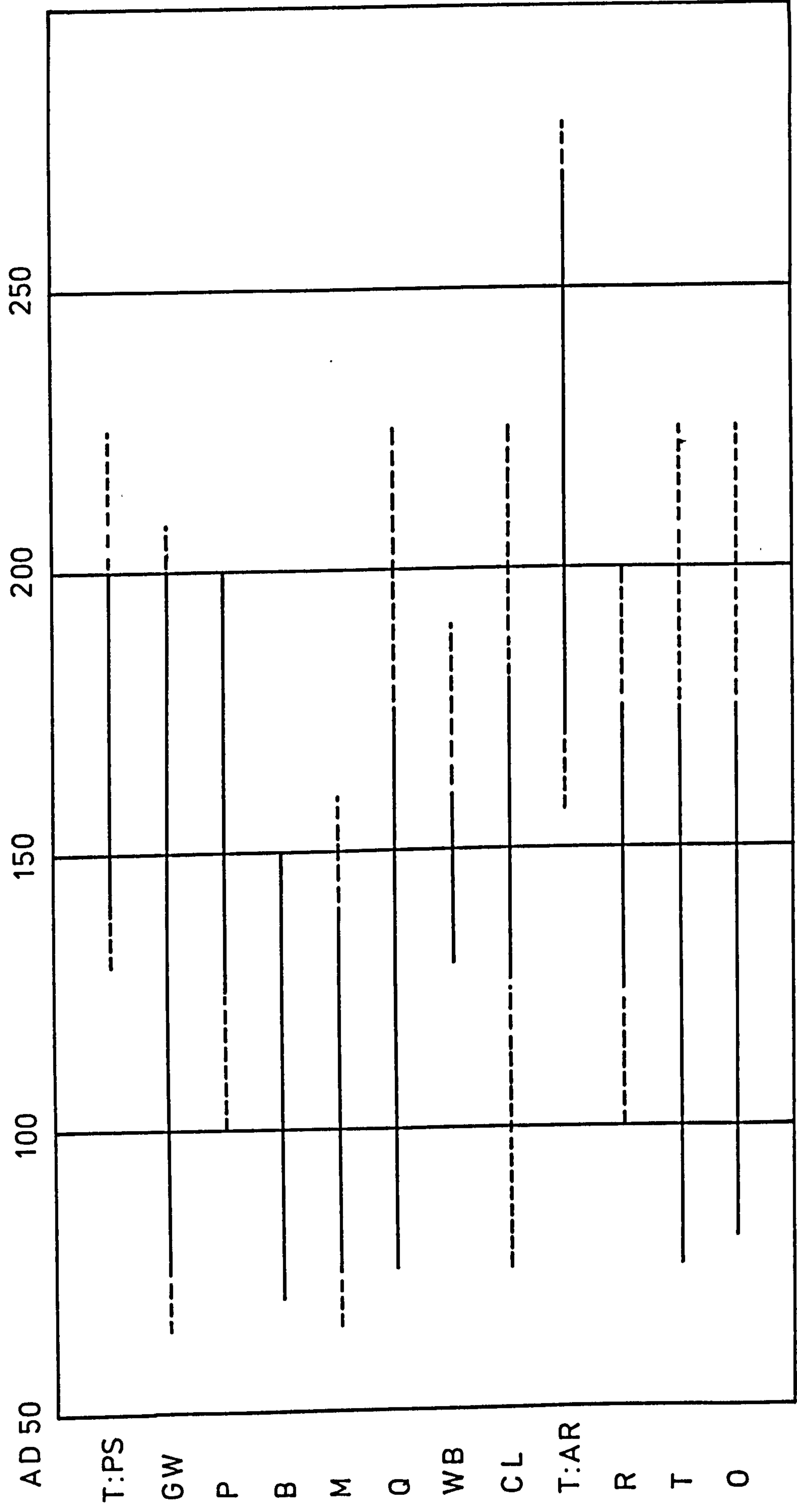


Fig. 65 Site date ranges

the vessel was dipped before its single firing.... The temperature of 900 - 1100°C required for the sintering of the clay, must have been maintained for about thirty hours. The kilns were partially free standing, and ceramic pipes came to be used to jacket their superstructure in an attempt to reduce the heat loss " (Bulmer 1980 6-7).

She goes on to suggest that a number of chemical substances were deliberately added to body and slip to improve the hardness and appearance.

Over eighty different forms of samian vessels are known from all the periods of production. From the twelve sites in Northants alone, thirty-eight different second century forms were represented (see Fig. 45). The ability to classify the forms of samian is due to the apparent standardization of their manufacture. Johns notes that even the size of some of the more common forms were standardized to some extent:

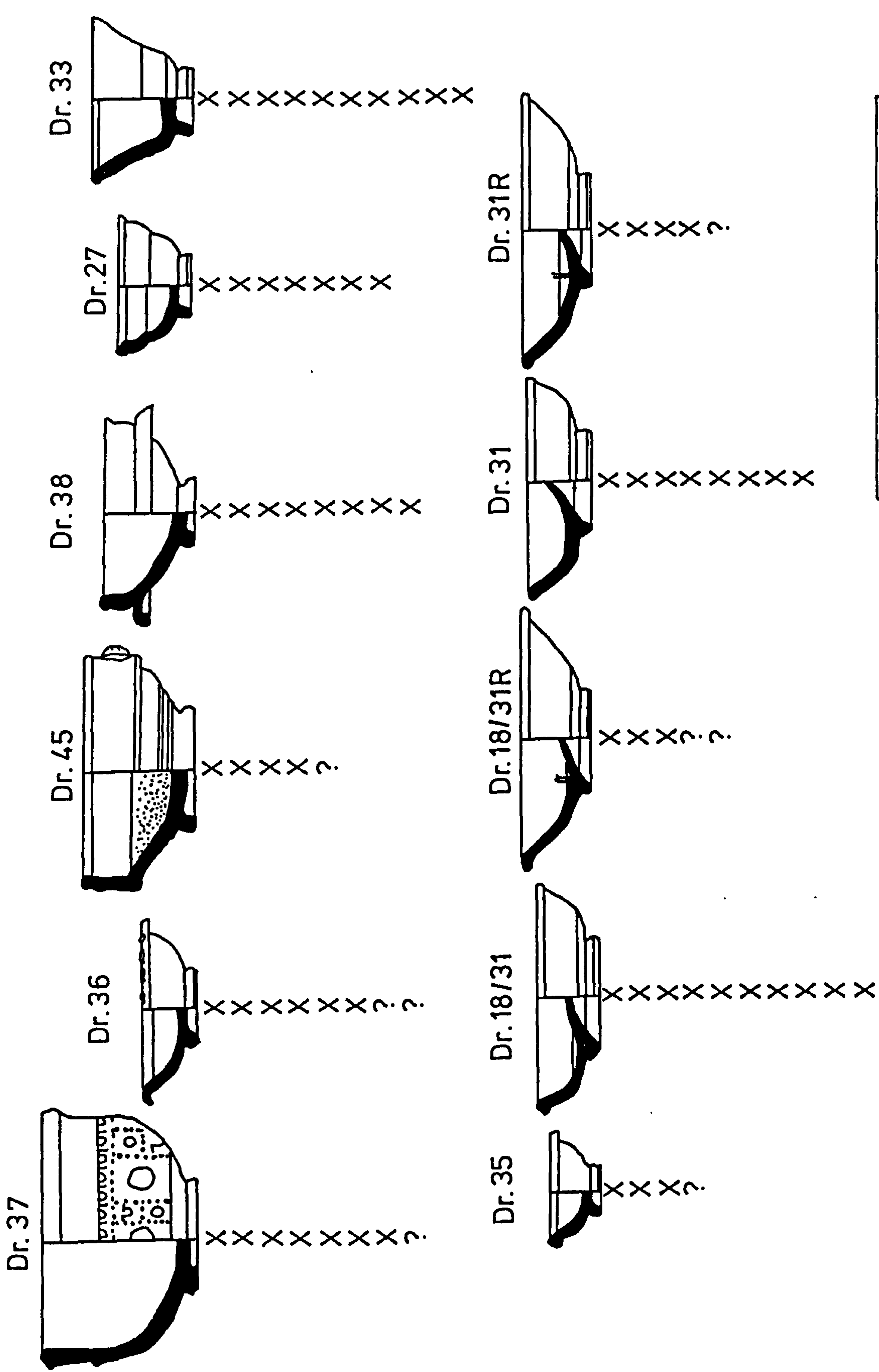
"Especially in the earlier period, plain forms often had intricately shaped profiles, inspired ultimately by metal prototypes. It would have been essential to use a template in the shaping and trimming of these vessels, and it is clear that such methods were also used in making other simpler plain forms " (Johns 1977 13).

The most typical form of ornament on samian was a low relief-moulding made by casting all or part of the vessel in a mould, which further aided standardisation.

Bulmer (1980) gives some idea of the complexity of the organisation of the Gaulish samian industries, describing the detailed graffiti tallies that survive recording production and the way that the various craftsmen stamped and named their own vessels, clearly a necessity where the products of a number of different workshops were fired together in the same kiln as has been demonstrated. Bulmer sees this as "... almost certainly intended to prevent argument about piece work completed by the hirelings in the workshop of a master potter or patron " (Bulmer 1980 29). Peacock (1982) on the other hand believes them to be catalogues of the contents of kilns before or after firing. Either way, with an annual output of millions of vessels, such organisation was clearly vital.

The archaeological evidence from central Gaul indicates a system of numerous small workshops although some degree of specialization can be proposed with workers responsible for particular parts of the process. Peacock writes that despite the fragmentation of the industry into small units, "... [it]... as a whole achieves a very wide market for its products, not unlike that of the factory mode of production at the present day " (ibid 127).

Fig. 66 indicates the commonest second century forms of samian found on the Northants sites. The vast majority of these wares apparently came from the Lezoux area of central Gaul.



X Form occurs on one site

Fig. 66 Commonest samian types

The presence/absence data is based on the specialist samian reports where these were available (see Appendix B) and include all secondary forms. As already noted these should thus be treated with caution, bearing in mind the possibly very long life of such a ware.

The most common forms on the Northants sites were Dr. form 33, a conical cup and Dr. form 18/31, a shallow dish. Next most common came Dr. form 38, a flanged bowl; Dr. form 31, similar to Dr. form 18/31; Dr. form 37, the well-known large decorated bowl and Dr. form 36, a small shallow bowl or dish.

It is tempting to suggest that even the poorest sites in second century Roman Britain could furnish a table with a samian drinking cup and samian plate accompanied in most cases with further serving bowls and dishes.

Amphorae

Callender describes the method of manufacture of these vessels as follows:

"Some were entirely turned on the wheel, others were probably hand made, perhaps being formed around a rope core. Others were obviously made in two or more pieces, with the upper portion of the neck and shoulders carefully worked and then 'fluted' on to the less carefully worked body and spike "

(Callender 1965 42).

The vessels were then fired and afterwards coated with some sort of pitch or resin to make them water tight. The production of amphorae was generally carried out on the estates which produced the commodities they contained. Some may also have been produced in manufactories according to Callender (ibid).

Their forms reflect the fact that the vessels were designed for a strictly utilitarian purpose, as containers and not for any day-to-day use. Callender details the requirements for such a vessel, "... they had to be strong to withstand the buffetings of long-distance transport, simple and easy to produce, and without any decorations or trimming in order to keep 'overhead' costs as low as possible " (ibid xix).

The forms of the vessels had another function to perform and that was to indicate, according to Callender, to the trader or merchant, the origin and sometimes the contents of the vessels concerned.

If whole amphorae were sold to customers then they would be stacked in tiers on racks or shelves or placed in a leaning position against the wall of the cellar, or even, writes Callender, dug into the sand or earth of the cellar floor. When required for consumption they were apparently brought up for use at the table where they were placed in a tripod-stand of metal or wood (ibid 3).

The contents of amphorae could also be tapped in the shop and reliefs survive showing this procedures with leather bottles, buckets and jugs being used.

Callender makes the important point that amphorae were frequently re-used up to fifty years after being first emptied.

The original contents of the amphorae were most often wine, oil and olives or fish sauces and salted fish, but Callender also lists things as diverse as nuts, pepper, hair-remover, honey and potter's clay.

Colour Coat

These wheel-turned wares are so-called because of the dark colour coating or slip which covers their hard fine white or cream fabric. The colour of the slip ranges from dark-browns through purplish to a lustrous black. The most common form of colour coated vessel is the beaker, apparently for drinking wine, with whose trade these beakers have often been associated. The next most common form at least on the Northants sites is the 'Castor' box, a round shallow vessel with a narrow base and a flatter matching lid.

The sourcing of these wares presents rather a problem since it is now recognised that many of the wares previously thought to have been imported from the Rhineland and central Gaul in the second century AD may well have been made in Britain itself, more specifically in the Nene Valley, at least for Northants sites.

The fineness and thinness of the colour coated beakers and boxes is matched by the variety of decorative techniques used on them. The commonest on the Northants sites was 'roughcasting' where dried fragments of clay are dusted over the still damp clay of the body and then slipped over. Other decoration included rouletting - particularly on the boxes - scale decoration where the surface of the vessel is worked into fish-like scales and finally decoration 'en barbotine' where soft clay is squeezed out of a bag onto the surface of the vessel producing often very lively animal scenes, the most well-known being hunting scenes.

Little is known of the organization of the potteries that produced these wares in the second century. Clearly the

technology involved must have been almost as advanced as that of the samian producers since the vessels are hard and very well-made. (See Greene 1978).

White (Flagon) (See also Chapter 5, section ii) a) above).

This fabric was variously described as hard, smooth, sandy or even, as a paste. In colour it was generally white but ranged right through cream to orange and buff. It seemed generally to be reserved for flagons, but for example, at Clay Lane, a slightly coarser/sandy-white fabric ('F' - see Fig. 5) was distinguished, which occurred as ovoid jars, a bowl and two dishes, all second century (Windell forthcoming). The source of these vessels is generally considered to be a combination of two separate industries, those of the Oxford area and those of the Verulamium area. The fabric from both sources is apparently almost indistinguishable (C. Woodfield pers. comm.).

The flagon is a distinctively 'Romanised' form of vessel, used for containing and serving liquids. Wine is most often suggested as the liquid involved though it might just as well have been beer or water. The earliest examples in Roman Britain are generally thought to be military imports or local products solely for the army. By the second century the British examples were undoubtedly being produced almost completely by native potters.

The hardness of the fabric indicates that the vessels must have been fired at fairly high temperatures; they were wheel-turned and the flagons had applied handles. Some of the Northants sherds

were decorated with red paint but it was not clear if this was associated with flagons or other types of vessel.

Mortaria

Very few mortaria were found on any of the Northants sites (see Fig. 34). Like flagons the mortarium was a distinctively 'Romanised' form of vessel and its presence indicates the (apparent) adoption of a Romanised diet. The scarcity of these vessels in second century Northants is ingeniously explained by Woods as being due to their substitution at this time by the distinctive large bowls or wide-mouthed jars made of a coarse heavily gritted or 'grogged' fabric (Woods 1970 17). Second century examples of this latter form were found on nearly every site (see Fig. 64) and could well have been the preferred food-mixing and processing utensil of the native kitchen before the 'fashion' for mortaria became established.

The mortaria that were found on the Northants sites seem to have originated at the same two centres as the flagons (see above), the potteries at Verulamium and Oxford. A certain amount of research has been conducted on the British mortaria industries, and this is briefly summarised by Swan (1984). She writes that the Verulamium producers were concentrated in various centres on or near Watling Street just south of Verulamium. The best known were at Brockley Hill, Middlesex and Radlett, Herts. Swan suggests that all these 'factories' may have formed a single industry since the products were similar and some of the potters who stamped mortaria are known to have kilns in more than one of them, possibly simultaneously (ibid 97). By the mid second

century, production was already in decline and the Verulamium industries rapidly became purely local suppliers. The main kiln type of the late first and second centuries at Verulamium is defined by Swan thus, "...oval or circular with a relatively narrow tongue support and a solid-clay vent-holed floor" (ibid 98).

The Oxford potteries originated in the immediately pre-Roman era and by the first century were making "...indigenous La Tene III derived ('Belgic') kitchen wares, or occasionally, simple Gallo-Belgic derived table-wares...." (ibid 102). However, by the early second century, specialist wares such as flagons and mortaria joined the range offered, "...presumably intended for wider markets and more sophisticated tastes" (ibid 102). Swan also notes the similarity in form and fabric between these latter products, and those produced at the same time in the Verulamium region. She suggests that for various reasons, the emergence of the specialist industry near Oxford "...resulted from the migration of potters from within or close to the Verulamium industry" (ibid 102). The probable second century kiln form in the Oxford region had, "...an oval or circular chamber with an integral, narrow, relatively short tongue-support, and a solid-clay vent-holed, raised oven-floor" (ibid 102). Its similarity to the Verulamium type leads Swan to propose that the kiln-type divided in conjunction with the production of specialist wares (ibid 102).

Like the flagons described above, the mortaria found on the Northants sites were made in a well-fired off-white fabric. The bowl-shaped, spouted vessels were wheel-turned with thick walls

and a heavy curled rim to give a good grip when the vessel was being used. The interior was scattered with hard stone grits while the clay was still damp and these aided in the grinding function of the vessel. The second century examples seem to have been undecorated apart from the fluting around their shallow spouts.

Upper Nene Grey (see also Chapter 5 section ii) a) above)

This range of wares is generally described as having a hard, sandy fabric though a coarser, softer fabric is recognised by Woodfield (1983 Fabric no. 30) and at Clay Lane the range of hardness, colour and inclusion is emphasised (Windell forthcoming - Fabric E).

The major source of these wheel-turned fabrics seems to have been the kilns at Ecton, which Swan (1984) describes as the largest kiln complex of the Upper Nene valley, with up to fifty kilns known to date. Woodfield illustrates various necked jars, beakers and dishes in the specifically Ecton fabric (Woodfield and Brown 1983 Fig. 18) while Swan (1984) describes poppy-head beakers and possibly mortaria as other products of these kilns in the second and early third centuries. Woods illustrates the poppy-head form from the Brixworth excavations (Woods 1967 Fig. 5 vessel no. 30).

Woodfield includes these wares in her category of table wares, describing them as "...better quality coarse wares which do not appear to have been purchased as containers or used as cooking vessels" (Woodfield and Brown 1983 77). Woods on the other hand

notes external sooting on some of the Brixworth Upper Nene grey ware jars (Woods 1967 15). A number of the second century grey ware jars from Towcester: Park Street were also sooted (Lambrick 1980 - vessel no. 144 for example), indicating use in the kitchen rather than on the table at least for some of the grey ware jars. Clearly the beakers and dishes were not used on the fire.

Swan describes two different types of kiln at Ecton, kiln 1 was, "... pear-shaped, walled with alternate pitched and horizontal stones and a clay-lined bottom to the furnace chamber... kiln 2 had a ...long oval chamber walled with stone masonry over-plastered with clay and floored with stone" (Swan 1984 Microfiche).

The various grey ware vessels were simply decorated with burnished surfaces, incised lattice designs, and barbotine dots in the case of the poppy-head beakers.

Mica-dusted

Swan writes that "...alongside the frequent imitation (in pottery) of metal vessel-forms in the Roman empire was an attempt (probably in Gaul and the Rhineland) to obtain a gold or bronze metallic finish by coating brown or buff vessels with a wash containing innumerable specks of yellow mica, a process known as mica-dusting" (Swan 1980 ii). She then goes on to describe how soon after the mid first century, local potters in Britain were imitating the jars and bowls finished in this way, particularly for the army. The fashion seems to have declined from the mid-second century.

Those few sites in Northants that possessed this type of ware had it in a variety of forms and fabrics. The most common was a straight-sided dish ('dog-dish') in a buff fabric. At Great Weldon a small jar was found in a "...rather soft, orange fabric" (Smith forthcoming) with mica-dusted surfaces while at Towcester: Alchester Road, Woodfield illustrates a dish "...influenced by samian form 42?" (Woodfield and Brown 1983 83 vessel no. 31), in a red-bodied mica-dusted ware. Both it, and the sherds of an unillustrated triple-vase in the same fabric were included in the study assemblage for the site. Woods illustrates one 'mica-gilt' small jar or beaker with a buff-orange fabric of Hadrianic-Antonine date, noting that it was unique on the site (Woods 1970 23 vessel no. 152). Woodfield (1983) can only suggest a 'non-local' origin for this wheel-turned ware and nothing can be said about its production.

Orange Beaker (see also Chapter 5 section ii) a) above).

Only Woodfield (1983) appears to distinguish this ware (her fabric 9) which she describes as having a softish-orange surface, sandy with a thickish grey core (Woodfield and Brown 1983 Microfiche).

The main product in this wheel-thrown ware was the beaker, at least at Towcester: Alchester Road, either plain, rouletted or indented, though evidence for Tazza and a bowl was also found in second century contexts. Woods illustrates similar beakers from later Antonine contexts at Brixworth (Woods 1970 vessel nos. 148-149 for example), describing them as smooth buff-orange to orange-brown wares with carefully finished surfaces. He suggests

that they are local imitations of contemporary colour coated wares (ibid 22) and Woodfield also assigns them a local source, probably in the Upper Nene area (Woodfield and Brown 1983 78).

Black Burnished (see also Chapter 5 section ii) a) above).

Black burnished ware, category 1 (BB1) has its origins among the Iron Age potters of Dorset. Swan describes it as "...black and gritty...hand-made and burnished in facets" (Swan 1980 15). The burnished areas were further decorated with incised lattice designs. The ware was apparently designed for use in the kitchen and examples are often heavily sooted. The common forms found on the Northants sites included cooking pots or jars for use over the fire or in the oven, bowls and platters or 'dog-dishes'.

BB1 was produced in large quantities in the Poole Harbour area but fired using primitive surface clamps or bonfire kilns which rarely fire to more than 700 - 900°C (Swan 1984 53). The ware was widely imitated by local potters all over Britain and Swan records that the late second century kiln at Mears Ashby (see Map 8) for example was producing imitation BB wares (ibid Microfiche).

At Great Weldon a number of BB wares were found in the study assemblage. These are described in the pottery report (Smith forthcoming) as 'reminiscent' of Black burnished category 2 wares which were produced in south-eastern England from the late first century AD. However these were never common outside eastern England and the northern frontier and it seems more than likely that the Great Weldon examples are local imitations. The same is

suggested for some of the BB sherds found at Clay Lane with the comment that these were difficult to separate from genuine BB1 microscopically (Windell forthcoming). Woods illustrates two black burnished cooking pots from second century contexts (Woods 1970 vessel nos. 171 and 172) and describes them as "...good local attempts at a black burnished cooking pot" (ibid 25). He also notes that they were invariably wheel-thrown at Brixworth unlike the originals from Dorset. He cites Mears Ashby as a probable source but also suggests Ecton on the evidence of surface finds (ibid 25). At Towcester: Alchester Road quite a different situation occurs with the vast majority of the BB wares being from the Poole area. Woodfield does note however that the amounts found were quite anomalous for the area (Woodfield and Brown 1983 79). Ringstead also seems to have received Dorset BB1 wares (Jackson 1980 vessel no. 16).

Grogged (see also Chapter 5 section ii) a) above).

On the whole these wheel-turned wares had a soft pink/buff fabric, heavily grogged, giving it a 'lumpy' appearance (Woodfield and Brown 1983 fabric no. 35b). A slightly finer grogged ware was also recognised, often referred to as 'oatmeal' ware by excavators due to its creamy white colour and grogged fabric.

One of the most distinctive forms in this fabric was large, heavy bowls (wide-mouthed jars) illustrated for example by Woods (1970 Figs. 14-16). As noted above Woods hypothesises that these large bowls may have been used in preference to mortaria until the

later second century in Northants. He further suggests that the wide-mouthed bowl form derives ultimately from a late Belgic prototype (ibid 20).

Another common vessel form in this fabric was the storage jar. Some very large examples have been found (see for example Woodfield and Brown 1983 vessel no. 72a). Often these jars were decorated with incised wavy lines, and may even have been slipped. Woodfield suggests that the storage jars in her fabric 35b were more likely to have used as containers than for cooking (ibid 79). The smaller 'oatmeal' ware jars found elsewhere, do have signs of use over the fire (see for example Woods 1970 29 vessel no. 219).

Woodfield comments on the large quantities of these grogged wares (at least her fabric no. 35b) at Towcester: Alchester Road and postulates that a large kiln field producing these wares awaits discovery, possibly to the south and east of Towcester (ibid 78). These potteries seem also to have been producing roofing tiles, often with colour-washed surfaces. No date is specified for these latter products.

'Belgic'

These rather uncommon wares appear to be survivors from earlier periods. They have a coarse, grogged fabric and clearly derive from Iron Age potting traditions, no doubt local ones. Woodfield illustrates one sherd in this fabric from Towcester: Alchester Road (Woodfield and Brown 1983 vessel no. 77) and describes it as hand-made with combed decoration, and a hard, red-brown surface

(ibid 87). This sherd was incorporated into the study assemblage but is very probably residual. Forms of vessels in this fabric were probably mostly rough jars for cooking and storage, no illustrated examples could be found.

Calcareous ('Shelly') (See also Chapter 5 section ii) a) above)

These wares were easily recognised being heavily tempered with crushed shell. They were generally reddish-brown in colour, sometimes with rilled decoration. Woodfield distinguishes two major categories of this ware at Towcester: Alchester Road. Firstly, a coarse, undecorated type (her fabric 44b), possibly hand-made and secondly a smoother, often rilled, and thus wheel-turned, type (her fabric no. 44c). The latter, by far the rarer at Towcester: Alchester Road in the second century, seems to have come from the Harrold kilns in Bedfordshire (see Map 8). The former, coarser type, Woodfield suggests, had a more local source. She adds that "...it is curious to find so crude a hand-made product as this being marketed at a period of sophistication and refinement in pottery manufacture in the second century, but must assume that it was inexpensive and serviceable" (Woodfield and Brown 1983 79). At Towcester: Alchester Road, and apparently on all the other sites in the study group, the only form of vessel produced in these fabrics was the necked cooking pot. The large majority were sooted and thus presumably used in cooking.

Sandy (See also Chapter 5 section ii) a) above)

This comprised a rather broad range of oxidised, hard, sandy

fabrics. The surface colour ranged from buff to reddish-brown. Woodfield gives the majority of these wares a local, Upper Nene source though her fabric no. 36 may possibly have come from the Verulamium area (Woodfield and Brown 1983 80). The commonest form of vessel at Towcester: Alchester Road was the channel-rim jar, quite often sooted externally. Brixworth produced similar forms, also soot-blackened (Woods 1970 28 vessel nos. 195 and 196).

The information contained above is summarised in Fig 67 using the following key:

A. Manufacture

Wheel-thrown	WT	Bonfire	B
Hand-made	HM	Kiln	K
Moulded	MD		

B. Decoration and Surface Finish

Relief-moulded	RM	Barbotine	B
Slipped/colour coated	CC	Rouletted	R
Burnished	BB	Incised	I
Mica-dusted	MD	Rilled	RL
Rough-cast	RC	Combed	C
		Painted	P
		Slip-decoration	SD

C. Function

Table - drinking	TD	Decorative	D
eating	TE		

Kitchen - cooking	KC	Container C
storage	KS	
other	KO	

D. Form

Storage jar	SJ	Bowl/Dish/Platter	B
Cookpot/jar	CJ	Mortarium	M
Large wide-mouthed bowl	LB	Flagon	F
Jug	J	Cheese-press or colander	CP
Amphora	A	Cistern	C
Beaker	BK	Triple vase	TV
Cup/mug	CM	Tazza	T
Box	BX		
Lid	L		

Central Gaulish samian ware alone seems to fit independent criteria for the hypothesised mass-produced ware in Northants inspite of the fact that amongst other earthenwares it is clearly of better quality and finish with its dense, hard fabric and glossy red surface, "...the lustre of which often rivals that of sealing-wax" (Oswald and Pryce 1920 4). Not enough is really known about any other potteries to decide whether their production reached the same level of 'industrialization' as at Lezoux and Les Martres-de-Veyres with their complex organization and degree of division of labour and their output of millions of vessels per year.

Amphorae by virtue of their contents seem definitely to have been

	Manufacture decoration			Function	Form	Size of industry
samian	ML+WT/K	RM/CC		TD/TE/E	B/CM/M	very large
amphora	WT/K	None		C	A	large
colour coat	WT/K	CC/RC/SD/B/R	TD/D		BK/BX+L	?large
coat white	WT/K	P?	TD/?KS		F/CJ/B	medium large
mortaria	WT/K	None	KO		M	medium large
mica dusted	WT/K	ND	TE(ord?)		B/BKorCJ/TV	?small
grey	WT/K	BB/B/I	TE/TD/KO		CJ/LB/B/BK/CM/L/CP	?medium
orange beaker	WT/K	R	TD/D		BK/B/TZ	small
black burnished	WT/B	BB/I	TE/KC/KS/KO	CJ/B/CX/L		?medium
imitation samian	WT/K	RM/CC	TD/TE/E	B/CM/M		?
grogged	WT/K	CC/I	ES/KO		LB/SJ/CJ	medium/small
'Belgic'	RM/B?	C	?KC/?KS		?CJ/?SJ/?LB	small
calcareous	PM or Tr/K?	RL	KC		CJ/?SJ	medium/small
sandy	WT/K	None	KC		CJ/?SJ/?B	small

Fig. 67 "Quality" of pottery table

luxuries.

The imported colour coats seem similarly to have been luxuries since they never appear in very large quantities on any of the sites (12.88% maximum); because they are associated with the luxury of wine (as drinking beakers) and finally because of their fine, artistic decoration and their high quality fabrics.

The white wares are more of a problem to define. They were clearly competently made with a hard, fine fabric. The major form was the flagon, a Romanised vessel, associated with the consumption of wine (though how far this was true on the British sites is hard to say). If the flagon was meant to be used at table it hardly matched the quality of samian and colour coat although the occurrence of some white ware sherds with red and brown painted decoration might belie their apparent plainness. The Verulamium and Oxford potteries, though both larger than just local producers were hardly on the scale of the 'giants' of the central Gaulish samian industry.

Mortaria can perhaps be classed similarly with the white wares, although they are far rarer on the Northants sites. They were also 'designed' to be far more utilitarian, for preparing food rather than serving it and so are coarse and heavy and virtually undecorated.

The mica-dusted wares though not having a very fine fabric were well-made. Their rather uneven distribution (only three sites), makes it difficult to comment on their status, though the fact that they were originally designed to imitate gold or bronze

vessels suggests that those who acquired this ware could not generally afford the real thing.

The grey wares, though produced locally in the Upper Nene, had hard, relatively fine fabrics, with well-finished often decorated surfaces and as already pointed out, Woodfield felt they were too good to have been entirely confined to the kitchen (Woodfield and Brown 1983). It is however noticeable that on some of the 'richer' sites like Brixworth these wares do show signs of having been used for cooking.

The orange beaker wares as suggested by Woods (1970) and Woodfield (1983), were most likely cheap local imitations of the imported colour coated wares, the richest sites in the hierarchy noticeably had none of these wares.

The black burnished wares were far more clearly used in the kitchen for cooking and probably storage. The potteries that produced them though primitive was on a large scale and all the Northants sites except Clay Lane received some of it.

The grogged, 'Belgic', calcareous, and sandy wares seemed to be typically coarse wares, manufactured not far from their consumers, only the grogged wares possibly at a more than small scale production centre. They were all used in the kitchen, for mixing, storing and cooking, the calcareous and sandy wares in particular usually showing signs of being used over fires or in ovens.

Before continuing with the final stage of the analysis it seems appropriate at this juncture to emphasise briefly how both the fabric hierarchy and the form/fabric descriptions originally set out in Chapter 5 section ii) a) above have been modified during data collection and the subsequent analysis. The two-fold hierarchy proposed originally was found to be too generalised and incapable of reflecting the natural three-fold division of the study assemblages into the 'fine', 'regional speciality' and 'coarse' categories, so useful in the hypothesis testing carried out above.

The form/fabric descriptions given in Chapter 5 section ii) a) for the 'coarse' wares in the study assemblages were based almost exclusively on Woodfield's study of the Towcester: Alchester Road assemblage (Woodfield and Brown 1983). Contact with the study assemblages demonstrated that the former collection is not absolutely comprehensive. Fig. 64 illustrates the additional forms in the coarse and regional speciality ware categories.

i) Model VI - Conclusions

The grey wares are found in the greatest quantities on the two poorest sites and in the least quantities on the richest sites. It looks as if these medium-quality wares, well-finished and competently made, were acceptable as table wares amongst the poorer members of Romano-British society. In other words not even these people needed to be content with low quality coarse wares in their 'dinner services'. On all sites coarse wares like grogged, sandy, calcareous and 'Belgic' were reserved for the kitchen, for cooking, storage and preparing food.

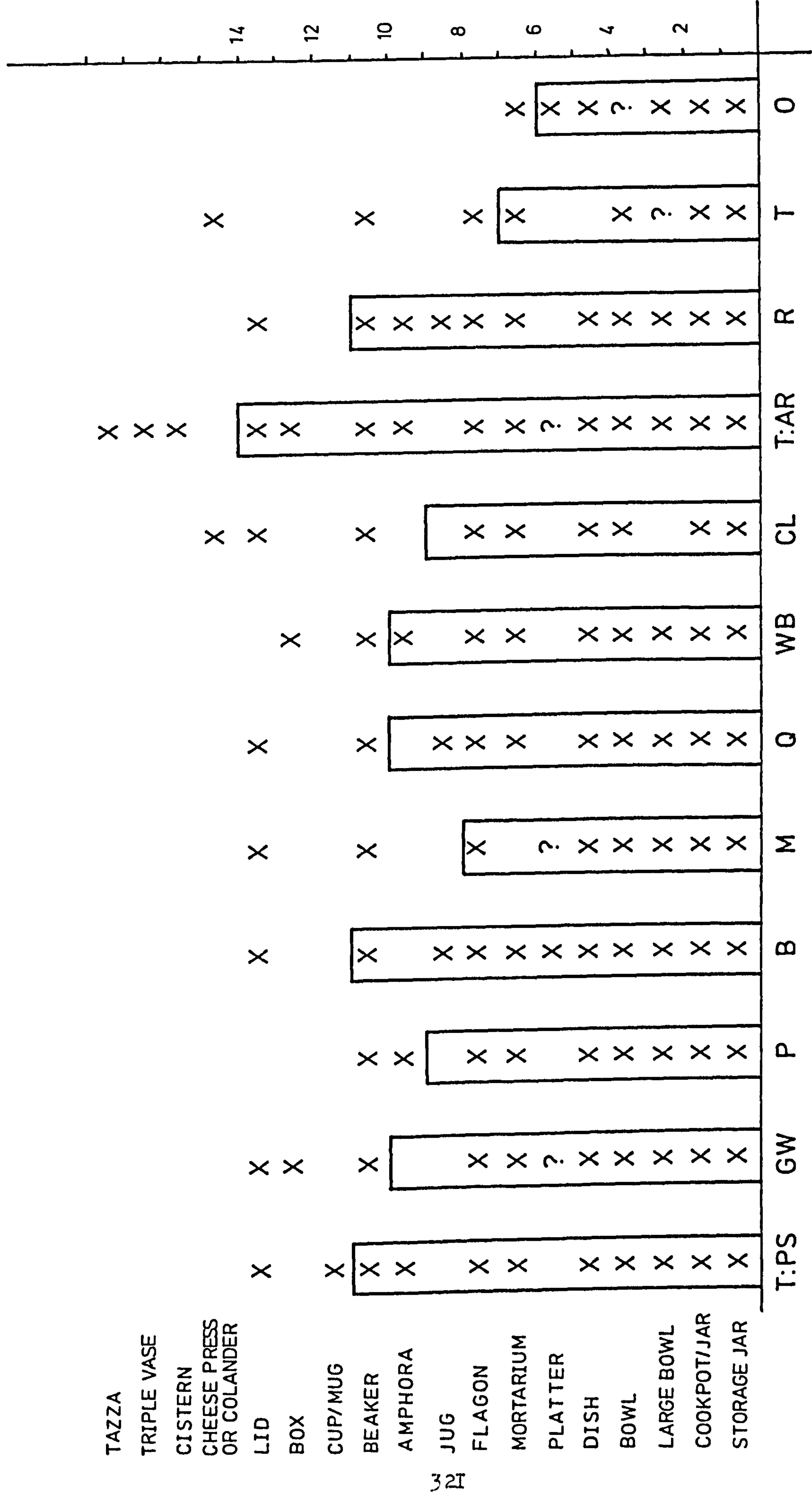


Fig. 64 Range of vessel types

The grey wares may thus be the middle-quality wares proposed in hypothesis IV. On the other hand only samian ware really satisfied the description of 'mass-produced' and an alternative hypothesis may be proposed. Assuming that none of the sites is beyond Peacock's 15-25 km distance limit from a town and that they thus all had equal access to the markets there, then the richest, most 'Romanised' sites preferred to use bronze and silver vessels rather than samian and other fine wares, at table. The poorest, least 'Romanised' sites could hardly afford samian, let alone bronze and silver, and used grey wares as a reasonable alternative. Only medium-range sites could afford and considered it socially acceptable to use fine earthenwares like samian and colourcoated wares regularly at table.

This hypothesis (VI) stands up fairly well to testing against the ceramic data although Towcester: Park Street's status would have to be radically altered (something already proposed above). The evidence of the mica-dusted ware alone can be taken as opposing the hypothesis. As already suggested it was originally designed as a cheap alternative to bronze or gold vessels, and the fact that Great Weldon, the richest rural site, had large amounts of it, may indicate that even on such a large and well-appointed site (in relative terms) bronze and other metal vessels were generally too expensive.

The hypothesis implies that a system of market exchange involving mass-produced, medium-quality (in a range of vessels of differing materials) goods was operating in the study area during the second century AD.

From the analysis conducted above, it seems reasonable to add to Model VI the proposal that a redistributive exchange system operated in the exchange of coarse wares. If any of the ceramic vessels can be considered as luxuries, perhaps only amphorae, then they too may be hypothesised as being exchanged redistributively.

The extent to which the economic system in the second century was marketized is the final step in testing the primary hypothesis. It was hoped that the ceramic data collected in Northants would provide a sufficient breadth of material to explore and test the primary hypothesis completely. However, if the final hypothesis (VI) is accepted that not even samian and colour-coat were true luxury goods, then this hope remains unfounded. To conclude, the model VI can be applied to the Northants sites as follows:

Towcester: Park Street	}	: Poorish sites but with good access to markets so plenty of top quality ceramics and specialist wares.
Towcester: Alchester Road		

Great Weldon	}	: Rich rural 'villas' using bronze and silver in preference to luxury earthenwares.
Piddington		
Brixworth		

Mileoak	}	Medium-range 'Romanised' structures with lots of specialist wares and slightly more luxury pottery than the last sites, rarely using bronze and silver.
Quinton		
Wood Burcote		
Clay Lane		

Ringstead	}	The poorest rural sites with very few luxury wares and fewer specialists wares, but lots of grey wares, the next best thing to use at table.
Thorplands		
Overstone		

Other archaeologists have used ceramic data to test economic hypotheses and in the next chapter a number of these will be examined in the light of the analysis conducted above.

PART III

THE ROMAN ECONOMY REASSESSED

CHAPTER 7

MODELS OF THE ROMANO-BRITISH ECONOMY

Section i)-The Evidence of Pottery

In the last chapter a number of hypotheses were proposed and tested. As mentioned in the conclusion to that chapter, some archaeologists have already approached the subject of the exchange systems operating in early Roman Britain. In this section, those analyses specifically using ceramic data will be examined and compared with the preceding data analysis. This will be followed by a discussion of the work of other archaeologists in the field.

The current view on the subject of the economics of Romano-British pottery is perhaps best summarised by Swan (1984) who describes how the use of ceramics by the native British population rose dramatically after the Roman conquest. The army in its forts demonstrated the use of the vessels to the civilians who, according to Swan, seem to have readily accepted Romanized types of pottery. The towns which sprang up on the fort sites once the army had moved on "... provided nuclei of Romanized people... In the first and second centuries, then, the siting of many kilns related primarily to urban consumers" (ibid 19). Only in the third century does Swan see the Romanization of the countryside as sufficient to induce rural industries to begin operating, "... it was... the first time that many rural potteries could survive without being primarily dependent on urban or military consumers" (ibid 19).

The effect of the army on the supply patterns of second century Northants did not figure in the data analysis undertaken in Chapter 6, since by that time the army was far away. However, as Swan points out (ibid) even in the second century, many pottery producers are believed to have relied heavily on army consumers, the most well-known being the potters of the Dorset black-burnished industry.

Middleton (1979) examines the effect of army markets on long-distance supply routes first in Roman Gaul and then in Roman Britain. He uses the epigraphic evidence for shippers' guilds in Gaul firstly to demonstrate a close link between entrepreneurial activity and the satisfaction of the army's material wants and secondly to propose that private entrepreneurial activity was parasitic on official army supply routes. He supports his argument with the evidence of Gaulish terra sigillata distributions, suggesting that such goods were only available where official army supply routes made it feasible.

Middleton (ibid) then applies his hypothesis to the situation in Roman Britain. In the case of terra sigillata imported from Gaul in the first century he writes that in the Chichester area the military occupation layers yielded large amounts of these wares, whereas in civilian phases they were much less common. On minor country settlements in the same area he sees terra sigillata as

very rare though quite often imitated locally from the late first to the mid second century. He concludes from this that terra sigillata was "... known and admired, but difficult to obtain once the primary military market had moved on" (ibid 92). The small amounts of the ware actually found on such civilian sites, according to Middleton, are possibly evidence of the proposed parasitic entrepreneurial activity always associated with military supply lines.

The second century evidence from Northants seems to immediately refute these statements. In this area even in the early to mid second century 'minor' rural settlements were receiving more than small amounts of imported wares such as samian and colour-coat (see Figs. 30 and 32).

A Romanized vessel like the mortarium was clearly scarce on these second century sites (see Fig. 34) though this could just as well have been the result of a preference for the large 'native' type bowls discussed above, than a scarcity caused by the lack of a nearby army supply route. Hartley (1973) though, stresses the military origins and continuing links with the mortaria industries of Britain, particularly those she terms 'large industrial concerns' which produced "... for markets over a substantial part of the province, trade with military sites often being prominent" (ibid 43).

The trade in coarse black-burnished ware is one of the examples that Middleton (1979) uses to support his thesis. He writes that for black-burnished ware to be involved in long-distance trade, which it most certainly was, its producers must have taken advantage of military supply routes. Black-burnished category 1 ware (BB1) is considered to have travelled north to sites on Hadrian's Wall from its Dorset production area via a west coast supply route. Middleton further suggests that in the early years after the conquest the Fosse Way would have acted as the major supply route for the Roman army. Whether it still acted as such by the second century is difficult to say though not unlikely. This being the case, following Middleton, the occurrence of BB1 on the Northants sites might reflect their access to a lesser inland official supply route north. The sites with the most BB1 (if it is not a local imitation), Ringstead and Great Weldon, are in fact hardly any closer to the Fosse Way than any of the other sites, and Towcester: Park Street lying on a direct route to that road has very minor quantities of the ware (see Fig. 39).

The Northants data does not thus seem to support Middleton's thesis. Long-distance trade did not necessarily occur in "...primary association with military supply or private sale to military settlements" (ibid 95). The Gallic model that Middleton uses to hypothesise the situation in Britain becomes immediately

suspect when it is realised that the reason that much of the ceramic evidence is only found on military sites is because it is only these sites that have been excavated until recently on the continent. The data from rural sites such as those in the Northants study area is noticeable by its absence.

Greene (1979) further undermines the foundations of Middleton's thesis by pointing out that in the case of BBI although it certainly "... held a special place in the supply of the northern frontier... The ware is common over most of civilian Britain as well, however, which must have consumed the majority of the output" (ibid 102). If entrepreneurial activity is represented by the distribution of the ware, then the evidence does not suggest the sole use of military supply routes in its long distance trade. The same may also have been the case for other Romano-British wares, "The military market, it would seem, was only a minor part of the 'Romanised' demand for new forms alongside traditional vessels" (ibid 103). Greene furthermore sees the effect of the army on pottery production, particularly in the south-east of Britain, as minimal, "The settled army in the north and west was content to wait until the developments of the industries of the civilian zone made it unnecessary to continue making pottery for itself" (ibid 103).

Greene (ibid) dismisses the likelihood of military contracts existing to explain the long distance supply of pottery to the Wall. Breeze (1977) on the other hand sees no reason why such contracts did not exist. He cites for example the glass and pottery stores at the legionary fortress at Inchtuthil, presumably containing army supplies rather than the property of

individual soldiers. Contrasting this he also notes the great variety of sources for the pottery found on northern military sites, "It might be expected that if the provincial army ordered pottery for all units direct from the workshop the products of only one or two factories would be represented at each site, which is manifestly not the case" (ibid 139). He concludes that whether the pottery was bought by the unit (possibly on a contractual basis) or by the soldiers themselves, it is more than likely that it came from shops in the *vici*, having found its way there via private, (i.e. entrepreneurial) marketing and distribution rather than by bulk purchasing on the part of the army itself. This being so, the 'capture' of the northern market by BB1 in the second century is seen by Breeze as reflecting "... a not inconsiderable entrepreneurial spirit among the potters or their retailers and the application of financial resources of some weight" (ibid 141).

Breeze will commit himself no further. Fulford (1977) is more definite. He approaches the question of military supply from the direction of the pottery production sites. He notes that the unusual feature of pottery assemblages on the Wall is that the coarse wares generally come from distant sources whereas in the civilian south such coarse wares were mostly produced for local consumption. Fulford goes on to demonstrate how a number of major pottery producers in the second century had fairly limited local markets with the widest range of types and numbers of vessels ending up in the north. The clearest examples are the major kiln groups at Mancetter, Water Newton and Colchester and Fulford adds that, "With the possible exception of the firm that

produced Gillam 272... there was no other industry in the south which compared in scale with the midland pair or Colchester" (ibid 303).

In the case of the black burnished wares (category 1 and 2), Fulford, unlike Greene (1979) is not prepared to suggest whether the south or north received the lion's share though for the later Roman period it seems that BB1 is not common inland except in the south-west (Fulford 1977 304). In conclusion Fulford suggests that in the first and second century the major factors in determining kiln location were the army and the strength of continental competition, "Large factories lay either towards the coast or the northern limit of the lowland settled zone" (ibid 312). The success of the inland potteries at Mancetter and the Nene Valley is explained as due to the diversity of their products and their location in areas difficult of access to the products of central Gaulish and Rhenish potters. As already noted, Swan (1984) also sees the army of the first and second centuries as a strong stimulus to pottery production in Britain. She suggests that the "... progress and impact of the first century army... is... represented amongst other things by the burgeoning of existing industries such as those in the Upper Nene Valley" (ibid 8). She apparently means the grey ware producers, of which Ecton was the largest. The Northants evidence clearly indicates however that even if they required an initial military stimulus (official or otherwise), once the army had moved on, they still found an adequate market among the local civilian population for their products.

In the case of larger potteries such as the mortarium producers

of Hartshill/Mancetter from the second to the fourth century, the military market seems to have been crucial throughout to their continuing success. Swan (ibid) sees the rapid Haridanic expansion of these potteries along with those of the Dorset black burnished ware industry, as reflecting a "... drastic turn-about in military supply policy...the army of the North was left dependent on supplies from civilian sources further South, a policy seemingly adhered to thereafter". (ibid 19).

It can be concluded from the preceding discussion and from the Northants data that mortaria producers of the south had an early and continuing reliance on markets other than those of the civilian zone. In the case of the white wares produced in the same potteries, quite the reverse seems to have been true with plenty of these wares reaching even the rural areas of Northants (see Fig. 33). BBl was also apparently capable of penetrating to inland rural consumers contrary to Fulford's hypothesis (see above). Finally, in complete contradiction to Middleton's thesis (see above) the Northants data shows that imported wares like samian, and other wares traded long-distance within the province, were not restricted to military markets and in association with official supply routes. The data would therefore seem to support Greene (1979) in suggesting that by the second century AD civilian markets for both local and non-local pottery were at least as important as military ones in Roman Britain.

This of course is not to assume that the average British peasant was as well off as the average Roman soldier. The latter was considered by Duncan-Jones (1974, n4 12) to have been able to

spend 80-90% of his salary on items other than food. Campbell (1984) however regards this as optimistic, pointing out that this figure does not take into account stoppages from his pay and "... the fact that although he was not allowed to marry, the soldier often took a permanent concubine, and presumably he would want to support his woman and the bastard children of such a liaison" (ibid 177). Campbell proposes that what made the Roman soldier's life so attractive was the regularity of employment and the chances of promotion, rather than its initial financial rewards. However, in the first two centuries of the imperial period he does see that the overall financial and social position of the troops was superior to that of most common people who he clearly imagines as close to the subsistence line (ibid 179).

Though the actual poverty of the Roman peasant is open to dispute particularly in the study area, the important point is that the poor rural peasant far out-numbered the richer soldier in Roman Britain and it was the 'aggregate demands', as Hopkins (1978) calls them, of this large peasant population that provided a market for manufactures to match that of the Roman army.

Population statistics for civilian Roman Britain are constantly under revision, as Salway (1981 542ff) points out. The unexpectedly dense settlement pattern in Roman Northants is a case in point and total population figures for Roman Britain have risen from at most one million to as much as six million, a figure produced by extrapolation from localized studies of areas like Northants. Salway writes that:

"If other regional and local studies confirm

these calculations, we should no longer be comparing Roman Britain with 1086 (recent work on Domesday suggest 1.75 to 2.25 million) but with England in the middle of the fourteenth century shortly before the Black Death, when a figure towards the upper end of the range 4.5 to 6 million is currently thought likely" (ibid 544-5).

Such vastly increased population estimates are complemented by current work on the agricultural productivity of the island, in particular, grain yields. Scott (1983) summarises the orthodox estimates, ranging from 2.8 cwt per acre to 11.5 cwt per acre. She then refers to the work carried out by Peter Reynolds at the Butser experimental Iron Age farm (see Reynolds 1979) where vastly greater yields have been produced using ancient species of crops, "On soil without manure or any residual nutrient from previous land management, yield figures in excess of 1 tonne (20 cwt) per acre have been recorded" (Scott 1983 221). Such figures have important implications as Scott is quick to point out. In particular, the amount of surplus available to the rural population for conversion to cash and/or manufactures is much increased if the Butser's experimental yields are accepted, though they are not without their critics.

For the moment then, the civilian market in Roman Britain may be assumed to have been sufficient to support the exchange, local and long-distance, of pottery, both 'coarse' and 'fine'. Peacock (1982) comes to much the same conclusion in his discussion of the

marketing of Roman pottery (ibid 156ff). He makes a distinction between the mechanisms of local and long-distance exchange, something that was not seen as central to the data analysis here. It was in fact really only the final links in the exchange network that were under consideration and as will be seen below, that archaeologists such as Hodder, Loughlin and Pollard have also been concerned with.

Hodder has published perhaps the most detailed series of ceramic analyses of marketing and distribution patterns in Roman Britain (1974 a, b, 1979 a). As well as providing important insights into the exchange processes operating in Roman Britain, he also makes explicit a number of often previously unknown (to Romanists) methods of analysis. In one of these later articles on the subject (1979 a) he details the assumption upon which his analyses (and the one undertaken here) rests. That is, that relating to the idea of the 'random spatial economy'. Pattern within such an economy is related according to this theory to non-randomness and the imposition of constraints:

"In general, the stronger and fewer the constraints in operation, the more patterned is the end result... and the more information can be gained about the behaviour from examination of the end result" (ibid 7).

The comparison of spatial archaeological patterns with simulated random patterns, according to Hodder, will demonstrate the strength and types of constraints in operation. Some of the

constraints which cause the more obvious patterns in pottery distributions have already been discussed in Chapter 6 above.

The most general is the friction effect of distance which varies according to the nature of the pottery. People will travel further to buy a fine pot than for a coarse one. Hodder (ibid) also refers to the fact that consumers and traders will travel further to larger centres, on the assumption that these places act as service or redistribution centres for surrounding areas (ibid 7). In Chapter 6 the case for the urban centres of Roman Britain acting as such service and redistributive centres was strongly argued. Hodder (ibid) warns that the relative frequencies of pottery in larger and smaller centres may be evidence for the relative attractiveness of the centres but do not on their own say anything about the functioning of the centres. This aside, Hodder's other 'marketing' models rely heavily on the idea of the Roman town as a 'central service node' for the countryside around it. They also seem to assume the operation of only the most general of the other constraints mentioned above, the friction effect and the relative sizes of 'central service nodes'. Other constraints particularly social ones such as the presence of tribal boundaries, are not taken into account, though brief mention of the 'distortion' of exchange systems by army supply routes is made (1974b 355).

Hodder (1974b) uses as his data base a fairly large range of Romano-British coarse wares (all wares excluding colour coat, painted, samian and mortaria) from southern England. He is quick to admit that some of his samples were statistically dubious being occasionally as small as thirty sherds. His first model

(Model 1) has two main characteristics which he defines as follows:

"a) location of the kilns within easy reach of a town and the main area of distribution of the products related to that town's area of influence; b) sometimes this main area of distribution is extended along the main roads to a wider area" (ibid 341).

He then satisfactorily supports the model using a number of assemblages from various parts of southern Britain. Clearly the Northants data is not extensive enough to be used as a further test, but some comparisons and criticisms can be made.

The only support (admittedly circumstantial) for part b) of Hodder's Model 1 is from Ringstead which is close to a main route, Margary no. 570, running between the Roman towns of Irchester and Water Newton (see Maps 6 and 7). The site, though apparently of low status has relatively large amounts of 'fine' wares which from the model may be proposed as being due to ease of access. Hodder writes that pottery prices would rapidly increase away from easy transport routes like roads, and provides evidence to show that much less pottery was sold in the more inaccessible areas of lowland Britain.

The apparently unusual make-up of the Wood Burcote assemblage when compared with that of similar status Mileoak has already

been explained by the former's proximity to the main Alchester road into Towcester (Margary no. 160a). Apart from these two examples, the location of a site near or far from a road or even an apparently navigable river seems to have had no effect on the make up of the assemblages. Nowhere within the study area seems to have been really inaccessible to even the 'best' pottery, see for example Thorplands and Overstone where the latter's lack of the finer wares has to be for reasons other than its nearness to an easy transport route since nearby similar status Thorplands has plenty of such wares.

A closer examination of Hodder's distribution maps reveals a major difference to the Northants pattern. None of the sites in the study area are more than the 15-25 km 'optimum' distance for a peasant to travel in a day to a market as discussed in Chapter 6 above. Most of Hodder's distribution maps include sites at much greater distances from distribution centres. Thus the Northant's distances are too small to be significant in testing part b) of Hodder's first model. As a further point, if prices did increase rapidly away from main routes then as far as Northants was concerned, these prices were well within the means of the majority of the rural population.

The explanation lying behind Hodder's Model 1 is, as already implied, based simply on price. He expresses it as follows:

"The purchase price of a product such as pottery is comprised of manufacturing costs and transport and marketing costs. There is thirteenth century evidence that transport

costs sometimes made up to 25% of the purchase price. The price of pottery will therefore increase with distance from its origin" (ibid 346).

Such glib use of medieval analogies is dangerous as already pointed out above, but his suggestion seems otherwise quite reasonable, in the light of what is known of the costs of transport in the Roman world. Many historians indeed, use the historically attested cripplingly high cost of land transport to explain much of the empire's economic backwardness (see Chapter 1 section ii). Current opinion would tend to play down such explanations however. For example Hopkins (1983) recognises the archaeological evidence that goods were transported far and wide overland and by river. He also cites what he considers to be comparable evidence from the Middle Ages, "...although sea-routes from Venice or Genoa to northern Europe were used, the land routes from northern Italy to northern Europe continued in use also; they were more expensive, but safer and quicker" (ibid xx). Elsewhere Hopkins has demonstrated the unreliability of using Diocletian's Price Edict to work out the ratio of land to sea transport costs. One such calculation produced the following figures; 10 units cost per ton unit distance by sea, to 60 units cost per ton per unit distance by river, to 550 units cost per ton per unit distance by land (Hopkins 1982 conference paper). Hopkins sees such figures as over inflated, considering the ratio gaps to have been much smaller. With this in mind it seems likely that part b) of Hodder's first model will have to be rejected.

Hodder himself questions the other half of the model by asking

why it should be assumed that the towns were acting as distribution centres for the pottery. His answer is that in the case of Romano-British coarse wares, the production of fairly small quantities of 'low-price' pottery coming from 'medium-scale' producers, is under discussion. To keep prices low, marketing and transport costs had to be kept low, so the products were, "... channelled through the existing marketing mechanisms centred on a nearby town" (Hodder 1974b 349).

There may also have been:

"...sale in the surrounding minor markets connected to the main town market by traders or pedlars moving according to some cycle of market days in what is termed a periodic ring" (ibid 349).

The producers whose size and output best match Hodder's model 1 are the Ecton area kilns, but their siting equidistant from three towns rather than close to one as already noted, is in direct contradiction to Hodder's model.

If the Northants evidence fails to support Hodder's 'nearby town' distribution model, then the idea of the 'periodic ring' of minor markets is also difficult to demonstrate. The probable sites of such minor markets in Northants are the 'semi-urban' nucleations such as at Duston and Ashton (see Map 4). The former along with that at Houghton are close to the Upper Nene potteries, that is, equidistant from the three major towns.

The situation is clearly far more complex than that indicated by Hodder's Model 1. Two alternative models might be suggested from the Northants evidence. Firstly, the much smaller 'semi-urban' nucleations like Duston may have been acting as redistributive centres for the pottery produced nearby. This might be linked with the industrial activity already demonstrated within such settlements. The second, perhaps more attractive model is that the kilns are situated equidistant from as many towns as possible in order to exploit as many markets as possible. Maps 8 and 9 show this pattern repeated twice in the study area in the second century, once in the area between Towcester, Norton, Irchester and Kettering, and a second time, the kilns situated in the area between Durobrivae, Medbourne, Great Casterton, Ashton and Kettering. All these urban and semi-urban settlements are within easy reach of the kilns and may perhaps represent a 'periodic ring' of markets to which the potters or merchants took pottery, direct from the kilns rather than via an urban redistribution centre as Hodder's Model 1 proposes. Fulford (1977) provides support for the alternative model:

"A central, rural location for a kiln centre increases the range of available markets, by being equi-distant from two to three towns rather than close to just one. Rural locations can also allow a more efficient service of village and country markets" (ibid 308).

Hodder's second model (Model 2) is the one that in fact comes

closest to this latter model though it is in fact concerned specifically with coarse wares produced in conjunction with fine wares and having a large-scale and very wide distribution. Such large-scale fine and coarse ware producers do not really figure in Roman Britain until the third and fourth centuries, for example the New Forest and Farnham kilns. Such producers, according to Hodder were able to 'manufacture' coarse wares more efficiently and cheaply than the small-scale producers with which Hodder's Model 1 was concerned. This reasonably priced pottery could, "...therefore be sold through mechanisms which were not dependent on the main towns and roads" (Hodder 1974b 353). Such a system would be reflected archaeologically by a much more even distribution of the pottery over the countryside. The second century potters of the Upper Nene seem to have hardly been producing on the same scale as the third and fourth century 'industries' but on the other hand they do seem to have the characteristically generalized distribution within the study areas, with no real dependence on main towns and roads. Of course, far more data needs to be collected before a suitable model can be tested, particularly in the light of the current difficulty in distinguishing the products of the various local grey ware producers.

Hodder's third model (Model 3) is concerned with the small-scale rurally produced coarse wares. Hodder acknowledges that his data is scanty but suggests that there were, "... quite a number of small-scale production concerns providing small overlapping areas of rural markets with many of the coarser wares" (ibid 355). Such a model seems quite reasonable with reference to the distribution of the calcareous, grogged and sandy wares in the

study area, though even these had really quite wide distribution areas.

In another article on the same subject, Hodder (1974a) discusses the application of regression analysis and gravity models. In the former case, if a central service node is considered with people in the surrounding area going to and from it, obtaining products or services, then an equation can be written for the 'fall-off' in interaction with distance. For coarser and commoner products like coarse wares and tiles, distance has an important friction effect as already mentioned and thus the 'fall-off' is more rapid or 'steep' around a service node than for finer wares. Gravity models are concerned with the fact that the size of a marketing or production centre is important in determining the amount of interaction with that centre. These two methods of analysis thus attempt to measure the two major 'constraints' at work on pottery distributions that Hodder outlines in a later article (1979a) discussed above.

As already demonstrated in Chapter 6, of the two variables, distance of a site from a town and from a kiln site, the former seems the more important factor in determining the make-up of an assemblage, though sites very close to a kiln site in this study area would seem to obtain pottery direct, rather than travelling to a distant town. If the greatly increased 'friction effect' for the coarser wares is accepted then, even when a coarse ware source is not pin-pointed then it can still be assumed that the nearest known kilns producing that ware, will be the probable pottery suppliers. Thus in the study area, the possible source

of calcareous wares at Wellingborough and of sandy wares at Hardingstone may very possibly be the actual sources or not far from them for the sandy and calcareous wares found in the study assemblages.

This is easy to apply to the grey wares since these are hardly a "...coarse bulky Romano-British ware" like Hodder's Savernake pottery (ibid 179). Clearly the Northants data was not large or detailed enough to test thoroughly either Hodder's regression analysis or gravity models, but the 'breaking-points' between service nodes proposed in the latter analysis could be calculated using Reilly's law of retail gravitation, with the following breaking point formula:

Where i and j are two service nodes,

$$\begin{array}{lcl} \text{Distance from} & = & \text{Distance of centre i} \\ \text{breaking point to} & & \text{from centre j} \\ \text{centre j} & & \end{array} \frac{1}{1 + \sqrt{\frac{\text{area centre i}}{\text{area centre j}}}}$$

This can be summarised as follows:

$$D_{bj} = D_{ij} \frac{1}{1 + \sqrt{\frac{P_i}{P_j}}}$$

In the study area the various breaking points between the three Roman towns, Towcester, Irchester and Norton were calculated. Only the walled areas could be used since the extent of extra mural settlement is unknown.

Breaking-point calculations

$$\begin{array}{lcl} \text{Irchester} & = & \frac{27.5 \text{ km}}{1 + \sqrt{\frac{21 \text{ ha}}{7 \text{ ha}}}} \\ \text{(to Towcester)} & & \end{array}$$

$$= \frac{27.5}{2.73}$$

$$= 10.07 \text{ km}$$

$$\begin{array}{lcl} \text{Towcester} & = & \frac{20 \text{ km}}{1 + \sqrt{\frac{5 \text{ ha}}{21 \text{ ha}}}} \\ \text{(to Norton)} & & \end{array}$$

$$= \frac{20}{1.49}$$

$$= 13.42 \text{ km}$$

$$\begin{array}{lcl} \text{Norton} & = & \frac{30 \text{ km}}{1 + \sqrt{\frac{7 \text{ ha}}{5 \text{ ha}}}} \\ \text{(to Irchester)} & & \end{array}$$

$$= \frac{30}{2.18}$$

$$= 13.76 \text{ km}$$

$$\begin{array}{lcl} \text{Towcester} & = & \frac{27.5 \text{ km}}{1 + \sqrt{\frac{7 \text{ ha}}{21 \text{ ha}}}} \\ \text{(to Irchester)} & & \end{array}$$

$$= \frac{27.5}{1.58}$$

$$= 17.40 \text{ km}$$

Norton

$$\begin{array}{lcl} \text{(to Towcester)} & = & \frac{20 \text{ km}}{1 + \sqrt{\frac{21 \text{ ha}}{5 \text{ ha}}}} \end{array}$$

$$= \frac{20}{3.05}$$

$$= 6.56 \text{ km}$$

The most significant feature of these results is that the 'semi-urban' settlements of Duston and Houghton lie on or very close to the breaking points between the three towns (see Map 4). Perhaps these smaller settlements acted as 'service nodes' for a local population that found the distance to larger towns too far.

Hodder's lines of enquiry have been followed by other archaeologists. One of the most thoughtful considerations of the marketing of Romano-British coarse wares is by Loughlin (1977) who concentrates specifically on the pottery known as Dales ware

and Dales-type ware. These wares started production at around AD 200, both have coarse calcite-gritted fabrics, the former hand-made, the latter wheel-turned imitations. An examination of the ware fabric forms and distribution leads Loughlin to suggest that the ware was 'mass-produced' and fired in large quantities in bonfire firings rather than kilns, "... Dales ware is a standardized commercial product. Petrological analysis supports the conclusion that a major or individual enterprise was responsible for these vessels, however loosely production may have been organised within this framework itself" (ibid 117).

Loughlin takes four study areas and examines the distribution of this ware in relation to the contemporary Romano-British settlement. In one of these areas, his Case Study 2 (ibid Fig. 8.2), North Lincs and the East Midlands, the closely spaced and regularly ordered network of nucleated centres is very similar to the Northants study area. As in Northants few people by the second century were more than 10 km away from a nucleated settlement, and almost every rural site has Dales ware. According to Loughlin, this testifies, not only to the "...overall economic integration of the region, but also to the marketing opportunities - and evident capabilities - of the potters working in those circumstances" (ibid 121). The implication is of an integrated market exchange system in operation, rather different to the purely redistributive exchange systems outlined by Hodder in his Model 1 (1974b) . Indeed Loughlin makes clear reference to the "... more permanent [than the structure of military organization], if less static presence of free-market forces in the middle and later Roman periods" (Loughlin 1977 121).

The only resemblance of Loughlin's Case Study 2 model to Hodder's Model 1 is that Loughlin considers pottery distribution to have been definitely assisted by road routes, at greater distances from the kiln source. The Case Study 2 area is defined by Loughlin as part of the 'local' market area for Dales ware, and it seems to correspond closely with the distribution pattern type of the Upper Nene grey wares in the Northants study area. Dales ware differ in that they had a further 'extended' market area, as Loughlin describes:

"Outside of the local market area there is not a clearly progressive fall-off zone either in the military north or in the Midlands to the south. This supports the view that Dales ware, and the Dales types, did not rely on opportunist, long-distance, itinerant marketing, nor on complex economic or social mechanisms for its dispersal, but rather that its marketing was specifically aimed at heavy sales at the larger permanent centres of residence, and via those places, to their surrounding economically interdependent rural population" (ibid 124).

The Upper Nene grey wares do not seem to reflect this picture, but the products of the Oxford and Verulamium industries, even in the second century do. A reappraisal of maps 6 and 7 indicates that sites closest to road routes, Great Weldon, Ringstead and

Wood Burcote for example have marginally more of the 'regional speciality' wares as they have been termed than other similar status but less accessible sites. This possibly reflects the extension of trade at the periphery of the 'local' market area of the Verulamium and Oxford producers, along road routes, as postulated by Loughlin for the Dales wares.

Pollard's (1982) study of Roman pottery in Kent provides the most direct test for the data analysis presented in Chapter 6 above, since unlike Loughlin (1977) he examines the relation of a number of different 'classes' of ware to a range of 'classes' of sites (see Pollard 1982 444ff). The ware classes used by Pollard are Kitchen or "coarse" wares, Table or "fine" wares; specialised vessels (amphorae, flagons and mortaria) and miscellaneous types. In the case of the Kitchen wares Pollard finds little evidence in the Kentish assemblages to suggest that they ever reflect differentiation (spatial or temporal) according to different classes of site. In the Northants study area the emphasis was on the numerical differentiation of the assemblages in relation to site status and in this case a pattern was reflected, particularly in the case of the grey wares with their bias towards the lowest status sites, though the latter's proximity to the kiln source must not be forgotten.

Pollard comments that the greater variety of coarse wares on some sites seemed to be due more to their geographical location than their socio-economic 'function'. One site, Joydens Wood for example, is situated 5 km south-west of the town of Noviomagus, and though a poor site with "little sophistication" it has a

large variety and range of all types of pottery (ibid 446). The settlement on the Alchester road, just south of Roman Towcester in Northants, seems to parallel Pollard's finding.

In the case of long-distance traded coarse wares, BB1 for example, Pollard sees a bias in Kent towards high status sites, not apparently the case in Northants.

Turning to the Table wares, Pollard suggests that the rarity of a ware may be equated with its exchange value in a direct proportion. Furthermore, in Kent the rarer wares are restricted in the range of classes of site on which they occur with a bias towards wealthier settlements such as towns, military bases and villas (ibid 452). In the second century Pollard suggests that this effect is less marked with central Gaulish samian and colour coat and what he terms Hadrianic to mid-Antonine roughcast wares having a wider circulation. Towns of all sizes in Kent seemed to have received sizeable quantities of samian whereas lower status sites like Joydens Wood (see above) had lower amounts. Pollard has no comparative data available for villas. In Northants the situation would seem to be similar. Sites like Great Weldon and Piddington may safely be called 'villas' (E. Scott pers. comm.) and they also have less samian than the town site.

The distribution of specialised vessels in Kent reflects closely the data from Northants. Pollard suggests that in the case of amphorae a multiplicity of site status is implied and similarly flagons and mortaria. The former are found on all classes of site and there is no evidence of site bias from the late first to the fourth century. Mortaria in Kent though much the same are

seen by Pollard as alien types to the indigenous population in mid first century, but widespread from the Flavian period on. Though also widespread in second century Northants their small numbers seem to indicate, as already suggested above, a grudging acceptance by the local population.

Pollard's final class of miscellaneous vessel types includes Tazze, Face-pots, triple-vases and unguent vessels, of which there were not enough for trends to be ascertained. In Northants the situation was much the same. The metal-working settlement along the Alchester road on the outskirts of Lactodorum has the only examples of any of these wares, some triple-vase sherds.

Pollard has an interesting additional section on how the class of vessel can affect distribution and from the Kent evidence lists five factors exerting influence on the dispersal of classes of vessel. These are:

- a) cost of production and transportation of the vessel, involving breakage rates, facilities of packing, expected retail value amongst others
- b) value of contents, if any
- c) competition from vessels/contents of other sources
- d) social demand
- e) existence of facilities for exchange between producer and potential consumer or between owner.

Factor d) is interesting in that Pollard makes the important point that the economic determinism of production and transport costs and the interaction between industries must not be allowed

to monopolise thinking on the determinants of pottery distribution. Considerations of aesthetics and functions should also be taken into account (ibid 469). Most pottery vessels can be assumed to have been acquired because they performed a useful function. Pollard excepts vessels of high prestige value, but in the Northants study area it seems reasonable to suggest that even samian and imported colour coats performed the function of gracing the dinner table rather than sitting on the 'mantle piece'.

As Pollard points out, guessing at the range of functions of a vessel type is a dangerous and usually fruitless exercise, "Aesthetic perception is an aspect that is impossible to reconstruct with any confidence" (ibid 472). In the Northants assemblages the bias of the grey wares towards the lowest status sites has already been discussed above as a function of aesthetics, with such vessels on higher status sites perhaps being used solely in the kitchen whereas on the lowest status sites their good quality finish rendered them fit for the dinner table. Whether a round house like Overstone actually had a dinner table is another matter, though the range of 'tableware' found at Ringstead suggests that it is not impossible.

On the subject of the modes of exchange operating in Roman Kent, Pollard is more reticent. He discusses in some detail the relationship of pottery to the broader context of society, politics and the economy, but other than suggesting that on coin evidence, by the second century "...the role of money in small scale transactions is debatable but money rents and taxes can be

assumed to have been well-established" (ibid 504) and by referring to the fact that by the second century the whole of Kent was well-served by "high technology industries" (ibid 504), he has little more to say. He apparently accepts without reservation the ethnographically-derived models of exchange proposed by Renfrew (1977) which will be examined below, and makes no attempt to test them using his own data. He seems happy to use the idea of the town 'market place' as the redistributive centre for pottery linked with a certain amount of itinerant peddling from site to site either by potters or by 'middlemen'. No attempt is made to assess their relative importance which is disappointing considering the weight of data available from the Kent area.

Section ii)-The Pre-Roman Economy

Both Pollard (1982) and Loughlin (1977) stress the importance of examining the pre-Conquest situation before coming to any economic conclusions. Loughlin (ibid) in particular notes that in his Case Study 2 (see last section), the area displayed considerable economic 'sophistication' well before the arrival of the Romans and suggests that this was a contributory factor to the extent of 'economic integration' displayed by the study of the distribution of Dales wares.

The idea of pre-Roman economic sophistication, integrating readily with the conquering economic system is supported, albeit often implicitly by many prehistorians. Curiously a handful of Romanists have attempted to refute this model in order to demonstrate a continuity of primitive exchange economies from the

Iron Age into early Roman Britain (and so support their archaeological data). Foremost among these latter is Hodder whose paper on 'Pre-Roman and Romano-British tribal economies' (Hodder 1979b), probably introduced the concept of the socially 'embedded' economy to many Romanists for the first time, (see Reece 1979 216-7 for example).

Hodder's approach is unashamedly that of the substantivist who sees all primitive economies as embedded within the social sphere, "The exchange of goods is really a reciprocal transaction within the social relations involved. The transaction binds and gives meaning to the social act" (Hodder 1979b 189). Such an approach is ultimately derived from the work of those such as Polanyi, (Polanyi et al 1957) and has already been discussed in a previous chapter (Chapter 3). Hodder does not attempt to test the model he proposes for the Iron Age economy but does make some suggestions in that direction. Unfortunately, his points are badly argued. For instance he looks at the evidence of centralised pottery production in Iron Age England previously taken as good evidence for market exchange and writes that "...this is not necessarily the case," hardly convincing in itself. Concerning Iron Age coinage, he dismisses Collis' thesis that Iron Age gold coins had a social function and bronze a marketing function in the big centres only, on the grounds of a sampling bias in his data. Collis has recently rejected such attacks with understandable asperity (Collis 1981 54). Hodder's concluding remark is that it is "...extremely difficult to see how the supposed market exchange involving bronze coinage would not have led to distribution outside the market centres" (Hodder 1979b 189). Crawford (1970) has no such problem in proposing the

concentration within the urban centres of the Roman world of coin used for market exchange. The dearth of small denomination coinage on rural sites in first and second century Britain (see Reece 1982) might further underline Hodder's false position. On a more general level, Hodder seems to find it hard to believe that pre-Roman Britain could have developed a market exchange system when Classical Greece according to Polanyi had made the changeover "...only a few centuries earlier" (Hodder 1979b 190). It might be pointed out that Rome managed the process fairly well, on Hodder's own evidence, within those few centuries once it had come in contact with the Greek system and there is no theoretical reason why British contacts with the Roman world might not have similarly hastened the development of market exchange systems in Britain.

With these criticisms in mind, Hodder's next step, to apply the model to early Roman Britain has to be treated with appropriate caution. Having relegated Iron Age coinage to use in 'payment' or as a 'standard' rather than in 'exchange', Hodder then proposes with little supporting evidence, that they continued in use into the early Roman period with the population apparently ignoring both Roman currency and the alien system of market exchange introduced with it. Reece has dismissed the first part of the argument, writing that, "By AD70 Britain, in the lowlands at least, was conquered. So, with the expenditure of neither effort, ill-feeling nor cost to the state, was the British coinage" (Reece 1979 215). The concept of the introduction of the alien economy reveals the ambiguous nature of Hodder's

hypothesis. On the one hand he quotes Finley on the backwardness of the Roman economy yet on the other hand he writes of the clash between primitive Iron Age 'embedded' and advanced Roman 'disembedded' systems in early Roman Britain, and the victory of the former until the later centuries of the Roman occupation.

Hodder's suggested 'test' for this latter model is based mainly on the distribution patterns of various types of early Roman pottery produced in England which seem to show an adherence to Iron Age socially-determined patterns. Of course the assumption is that the Iron Age patterns do not represent market exchange. Even Hodder can make no stronger case than that, "...some continuity between Iron Age and Romano-British processes is suggested and there is no strong evidence for market trade" (Hodder 1979 b 194).

The obvious 'differences' between the archaeology of the early and later Roman occupation in Britain is Hodder's final evidence for an economic continuity from the Iron Age to the early Roman. Pottery distributions no longer show evidence of 'tribal or social control' with potteries located to take the best advantage of available town and military markets. The second century Northants data has already demonstrated that this need not necessarily be the case and to argue that because one pattern can be taken to represent one exchange system, another cannot is merely arguing by default and thus not helpful.

In spite of such very obvious failings, Romanists such as Reece (1979) have readily accepted Hodder's model of continuity as the best one for their data. Reece for example confesses that, "...I

find the idea a great relief, and a very attractive model with which to work" (Reece 1979 216). As will be noted below, Reece's puzzle over early Roman coin losses in Britain may be more imagined than real.

As already pointed out prehistorians themselves would not generally go as far as Hodder in describing the 'backwardness' of the Iron Age economy. Haselgrove in his detailed paper on the significance of coinage in pre-Conquest Britain (Haselgrove 1979) demonstrates his own knowledge of the work of Polanyi with the following section on the function of coinage, quoted here in full since it is relevant to the general discussions:

"Because of the exchange use of money under our market organization of economic life we are apt to think of money in too narrow terms. No object is money per se and any object in an appropriate field can function as money. In truth, money is a system of symbols similar to language, writing or weights and measures... it is an incompletely unified system, a search for its single purpose is a blind alley.... We must be content with listing the purposes to which objects called money are actually put. This is achieved by pointing to the situation in which we operate these objects and with what effect" (K. Polanyi cited in Haselgrove 1979 201).

Thus does Haselgrove introduce the idea of the socially-embedded primitive economy. Unlike Hodder however, Haselgrove, though ready to accept that earlier precious metal coinage in Iron Age Britain did not function as a means of exchange, does not include bronze coinage in the same category. He follows Collis (see above) in regarding the concentration of large amounts of this bronze coinage on nucleated settlements (particularly in the south-east) as evidence of a differentiated coin use. Haselgrove proposes that the role of bronze coinage in these situations:

"....may well have been as a general-purpose money within the subsistence sphere, issued to specialist producers and other individuals providing services for the central authorities in payment and used by them to obtain foodstuffs, domestic utensils and such like at local markets established for this purpose, ultimately leading to their generalised use as a medium of exchange and standard of value in the market place" (Haselgrove 1979 206).

Left to itself, Haselgrove speculates that Britain might have produced its own market economy.

Haselgrove is not alone in his view of the relative sophistication at least of low-land Britain in the years before the conquests. Dannell for instance refers to the rapid penetration of Gallic 'markets' in the wake of the Caesarian

campaigns by mercatores (Dannell 1979 177). Nash, again referring to the contemporary situation in Gaul, describes the confinement of bronze coinage to larger centres of population as a function of their "...suitability for use in retail trade and subsistence markets..." (Nash 1981 13). Finally, Cunliffe, referring to the 'socio-economic zones' of the south-east of Britain, describes how coinage was adopted "...and a full-scale market economy eventually developed" (Cunliffe 1981 29). In a later passage he suggests that the widespread distribution of Cunobelin's coins in the south-east, was not so much representative of his aggressive territoriality as of his ability to issue widely-accepted coins "...for the purposes of exchange and marketing" (ibid 38).

Clearly ascribing a relative primitiveness to the Iron Age economy would suit some archaeologists more than it would others. The novelty of Hodder's 'embedded' model has seduced more Romanists than it has prehistorians. The latter finding far less that was new in the model (a late product of the New Archaeology), have treated it with greater scepticism and perhaps produced a more balanced view of the exchange systems operating in south-east Britain immediately prior to the Claudian invasions.

This being so it is interesting to return to Cunliffe's article on 'Money and Society in pre-Roman Britain' (Cunliffe 1981). His Fig. 15 illustrates tentative socio-economic zones in the period 50 B.C. to AD 10 in the economically advanced south-east portion of Britain.

One of these with a possible nucleated settlement at Duston as its focus, incorporates the Northants study area. The failure of Hodder's post-conquest model when tested with data from this area brings to mind Loughlin's remarks noted in the opening paragraph of this section, namely, that the pre-Roman economic sophistication of part of his study area may have been a contributory factor to the extent of 'economic integration' displayed by his study of the distribution of Dales wares.

Section iii) – The Evidence of Roman Coinage

As has been seen in the last section, the evidence of coinage can throw much light on an economy. In the case of the Roman era, the extraordinarily extensive monetization of the Roman economy has led to some false assumptions about that economy's sophistication. Fulford (1978) does however warn of the danger of going to the opposite extreme, "... it does seem vital to point out that, in terms of its denominational range, the gold, silver and bronze coinage of the early imperial coinage had no European parallel until the later medieval period" (ibid 90).

The denominations more or less current in Britain in the second century and their monetary relationships may be summarised as follows:-

aureus (gold)	denarius (silver)	sestertius (brass)	dupondius (brass)	as (copper)	semis (brass)	quadrans (copper)
1	25	100	200	400	800	1600
	1	4	8	16	32	64
		1	2	4	8	16
			1	2	4	8
				1	2	4
					1	2

(After Casey 1980 8).

The smallest coins, the semis and quadrans never came into Britain in large numbers. There were also occasional issues of half aureus and half denarius pieces, called quinarii.

The state required coins to pay its armies and its administrators. Most of the coinage found in Britain was minted on the continent, at Trier, Lyons, Arles, Aquileia and Rome in particular. Copying within the province seems to have been widespread, possibly with official permission because of coin shortages (Salway 1981 660).

Little is known of how the civilian population came by its money, and it has to be assumed that it was dispersed via the army and provincial administration, though this does not really account for the apparent speed of diffusion into civilian pockets following the Conquest. Reference may perhaps be made to the

large loans made to British aristocrats by Roman senators before the Boudiccan rebellion (Dio XII ii).

The actual issue of coinage by the state according to general received opinion was totally dictated by the annual needs of the state to pay the army and administration. Crawford for example writes;

"Coinage was probably invented in order that a large number of state payments might be made in a convenient form and there is no reason to suppose that it was ever issued by Rome for any other purpose than to enable the state to make payments, that is, for financial reasons" (Crawford 1970 46).

The only management of its currency carried out by the state was thus the prevention of forgery and the enforcement of the official values of coins. Lo Cascio (1981) has written a strong counterattack of this view of the state and coinage, using ancient literary evidence to demonstrate, for example, an awareness of the effect that a sudden increase of the available amount of a precious metal can have on its price, concluding that there is no need to suppose, as Finley does (see Chapter 1 above), that "...this awareness could be prompted only by a sophisticated knowledge of 'economic laws', these are among the 'pre-scientific notions' empirically discovered by common sense" (ibid 78). Lo Cascio believes that the Roman government was both aware and interested in what happened to its coinage once it was in

circulation and goes so far as to propose a bipartite 'monetary policy' involving the fixing of monetary relationships and, more controversially, the supplying of the market with an adequate means of exchange, to an extent allowed by reserves. The limitations of government action were thus not the result of theoretical shortcomings but arose whenever metal reserves could not be easily increased (ibid 86).

Such historically based arguments seem irreconcilable using only the evidence of literary sources. The argument, of course, revolves around the definition of the actual function of coin in the Roman empire. Lo Cascio clearly visualizes a major role in market exchange systems. Crawford (1970) on the other hand sees coin in the Roman world as having three major uses, for payment, for storing wealth and for measuring value. Its use as a means of exchange was very much a secondary one and then only in the larger towns and cities of the Roman empire. Crawford uses archaeological evidence, particularly from Pompeii to support his thesis, but is forced to admit that, "...it can of course be argued that a countryman would go into town to purchase his wants and that he could partake of a market economy as much as a town dweller" (ibid 44). Crawford's answer to this, is to quote Cato and Cicero on the subject of farmers being 'sellers' not 'buyers' and ordinary farmers having no spare cash (ibid 44). It need hardly be pointed out that the opinions of aristocratic Italian 'gentlemen farmers' are hardly immediately applicable to the peasantry of Britannia.

Far more convincing is the work by Reece on various coin collections from the western provinces, Italy included (Reece

1973). He shows how in comparison with areas such as northern France, southern France and northern Italy, Britain up to AD 259 lags well behind in the proportion and also actual number of Roman coins recovered from towns and villas like Chedworth, Fishbourne, Cirencester and Verulamium. In a later article Reece attempts an interpretation of these figures, pointing out that if site finds from Italy are taken as the standard of coin loss, with most sites having a reasonable representation of denarii, sestertii, dupondii and asses then, "Judged on this standard, Britain is an economic failure....more factually...the British system of coin use was not the Italian system and if the latter.... is the archaeological remnant of a market economy the British coin loss is not" (Reece 1982 501). Not until the third century do the coin loss patterns become similar and then overtake the Italian pattern presumably representing according to Reece the changing balance of trade between the centre, Italy and its provinces which cease to be exploited and instead succeed at Italy's expense (ibid 502).

Reece thus implies that if the presence of market exchange is to be postulated before the third century in Roman Britain, the coin evidence must be ignored. Crawford (1970) is less sweeping. He suggests as noted above, that the use of coinage as a means of exchange within the cities of the Roman empire was not uncommon, but that even in Italy small change did not travel very fast into rural areas and was never present there in particularly large quantities. The general lack of denominations smaller than the as indicating that coinage was little used there as a means of exchange, soldiers had their necessities provided and so what

purchases they made were in luxuries. For the civilian population, coinage "...will have served mainly as a store of wealth and as a (compulsory) method of paying taxes" (ibid 45).

Inspite of the fact that Roman currency seemed admirably suited for use in market exchange by virtue of its stability and the wide range of denominations, neither the historical, nor the numismatic evidence would support its use as such in second century Britain at least.

This view may be balanced to some extent, firstly by a remark made by Casey (1974) concerning the scarcity of early coins on Roman sites in Britain. He supports the view that this is a reflection of the 'inevitable' slow initial economic growth of the sites and of a restricted supply of coinage, but he adds that the picture may well be biased by the fact that early levels are generally less well explored archaeologically than upper ones (ibid 44). He also makes the important point that an abundance of coins on a site does not necessarily reflect an increase in prosperity, as indicated with reference to modern inflation, "...indeed, the contrary situation pertains since the larger volume of currency is needed to purchases an unchanged amount of goods and services" (ibid 45). Secondly, Reece's coin histograms for Italy and Britain suffer from a major flaw. As has been pointed out by Greene (K. Greene pers. comm.) the fact that after the fourth century coins cease circulation within Britain, whereas in Italy they go on being used, heavily weights the top section of the Italian histogram and so makes any comparison with the British one spurious.

Finally, Fulford (1978), while discussing mint activity in the late Roman empire, though stressing the importance of coin evidence in throwing light on the economic 'complexities' of the Roman era also points out that such evidence can only present a fully rounded picture when integrated with the study of traded artefacts (ibid 90). In other words, the evidence of Roman coinage alone cannot provide a complete understanding of the Roman economy. This is particularly the case when it is realised that opinions as to the function of Roman coined money are generally based on a preconceived notion of Roman economics. Using such 'opinions' as tests for models of the Roman economy is thus fraught with the problem of circularity. The negative attitude of some numismatists to the economic models built from their data by others, and their refusal to propose their own is a further problem.

Section iv)-Conclusions

In the opening section of this chapter a comparison was made between the models of the Romano-British exchange system tested in Chapter 6 above and those of other archaeologists. A clear contradiction of the more primitive model favoured by Hodder (1974b) for example was discovered, while the more sophisticated marketing model proposed by Loughlin (1977) perhaps came closest to that arrived at in Chapter 6.

The model constructed by the numismatist Reece (1982) provides a more generalised statement on the primitiveness of the Romano-

British economy in the early centuries of the occupation. Though at first sight strong, this model can be sensibly criticised, as can Hodder's theoretically attractive similarly 'embedded' model. The current models of prehistorians for the economy of immediately pre-Conquest Britain indicate at least for the south east, the functioning of limited market exchange. This again undermines much of the foundation of the 'primitive' models for first and second century AD Roman Britain which rely on ideas of socio-economic continuity (see also Fulford 1981).

The elucidation of the actual mechanisms of exchange in Roman Britain has clearly been subsumed here by a more generalised consideration of the theoretical modes of exchange operating during the first two centuries AD. Thus it seems more important at this stage to ask exactly how wide-spread were systems of market exchange rather than how pottery was conveyed from the kiln to the consumer, though obviously the latter is a function of the former.

The archaeological data from Northants appeared to support a dual hypothesis. In the first instance the presence of market exchange systems in second century Roman Britain seems quite definite, a major statement in itself. Secondly, it is possible that such systems were not confined entirely to urban centres and may in fact have been sufficiently large-scale to penetrate the most rural areas.

The implications of this hypothesis for the study of the empire-wide economy will be examined in Chapter 10 below. Before this

however two chapters will be devoted to the application of historical and ethnographic analogy to the situation in Roman Britain and the empire. Such an activity is fraught with theoretical and practical problems and has sometimes been dismissed out of hand by archaeologists. Conversely it is after all what every archaeologist must do everytime he or she interprets data. As Orme (1981) puts it, "There would be no archaeological interpretation as we know it without ethnography, both at the level of the recognition and interpretation of artefacts, and at the level of discerning and explaining the processes of human cultural development" (ibid 2).

The line taken here is that such analogies are better exposed and examined than left implicit within an hypothesis.

CHAPTER 8

ETHNOGRAPHIC ANALOGIES

Section i)-Introduction: The Use of Ethnographic Analogy

Without the use of analogies from contemporary 'primitive' societies, archaeologists would be unable to explain or interpret their evidence. They know that Roman cooking jars were used for just that, not only because the sherds that remain are sooted, but also because primitive people still use equivalent types of earthenware pots in a similar fashion. Ethnographic studies have proved particularly fruitful in elucidating the technology of past modes of production. Peacock's recently published work on 'Pottery in the Roman World' uses the author's ethnographic observations to build a more coherent picture of Roman pottery production (Peacock 1982). Peacock's 'ethnoarchaeological approach' demonstrates that inspite of the highly pessimistic attitude of writers like Ucko (1969), archaeologists are still prepared to use ethnographic analogies explicitly, in their interpretations. The pitfalls of such an approach have been ably set out in two recent introductions to the subject by Hodder (1982) and Orme (1981). Orme examines the use of ethnography to provide background information for archaeologists, for setting up models and for making comparative studies. She incidentally, uses the term ethnographic 'parallel' instead of 'analogy' which Hodder prefers. In her introduction, Orme sees the problems for archaeologists as threefold: the danger of bias on the part of the ethnographer in the field; the bias of the archaeologist in selecting material from the ethnographic literature; and finally the danger of the single parallel, "A single parallel can never

give the same thorough understanding of the data, and it would often be better to use no ethnography at all than to be hoodwinked by the mere appearance of similarity" (ibid 27-8).

Hodder (1982) seems to see the problems for ethnoarchaeologists as far more complex and his opening chapter is devoted to explaining the correct use of analogy. He writes that previous negative assessments of the value of analogy in archaeology, "...are clouded by a misconception of the nature and proper use of analogy" (ibid 14). Hodder then goes on to draw a distinction between formal and relational analogies:

"According to a formal analogy it is suggested that, if two objects or situations have some common properties, they probably also have other similarities. Such analogies are weak in that the observed association of characteristics of the objects or situations may be fortuitous or accidental. So other analogies, of the relational kind, seek to determine some natural or cultural link between the different aspects of the analogy. The various things associated with the analogy are said to be interdependent and not accidentally linked" (ibid 16).

The emphasis, according to Hodder must be on the elucidation of causal relationships rather than a concern simply with associations. Just as importantly, the archaeologist's notion of context must concern both functional and ideological aspects of

life, "...that is,... the functional and ideological framework within which material items are used in everyday life" (ibid 27). Thus only when the archaeologist has examined the existence, the strength, the nature and the cause of covariation between a past and present society can the use of analogy be seen as reliable and rigorous (ibid 27).

As has been pointed out in a review article (Pinsky 1983), Hodder's work is important in that it balances "...existing interpretive bias towards functionalist and utilitarian approaches. These are regarded by Hodder as cultural preconceptions derived from our own modern, western and middle class experience and are little more than ethnocentric prejudice" (ibid 105).

The relevance of the proposed weighting towards symbolic and ideological aspects of past societies will be assessed in the following sections but it must be stated here that at least as far as the production of Roman pottery is concerned, this author feels that the weighting must not be taken too far in Hodder's direction. One further point can be made that neither Hodder nor Orme mention, and that is that some archaeologists, rather than using the current ethnographic literature, have begun to collect their own ethnographic data for comparison with their archaeological data. The biases that can be introduced into such studies are obvious and great caution has to be exercised in avoiding them.

The work that has so far been done in putting ethnoarchaeology

into practice in the field of Roman ceramics, has concentrated on two areas, modes of production and subsequent modes of exchange. In the following two sections, 'production' and 'exchange' will be dealt with separately, but it must be borne in mind that the two are in reality closely linked.

Section ii) - Modes of Production

The most comprehensive, indeed the only, attempt to date to use ethnographic analogy to elucidate modes of ceramic production in the Roman period has already been mentioned above. Peacock (1982), outlines his belief that the majority of ethnographic field work has concentrated on more primitive societies in 'ecological zones' very different to those of the Roman world. The latter point is reasonable, the former less so since it assumes a predetermined level of complexity for Roman pottery production that many Romanists would disagree with. Peacock chooses to make his own ethnographic observations of 'peasant' pottery production within Europe and the Mediterranean basin, supported by historical records and the evidence of industrial archaeology. He fits the data he has collected into a generalised model of modes of production. These are:

1. Household Production
2. Household Industry
3. Individual Workshops
4. Nucleated Workshops
5. The Manufactory
5. The Factory
7. Estate Production

8. Military and Other Official Production.

The theoretical flaws in Peacock's approach have been discussed elsewhere, by this author and by others (Griffiths and Greene 1983, Reece 1983, McVicar 1983). Principally, the criticism is of inconsistency:

"Whilst modes 1-6 are examined because they ought to be relevant from a largely theoretical standpoint, 7 and 8 are appended because of preconceptions derived from the very data against which they will be tested" (Griffiths and Greene 1983 184-5).

The point is that Peacock's explicitly deductive approach is not as pure as it is held to be by many theoretical archaeologists (see Introduction section ii) - Methodology above).

In his following ethnographic chapter, Peacock illustrates his eight modes of production, that is the material remains that might result archaeologically from each mode, using examples from contemporary European and Mediterranean societies. Here his approach runs into a major theoretical pitfall. His concentration on purely technological and economic aspects of ceramic production at the expense of its social context is exactly what Hodder argues so strongly against (1982). As one reviewer puts it, "...Peacock has constructed an interpretative scheme which is so processual that it is difficult to see how life might be breathed into it...the extensive list of

ethnographic case studies amounts to little more than an international recipe book for potters..." (McVicar 1983 107).

The point has to be made however, that Peacock's book was specifically aimed at the thinking field archaeologist, not the desk-bound theoretician. Peacock's 'recipe book' may not help to fit Roman pottery production into its social context but it is a valuable aid in the archaeological categorization of data. Many archaeologists, this author included, would feel that before more theoretical considerations can be taken into account, far more work remains to be done on this initial categorization.

As already noted Peacock avoids any examination of the ideological framework within which pottery production takes place in the modern societies he studies. He thus evades most of the problems outlined in the last section concerning the application of ethnographic analogies.

Section iii)-Modes of Exchange

Economic anthropologists have pioneered the theoretical study of modes of exchange following on from Polanyi's seminal categorization into reciprocal, redistributive and market exchange. Unfortunately the equivalent of Peacock's work (1982) on archaeological modes of production remains to be written. Both Orme (1981) and Hodder (1982) discuss exchange in their introductions to ethnoarchaeology. Orme concerns herself with the more 'primitive' forms of exchange, reciprocity and redistribution, both of which she includes under the heading Gift and Ceremonial Exchange (Orme 1981 180ff). She illustrates a

number of sub-headings with ethnographic field studies. Her sub-headings are tribute; gift-partnership; diplomatic exchanges and exchange cycles. The latter are illustrated by Malinowski's classic Kula exchange cycle of the islanders living to the east of New Guinea and the aboriginal pan-American network of exchange studied by W.R. Wood (ibid 183ff). Both examples demonstrate conclusively the complexity and scale achievable with such so-called 'primitive' exchange systems. In Wood's study (ibid 189ff) it was demonstrated how within a matter of years, goods travelled from the Pacific to Atlantic coast and vice versa, across the width of North America.

Hodder's study of exchange (1982) similarly concentrates on reciprocal and redistributive exchange systems and their elucidation within prehistoric contexts using ethnographic evidence (ibid 146ff). He stresses the necessity of a more general understanding of the social context of exchange, referring to the theoretical framework developed by the substantivist school of economic anthropologists (see Chapter 3 above). He provides a few examples of how ethnographic data can supply information on general relationships between exchange and social organization, but can go no further really than pointing the way forward for future research. Thus he concludes that:

"...if archaeologists are to reconstruct the ways in which exchange transactions are involved in social relations, they must acknowledge that the artifact itself has a cultural value on which the social effect of the transaction will depend. The exchange

artifact legitimates, supports and provides the basis of power of interest groups" (ibid 151-2).

As already noted, very few archaeologists have tried to use ethnographic analogy in the study of Roman exchange systems. Renfrew (1977) made a rather make-shift attempt with his discussion of 'Production and Exchange in Early State Societies'. Like Peacock (1982), Renfrew begins with a model of the possible variations:

1. The consumer travels to the producer's home or workshop to obtain his pottery.
2. The producer himself carries his produce around to the consumer, acting as an itinerant pedlar.
3. Producer and consumer meet at some third place, frequently a market, for exchange.
4. The producer exchanges his pottery with a middleman, who transports them to, and exchange [sic] them with, the consumer.
5. The producer takes his pottery to some central agency which assigns him goods in exchange.

Renfrew's assignation of these five modes into Polanyi's three generalized categories is somewhat vague. Apparently modes 1-3 may represent reciprocity, though "...not normally at a market

place and ... in many societies pots are not looked upon as valuables and are thus not suitable as prestigious gifts" (ibid 10). Mode 5 represents redistribution and centralized control distinguishes 5 from 4, which presumably means that the latter is also redistribution. Renfrew then goes on to illustrate his five modes with ethnographic field studies from primitive societies as far apart as the Siuai of the Solomon Islands and the Yoruba of Africa. Such illustrative uses of ethnographic data are clearly rather unhelpful to the archaeologist since they merely prove that the various modes of exchange are known to have operated at least once in history. Furthermore, Renfrew's model is itself rather unsatisfactory since it only incorporates the physical movements of producers, consumers and middlemen. It takes little account of the social contexts of such exchanges.

Like Peacock, Renfrew uses his ethnographic data to support a predetermined model. It is an approach that Hodder (1982) does not look at specifically although he does discuss the dangers of trying to reduce the unreliability of ethnographic analogies by 'testing' their consequences in the material remains (ibid 120). Orme (1981) on the other hand, sees the building of models using both ethnographic data and anthropological theory, as perfectly valid exercises for archaeologists.

This approach is described in a review of Peacock's 'Pottery in the Roman World' as being, "....founded on the idea that by understanding the kinds of archaeological record created by different economic and social systems it is possible to make necessary inferences about the economic and social conditions associated with a particular dataset" (McVicar 1983 106). Both

Peacock and Renfrew may be seen to have applied this approach in not completely rigorous fashions (see last section). Perhaps the best practitioner is van der Leeuw (1983) who, taking Peacock (1982) as a starting point provides a summary of modern pottery manufacture and distribution on Negros, Philippines with a view to elucidating the same in the Roman world. He details four different modes of production operating on Negros; Household Production; Household Industry; Workshop Industry and Village Industry. The main traits of each are listed under sixteen headings; clay; temper; tools; technique; range; firing; batches; time per batch; market; distribution; transportation; sex of producer; specialization; dependency; part/full-time; seasonality. All field observations were made by van der Leeuw himself.

His conclusions though tentative, offer some interesting comments on the Roman situation. Firstly, the survival of home production on Negros is directly related to distances from main centres of production:

"Under pressure from a major production centre, home production, disappears rapidly, first in areas which are in better communication with the manufacturing centre..." (van der Leeuw 1983 44).

Secondly, types of distribution systems seem to depend on the numbers of vessels to be distributed rather than the nature of the pottery. Thirdly, there seems to be little difference in

efficiency between kiln firing and open surface firing. On Negros, pottery made in the latter way is in fact more highly esteemed. As a side-issue to this it seems that simpler, part-time workshops are less vulnerable to external disturbances than more highly organised ones. Finally, changes in organization and technology are not innovation-constrained. More important apparently is growth in interactiveness, information flow and information-processing capacity, "As interactivity grows, so does dependency of each subsystem on the next. As we have seen, this causes the margins to narrow and the productivity to grow. Such growth is only achieved by changes in organization and technology" (ibid 45). Such changes are not always beneficial. Indeed a vicious circle may result, with increasing complexity going hand in hand with increasing poverty and misery for the potters. In the nucleated Village Industry on Negros, van der Leeuw describes how the potters work during lunch in order to keep up their quota, "The middle-men have them completely in their grasp" (ibid 45).

Van der Leeuw makes no specific analogies with the Roman situation, contenting himself with demonstrating how the results of an ethnographic field study can be presented to help the archaeologist make rational analogies. Unfortunately the Northants data lacks the relevant information on modes of production for any such relational analogies to be made here.

Section iv) - Conclusions

Van der Leeuw's short article (1983) offers a tantalizing glimpse of future directions of research in ethnoarchaeology. One of the

primary objectives must be the determining of the physical realities of pottery distribution patterns in relation to the exchange systems acting on them. A second priority is the linking of modes of production with modes of exchange. Van der Leeuw (1983) records, for instance, how in Household Production, the potters rely on family (i.e. reciprocal) relationships to distribute their products with 'commercial' production only to order, whereas the Village Industry relies on a chain of middlemen to distribute its wares to apparently quite distant markets. Such differences may seem obvious on a very general level; small scale 'primitive' modes of production rely on/require only primitive modes of exchange; more sophisticated and large scale production leads to/is inspired by more sophisticated exchange systems. On the other hand, it is no longer possible to hypothesise that sophisticated exchange systems move goods further than less sophisticated ones as Wood (see Orme 1981 183ff) demonstrated with the American Indian exchange networks (see last section).

In Chapter 6 a fairly simplistic link was made, not with distances of distribution, but between sophistication of production (and product) and sophistication of exchange. Thus on a local scale, the well-made grey wares of the Upper Nene Valley kilns were hypothesised as being correspondingly 'well' marketed rather than simply relying on redistributive or even reciprocal exchange networks. Their siting mid-way between a number of potential 'market' centres seemed to support the original hypothesis. On a wider scale, central Gaulish samian wares were seen to be produced on a large-scale with a certain amount of

labour specialization and a sophisticated technology, for example the large pipe-jacketed kilns and the standardised moulds. Their wide-scale distribution, geographically and more importantly socially was thus hypothesised as being largely the result of a correspondingly complex exchange system, in other words market exchange. Ethnographic analogy could provide vital help in testing such hypotheses.

Set against such purely functional hypotheses an attempt, was also made in Chapter 6 to incorporate the "emotive and ideological power" of the artefact that Hodder writes of so strongly. A simple link was made between the technological (and artistic) merit and the desirability of a pot. It was noted that though fine earthenware like samian was despised by the Italian upper classes, it seems to have been much sought after by at least the middle echelons of provincial society. The occurrence of samian on low status sites as well, suggests that even in Britannia, it was far from being an exclusive 'luxury'. The ready survival of ceramics must not blind the archaeologist to the range of possibilities, for example, bronze and silver vessels at the top end of the spectrum, wood and leather at the other.

Ethnographic analogy again has the potential to supply absolutely crucial information in this field. The study of anthropology and the use of ethnographic analogy may thus eventually help archaeologists to understand both the gross and the particular details of their subject. In the next chapter an attempt will be made to show how economic archaeologists may elucidate the gross trends of their subject with the use of historical analogy and theory.

CHAPTER 9

HISTORICAL ANALOGIES

Section i)-Introduction: The Use of Historical Analogy

Archaeologists seem to have had fewer problems in using parallels from historical sources than those from ethnographic field studies. This may be due to the fact that most historical analogies come packaged within a ready-made functional and ideological framework worked out by the historian. Assuming that the historian's methodology is sound then relational analogies can be made with apparent ease. For example, much has been made of the contrast (rather than similarities) between the feudal medieval European economic system and that of the Roman Empire, such as the different functions and statuses of trade guilds, of towns, of merchants and manufacturers. Unfortunately, such an analogy is biased in that the evidence for the situation in the Roman Empire is taken from the same source as the medieval, that is, the literary record. For the medieval period such sources may be adequate, for the Roman period, as has already been stated, they are not. Furthermore such comparisons on their own serve only to reinforce preconceived hypotheses and then the economic archaeologist makes no progress.

In the following sections a number of historical analogies will be examined for their relevance to the Roman situation. The starting point for this study was found in an article on technical innovation and economic change in Medieval pottery, by Blake (1978). In this article Blake points out, almost in an aside, that where most studies of medieval pottery usually begin by contrasting its poor quality, limited quantity and restricted

range of shapes with the 'industrial' products of the Roman period, similar studies by Romanists tend to go out of their way to minimise the reality of such an 'industrial' production in their study period. Blake sees this latter approach as being in complete contradiction with the archaeological facts. To support this statement he describes the success of African Red Slip in Western Mediterranean markets from AD100-AD600. In the areas in which it is found (those not supplied by its early competitors in Gaul):

"The quantity on urban sites and its penetration of the countryside is remarkable, if indeed sites where they are found include wooden huts occupied by shepherds. It is difficult not to agree that African Red Slip ware was produced for mass consumption and put on the market in great quantities at competitive prices. Such a domination and distribution in spite of the competition of established local industries make nonsense of assumptions that productivity and the scale of manufacture could not be increased to compensate for transport costs, and that the mass of the population could only afford simple articles locally produced" (ibid 437-439).

Such a view point can clearly be seen to have greatly influenced the preceding ceramic analysis in Chapter 6. More relevant to this chapter however are Blake's concluding remarks:

"Inequality in incomes was enormous in the Roman period but perhaps fifteen per cent of it was redistributed in comparison with an estimate of at the most five per cent for pre-industrial Europe. The ceramic structure (in terms of qualities and distribution) is unparalleled until the eighteenth century when the social structures of wealth and aspirations was remarkably similar to that portrayed in the Roman Empire" (ibid 440).

The figures may be disputed but the model is too provocative to be ignored, particularly when Finley's disparaging description of the potters of the Gaulish samian industry is contrasted, "...Lezoux and La Graufesenque in Gaul, did, it is true, export their ware for a long period throughout the western empire, but the potters were themselves modest men, not even little Wedgwoods" (Finley 1973 137).

Section ii) - The Rise of the Staffordshire Potteries

The rise of potters such as Wedgwood and Spode in the potteries of the Midlands has been chronicled in detail by the historian Thomas (1971). As will be seen, the stages through which these eighteenth and nineteenth century industries passed would seem to have particular relevance for the Roman situation.

The earliest (late seventeenth century) description of pottery production in the Staffs region describes a 'peasant' industry.

After firing, the potters sold their wares to the "...poor Cratemmen, who carry them at their backs all over the Country" (ibid 4). By the early eighteenth century, potters were being mentioned by name and the number of 'pot-works' was growing though individually they were all small units. There were never more than six workers per potwork, many of these being relatives of the master potter. A certain degree of specialisation is apparent in the taking on of boy apprentices (ibid 6).

At around this time (early eighteenth century) the demand rose for china, linked with the growing fashion in tea, coffee and chocolate houses. The early potters obviously had difficulty in keeping up with the demand, particularly in the field of transport of raw materials. Wedgwood for instance records in a footnote to his account, "Only one horse and one mule left in Hanley. No carts scarcely in the country. Coal carried on men's backs" (quoted in ibid 6).

Thomas describes how between 1750 and 1800 there was a qualitative as well as quantitative change in the potteries of the area. From 1780, the term 'pot-works' was replaced by 'manufactory' and by 1833 official government documents referred to the pottery establishments as 'factories' ostensibly because of the large numbers of employees and the degree of concentration of works in large units and the use of labour saving machinery.

In the same process of change, the master potter was replaced by 'captains of industry'. Interestingly, the majority of these men, Minton, Wedgwood and Spode included, all took partners from outside the business. Usually men with capital and with business

experience Wedgwood's partner, from 1766, was Thomas Bentley, a successful merchant of Liverpool. Thos. Bentley brought not only capital, but also taste, to the partnership. Wedgwood shrewdly realised that he needed a man of culture to interpret the taste and needs of aristocracy and royalty as patrons of pottery wares. Bentley furthermore had influence in parliament, which Wedgwood actively made use of in furthering his business schemes.

Nor was the production side of the industry allowed to rest. Thomas writes that innovations were not the result of flashes of inspiration, but rather the product of continuous experiment. Wedgwood wrote:

"I scarcely know without a good deal of recollection whether I am a landed Gentleman, an Engineer, or a Potter, for indeed I am all three and many other characters by turn" (quoted in *ibid* 22).

Inventions in the pottery industry could be patented, but such patents were scarcely reliable, and Wedgwood for one, was continually spurred on by competition with his rivals. On the other hand the economic historian Redford (cited in *ibid* 29) saw the industrial capitalists between 1760 and 1860 as more important as organizers than as inventors. Wedgwood may then be seen as rather the exception to the rule.

As demand for fine pottery grew in the late eighteenth century, the greatest step forward into the industrial era for the

Staffordshire potters was the introduction of the steam engine. Hand-milling of materials was tiresome, costly and produced uneven results. Wind and water mills had been adapted but found to be uneconomic. Wedgwood was again the innovator, using one of Watt's steam engines to drive a clay mill, a flint mill and smaller colour grinding pans. As Thomas puts it, where Wedgwood led, other potters followed, and by the 1790's the steam engine was established in solving the problem of handling ever greater quantities of raw materials (Thomas 1971 45ff). The steam engine, though a great leap forward technologically, was in fact just one more machine in a long line of introductions. Thus even moulds may be seen not just as tools but as simple machines.

The supply of fuel to the kilns was another major problem for the growing industry. Coal probably replaced wood by the early seventeenth century, though the process was a gradual one. By the early nineteenth century, Thomas notes how at Minton's factory, coal was the heaviest single cost except for labour, even more expensive than the clay. This explains almost exclusively the localization of the pottery industry in North Staffs, since it was cheaper to bring clays and other raw materials to the North Staffs coalfield, rather than transport the required bulk of costly coal elsewhere.

The problem of transporting raw materials as well as finished products, clearly increasingly occupied the minds of the potters, as their industries grew. Wedgwood again was outstanding in his efforts to get first, Turnpike Acts and then the Canal Act passed in parliament. His partner Bentley was obviously a great help in canvassing for the support of members of parliament.

Running hand in hand with what Thomas describes as the Transport Revolution, was the Commercial Revolution in the way the pottery was distributed and sold. Thomas sees the foundation of the industry on a simple fashion introduced from the Orient in the late seventeenth and eighteenth century, that of taking hot drinks, as absolutely crucial, coupled with the increasing habit of eating hot meals which necessitated pottery dinner ware. The reason for the dominance of china was simply that it was impossible to drink anything hot from a pewter vessel, while wood and horn were unappetizing. Pottery was furthermore cheaper than most alternatives.

Up to the eighteenth century, the peasant potter took his own wares by pack horse to the local market stall or fair. As the industry developed after 1730, itinerant pedlars or hawkers began to act as middlemen between the potter and the rural and urban customer. Later still, the middleman grew into the richer and more respectable merchant who took consignments of pottery and china to shops, particularly in the larger towns and even further afield, to London itself.

Interestingly, Thomas records how, even as late as 1785, the potters themselves were against the abolition of the pedlar since these provided an apparently essential link with scattered rural customers. Furthermore, the itinerant pedlar was cheap, having no overheads and could thus hold shopkeepers in check from putting prices up too high. They were also vital in the disposal of 'seconds' (ibid 117-8).

The next stage in the so-called commercial revolution was for the potters to bypass the merchants and their commissions and set up their own warehouses and showrooms in the larger towns, and of course, London, the major access point to foreign markets. Early merchant partnerships were obviously important in the setting-up of direct sales departments by the potteries, and also in breaking into the export trade. The North American market was easily captured by the Staffs potters. The European arena proved harder to conquer though potters like Wedgwood campaigned long and hard for government help in making commercial treaties for example. Even China itself was considered fair game and Thomas describes how Wedgwood, the Prince of Potters, considered the world his market (ibid 16). The potters were still mostly cautious though. Foreign trade was undertaken by specific orders through merchants to the potters. Thomas notes how the firm of Ann Warburton was chastised for sending unordered crates of pottery. Such 'forward' selling was not apparently very profitable (ibid 108-9).

Wedgwood concerned himself not just with extending his geographical market, but also with the 'social' market. Thomas charts Wedgwood's commercial learning process, starting with his initial exploitation of the increasing demand and higher prices payed for ornamental rather than 'useful' wares by the richer classes. Wedgwood then gradually became aware of the greater profits to be made in selling at lower prices the increasing output of mass production and yet still maintaining the quality of the product. As he put it himself:

"The 'Great People' have had their vases in their Palaces long enough for them to be seen and admired by the Middling Class of people, which class, we know, are vastly, I had almost said, infinitely superior in number, to the 'Great'. And though a great price I believe at first was necessary to make the vases esteemed ornaments for Palaces, this reason no longer exists. Their character is established and the middling people would probably buy quantities of them at a reduced price" (quoted in *ibid* 130).

The commercial revolution needed not just a radical change in the way sales were made but also in the way debts were collected. In the first half of the eighteenth century, banking lagged far behind the cash needs of the potters. The shortages of coins for the cash payments of wages was a major problem right into the early nineteenth century. Wedgwood transacted most of his business, loans and the discounting of bills through Bentley's friend Hodgson, a merchant banker, until a local bank was founded.

Thomas concludes the first part of his work with a summary of the economic stages to be seen in the evolution of the Staffordshire potteries, which runs as follows:

- 1) Firstly the family-craftsman stage, where the workforce consists of members of a family working in a peasant workshop.

Many such craftsman had a by-employment as well.

2) The master-craftsman stage came next with the latter employing non-family members as apprentices working in a larger workshop. At this stage a cash nexus appears in the payments for the services and training of these apprentices who may later work as journeymen.

3) The employer-merchant stage is where the master craftsman employs merchants to sell his wares for him.

4) Finally the factory stage arrives where the industrialist or capitalist manufacturer employs 'hands' in his factory to produce wares which the factory owner sells direct to wholesalers, retail shops or direct to customers from his factory or showroom (ibid 136ff).

Section iii) - Applying the Analogy: the Samian Producers of Gaul and Arretium

The Roman pottery known as samian or terra sigillata is one of the most intensively studied wares of those produced in the empire. The majority of the research has been done on forms and decoration, but the organization of production has not been completely ignored though the accumulated evidence is still far from conclusive. A brief examination of the research done so far indicates that these 'industries' as they are often called, provide the most fertile ground for the application of the eighteenth century English analogy from the Staffordshire potteries. On the most general level for example, the wide

dispersal of both products springs to mind, along with the large quantities involved, "From La Graufesenque graffiti we learn that the average batch of vases from a south Gallic oven was over 30,000" (Pucci 1983 110).

The parallel has already been made by Peacock (1982) who uses the Staffordshire potteries as an analogy for the apparently illogical location of some of the samian industries. La Graufesenque for example, supplied pottery to Gaul, Britain and much of the western empire, ".. and yet the potteries were in the small Roman town of Condatomagus lying in the heart of the wild Cevennes massif. Export to the Mediterranean would involve an expensive mountainous haul over the Causses, while the northern markets were blocked by the Massif Central" (Peacock 1982 119).

As already noted the Staffordshire potteries were many miles from their clay sources in Cornwall and Devon. They were also about thirty miles from the sea and cut off by the Pennines from markets to the east and west. Thomas (1971) saw the presence of easily accessible coal as the major factor in locating these industries though Peacock cites the alternative suggestion that it may have also been due to the poor farming potential of the area generating a reserve of skilled manpower. Either way, the point is that historical as well as geographical factors must be taken into account when attempting to explain the paradoxical locations of the Roman terra sigillata producers.

Peacock also suggests that the 'characteristic' separation of producer and seller in the samian industry was a factor in the apparent inaccessibility of many kiln sites to markets. If

middlemen were involved, accessibility to markets would not be so important to the potters when setting-up their workshops. Actually proving that such middlemen existed is difficult over and above the common-sense approach that points out that if the potters had been directly involved in organizing the sale of their goods all over the empire, they would have hardly had time to do any potting. Some epigraphic evidence survives for 'negotiatores' specifically involved in the shipping of pottery (Hassall 1978 44). More circumstantially, an unopened crate of south Gaulish samian and lamps excavated at Pompeii was found to be made up of pottery from a number of different workshops, suggesting that middlemen made up deliveries by travelling from workshop to workshop rather than concentrating on, or working for one producer alone (Atkinson 1914).

The early Staffs picture seems to be similar to this one. Originally the potters took their wares direct to local fairs and markets themselves. They soon however, began to sell the pottery to pedlars or 'cratemens' instead, who carried it to local markets. As the 'potworks' grew into 'manufactories' and finally 'factories' so the pedlar was very gradually replaced by middlemen actually employed by the potters, who finally did without them altogether and organised their own aggressive marketing policies via their company's warehouses and showrooms.

Clearly the closest analogy for the Roman situation is the secondary stage of the Staffs industry where the potters stopped selling their wares themselves and the itinerant pedlar and hawker took over. The stage at which this happened also

coincided with the potters becoming more or less full-time professionals, what Thomas (1971) calls the 'master-craftsman' stage, with the potter employing apprentices from outside his family in an extended workshop. A cash-nexus naturally also occurs at this point.

The Gaulish samian industry, since it apparently relied on free rather than slave labour (see Grenier 1975), provides the closest fit to Thomas' 'master-craftsman' economic stage. Workshop, mould-maker and bowl-finisher stamps on this samian serve to suggest that the pottery was not always turned out by the same man and that instead a degree of specialization occurred within the separate workshops or officina. The well known central Gaulish workshop of Cinnamus (the largest at Lezoux) seems to have employed around seven potters although the stamps may also indicate that seven independent craftsmen purchased and used moulds. Interestingly, Thomas writes that the 'master-craftsman' in the Staffs potteries employed no more than six apprentices per workshop. The so-called 'tally-lists', graffiti inscribed on samian waste-sherds may provide further information on the subject. These 'lists' are interpreted by some as accounts enabling a foreman to check the output of potters under him. However, it seems more likely that they catalogue the contents of kilns before or after firing. The listing of potters' names indicates communal firings. The large numbers of tally-lists at La Graufesenque implies that such communal firings were frequent there and Peacock (1982 126) suggests that they were carried out by specialized kiln operatives perhaps attached to the bigger works or even working independently. In Staffs, even today, within large firms, there may be workshops which are quite

separate from the company they work for. For example, at the Spode-Copelands factory today, there is a 'sagger-workshop' where sagger-makers pursue a family craft, not on the payroll of the factory but on a contract basis. They can trace their ancestry back to Josiah Spodes' original eighteenth century sagger-makers. Such a situation is further reminiscent of the samian mould makers who very often seem to have worked independently of the workshops who eventually used their moulds (see Hartley 1966).

Cooperation between Roman potters in other fields and kiln sites is very difficult to prove. The Staffs analogy would suggest that such occurrences would be the exception to the rule. Fierce competition was the order of the day, though Thomas (1971) records that larger firms very often supplied raw materials such as clay ready mixed with ground flint to smaller firms.

Evidence for the existence of competition between the producers of Roman terra sigillata is hard to find though King (1984 57) for instance clearly assumes it. The diversity and distinctiveness of the moulded decoration alone might suggest that some rivalry existed. The lack of patents need not have prevented this since even in Wedgwood's day, when patents existed but were hard to enforce, the copying of techniques, spurred the 'experimenters' as Thomas (1971) calls them, on to yet further developments. The fact that Roman middlemen could pick and choose from the products of a number of different kilns might further reinforce the analogy of competition between firms.

The samian industry did not lack its innovators either. The

complex jacketed kilns described in Chapter 6 above, together with the use of the mould, itself a simple machine, and the high standards of fabric and slip all suggests a considerable input of time if not of actual capital investment, during their development. The changeover from the carinated form of bowl (Dr 29) to the rounder Dr 37 in the first century AD in Gaul also indicates innovatory minds at work since the latter form proved much easier to remove from its mould and thus improved production efficiency.

So far the analogy between the master-potter stage of the eighteenth century Staffs potteries and the Gaulish samian industry can be seen to be close in a number of respects. The analogy may be extended yet further, since it charts not a static industry, but one developing rapidly through time. The development of the samian industry as a whole through time has also been fairly closely researched and a comparison of the two changing patterns reveals radical differences which prove highly informative.

The samian industry may reasonably be supposed to have begun in Italy in the first century BC at Arrezzo. The so-called 'Arretine' ware was a fine red-gloss pottery often with beautiful appliqué decoration and was apparently considered something of a luxury. Few types of pottery ever travelled as far as Arretine did, sherds have been found in places as far apart as Britain and India. Peacock (1982) examines the evidence for the organisation of the Arretine industry and concludes that at the top end of the scale the units of production were very large indeed, the levigation tanks of Perennius apparently had a 10,000 gallon

capacity. The work was carried out it seems by slaves, one potter had up to sixty working for him while many had between ten and twenty. The fact that the slaves' names are so regularly recorded on their products leads Peacock to suggest that the masters who owned them were not engaged in the day-to-day work of the pottery, "The composition of Arretine stamps seems to accord well with the concept of a proprietor with his skilled foreman or artists" (ibid 122). All this adds up to the existence of 'manufactories' rather than just 'workshops'.

The closest historical analogy to this from the Staff study is not in the early stages of that industry but rather, later on when the Staffs 'potworks' became 'manufactories' and Wedgwood in particular began to exploit in earnest the upper class fashion for fine china teasetts and dinner services, the high prices that could be asked for such 'ornamental' wares making them highly profitable. With the help of his partner Bentley, Wedgwood's tasteful and expensive products became much sought after luxuries. The Russian aristocracy were introduced to them at the British Ambassador's residence and soon demanded their own supply according to Thomas (1971). The influences of fashion and taste may very well have been important in determining the success or otherwise of the samian industry as well. It may be hypothesised that as the Italian aristocracy grew rich from the conquests of the provinces, so the fashion for finely-made luxury pottery like Arretine was superseded by demands for even more luxurious table vessels, of bronze, silver and even gold. The literary evidence for this change in taste was noted in Chapter 6 above.

Wedgwood in the end made a deliberate decision to change the emphasis of his marketing, aiming his products no longer at the 'Great People' but at the 'Middling Class of People' who having envied his products from afar were eager to purchase the mass-produced but still high-standard equivalents at a price they could afford. The vast numbers in the lower orders of society guaranteed Wedgwood far greater profits than the luxury market could.

At Arezzo this type of commercial revolution did not take place. The poorer but numerically huge markets of the provinces were taken over by the provincial samian makers at first of southern Gaul, then central and eastern Gaul and North Africa. Other explanations have been forwarded, Pucci for instance sees the collapse of the Italian potteries as originating in the structure of the industry (Pucci 1983 115). The replacement of medium-sized slave worked enterprises by much larger ones may have led to problems of supervision and standards declined as the level of cooperation within the labour force fell. Such problems did not occur in the largely free labour forces of the Gaulish workshops. Pucci adds that an attempt was probably made to export the slave mode of production to the provinces in the shape of the well-known branch factories, "That development; which implied that the producer was becoming merchant in respect of his own products in order to sell in distant markets...." (ibid 116). For Pucci thus the samian industry reached its most advanced stage of development in Italy, a stage which may be likened to the employer - merchant stage in the Staffordshire potteries (see last section). In the Roman provinces, Pucci proposes that, "Small peasants and free artisans were too closely integrated,

and slaves were never the prevailing labour force" (ibid 116). The Gaulish industries therefore were never as economically advanced.

The failure of the Roman state to intervene in the decline of home industries seems to be an indicator of the lack of political influence that the potters had, a very different situation to that of eighteenth century potters like Wedgwood who actively tried to sway government policy making in their favour.

The exploitation of larger markets in the provinces does not seem to have had the same effect on the samian industry as it did on the Staffs industry. As already discussed the production unit seems to have declined from the Arretine 'manufactory' to the Gaulish workshop. On the other hand the distribution and the actual products themselves seem to reflect closely what happened to Wedgwood's products.

Thus, standards of decoration, fabric and slip remained fairly high right into the second century AD even though as suggested in Chapter 6, the actual purchasers of the vessels were no longer the aristocracy but rather the 'middling' and even possibly the lower classes of Roman and provincial society. The key feature for the analogy to work is of course the occurrence of mass-production. Wedgwood acquired the steam-engine and built the 'factory' to accommodate it, to this end. The Gaulish samian makers clearly did not. Some specialization, a feature of mass-production did occur amongst the workers of separate workshops, but the workshop itself did not change, and even the use of the

mould cannot disguise the lack of labour saving machinery.

The historical analogy, at least for the Gaulish samian producers, can thus be extended no further than the very beginning of Wedgwood's empire building, when he was still no more than a master-craftsman. It is perhaps interesting to examine in more detail at this point exactly why the samian producers never became 'fully-fledged' Wedgwoods even though they seem to have put their feet on the first rung of the ladder. The question can also be phrased in its wider sense by asking why there was no Industrial Revolution in the Roman period, when it is not just Roman pottery that mirrors the production levels of immediately pre-industrial Britain.

Section iv) - Industry and Empire: the analogy of the Industrial Revolution

The rise of the Staffordshire potteries illustrates in microcosm what was happening on the large scale in the rest of eighteenth century Britain, the Industrial Revolution. Much has been written on this subject and in now using it as an illustrative analogy for the broader Roman situation it is necessary to be selective. The title of this section is taken from Hobsbawm's work on the subject (Hobsbawm 1973). It is this author's emphasis on the crucial role played in the Industrial Revolution by British imperialism that influenced his choice as the chief model for the historical analogy with its obvious parallels to Roman imperialism. In Chapters 1 and 2, a series of models for the Roman economy were summarised and it is these with which Hobsbawm's model will be compared with particular reference to

the analogy of Roman and British imperialism and the importance of the role of systems of market exchange. The results of the analysis conducted in Chapter 6 will also be taken into account to counterbalance the often overly historical approaches of the ancient economic historians.

The general analogy has already been hinted at (see Chapter 3), both Rome and Britain become rulers of vast empires through an aggressively military policy on the part of their governors. Britain's acquisition of her colonies and their vast markets, provided the 'spark', according to Hobsbawm, which set the Industrial Revolution alight. In the Roman world apparently no such spark was generated and the problem here is to explore the reasons why, when the historical situation seems externally so similar.

The answer in fact lies not with the striking of the spark but in the presence of sufficient fuel. Hobsbawm sees the basic fuel for the industrial fire in the political, social and economic atmosphere of eighteenth century Britain. The political ground had been prepared by Cromwell. The ruling British aristocracy was a 'post-revolutionary elite', willing to respond to the needs of the 'honest middle classes' and well aware that the country's and their own power lay in making money militantly and commercially. The 'modernism' of Rostovtzeff's model (Chapter 1 section ii) a)) is nowhere better demonstrated than when he discusses the urban bourgeoisie of the Roman world and the paternalist policies of the Roman state towards them. He concludes however that such paternalism was overshadowed by the Roman states' main economic policy, that of laissez-faire. If for the moment it is assumed

that Rostovtzeff's hypothesis is correct, and all the historical evidence suggests that it is not, then here lies a first divergence from the British situation. Both Hobsbawm and Coleman (1977) who writes about the English economy from 1450-1750, stress that the crucial strength of the pre-industrial British economy had its foundations in an almost fanatically paternalist attitude on the part of the British government. Coleman describes how initially this meant the encouragement and regulation of overseas trade and shipping in favour of British merchants and Hobsbawm goes on to relate how British manufacturers, increasingly had their political interests catered for, eventually at the expense of the merchants. As Hobsbawm puts it, the conquering of markets by war and colonization required not merely an economy capable of exploiting those markets, but also a government prepared to wage war and colonize for the benefit of British manufacturers. As pointed out in Chapter 3 above, Britain, unlike her foreign competitors was willing to subordinate all her foreign policy to economic ends.

It is virtually impossible to find the equivalent of this attitude in the literature of the Roman world. Nothing remotely similar to Thomas Mun's 'England's Treasure by Forraign Trade' (first published 1664) was ever written and a clue as to why not perhaps lies in a quotation from that work:

"Although a Kingdom may be enriched by gifts received, or by purchase taken from some other Nations, yet these are things uncertain and of small consideration when they happen. The ordinary means therefore to increase our

wealth and treasure is by Forraign Trade,
wherein wee must ever observe this rule; to
sell more to strangers yearly than wee consume
of theirs in value" (Mun 1928 5).

Mun's patriotism may not have been echoed by the merchants that his work was addressed to but it was real all the same and contrasts strongly with the literature that survives from the Roman period. Rome itself may have been admired and even revered but the city and its empire as Viljoen points out (see Chapter 2 section ii) b)) never seems to have inspired a genuinely patriotic attitude amongst its inhabitants. A receptive political ideology was thus not a feature of the Roman state and nor was it a feature of the thinking of its society's richest members.

The acquisition of new colonies by Britain and the conquest of new provinces by Rome led to a substantial influx of wealth. In Britain Hobsbawm describes the accumulation of this surplus wealth and its concentration in the hands of men willing to invest in economic progress, "...while relatively little was in the hands of men likely to divert resources to alternative (and economically less desirable) uses, such as mere display" (Hobsbawm 1973 24). Blake (1978) wrote that the social structures of wealth and aspirations in the Roman Empire can be closely compared with those of eighteenth century Britain (see Chapter 9 section i)) but an examination of the models in Chapters 1 and 2 shows that this hypothesis must be treated with caution.

On the one hand, the literary evidence shows landed wealth as the only socially acceptable means of support for the upper classes and the strong box or short term loan as the only other use for surplus cash. On the other hand the epigraphic and archaeological evidence demonstrates that men did work and did well on it.

The usual means of resolving this contradiction seems to be to describe the provincial upper classes as better businessmen than their social superiors in Italy. The latter 'squandered' their wealth of conquest on land and provincial luxuries whereas in the provinces this wealth was put to better use in semi-capitalistic enterprises such as farming or manufacturing ceramics. Finley of course would not even go this far (see Chapter 1 section ii) i)). To him, the provincial or Italian bourgeoisie, if it ever existed, was politically and therefore economically, powerless. Those in power, the very wealthiest members of Roman society were ruled by the psychology of the life of landowning leisure. Household self-sufficiency, the inefficiency of peasant smallholdings, the high cost of land transport and most of all the huge absolute resources of the empire in terms of men and land, combined as a powerful disincentive to the 'economic' use of wealth in the Roman world.

The major problem in criticizing and using these models in an analogy is thus illustrated. Finley refers to Roman society, the society which produced the classical literature on which he bases his model, and this is the aristocracy of Italy and Rome, not of the empire. This can be compared with Hobsbawm's account of the

Industrial Revolution where he is entirely concerned with the British economy and treats the British conquests and colonies as mere appendages to that economy. The approaches are similar, but Finley in fact stands virtually alone in this. Nearly every other model treats Rome and her provinces on an economically equal footing referring particularly to the 'competition' between provincial and Italian manufacturers. Herein in fact lies the key to resolving the difficulty.

The different ways of seeing the British and Roman empires are in part a product of their own economic systems. The economic decentralization which resulted in Italy's manufacturers and farmers losing the battle for markets (see Guha Chapter 2 section ii) d)) simply did not occur in the British situation, because apparently her attitude to her colonies was different to that of Rome. Put another way, Rome did not look at her provinces in an 'economic' sense, and this was in part a product of the prevailing ideology which denied both merchants and manufacturers political power. Contrast this with the way Wedgwood campaigned for his industry's benefit in parliament, and the receptiveness of that parliament to his and other industrialists' requests.

Strangely, in both the Roman and the eighteenth century British world, it was the merchant rather than the manufacturer who had the upper hand as far as wealth and prestige was concerned. At Ostia, Rome's port, merchants rose to hold high rank on the city's council, but all the historical literature would seem to see this as the exception to the rule. Frank for example writes that:

"It would have seemed significant of Ostia's social mediocrity that members of the decurio cared to have their association with trade mentioned on their epitaphs" (Frank 1975 245).

Meiggs explains it another way:

"A weakening of class barriers is to be expected in a trading city and it is clear that, in the second century AD at least, trading interests dominated Ostia. Trade was the natural outlet for ambition and dominated the social sphere" (Meiggs 1977 230).

Other writers like Jones (see Chapter 1 section ii) h)) write that the fortunes to be made by Roman merchants paled into insignificance besides those of the land magnates of the empire. The involvement of the Roman aristocracy itself in trade and even industry, has long been a subject of contention. D'Arms has examined the historical evidence from the early empire noting that "...the morally approved ways of acquiring wealth continue to receive a special emphasis" (D'Arms 1981 152-3). However, as D'Arms points out, the fact that laws such as that prohibiting senators from owning commercial ships had to be made in the first place is highly suggestive. He examines the activities of a number of aristocratic Romans to try to discover the reality behind the literary stance and concludes that though commerce and industry never had a major role to play in building Roman fortunes, "... a diversity and multiplicity of economic pursuits was undoubtedly the normal rule, a multiplicity which the

increasing interdependence between 'landed' and 'commercial' activities and increasing exploitation of the provinces helped to foster" (ibid 159).

Recent archaeological work is further lending support to D'Arms' conclusions. For example there is the senatorially owned fish farm at Cosa, Italy (A. McCann pers. comm) and Pucci has written of the possibility that behind potters bearing names that sound 'vieille noblesse' there were aristocrats either directly involved in production or acting as patrons (Pucci 1983 117).

In seventeenth century Britain, inspite of the merchants' superior wealth and status it was the manufacturers who finally won the ear of the government. The reason for this, according to Hobsbawm (1973) lay primarily in the scattered, essentially rural nature of existing industrial enterprises. This was in a large part due to the 'putting out' system of work, particularly in the cloth industries. Their rural location was crucial as it meant that the powerful landowners of Britain had a direct interest in the mines and manufactories located on their lands. When conflicts of interests arose as they had to, merchants found they could only muster support in London and the great ports. Their demands for 'free-trade' were drowned by the 'protectionist' needs of the manufacturers who could rely on nationwide support from those who really mattered in parliament. By the end of the seventeenth century as Hobsbawm describes, the matter was finally decided when textile manufacturers relying on the traditional importance of woollen cloth to British government finances, secured the prohibition of foreign 'calicoes'. The British

industry was allowed to grow up in a protected home market until strong enough demand free entry into other people's markets (ibid 17). The British cloth manufacturer was further aided by the government in the colonies, India, for example, where native cloth industries were deliberately destroyed to create markets for home produced cloth.

How far the presence of manufactories on the land of the politically powerful in the Roman world affected policy making remains to be seen. Italy's economic decline may disguise the fact that in the provinces, manufacture and trade played an important role in supplementing the revenues of the landowning classes. It must be assumed, for the moment, owing to lack of evidence, that they did not and that the freedmen and foreigners who were historically the main operators of commerce if not manufacture, remained politically obscure.

Rome's provinces of course, came no nearer industrialization (on present evidence), than Italy and the reason for this can be sought by returning to the analogy with Hobsbawm's model.

As has already been hinted at, the pervasion of market systems of exchange within seventeenth and eighteenth century Britain and throughout her empire, played a vital role in sparking off the process of industrialization. Hobsbawm expresses this as follows:

"It is often assumed that an economy of private enterprise has an automatic bias towards innovation, but this is not so. It

has a bias only towards profit. It will revolutionize manufactures only if greater profits are to be made in this way than otherwise. But in pre-industrial societies this is hardly ever the case. The available and prospective market - and it is the market which determines what a businessman produces - consists of the rich, who require luxury goods in small quantities, but with a high profit margin per sale, and the poor, who - if they are in the market economy at all, and do not produce their own consumer goods domestically or locally - have little money, are unaccustomed to novelties and suspicious of them, unwilling to consume standardized products and may not even be concentrated in cities or accessible to national manufacturers. What is more, the mass market is not likely to grow very much more rapidly than the relatively slow rate of population increase" (ibid 25-6).

One of the great advantages that Britain had over her competitors was the commercialization of the British countryside. The concentration of land in the hands of a very small number of wealthy landowners and the leasing of this land to vast numbers of tenants and the working of it by even larger numbers of labourers ensured a huge system of cash incomes and cash sales. Famine, as Hobsbawm puts it, was a memory of the dead, and Britain's rural populace, unlike the rest of Europe could no

longer be termed a peasantry. Every rural cottage had its china teapot and precious packet of tea. Britain by the mid eighteenth century was hence a monetary and a market economy on a national scale. Hobsbawm sees this as in a large part due to the concentration of population (15% of the total by the mid eighteenth century) in London which thereby offered the largest nucleation of markets for goods in the western world. Its 'pull' extended all over the country and as a result regional price fluctuations at least in non-perishables and easily transported foodstuffs was small. Ready access to sea transport was a major factor in keeping the prices of goods stable over long distances. The home market, especially a government protected one was thus very large and stable over long distances. Hobsbawm describes it as providing the broad foundations for a generalised industrial economy. It thus promoted economic growth rather than industrial revolution, and importantly was always available to cushion the more dynamic export industries against, as Hobsbawm puts it, the sudden fluctuations and collapses which were the price they paid for their superior dynamism (ibid 32).

The analogy of Rome with London springs immediately to mind. It represented the largest concentration of consumers in the known world, a million inhabitants by some estimates. It too must have exerted an enormous pull on producers from far and wide. Many economic historians, Reece for example (see Chapter 7 section iii)) seem happy to accept that systems of market exchange were operating in Italy and Rome under the Principate. Ready access to Mediterranean sea routes further supports the analogy. Where the analogy breaks down was not just in social attitudes and

political ideology, but also apparently in economic realities. It was simply easier, in other words, more economical, to rely on the provinces for staples like corn. Italian farms were forced into growing cash crops with larger profit margins like vines and olives and luxuries like violets, to survive. Problems of long range land transport and the apparent loss of the medium social range of consumers in Italy led to the relocation of what industry there was in the provinces, leaving again the Italian market only luxuries. In other words, it may be hypothesised that though the Italian 'home' market for the standardised products of mass-production may have been large to start with, it did not increase. Thus, what in eighteenth century Britain became fuel and draught to the industrial fire, in Italy declined and was never the cushion force that Hobsbawm refers to.

Without the foundation of a large, stable home market, Italy could never have become industrialised. It must thus be asked why the provinces also did not with their much larger markets. The answer must lie of course in their accessibility to market exchange systems and again to the deadening effect of the upper class ideology, the stifling of 'need achievement' as Carney puts it (see Chapter 2 section ii) c)), by the anti-business ethic.

In eighteenth century Britain, the rapidity of foreign market expansion 'forced' British entrepreneurs to industrialize. Home demand increased, but foreign demand multiplied, as Hobsbawm writes. This force was dissipated in Roman Italy, and by the time it was transferred to the provinces, had lost much of its strength. The Roman economy had peaked by the second century AD and as Rostovtzeff points out, the limiting of the market by the

cessation of imperial expansion was in the end decisive (see Chapter 1 section ii) a)). This of course is not denying that market exchange systems were operating extensively in the Roman world.

The close analogy of the pre-industrial Staffordshire potteries with those of Gaul cannot be ignored, nor can the archaeological evidence for rural commercialization in the Roman period, so important in pre-industrial Britain. The analysis in Chapter 6 demonstrated this and so interestingly enough does a recent examination of the economic context of a series of Roman villas in the Buccino region of southern Italy (Dyson 1985). The region was neither spectacularly poor nor extremely rich during the Roman period. It was in a state of semi-isolation from major cities but had access to major communication routes. Five rural 'farms' were excavated and a larger area was surveyed. This, coupled with a Constantinian land register led Dyson to conclude that the region was remarkably densely populated from the Republican to the late Roman era:

"The picture of rural desertion, the decline of the small-medium farmer and the spread of the big estates which was started by the Roman alarmists and propagandists of the late Republic and has been sustained up to the present by the Marxist tradition of ancient economic historical analysis does not seem to be supported by the archaeological and epigraphical evidence" (ibid 76).

The excavators remark on the way that every ecological niche was settled in some form or another and the similarity with the situation in remote Northamptonshire is striking. From his own evidence Dyson refutes the 'primitivists' model of the rural Italian peasant, ground into the dust with much of the countryside worked by men in chains with little hope of enjoying life in the present or the future. The evidence of the pottery alone suggests to Dyson, "...complex systems of ceramic production and marketing in the region...." (ibid 76). Dyson sees these systems as market-oriented even for locally produced goods. He finally dismisses the notion of rural self-sufficiency:

"Certainly many goods were produced on individual farmsteads. However, the quality, quantity and standardization characteristic of Roman goods from amphorae and utilitarian pots to roof tiles, argue against too much autonomous production. Moreover, only a large self-contained estate on the American plantation model could support a range of skilled craftsmen, If the rural reality during the Roman Empire was a larger population and the dominance of middle-sized farms, a model which stresses craft independence and complex exchange of goods and services would seem to be more suitable" (ibid 78-9).

What in fact the 'industry and empire' analogy demonstrates is that these market exchange systems were not on a large enough scale to seriously undermine the social and economic norms in the Roman world. For as Hobsbawm points out, the Industrial Revolution was not just an acceleration of economic growth, undeniably this occurred in the Roman world (see Hopkins Chapter 2 section ii) e)), but rather an acceleration of economic growth because of and through economic and social transformation (Hobsbawm 1973 20), and this apparently never happened on a sufficiently noticeable scale in the Roman empire.

The conclusion to this section should be therefore, not that the Roman economy failed in any way to achieve industrialization, but rather to stress just how far along the road it progressed.

CHAPTER 10

CONCLUDING REMARKS

Section i)-The Validity of the Final Model

The use of the historical analogy in the last chapter has concluded the process of building a model of the Roman economy. In this model, systems of market exchange were shown to have played a dynamic role in the Roman world, in both urban and rural areas. Of the models summarised in Chapters 1 and 2 two perhaps come closest to this final model, those of Carney (Chapter 2 section ii) c) above) and Viljoen (Chapter 2 section ii) b) above). They both write that amongst the diversity of exchange systems operating in the Roman world, marketing had an important and clearly defined role to play. They and other writers like Hopkins (see Chapter 2 section ii) e)) further suggest that mobilizative exchange (an advanced type of reciprocity) played the dominant role in the Roman economy which on present evidence seems the most reasonable hypothesis. A negative feature of all these hypotheses is their emphasis on explanations of why emerging market exchange systems never took full control of the economy as most economic historians assume they should. Such assumptions ultimately rest on a Marxist paradigm where peasantry is seen as unable to withstand the development of capitalistic market relations. Recent studies of the imposition of modern market exchange systems upon primitive peasant economies, have begun to demonstrate the falsity of such a premise. Goodman and Redclift have conducted just such a study and show how in non-capitalist or underdeveloped countries, in this case Latin America, very often rural petty commodity production and peasant labour family farms are maintained alongside capitalistic farmers

and a rural proletariat (Goodman and Redclift 1981). Thus, rather than the peasant economy being overwhelmed and destroyed by the more 'advanced' market economy, an 'articulation' between the two occurs, with each becoming dependant on the other.

While direct analogies may not be made at this stage between modern colonialism and Roman imperialism, such advances in economic theory can only serve to strengthen the model proposed here.

In Chapter 3 above a rather more universal advance in economic theory was outlined. This was Dowling's 'middle-road' synthesis of formal and substantive economics (Dowling 1979). Dowling's three-tiered classification of the assumptions that can be made about economies and economics provided a clear and simple resolving of the debates of the formalists and substantivists. The subsequent analysis of the role of marketing in the Roman economy was made much easier as a result. Dowling's secondary or economy-wide assumptions remain to be adequately defined in the case of the Roman economy but steps have been taken in the preceding chapters to challenge some of the pre-existing ones. For example the idea that there were no production units proceeding on the basis of the profit motive in the Roman world is clearly untrue. More controversially, the assumption that the social relations involved in economic transactions in the ancient world were purely personal, i.e. socially embedded, can now be questioned. Dowling has provided the economic archaeologist with some powerful new theoretical tools. The validity of the model presented here rests very much on the acceptance of such new

theories. Of equal importance however is the validity or otherwise of the methodology employed. At the outset of this thesis it was suggested that a strictly scientific 'inductive' approach might be taken to the available data (see Introduction section ii) - Methodology). Orton's 'statistical cycle' (Orton 1980 Fig. 1.3) was then offered as a realistic modification of this approach and utilized as far as possible in the following chapters. The author feels that Orton's methodology performed well and successfully overcame the problems increasingly associated with the completely 'inductive' methodology of the 'New Archaeology'. One critic of the latter approach is Hodder who has written recently that, "...although we can support or weaken hypotheses by arguments of relevance, generality and goodness-of-fit, we cannot test or refute in any absolute or final way" (Hodder 1982, 23). The preceding study of market exchange in the Roman economy has hopefully illustrated this point. It cannot however be stressed strongly enough that a return to the old 'deductive' method must be avoided at all costs. Archaeologists by the very nature of their subject are peculiarly aware of the fact that though there can be no absolute or final answer to a research topic, that answer must still be striven for. The 'statistical cycle' seems to offer the best means of doing this at the moment.

Section ii) - Directions for Future Research

Problems of theory and methodology have been one of the major themes of this thesis. Archaeologists can so easily be accused of misusing theoretical tools, by other social scientists, or of being unable to distinguish when such tools are out-of-date. The

alternative, however, is to relegate archaeology to a very lowly status amongst the social sciences, and this is something which this author and many others find totally unacceptable. If archaeologists believe that their data can support the sort of edifices that anthropologists and sociologists build on theirs, and every excavation and field survey tacitly assumes this, then it is up to them to make sure that their theory and methodology is equally as sound.

In very many cases of course, the problem lies with the data. Archaeologists who attempt to reconstruct economies from archaeological data for example, are all too often accused by other archaeologists of misusing this data. Sometimes there is much truth in such criticisms. The present trend towards a divorce of the academic from the field archaeologist has already been condemned by this author elsewhere (Griffiths 1983 unpublished conference paper). The atrocious state of the current Roman ceramic record in Britain may never be corrected if such trends continue.

In this thesis an attempt was made to combine the academic and the field archaeologist. Within the confines of a three year research programme, too much had to be left out for either side to be completely satisfied. The vast potential for the use of ethnographic analogy could not be tapped for example. It can only be noted here that like Dyson (1985) this author feels that comparing Rome with that of eighteenth and nineteenth century New England, "...a land of peasants, peddlers, shop-keepers and merchants with an economy tied into the emerging world system, but at the same time regional and even local in many of its

qualities" (ibid 79), will provide valuable help in future model building. The use of the work of the economic historian in analogy was also far from fully explored, for example Gimpel's fascinating hypothesis of a medieval European mini-industrial revolution would provide numerous insights into the Roman situation (Gimpel 1977).

The field archaeologist had to be content with a single period, single area study group for the analysis in Chapter 6. Work such as that by Pollard in Kent (1982) and the Milton Keynes Development Corporation Archaeological Unit in Buckinghamshire (P. Aird pers. comm) would provide important parallels with that in Northants. A multi-period approach will obviously be vital as well, in producing any completely dynamic model of the Romano-British economy.

The study of the Roman economy has been controversial from its inception. Theory, method and models built from data of all descriptions have been proposed and refuted many times over. If a final satisfactory hypothesis is ever to be put forward, then archaeology must have a major say in its production and subsequent testing. But Roman archaeologists must be prepared to change their approaches too, not just in the utilization of more sophisticated tools of analysis like the computer, but also in extending the limits of their discipline to incorporate up-to-date theory, method and data by analogy and by direct application, from other parallel disciplines. The archaeology of the Roman empire will provide an ample test bed for such a project.

APPENDIX A THE DEFINITION OF 'SUBSTANTIVE' AND 'FORMAL' ECONOMICS.

"The substantive meaning of economic derives from man's dependence for his living upon nature and his fellows. It refers to the interchange with his natural and social environment in so far as this results in supplying him with the means of material want satisfaction..... The formal meaning of economic derives from the logical character of the means-ends relationship, as apparent in such words as 'economical' or 'economizing'. It refers to a definite situation of choice, namely, that between the different uses of means induced by an insufficiency of those means" (Polanyi 1957a 243).

APPENDIX B SMALL FINDS AND CERAMIC SPECIALISTS' REPORTS FROM THE
PUBLISHED NORTHANTS SITES.

The following represent only the briefest of summaries of the
information thought to be useful.

Samian (Second century AD - all contexts unless otherwise
stated).

Towcester: Park Street (Lambrick 1980)

(Numbers in brackets refer to total of each recognizable form)

Central Gaul:

Form 18R(1); 18 (1); 18/31(1); 27(1); 31(3); 33(4); 36(3); 37(1);

Curle 11(1); Curle 23(1).

a) Lezoux, C2 pre-export: Form 37(1); 67 etc.(1); 35(1); plus
small moulded cup (1).

b) Lezoux, main export period c.AD 120-200: Form 33(29); 37(27);
31(25); 27(22); 18/31R(12); 18/31(11); 31R(10); 18/31R or 31R(6);
Curle 11(6); 79 or 79R(6); 38(5); 18/31-31(4); 18/31R-31R(3);
35(3); Curle 15 or 23(3); 33a(2); Curle 21(2); 42(2); 30(1);
30/37(1); 46(1); 44(1); 79/80(1); 79 or Tg(1); plus enclosed jars
(4). Appliqué metallic-slip ware, form 74, jar(1).

c) Les Martres-de-Veyre: form 37(7); 27(2); 33/33a(2); 31(2); 30
or 37(1); 15/17 or 18(1); 27 or 35(1).

Central or East Gaul: Form 37(2); 31(2); Curle 23(1); plus enclosed jar(1).

Great Weldon (Smith forthcoming)

(Numbers in brackets refer to total of published vessels)

Central Gaul:

Lezoux C2: Form 46(1); 18/31(6); 31(5); Walters 79(1); globular cup(1); 37(4); 30(1); 33(7); 18/31 or 31(1); unknown(2)

East Gaul: Rheinzabern C2: Form 38(1).

(Excluding sherds not assigned to source)

Brixworth (Woods 1967)

Samian from Pit A only.

(Numbers in brackets refer to total numbers of sherds per vessel form)

Central Gaul: Form 18/31(4); 18/31R(1); 18/31-31(5); 27(2); 30(7); 33(1); 37(2); 38(3); 42 or 46(1); 81??(1).

Mileoak (Green and Draper 1978)

(numbers in brackets refer to total of each recognizable form).

Central Gaul: Form 27(3); 18/31 or 31(2); 37(1); 31(1); 33(1); Curle II(1); 45(1); 42(1) and a large jar or flagon.

Quinton 'A' (Friendship-Taylor 1974)

(numbers in brackets refer to total of each recognizable form)

Central Gaul: Form 31(15); 33(9); 37(6); 36(3); Ludowici Tg(1);
18/31(2); 18/31 or 31(1); 18/31R or 31R(2); 31R(4); 38(2); 79(1);
unknown (13).

Wood Burcote (Turland forthcoming)

Only samian from F271 is included.

(numbers in brackets refer to total numbers of vessels
represented)

Central Gaul: ("before 150 AD")

Form 27(2); 18/31(1); 35(1); 36(1); 37(1).

Clay Lane (Windell forthcoming)

(numbers in brackets refer to total of each recognizable form).

Central Gaul: Form 18R(1); 18(1); 18/31(1); 27(1); 31(3); 33(4);
36(3); 37(1); Curle 11(1); Curle 23(1).

Towcester: Alchester Road (Woodfield and Brown 1983)

Not including residual samian

(numbers in brackets refer to total of each recognizable form)

Central Gaul: Form 18/31(5); 18/31 or 31(5); 18/31R or 31R(4);
31(20); 31R(12); 27(3); 30(1); 33(20); 33 or 46(3); 33a(1);
35(1); 36(10); 37(18); 38(2); 45(3); 46(1) 79(2); 79 or 79R(1);
79/80 or 79(1); Ludowici Tg(4); Curle 15 or 23(2); Curle 23(1);

Walters 79(2); Walters 80(1); Walters 79R(1); mortarium(1);
unknown or unsure (37).

East Gaul C2: Form 31(1); 37(1); unknown (2).

Ringstead (Jackson 1980)

Samian taken from unpublished manuscript (Jackson unpubl.)

(Numbers in brackets refer to total of each recognizable form).

Central Gaul (?): Form 18/31(4); 18/31R(4); 31(2); 31R(2); 33(5);
?33(2); 36(3); 38(1).

Thorplands (Hunter and Mynard 1977)

(Numbers in brackets refer to minimum total of each recognizable
vessel)

Central Gaul: Form 18/31(1); 18/31 or 31(3); 18/31R(2); 31(9);
31R(10); 23(1); 27(1); 33(8); 36(1); 37(4); 38(2); 45(1); 79(1);
79R(2); unknown (8).

East Gaul C2: Form 31(1); 32(1); 36(1); unknown (2).

Overstone (Williams 1976)

(Numbers in brackets refer to sherd numbers).

Central Gaul: Form 27(1); 18/31(1); 18/31 or 31(1); 18/31R(2);
18/31R or 31R (3); 30 or 37(1); 31(4); 31R(3); 33(13); 36 or
38(1); 37(7); 38(6); 45(1); 79R(2); Curle 15 or 23(1); enclosed
jar (1); unknown (20).

East Gaul C2: Form 31(6); 31R(1); 38 or Curle 21(2).

Mortaria (Second century AD - all contexts unless otherwise stated).

Numbers prefixing examples refer to illustrations in the various excavation reports

Towcester: Park Street (Lambrick 1980)

Fabric 1 = Brockley Hill, Bricket Wood, Radlett, Verulamium, Herts/Middx.

Fabric 2 = Upper Nene valley as represented at Towcester.

Fabric 2A = Upper Nene valley as represented at Towcester.

Unillustrated Upper Nene (Fab. 1) c. 125-160

" " " " c. 100-140

1 " " " c. 80-120

Unillustrated Verulamium region (Fab. 1) c. 80-120

" Fab. 1 or 2 c. 90-130

" Brockley Hill region (Fab 1) 70-110

" Oxford 100-400+

2 Fab. 1 IVS = BRUCCIUS 80-120

3 Fab. 1 = Driccius of Brockley Hill, Radlett and Verulamium 135-165

Unillustrated Brockley Hill? 75-115

" Brockley Hill 65-100

4 probable import 80-140

5 Cowley, Headington, Sandford etc (Oxford region) 160/170-240

6 Fab. 2A VNICO (unknown) 110-160

Unillustrated Fab. 2 110-160

7 Fab. 1 DCCN = Doccas of Hartshill 85-125

Great Weldon (Smith forthcoming)

- 278 Verulamium region RIPANVS late C1
- 279 Verulamium LALLANS late C1 - early C2
- 280 Beds/Herts. region VEDIACVS C2
- 281 Midlands MAVRVS mid C2
- 282 Unknown source late C2

Brixworth (Woods 1970)

- 237 Oxford late C2 - early C3
- 242 Verulamium AEBRIS early C2
- 243 Verulamium (south Brockley Hill/Radlett?)
LALLANS late C1 - early C2

Unillustrated Verulamium (south) late C1 - early C2
(BLLM8)

Mileoak (Green and Draper 1978)

- 14 Brockley Hill late C1 - early C2
- 139 Kent or Gaul (Gillam 238) Flavian

Quinton 'A' (Friendship-Taylor 1974)

- M1 and M2 Verulamium region C1 or C2
- M4 Oxford region after AD100
- M5 Oxford region after AD100

Towcester: Alchester Road (Woodfield and Brown 1983)

- 270 Northants region C2
- 271 Northants region late C2 - early C3

Ringstead (Jackson 1980)

24 Mancetter - Hartshill mid C2

33 Rhineland mid C2 -mid C3

Thorplands (Hunter and Mynard 1977)

50 Headington, Oxon 170-240

unillustrated Mancetter-Hartshill 100-400

Overstone (Williams 1976)

Unillustrated i) Oxon (Cowley) C2

ii) Oxon late C2 - early C3

Colour-Coat

Only those sites having identified (i.e. sourced) sherds are included.

Brixworth (Woods 1970) (all second century)

Vessel no.293 small cornice rim, rough-cast beaker -
Nene Valley

Vessel no. 294 ditto

Vessel no. 295 beaker

Vessel no. 313 barbotine decorated beaker - Lezoux

Mileoak (Green and Draper 1978)

Vessel no. 26 barbotine 'hairpin' beaker - Lezoux 70-140

Towcester: Alchester Road (Woodfield and Brown 1983)

Colour coat from a number of sources was discovered during excavation and the 1977-8 watching brief.

The majority in second century contexts seem to have been made in the Nene Valley. Second century imports included the following:

Vessel no. 28 - Copy of a Dr 40 - Central Gaul ('Rhenish')

Vessel no. 29 - Beaker of Dechelette 74 type - Central Gaul ('Rhenish')

Thorplands (Hunter and Mynard 1977) (all dated c. AD 150-220)

Vessel no. 217 - Large beaker with barbotine dolphins - Lower Nene valley (or further upstream)

Vessel no. 218 - Castor box, rouletted - same source as 217.

Vessel no. 219 - Lid of Castor box, rouletted - same source as 217.

Amphora

Only the two Towcester sites had identified sherds.

Towcester: Park Street (Lambrick 1980)

Dressel form 30 (S. Gaul);

Dressel form 30 (S. Gaul);

Camulodunum form 186 (Cadiz, S. Spain);

c. 22 vessels = Dressel form 20 (Cordoba Seville region, Spain);
(Residual - 2 Dressel form 30, c. 7 Dressel form 20).

All early to mid C2

Towcester: Alchester Road (Woodfield and Brown 1983)

Dressel 20 Fabric 45;

Camulodunum 186c 1.

Small Finds (excluding glass)

Only finds from second century contexts or with a clearly assignable second century date are included.

Towcester: Park Street (Lambrick 1980)

Coins: Ant. Pius, As, 138-161

Other: None

Great Weldon (Smith forthcoming)

Coins: M. Aurelius, AE1, 161-80

Other: Bronze stud.

Mileoak (Green and Draper 1978)

Coins: Vespasian, As, lost 75-125

Domitian, As, lost C2

Other: Silvered mirror handle;

Bronze pin;

Bronze ?toilet implement

Quinton 'A' (Friendship-Taylor 1974)

Coins: None

Other: Bronze bracelet;

Strigil;

fragment bronze sheeting; various iron nails and objects.

Clay Lane (Windell forthcoming)

Coins: None

Other: Iron pin with bronze head; Bronze pin; (Iron penannular brooch); (Two bronze brooches - Colchester derivatives)

Towcester: Alchester Road (Woodfield and Brown 1983)

Coins: None

Other: Bronze clipping possibly related with bronze working; two
Kentish ragstone hones; Iron hook; Iron hippo saddle.

Ringstead (Jackson 1980)

Coins: None

Other: Bone pin; Bronze brooch with enamelling - Colchester
derivative; Folded thin sheet of lead possibly from a
window; Thirteen iron nails; Heavy hooked iron object;
Fired clay weight or pounder

Thorplands (Hunter and Mynard 1977)

Coins: None

Other: End tooth segment from a composite coarse and fine toothed
comb of antler; Part of an iron hanging lamp; Iron
hobnail; Nineteen iron nails and two iron objects; Bronze
cast pendant (either a toilet implement or harness
pendant); Iron cleat.

Overstone (Williams 1976)

Coins: None

Other: Bronze plate brooch with champlevé enamel decoration; Iron
object; Bone ?handle.

Glass (most can only be given a C1 - C2 date range)

Towcester: Park Street (Lambrick 1980)

The majority of the glass came from the second century pit 176 so

only that is summarised here.

(Numbers in brackets refer to minimum numbers of recognisable vessels unless otherwise stated.)

Colourless Vessels: Hemispherical bowl (3); small cup (1); conical beaker (1); unknown (45 fragments).

Coloured Vessels: conical jug, yellowish-green body, yellowish brown handle (1); Conical jug, yellowish green (1); conical jug, yellowish brown (1); discoid jug or jar, yellowish brown (2).

Great Weldon (Smith forthcoming)

The majority of the glass came from layer 4 a sealed deposit dated AD 160-190. A smaller group came from layer 3 which was given a similar date. The following glass thus comes from these two contexts.

Green glass: square sectioned bottles, many fragments.

Pale yellow glass: convex-sided bowl with high base ring, eight fragments.

Colourless glass: circular plate, two fragments; oval plate, seven fragments; shallow bowls; four fragments; various plates or shallow bowls, a number of fragments; deep bowl, four fragments; beaker, three fragments.

(Much of the colourless glass may well have been manufactured in Egypt, probably Alexandria).

Mileoak (Green and Draper 1978)

Bottle neck: clear greeny-blue.

Quinton 'A' (Friendship-Taylor 1974)

Fragment of shoulder of prismatic bottle bluish-green.

Clay Lane (Windell forthcoming)

Wall fragment of green bottle

Neck/body fragment of blue/green unguent bottle or flask

(Straight-sided colourless cup or small bowl)

Blue/green prismatic bottle wall fragment.

Towcester: Alchester Road (Woodfield and Brown 1983)

Blue-green wall fragment, square bottle.

Ringstead (Jackson 1980)

Rim and part of wall of beaker in colourless glass. base of square bottle in natural green glass with a moulded base marking, a square with a St. Andrew's cross on it.

Overstone (Williams 1976)

Chip from a handle in blue green glass. Three fragments of the neck of a small green glass flask.

APPENDIX C KNOWN TEMPLE SITES IN NORTHAMPTONSHIRE

- Bozeat - Circular Roman building 50ft in diameter. Shrine or possible mausoleum.
- Cosgrove - Rectangular shrine with central post and skull embedded in wall. Lasts into fifth century but may have had earlier buildings.
- Gayton - Possible classical shrine 50ft square.
- Irchester - Romano - Celtic temple within temenos inside Roman town. Early second century foundation.
- Irchester - Large octagon, presumably a temple in south-west part of Roman town.
- Brigstock - Several circular and polygonal shrines in a precinct. Three or four in all. Two of shrines, 20 ft apart, built in mid third century. Possible earlier structures.
- Collyweston - Several circular and polygonal ?shrines (about three), forming a?'rural sacred enclave'. Second century.

References: Lewis (1965)

Green (1976)

Rodwell (1980)

APPENDIX D KILN SITES IN ASSOCIATION WITH THE NORTHANTS AREA

This information is a précis of the microfiche catalogue accompanying Swan's comprehensive survey of Romano-British pottery kilns (Swan 1984). Most of the OS map references indicate the general centering of a pottery producing area. A number of the sites have earlier and/or later kilns as well as the second century ones noted below.

*indicates probable kilns only.

Northamptonshire

*Bradfield-on-the-Green C1 or C2

SP 828599. Settlement with enclosures nearby.

*Church Brampton ? C1 or C2

SP 71316603. Reduced wares. Lies on fringe of IA/RB settlement enclosure.

*Brixworth ? Had-Ant

?SP 74702123. Sandy-grey local type jars. RB settlement immediately to south

Ecton C2 to e. C3

SP 822653. Grey (some shell-gritted) wares - dishes/jars/poppy-head beakers, possibly mortaria. A complex of up to 50 kilns on the edge of a settlement and enclosure complex. The largest kiln complex of the Upper Nene valley.

*Geddington prob. 1. C1 - e. C2

SP 870823 Large IA/RB settlement and iron working nearby

*Gretton C2 or C3

SP 912925 Grey wares. On fringe of RB settlement, evidence of a building 120m to NW

Hardingstone ?? C1 or C2

SP 738585 'Grey and red pottery'

Hardingstone 1 C1 - e. C2

SP 7355884 Jars (possibly). Probably contemporary RB settlement nearby.

*Lt. Houghton C1 or C2

SP 862586 - 802585. Cooking pots or jars

*Irchester ?? 'C2'

SP 918664 Immediately S. of Irchester Roman town within 1 IA-e RB ditched enclosure.

*Long Buckby prob C1/C2

SP 64576783. ? Red-brown wares RB settlement nearby.

Mears Ashby 1C2

SP 839668. Grey dishes/jars/poppy-head beakers, imitation BB/cooking pots RB settlement nearby.

Milton Malsor ?C1/C2

SP 731552. Grey wares including jars. Poss. settlement in vicinity.

*Northampton (Dallington Railway sidings) ??C2

SP 746611 - SP 743626!. Probably colanders and 'large coarse vessels' (?storage jars). ? Settlement nearby

*Northampton (Billing Village) 1 C1 - C2

SP 818623 R. Nene lies 1100m to S

Scaldwell ?C2

SP 7571/7572/7573. Reduced wares settlement nearby. Probably many other kilns.

Towcester C2 or earlier

SP 69014820. 'Coarse grey wares'. S. of Roman town. RB occupation material from vicinity.

Wakerley end C2 - e. C3

SP 940983

- 3 kilns - 1. Grey dishes/bowls/jars most slipped
2. Grey cook pots/indented beakers most slipped
3. Orange-buff jars/bowls/one mortarium

Kilns within agrarian metal working industrial compound with ? living accommodation.

Wellingborough 1 C1 - e. C2

SP 876679. Channel-rimmed jars (?in both shell and non-shell tempered ware) probably storage jars. Kiln just outside an enclosure with possible building. Several probable lime kilns nearby.

*Yardley Hastings ?C1/C2

SP 874581. Settlement nearby

Yarwell 1 C2 (?with some earlier survivals)

TL 060991. Nene valley wares including jars/cook-pots/dog dishes/castor boxes. Substantial RB building NE of kiln.

Buckinghamshire

Biddlesden C. 140/160 or poss. slightly later

SP 63933972.

- 3 kilns 2 Oxidized bowls/jars
3 Reduced bowls/cook pots/jars/pie dishes/flagons/ c.c.
rouletted bag beakers and indented beakers
4 Oxidized pie dishes/bowls/jars

site lay within ditched ? field or enclosure.

Bedfordshire

Harrold C2

SP 93335530. Bowls/cook pots in oxidized calcite - gritted fabric. Domestic occup. adjacent to kiln complex especially in C4.

APPENDIX E COMMUNICATIONS IN ROMAN NORTHAMPTONSHIRE

Margary (1967) has numbered six major Roman roads in the study area (see Map 5). These are; Watling Street (no. 1); Norton to Duston (no. 17); Irchester to Dungee Corner (no. 170); Towcester to Alcheser (no. 160a); Water Newton to Irchester (no. 570) and a possible extension southwestwards, and finally Gartree Road running from Huntingdon to Leicester (no. 57a). Fox (1968) gives a brief glimpse of the network of lesser Roman roads that probably filled in the gaps on the map, but is not specific. As already suggested it seems reasonable to suppose that the River Nene acted as a major communication route between Duston and Irchester in the absence of any known overland routes.

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