TOWN AND CHORA OF THESPIAE IN THE IMPERIAL AGE

By
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Introduction

The topos of ancient authors, that much of Mainland Greece was in a state of decay or stagnation in early Imperial times, has found surprising confirmation in the accumulating results of regional archaeological field survey. The contribution of the Boeotia Survey, conducted since 1978 by myself and Anthony Snodgrass of Cambridge University, has been to offer a good overview of developments in town and country in this Central Greek province between high Classical Greek and Late Roman times, particularly as regards the cities of Thespiae, Haliartos, Hyettos and their *choras*, and the *komopolis* of Askra.[1] These data were put to significant use in Sue Alcock's landmark monograph on Roman Greece, *Graecia Capta*.[2] Currently I am directing fieldwork at the Boeotian city of Tanagra and in its countryside, where similar results seem to be appearing.[3] The final publication of the older Boeotia Project is now coming on stream, and this has involved a far more intensive analysis of our results from each city and *chora* of Boeotia which has been studied over the last 25 years. *Fascicule 1* deals with a mere 18 rural sites in the southern *chora* of ancient Thespiae city, and is now ready for publication. The development of a new hyper-intensive methodology for analysing surface survey sites in complex landscapes[4] has allowed us to reconstruct in unprecedented detail the transformation of the rural

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[1] J.L. Bintliff and A. M. Snodgrass, 'The Boeotia survey, a preliminary report: The first four years', *Journal of Field Archaeology* 12 (1985), 123-161; idd., 'Mediterranean survey and the city', *Antiquity* 62 (1988), 57-71.

[2] S.E. Alcock, *Graecia Capta. The Landscapes of Roman Greece* (Cambridge 1993).

[3] J.L. Bintliff, N. Evelpidou et al., 'The Leiden ancient cities of Boeotia project: preliminary report on the 2001 season', *Pharos. Journal of the Netherlands Institute in Athens* 9 (2001), 33-74; J.L. Bintliff, E. Farinetti et al., 'The Tanagra Survey. Report on the 2000 season', *Pharos. Journal of the Netherlands Institute in Athens* 8 (2000), 93-127; J.L. Bintliff, E. Farinetti et al., 'The Tanagra survey. Report on the 2002 season', *Bulletin de Correspondence Hellénique* (in press).

[4] J.L. Bintliff and P. Howard, 'Studying needles in haystacks – Surface survey and the rural landscape of Central Greece in Roman times', *Pharos. Journal of the Netherlands Institute at Athens* 7 (1999), 51-91.

settlement picture across dramatic changes associated with the Roman Empire, and this paper will concentrate on a review of this new information, together with the broader social, political and economic changes it seems to evidence. Finally I shall raise some general problems for archaeologists and ancient historians dealing with processes of regional development in the short, medium and long-term of Braudelian historical processes, in so far as they relate to the Aegean under Rome.[5]

Methodology and early results

Since 1980 the Boeotia Project has worked at settlement history reconstruction in this large province of Central Greece, using an intensive field methodology for finding surface traces of past activity foci across the Greek landscape.[6] Teams of fieldwalkers at 15 metre intervals between individuals, systematically cross the landscape field by field, hill by hill, counting the density of surface potsherds, thereby allowing computerised maps of entire swathes of the countryside with their ancient debris traces to be prepared on a daily basis. Artefact clusters of higher density, or of a distinctive character, are subjected to a further stage of field analysis, with grids of 10 x 10 metres or larger dimension applied over their surface, whereby each grid unit has a counted artefact density recorded and a sample of finds collected for subsequent study. The entire landscape artefact density allows us to measure human impact on the countryside by period of the past (through a dated sample of this material), whilst the more detailed study of the quantitative and qualitative foci (or 'sites') takes us into the specific forms of settlement and burial, their number, size and histories in the long-term.

As regards the Roman era in Greece, ancient sources (e.g. Strabo, Polybius, Pausanias, and inscriptions) have provided evidence for some historians to postulate a prolonged period of decay of urban and rural life in the *polis* heartlands of Southern and Central Mainland Greece, although other scholars have considered these as exaggerated or simply untrue,

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[5] J.L. Bintliff, ed., *The Annales School and Archaeology* (Leicester-London 1991); id., 'Regional survey, demography, and the rise of complex societies in the Ancient Aegean: Core-Periphery, Neo-Malthusian, and other interpretive models', *Journal of Field Archaeology* 24 (1997), 1-38; id. et al., 'Deconstructing 'The sense of place'? Settlement systems, field survey and the historic record: a case-study from Central Greece', *Proceedings of the Prehistoric Society* 66 (2000), 123-149.

[6] Bintliff and Snodgrass 1985, op. cit. (n. 1).

reflecting a topos of Greek decline in the shadow of Roman expansion. The early published results from our Boeotia Project, from both countryside survey and the total survey of large urban sites[7] were the first in Greece to test these competing theories. The results were unambiguous for Boeotia: the numbers of rural farm and hamlet sites were severely reduced in Late Hellenistic and Early Roman Imperial times (ca. 200 BC-200 AD), at the same time as *polis* urban sites were contracting dramatically in their spatial extent. Moreover, in the place of the many small Classical Greek sites generally interpreted as family farms, a lesser number of usually larger sites seen as '*villas*' was documented for this same period. The implications were equally clear: severe depopulation and the displacement of farmers of low to middling income by a wealthier class, and a general confirmation of our ancient authorities.

Subsequently published survey projects have provided similar results for South-Central Mainland Greece (for example in the Argolid Peninsula[8] and for Attica[9]). Susan Alcock's synthesis[10] of these and other survey projects and her skillful contextualisation of such results into all the historical material, gave definitive proof of the deep-reaching changes that Mainland Greece had undergone from its Classical highpoint, by the middle of the Roman Imperial period, although the causation of a generalized demographic decline and economic transformation remained difficult to be precise about.

A revisiting of data and interpretations

The sheer quantity of data we recovered in Boeotia during our active field seasons between 1978 and 1991 has led to a very prolonged period of analysis. There simply did not exist published studies of such artefact-rich landscapes where distributional patterns over and between sites were taken apart and accounted-for in sociological and taphonomic terms, and we have indeed spent many years trying to create a strong scientific methodology for

[7] Bintliff and Snodgrass 1985 and 1988a, opp. citt. (n. 1).

[8] M.H. Jameson, C. N. Runnels et al., eds., *A Greek Countryside. The Southern Argolid from Prehistory to the Present Day* (Stanford 1994).

[9] H. Lohmann, 'Zur Prosopographie und Demographie der attischen Landgemeinde Atene' in E. Olshausen and H. Sonnabend, eds, *Stuttgarter Kolloquium zur Historischen Geographie des Altertums* 2 and 3 (Bonn 1991), 203-258.

[10] Alcock 1993, op. cit. (n. 2).

interpreting our finds. The amount of information, and our constant learning-process through its progressive analysis, have ruled out a single volume for publishing our results, and instead we are publishing Boeotia as a series of some ten fascicules, each of book size, in each of which a sub-region or an individual city-site will be presented. *Fascicule 1*,[11] treats just 18 rural sites in the south *chora* of the major city of Thespiae, together with a remarkable carpet of ceramic discard of ancient date spread over the entire landscape between these sites and the city (the "offsite" pottery scatter). A key role in our revaluation of the Boeotia survey data is being played by computerized spatial analysis and database manipulation, made possible through software such as ArchInfo and ArchView within the group of analytical methods termed Geographical Information Systems (GIS), and carried out for us by Phil Howard at Durham University in England.

The prolonged gestation of our final results has allowed us to revisit older preliminary published analyses of our data, extract far more information than previously and question how valid our earlier provisional impressions of the data remain under intense and refined scrutiny.

There still exists some scepticism amongst ancient historians that surface survey archaeologists can distinguish farms or hamlets from casual loss and rubbish dumps, so one first step is to parameterize in a rigorous fashion what defines a 'site' or spatially confined human activity focus. With the aid of GIS all our counted surface pottery densities can be analyzed and mapped very precisely, and this allows us to show that past settlements, whether large or very small, are quantitatively elevated in density over normal 'background' ceramic sherd discard across the landscape as a whole (Figure 1). A further observation is that such settlements have a 'core' of highest values, associated often with traces of structures for habitation and storage, then around this a band of less elevated but still abnormal sherd density – a 'halo' (Figure 2), whilst our computerized analysis shows that the halo zone is more or less extensive into the surrounding landscape according to the relative size of the site core. More detailed study confirms that the 'core' represents the actual area of domestic habitation, whilst the halo seems to represent an area of farmyard and/or gardens, where rubbish is both accumulated and also deliberately placed to fertilize an inner part of the

[11] J.L. Bintliff, P. Howard, and A.M. Snodgrass, eds., *The Boeotia Project, Fascicule 1: The Leondari South-East and Thespiae South Sectors* (Cambridge, in press).

estate where intensive cultivation took place. Interestingly, a purely text-based reconstruction of Roman and Byzantine farming[12] has produced a scenario of land use for core and halo creation identical to our empirical results.

Our first aim, then, was to clarify the reality and distinctive properties of rural habitation sites. The same analysis helpfully shows that rural cemeteries – which are only of Classical Greek date hitherto in our survey area, when found separate from larger settlements – are distinctive through being lower in surface pottery density than the normal background values, so that their discovery rests essentially on qualitative criteria – special kinds of finer ceramics. Furthermore, as we shall show later, we are also in a position through very detailed internal analysis of the date and distribution of surface pottery found on habitation sites, to suggest that in some phases of their use they may have ceased to have been residential and lost their role as foci of heightened human activity.

So far we have sought to separate 'sites' – rural farms and hamlets, or cemeteries – from 'background', represented by 'offsite' pottery scatters. But for some 15 years we have maintained that this offsite material in Boeotia is of great interest in its own right.[13] Not only does Boeotian offsite pottery cover the entire cultivable landscape, but its average density is staggering. In the area presented in *Fascicule I* of the Boeotia Project, stretching some 2-3 kilometres southward out from the city wall of ancient Thespiae, our calculations suggest that around 1.4 million potsherds lie *between* recognized rural sites, on average some 2635 sherds per hectare (or the equivalent of finding one sherd in an area of 2 x 2 metre square anywhere in this 5.4 square kilometre district) (Figure 3). As this material runs up and down hills regardless of the location of our 17-18 rural sites, often at great distances from them too, and is of such density in comparison to the debris produced by the small population living in the country, the only conceivable source of this vast debris has to be the city of Thespiae itself, a giant town of some 100 hectares at its Classical to Hellenistic peak, and still some 40 hectares in Roman and Late Roman times. As erosion can be ruled out as a cause of such artefact spreads, for topographic reasons, the distances

[12] A. Ducellier et al., *Byzance et le monde orthodoxe* (Paris 1986), Figure p. 188.

[13] J.L. Bintliff and A. M. Snodgrass, 'Off-site pottery distributions: a regional and interregional perspective', *Current Anthropology* 29 (1988), 506-513.

involved and the sheer scale of deposition, we have long argued that only one explanation is allowable for the vast bulk of this offsite material, and that is deliberate manuring of the *chora* from city waste material, by farmers who were town-dwellers, but who commuted out to cultivate their estates. This being the case, our offsite scatters become a primary tool for measuring intensive land use in the *chora*, and hence their chronological composition is of great interest.

Remarkably, some 70-80% of the offsite pottery is of Classical to Early Hellenistic date (Figure 4), coinciding with the single era in the long history of the Thespiae settlement (Neolithic to early 19th century AD) when the town reached massive proportions. The implication is clear: only in this period was population density great enough to require an unparalleled effort of agricultural intensification in its supporting countryside, in which artificial manuring with domestic waste was a major aspect. Of course the most desired ingredients were inorganic waste components – from cooking, agricultural processing, human and animal waste products, all largely consumed by past crops for their growth – leaving us archaeologists the inorganic and almost indestructible household debris! These significant results are very much as predicted from earlier studies of landscape manuring in the Near East.[14]

If the entire cultivable landscape is itself an 'artefact', a new problem arises. It is easy enough to demonstrate with statistics that our claimed rural settlements are genuinely distinct in terms of the quantitative scale of accumulation of ancient rubbish, and hence residential. We can certainly also demonstrate that there is an easily-recognized difference between pottery manuring scatters from ancient fields and heavily-occupied rural farms, through the general nature of the finds – small and severely worn fragments contrast with larger and freshly-broken fragments, often fitting together, respectively. Our problem is a different and more subtle one, and I have already raised a more complex and yet surely highly plausible historical scenario. This is where an ancient rural residential site is found because of its undeniably rich densities of freshly-disturbed settlement deposits (through ploughing usually). But let us imagine, that during certain periods of its

[14] T.J. Wilkinson, 'Extensive sherd scatters and land-use intensity: some recent results', *Journal of Field Archaeology* 16 (1989), 31-46.

cultural 'biography' this settlement could well have changed its character – it was either abandoned or reduced to a storage or other non-residential role, so quite different from the times when it functioned as a normal farmstead or hamlet. In the latter cases our finding of some sherds of those periods at the site location and on its surface would derive from a very different human activity at this location, but mixed in with the surface sherds of the residential phase or phases this evidence might well be simply added to the list of periods when the settlement was in full occupation. This scenario is a problematic challenge to our understanding of life in the countryside from surface finds, but at the same time clearly an exciting opportunity to nuance our histories of the landscape.

The scale of this potential flaw in the practice of surface survey archaeology can be seen by considering recently-published site catalogues such as that of the Kea Survey[15]. Many surface sites on the island of Kea are multi-period, but the numbers of collected and dated finds for each phase on such sites are small (cf. Table 1).

TABLE 1: A representative surface site from the Kea Survey Site Catalogue

SITE 64. OTZIAS
Area: approx. 2.0 ha.?
Confirmed activity: Late Roman; Middle Byzantine
Dated finds from the site as collected: Greco-Roman 2+; Archaic-Classical 1; Archaic-Hellenistic 2 (plus +1?); Classical-Hellenistic 2; Classical-Late Roman 2 (plus 1+?); Late Roman 4+ (plus 1+?); Roman 1; Middle Byzantine 4; Modern 1+; Hellenistic-Roman 1
(From J.F. Cherry, J. C. Davis et al. 1991, op. cit. (n. 15), p. 123)

What if potsherds during some periods, collected from a rural site, reflect not residential activity at this location, but limited storage or even abandonment and a reversion to a field in which sherds from manure are deposited? Although normally site recognition in modern intensive surveys is due to dense and fresh sherds on its surface, this only demands that the dominant

[15] J.F. Cherry, J. C. Davis et al., eds., *Landscape Archaeology as Long-Term History* (Los Angeles 1991).

period represented should be residential, allowing minor periods represented to be open to the kind of alternative scenarios just presented. But how can we know?

It took me several years of mental struggle with the detailed data from the 18 rural sites of our first survey sector to resolve this central problem.[16] Previously, researchers confronted with small amounts of surface finds from several periods had perforce adopted a simple guideline: the dominant phase numerically was to be seen as occupation, the rest were rather arbitrarily assigned to either offsite, or also to site occupational use, without any sustained evidence or argument. If the entire surface collection was small, it is now almost impossible to decide which classification is correct.

The first guiding principle is what I have termed 'Residual Analysis'. Because we possess density figures for the surface pottery coating the entire landscape enclosing our 18 sites, and a chronological breakdown of its composition, it is possible to calculate the predicted density of finds across our sites *had they not existed*, by interpolating of the density of the district they lie in. Secondly, we can use the period breakdown for that district's offsite pottery to calculate the amount of sherds for each period we might expect to find across each site, also *if it had not existed*. We then compare the expected numbers of sherds per period with those actually recorded across each site. Excessive amounts beyond prediction comprise the 'Residual' not accounted for by processes operating over the whole district, and hence representing genuine focal activity at the site. Once it has thereby become clear that period 'x' is present in abnormal density at a site on residual quantities, we can add back to the residual the sherds predicted by local offsite density, since all this period's material can be removed from consideration as field scatter and reassigned to concentrated activity. As noted above, we argue that almost all of the offsite was put in place by urban manuring, and its bias towards the Classical-Early Hellenistic period means that finds of that phase on any site deserve particular scrutiny to test if their level really exceeds the high local offsite values. In contrast, prehistoric, Roman-Late Roman and Medieval-Postmedieval offsite scatters are much thinner and discontinuous, so that sites for these periods are much easier to distinguish. This method seems to clarify the basic issue of separating genuine site use from offsite activity for each period.

[16] Bintliff and Howard 1999, op. cit. (n. 4).

TABLE 2: An example of a rural site from the south chora of Thespiae. Actual = recorded density, Predicted = expected density from surrounding fields for this district of the chora.

SITE LSE 1: RESIDUAL ANALYSIS TABLE

500 sherd sample

Period	A-H	R	LR
Actual	305	83	22
Predicted	153	16	7
RESIDUAL	+152	+67	+15

In this example, it is clear that the reason for the field-walkers recognising this locality as a site was the very high total of Archaic to Hellenistic (A-H) potsherds. Subsequently the pottery collection sampled over the site revealed a secondary Early Roman (R), and a tertiary Late Roman (LR) sherd presence. In scientific terms, we should begin with the residual figures: strongest for A-H, much less so for ER, and weakest for LR. Once we feel that a reasonable case exists to give heightened local activity status to a phase, the next step is to re-incorporate the remaining sherds of that period, since we assume that assigning site status for that phase removes the hypothetical assignment of sherds to such off-site deposition as would characterise surrounding fields. Here then, although we expect in the immediate fields nearby a relatively dense scatter of A-H pottery, the same amount per square metre within the site at LSE 1 will now be added to the on-site activity, making up an overall total of 305 out of the sample of 500 which is site deposition. Likewise the enhancement, by a factor of four, of the actual over the expected Early Roman pottery first confirms site use, then allows us to merge the potential off-site with the residual on-site, to make a total of 83 per 500 sherds for the period. The disparity between these two phases of confirmed site use will be the subject of the next stage of investigation, together with the reason for a real but extremely vestigial Late Roman presence.

A second and more delicate analysis is required however, to cope with another and equally serious criticism of previous surface survey interpretation: the nature of use of a site. In the past, rural sites have often been subject to a 'grab collection', where a measure is made of the dimensions of the dense scatter, then a bag or two filled with randomly-collected potsherds

from various points of the site surface. As noted above, well-represented periods are taken to be site use, rarer periods as sporadic use or offsite discard. The statistics of such collections is very shaky and we gain no clear idea, even for the claimed site use periods, of how much of the site surface was in use in each phase. More advanced strategies collect from set points along set transects over the surface, although even here no evidence is given that such sampling is reliable for the entire site surface. Thus even on the high quality regional surveys published for the Argolid Peninsula[17] and the Methana Peninsula[18] almost all the sites have a single, maximum dimension of use area, despite the presence on most of more than one period of activity. Having experimented with these methods in the first two years of the Boeotia Project, we moved to adopting for most of our sites a collection method in which either large swathes of the surface were totally counted and collected from, or the entire surface was gridded and studied completely, from which we were able to show how misleading the results from the former sampling strategies could be, through comparison of the resultant collections.[19] Crucially, only large collections of sherds from distinct zones of each site can offer a reliable basis for examination of the internal composition of each site (cf. Table 1 with Table 2).

Nonetheless, even with large area or even total area coverage of a surface site, and a large sherd collection from each part of its surface, the meaning of the period finds across it demands rigorous analysis. We can plot the distribution of finds for each phase of activity, especially easy and rapid to do now that GIS packages spatial information and artefact database material for analysis and display on one's computer. The resultant sherd distribution maps for a site, period by period, complement the statistical approach to the density of finds (the Residual Analysis), in the following fashion. The Residual Analysis of numbers of finds per period highlights phases where site quantities do not exceed the local offsite discard, allowing a first hypothesis that the site is merely part of the wider landscape of manuring at that time. Likewise abnormal accumulation of density argues for distinct focal or site use at a particular phase. But the spatial plotting of these period finds permits a more nuanced series of scenarios to be tested. What if

[17] Jameson et al. 1994, op. cit. (n. 8).

[18] C. Mee and H. Forbes, eds., *A Rough and Rocky Place. The Landscape and Settlement History of the Methana Peninsula, Greece* (Liverpool 1997).

[19] Bintliff and Snodgrass 1985, op. cit. (n. 1).

the total number of sherds for period 'x' is within the range of the wider landscape, but across the site map its finds are clustered in one restricted part of the site – which means that the *actual* finds density is elevated at the location over the local offsite? Here we could propose a new model – limited site use compared to the wider use of other periods. Since taken as a whole the site is proven to be such by a surface pottery density exceeding local offsite, it is those other periods that therefore must now have been responsible for creating the high density feature or site in the first place. Now actually, since most of our sites in this sector are of Classical, Hellenistic, Early or Late Roman date, usually in use during at least two or more of those phases, it is highly likely that the scale of site use did indeed vary across time, so that we need a methodology which will reliably distinguish the expansion and contraction of rural settlements. Questions of rural population size and the kind of establishments represented demand our ability to draw such distinctions. In yet another scenario, the finds at a particular site may be clearly but not strongly elevated in absolute numbers over the expected total for the landscape around on the Residual Analysis, but when plotted on the site map we find an absence of a clear clustering effect. Such a pattern is unlikely to be created by a typical fullscale domestic occupation, more likely to represent some kind of temporary, seasonal use of the site, yet still arguably at a higher level than that of a manured field.

If we return to the site presented in the example Residual Analysis Table shown in Table 2, and now study both the location of that site in its offsite density context (Figure 5) and then the distribution of our dated pottery collection across the site (Figures 6-8), we are able to clarify the clear discrepancy between the total dated finds and the predicted finds based on the Null Hypothesis that the 'site' is merely part of a continuum of offsite pottery. Firstly we see that this site lies in a very dense carpet of offsite pottery – in fact it is really close to the city of Thespiae and is thus lying in a zone of very high density urban manuring. Since this offsite manuring ceramic is nearly all of Classical Greek age, this explains why in Table 2 the predicted amount of finds for this location is set so high and the threshold to clear site status is well above that set for corresponding thresholds of abnormal density in Roman and Late Roman times. Nonetheless the total density for the Greek phase is still adequate to elevate the location to site level, and as Figure 6 shows, this is the main occupation of LSE1, with a hamlet size of more than a hectare. Although the total for Early Roman times is well above expected offsite discard for this district of countryside, and

hence should reflect a genuine activity focus now at LSE1, the numbers of sherds recovered are quite out of scale compared to Greek times. As Figure 7 makes clear, this can be accounted for by a dramatic shrinkage of the occupied zone, with most finds occurring in a limited zone of the gridded area. In fact we estimate a small farm of a mere 0.2 hectares. Finally, the finds from Late Roman times (Figure 8), although visibly above expectation, are so few in total that the statistics of small numbers denies us certainty that the extra finds are not within the range of variability of the average for the offsite of this period. Moreover, their absolute number even in comparison to the small farm of earlier Roman times seems inadequate for an occupation site. To confirm our suspicions, the spread of these Late Roman sherds over the site (Figure 8) shows a wide and generally thin scatter[20] which is more likely to be the result of field manuring than concentrated activity – whether residential or otherwise – and we can safely assign this phase to offsite activity, when the former hamlet-farm had become an area of lightly-manured fields.

The advantages of such analyses are great. Firstly, scholars can study the figures and displayed distributions for themselves, to see if the interpretations look convincing, and apply alternatives for their own use or use these analyses for comparison with their own and other surveys. Secondly, we can suggest quite nuanced interpretations for the history of each site, and cumulatively for entire landscapes, charting the rise and fall in the number and size of rural sites, but also changing uses of those locations. At the same time, the intervening cultivated landscape provides a complementary story through the analysis of those 'offsite scatters' which result from manuring episodes which mark highpoints of intensive land use. Finally, the relationship between land use, rural site use and the city they belong to can be examined when, as here, the entire *polis* surface has also been studied through complete gridded collection of surface finds.[21]

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[20] Apparent small foci of Late Roman sherds in a few squares of the western part of the site are largely due to overenthusiastic collection of sherds in these squares by the students concerned, something we can control for by tagging such squares with an oblique stroke, as displayed here.

[21] Bintliff and Snodgrass 1988, op. cit. (n. 1)

Final results: the changing rural and urban settlement picture for ancient Thespiae

For reference it is necessary to commence with the settlement picture for the high Classical to early Hellenistic era, the 5th to 3rd century BC (Figure 9). Thespiae City is at an all-time maximum extent of some 95 hectares, perhaps 12,000 occupants, whilst the south inner *chora* has a whole series of rural farms and hamlets (cumulatively however just 6.8 ha. of domestic occupation) before we reach the first *kome* or village at Askris Potamos (ca. 2.5 ha in size). The rural population that we calculate drew their subsistence directly from the surveyed bloc of 5.4 sq.km. was less than 200 people, and by extrapolating from this we can suggest that some 76% of food surpluses from the surveyed area was available to feed the urban population. Overall, if we take out *komai* in the entire wider *chora* of Thespiae of 'urban' scale (ie 10 ha or more in size), the urban-rural population split is around 80%-20%, whilst our rural surplus estimates can just feed town and country at full landuse.

By Late Hellenistic times however (Figure 10), the final two centuries BC, dramatic decline has affected both the City and its rural settlements. In Early Roman Imperial times (the first two centuries AD) the City remains at its new shrunken level of around 40 ha, but a slight recovery in rural settlement can be registered. In Middle Roman times (ca. 200-400 AD) (Figure 11) rural recovery moves a clear step further, although the City does not grow correspondingly, but the really striking change to the preceding 600 years of stagnation then slow recovery, is registered for Late Roman times (ca. 400-600 AD) (Figure 12), when the countryside fills out with an unprecedented occupied area, and even the City witnesses an admittedly quite modest re-expansion (to 48 ha). Indeed the area of rural settlement has risen to 13 ha in the *chora* up to the still-occupied village of Askris Potamos (an additional 2.5 ha in extent), doubling therefore the density of rural occupation to that registered for Classical Greek times. The scale of transformation is encapsulated in the statistics: if high Classical settlement was 80%-20% urban-rural overall on extrapolated calculations for the entire Thespiae *chora*, then in Late Roman times an inversion has occurred to 30%-70% or even (on one calculation) 20%-80%.

Although one is tempted to a swift interpretation, very much in tune with contemporary thinking about Late Antiquity, I shall suggest that this is almost certainly erroneous. A standard current view would take this urban-

rural inversion of population to evidence the decline of minor provincial cities in Late Roman times and a complementary 'flight to the country' by rich and poor alike. While the towns became the residence of the jobless and landless, living off church and state handouts, country life revolved around large estates manned by tied peasants or '*coloni*', whose products were aimed rather at interregional trade (heading for the great cities and the army) rather than for regional consumption in the local towns. Why, then, does this attractive view not work in the south Thespiae *chora*?

For Classical Greek times, our estimates show that the entire surplus food production of the *chora* was needed to sustain the great city of Thespiae and its urban *komai* such as Askris Potamos and Askra. What was left could just feed the density of non-urban rural villages, hamlets and farms which we have identified through survey. Boeotia in this period is characterized in our sources as a self-sufficient agricultural region with little external trade and very little history of external involvement with colonial foundation, and indeed we find that there would have been little scope for exports with a regional total population at maximum exploitation of available agricultural land, and consuming virtually everything it produced in the way of subsistence crops. It is entirely consistent with these considerations that we have documented a massive and sustained programme of agricultural manuring out of all the major and minor urban sites of Boeotia so far studied, a practice without parallel in any other period of Boeotian prehistory and history. Simply put, feeding such a giant regional population put immense strain on soil fertility, and communal effort was deployed to enable the land to hold up high yields for as long as possible.

During the final centuries BC the system collapsed, and both town and country populations plummeted. Modest recovery in the rural sector can be observed in the early centuries AD, picking up in the 3rd and 4th centuries, to blossom into a spectacular replanned countryside in the 5th and 6th centuries AD, when the cumulative extent of rural sites is around double even that of the Classical florescence. The slight re-expansion of Thespiae City in Late Roman times still leaves that town, however, at half its Classical peak size.

But something has to be wrong with translating these areal extents of town and country directly into demographic and land use reconstructions. For one thing, the new generation of larger Late Roman sites is remarkable for the dominance of building debris (tiles) and storage and transport amphora, but a contrasting poverty of vessel fragments from domestic food preparation and consumption; these are often large sites, but it seems not

many people were normally living there. Secondly, if we were to assume that the density of rural sites and their area corresponded to dense rural inhabitants, we find that simply feeding these country residents would take up 90-95% of available food produced in the *chora*, leaving a still large urban population of 6000 or so residents to subsist on the remaining 5-10% of rural surpluses. In fact the figures are impossible, and the town would starve! Finally, with the City at half its Classical peak, but assuming full occupation of a greatly enlarged rural site area, food production in the *chora* would have needed intensive land use – but the evidence from our sample of dated offsite pottery (Figure 4) for agricultural manuring in Late Roman times is minimal.

The only explanation which brings into harmony all the evidence so far presented, is to suggest that the new socio-economic system of Early Roman and Late Roman times, replacing the Classical Greek *polis* model, is closest to the traditional agro-town, large estate scenario notoriously documented in Early Modern Sicily and Southern Mainland Italy. The wider countryside is owned by wealthy landowners, and exploited out of their estate centres; in the immediate outskirts of each town, peasants manage to work small plots, but the basis for peasant income comes from tied or wage labour on the open countryside estates of the rich. The labour force, however, dwells in the towns and commutes out to distant *latifundia*, so that these estate centres have a sizeable plan but a small permanently resident population of overseers and maintenance staff. In our application of this model, we suggest that a countryside once largely owned by middling farmers (of the hoplite class) and to a lesser extent by the elite in Classical Greek times, but with significant areas assigned to the smaller holdings for a lower peasant class, became transformed during the crisis of Late Hellenistic times, into one where by Roman Imperial times land in the wider *chora* had passed into the hands of a class of rich landowners (native or incoming) during. The former hoplite and lower class were largely reduced to an urban population surviving largely by supplementing inadequate smallholdings in the immediate vicinity of the City with hired or tied labour on the estates of the rich. The low level of domestic rubbish at these *villa* centres, compared to their sizeable individual and collective area, suits a small resident population but largescale activities requiring non-resident labour, and the effect of shrinking the rural population to a low level is to bring the Late Roman urban-rural balance back to its Classical Greek proportions of around 80%-20%. Since the 80% urban population is however at half the absolute level of

its Classical Greek precedecessor, then the level of land use they are involved with is also some half of that earlier period, and such a scale of exploitation would not require intensive agricultural manuring. Hence the striking absence of late Antique manuring evidence, plainly documented in our study of the offsite scatters.

The wider Aegean context

Some years ago I tried to summarize the accumulating results from recent regional field surveys and older more topographical researches as regards differential demographic and economic growth in the Aegean over the entire Greco-Roman period.[22] Although this was only a provisional attempt, which had to rely on data of variable detail and reliability, there nonetheless emerged a surprisingly consistent picture for most regions of Greece, exceptions to which were then subjected to special attention for the light they shed on underlying processes (Figure 13). As would have been expected by scholars of historical demography and regional archaeological survey working in other parts of the world, the Aegean trajectories are characterized by cyclical patterns of growth, climax and decline, although in detail clusters of regions appear to behave together and out of phase with other clusters in this respect. Thus a precocious early growth cluster focusses on the South-Central Mainland, with Boeotia on its periphery forming part of a second rather later cycle of development. In North and West Greece tertiary and later cycles can be traced. Whereas the first group already show rapid takeoff in rural and urban growth in the final Dark Age and earliest historic era (Geometric-Archaic period), the Boeotian cluster belongs more with high Classical and early Hellenistic times, whilst the latest cycles peak in Roman Imperial times or even in Late Antiquity.

In my study of these phenomena I highlighted the need to deploy a battery of models to isolate critical explanatory elements in accounting for both the general trends and localized exceptions. However one of the factors which seemed to account for much of the broader picture was an agro-demographic, Neo-Malthusian explanation[23]: put simply, populations tend to expand beyond the means of long-term subsistence capacity of their

[22] Bintliff 1997, op. cit. (n. 5).

[23] E. Le Roy Ladurie and J. Goy, *Tithe and Agrarian History from the Fourteenth to the Nineteenth Century* (Cambridge-Paris 1982).

resources, leading to a demographic and economic recession of a significant depth. Since the fundamental source of subsistence in ancient Greece was the land, this implies that its productivity may be expected to have failed as a result of overuse. Such a failure can manifest itself in various ways, such as deteriorating soil nutrients caused by overcropping, or erosion of open surfaces in a suitable climate such as semi-arid Southern Greece possesses. It seems likely that both of these named processes can be observed in the Aegean. In the Argolid and Attica, where the first growth cycle is concentrated, a major erosion phase is documented by the end of Classical Greek times,[24] whereas in Boeotia – where the climate is significantly less arid – failure of soil nutrients is more probably a central cause of the collapse of town and country population which we have discussed above for the Late Hellenistic era. It was to counter visibly declining crop yields, we believe, that the immense work of urban manuring into the Boeotian landscape was set in motion in Classical Greek times.

What, then, is the place of Roman imperialism in this broader Aegean picture, and then in the specific context of Boeotia? Following an approach widely adopted by scholars of the Roman economy[25], I would prefer to see the provinces of the Empire as following semi-autonomous paths in terms of demography and economy, much as we have postulated for the regions within the Aegean over a longer time-period. The 'Impact of Rome' in this view would depend on the pre-existing trajectory or trajectories of the future province at the time of incorporation, as well as the individual place of the province in terms of the functioning of the Imperial system as a whole. In the case of Greece, as we have seen, different regions were in quite contrasted states of growth, stagnation or decline by the turn of the 1st millennium AD, and thus Rome may have been a stimulus in some regions, but a force to sustain underdevelopment in others. Crete, for example, underexploited in Classical and Hellenistic times, reaches a first climax of population and economic productivity in the Early Empire, but Boeotia stagnates, and rural

[24] J.L. Bintliff 'Landscape change in Classical Greece: a review', in F. Vermeulen and M. De Dapper, eds., *Geoarchaeology of the Landscapes of Classical Antiquity* (Leuven 2000), 49-70.

[25] Cf. M. Fulford, 'Economic interdependence among urban communities of the Roman Mediterranean' *World Archaeology* 19 (1987), 58-75, and G. Woolf, 'Imperialism, empire and the integration of the Roman economy', *World Archaeology* 23 (1992) 283-293.

Attica fails to develop at all – if our single but high quality survey can be generalized from.[26]

For Boeotia, we have argued from the empirical evidence for the dominance of wealthier *villa* owners in the Early and Late Roman landscape, at the expense of a peasant class which was increasingly driven to occupy a defined niche as a town-dwelling, dependent labour force employed on the former's estates (a scenario in large part anticipated from less complete archaeological evidence in Susan Alcock's *Graecia Capta.*[27] Even in the heyday of the *villa* system, around 500 AD, we have suggested that land use and population levels were only half those of the Classical Greek era; nonetheless it can be remarked that, although this socioeconomy was little profitable for the bulk of the regional population, and very profitable for the landowning magnate class, it was at least considerably more sustainable in ecological terms. Had our Boeotian peasants known this, however, it would have been scant consolation for their impoverishment and that of the *polis* society of around 400 BC which they originated from!

Leiden, January 2004

[26] Lohmann 1991, op. cit. (n. 9); Bintliff 1997, op. cit. (n. 5)

[27] Alcock 1993, op. cit. (n. 2).

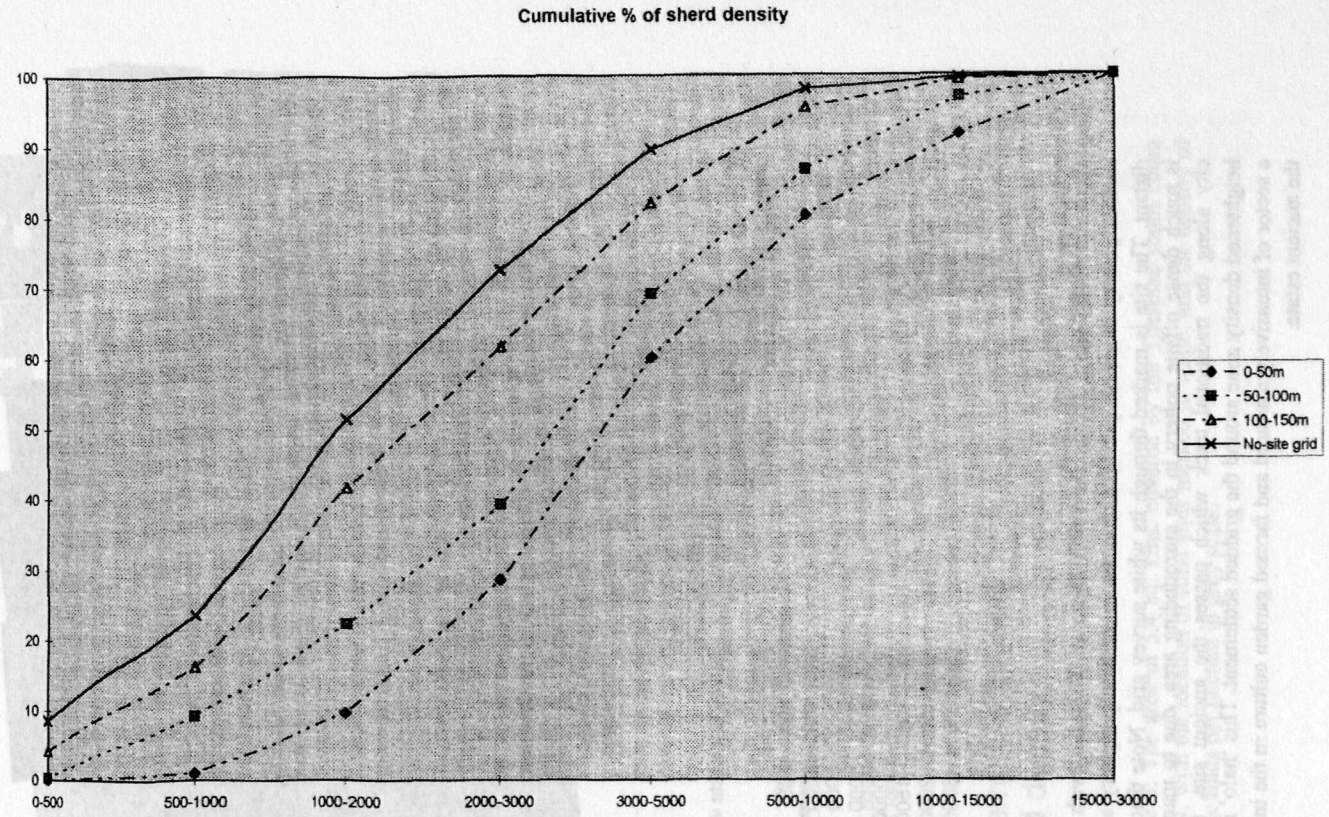

Figure 1: Cumulative frequency chart demonstrating the density of surface pottery at the core and in the immediate periphery of settlement sites in the south *chora* of Thespiae. Densities are given for three different concentric rings around the settlements, 0-50 ms, 50-100ms and 100-150ms, then for comparison the density of sherds on the surface in all the landscape zones lying between settlements and further than 150 ms from any settlement. On the horizontal axis we give sherd density per hectare, on the vertical axis the percentage of the readings at each density level. It is clear that even up to 150 ms distant from settlements the average surface sherd density exceeds the average offsite countryside density.

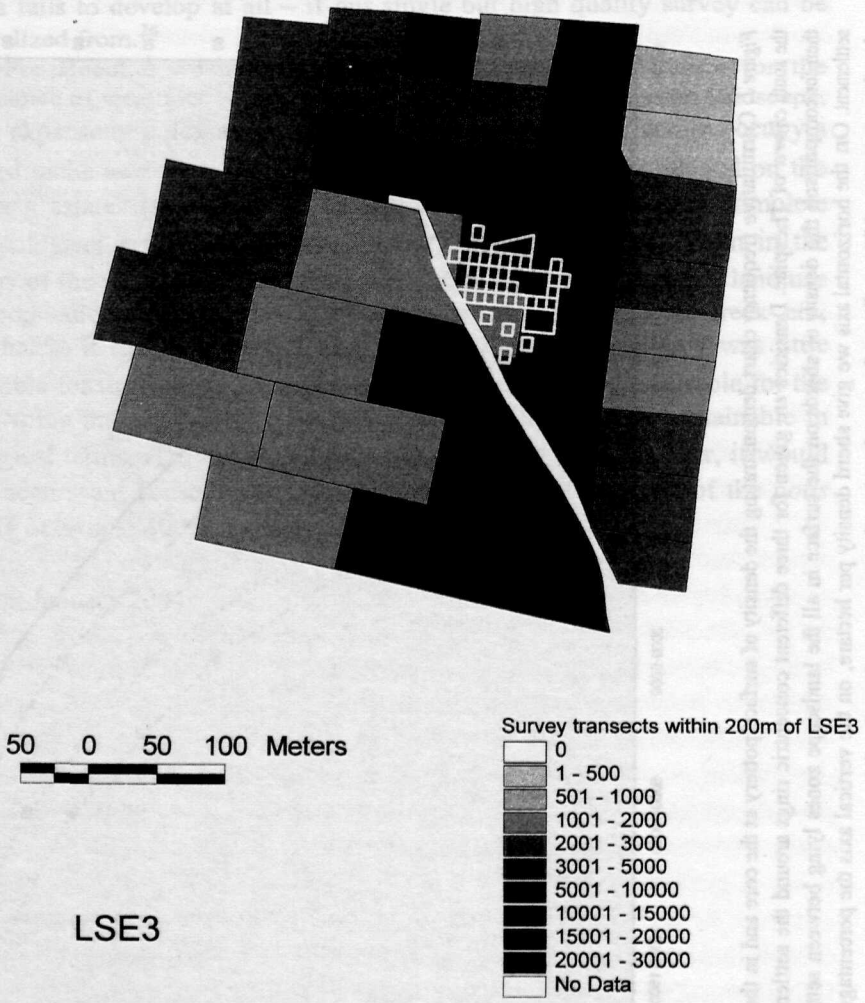

Figure 2: Rural site LSE3 in the south *chora* of Thespiae, with the density of surface pottery in sherds per hectare in its immediate periphery and fields more distant. The site is marked through its white survey grid. Note that although there is much dense offsite pottery in the surrounding area, due to manuring from the city along the traditional track which passes the ancient site, there is also a heightened density zone around the gridded settlement. This 'halo' is interpreted as a sector of intensively manured and farmed garden culture in the innermost part of the ancient estate.

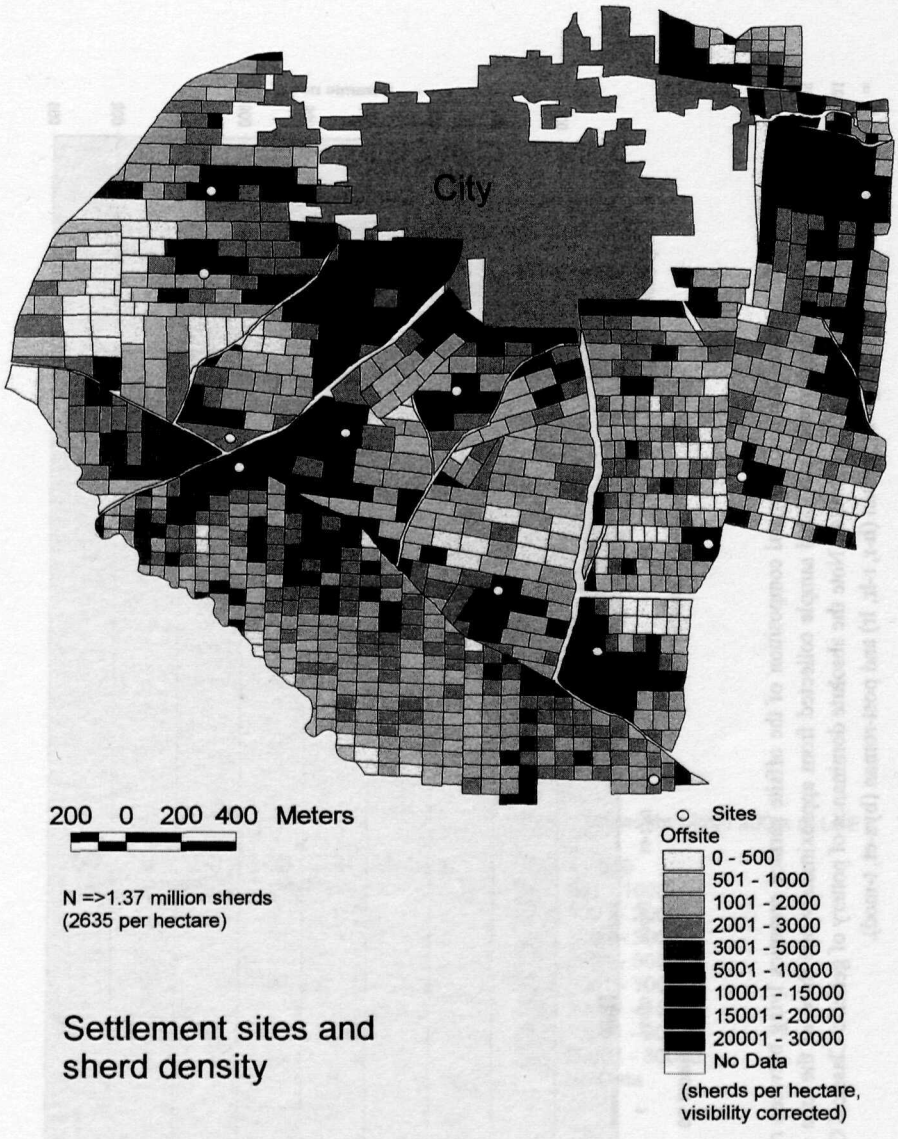

Figure 3: The area of 5.4 sq. kms. covered by the Thespiae south chora survey, with the location of rural sites marked in white, and the density of surface finds per hectare in grey scale.

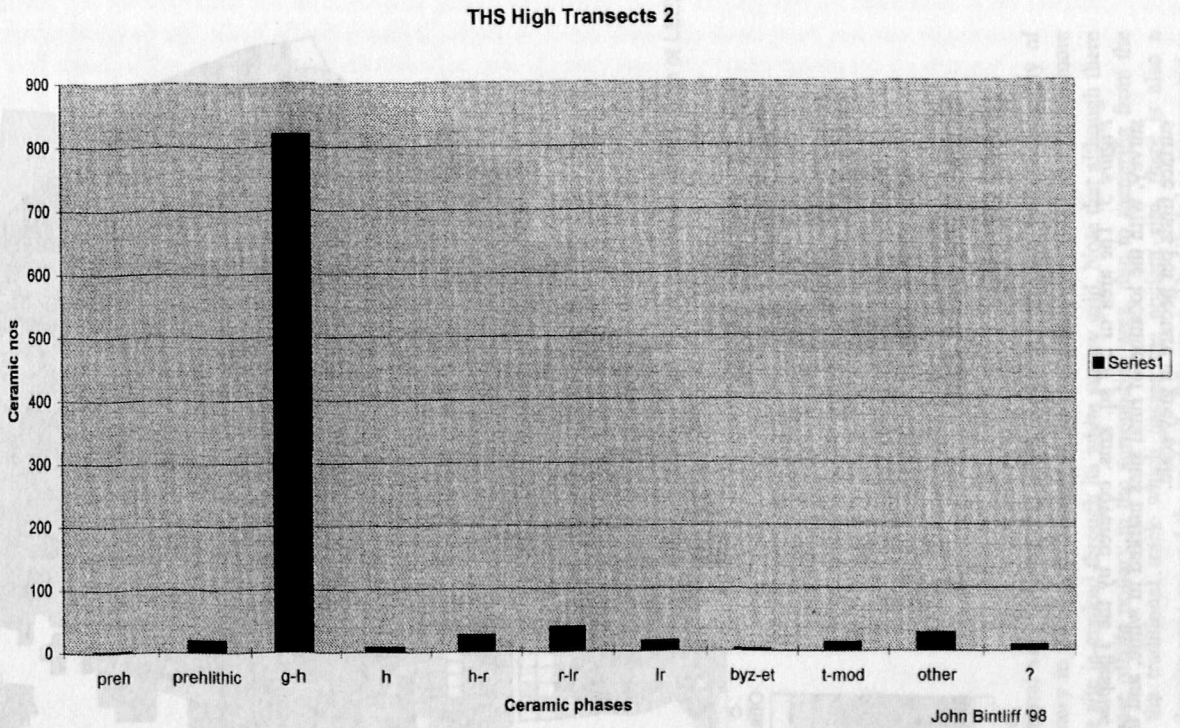

Figure 4: Chart to demonstrate the chronological composition of the offsite surface ceramics lying between rural sites in the south chora of Thespiae. This represents a dated sample collected from approximately one third of the area studied, but the results from the other two-thirds are very similar. Note the absolute dominance of pottery of generic Classical Greek date (here = 'g-h') compared to prehistoric (preh), roman (h-r, r-lr, lr) and post-roman (byz-et, t-mod).

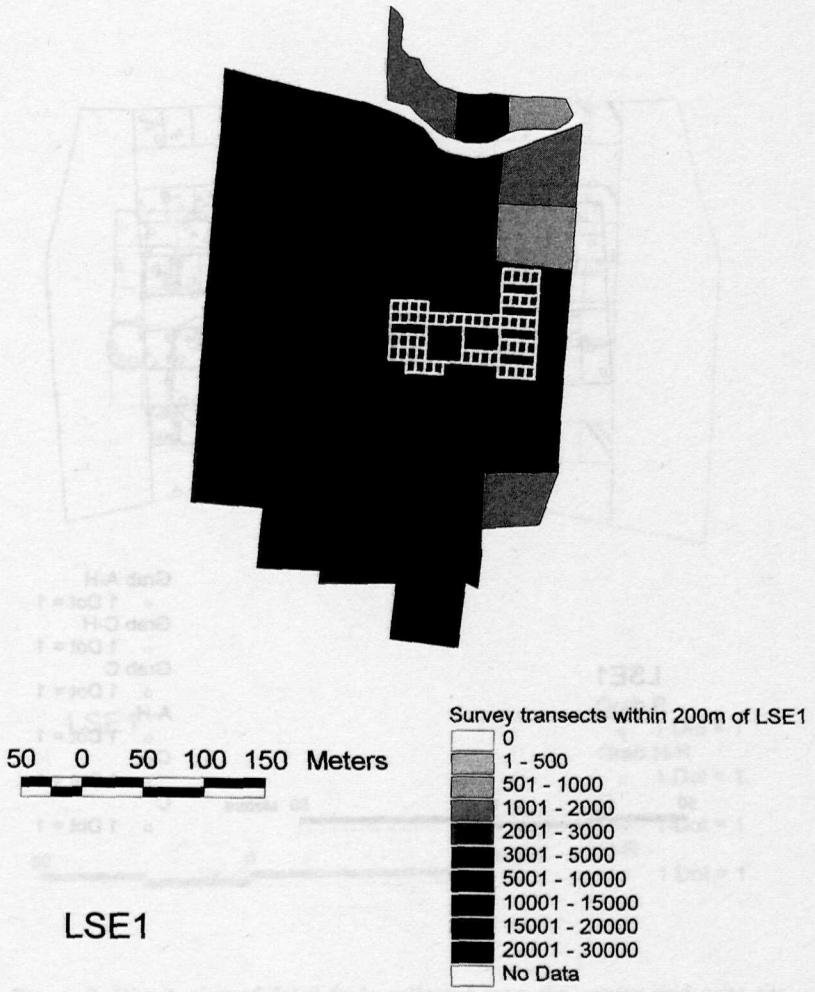

Figure 5: Site LSE1 in the south chora of Thespiae. The site core is represented by the white survey grid. Note that the site lies on the eastern edge of an exceptionally high density offsite zone, which continues to rise further westwards towards the ancient city walls, only some 500 ms distant, but which drops off rapidly in the open country east of the site.

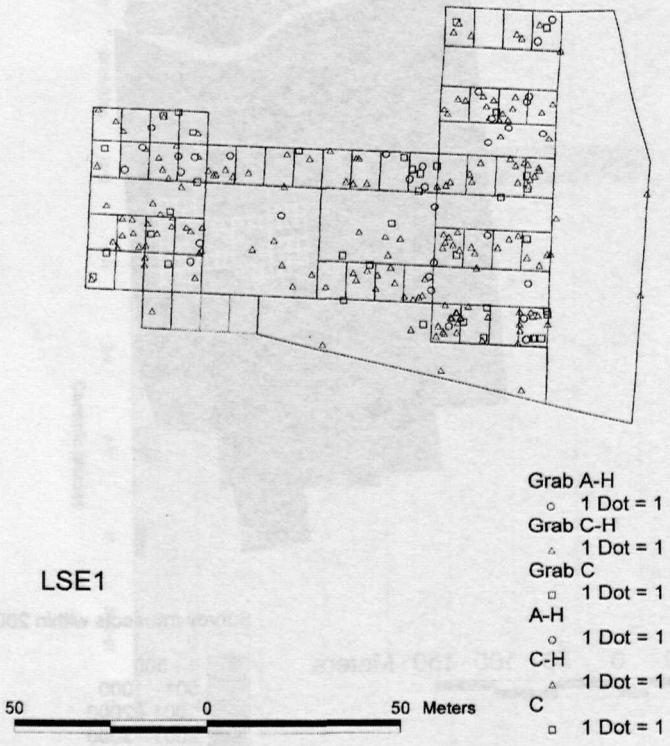

Figure 6: Distribution of dated finds collected from the survey grid over site LSE1, of Archaic-Early Hellenistic, Classical-Early Hellenistic, and Classical date.

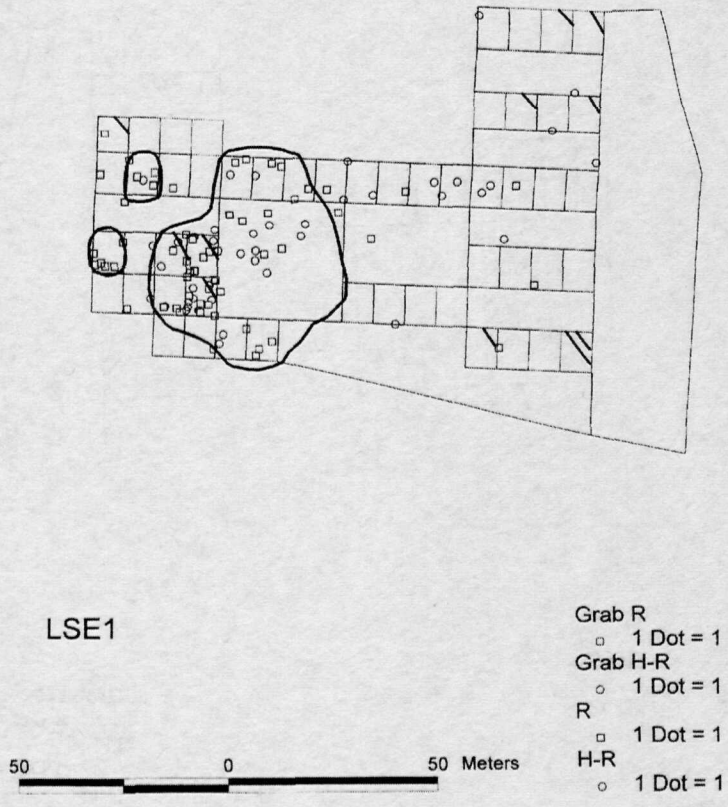

Figure 7: Distribution of dated finds collected from the survey grid over site LSE1, of late Hellenistic to Early Roman (H-R) and Early Roman (R) date. Dark outline highlights the main area in occupation during this period, whilst obliquely tagged grid collection units show those units where unusually large numbers of sherds were collected by fieldworkers.

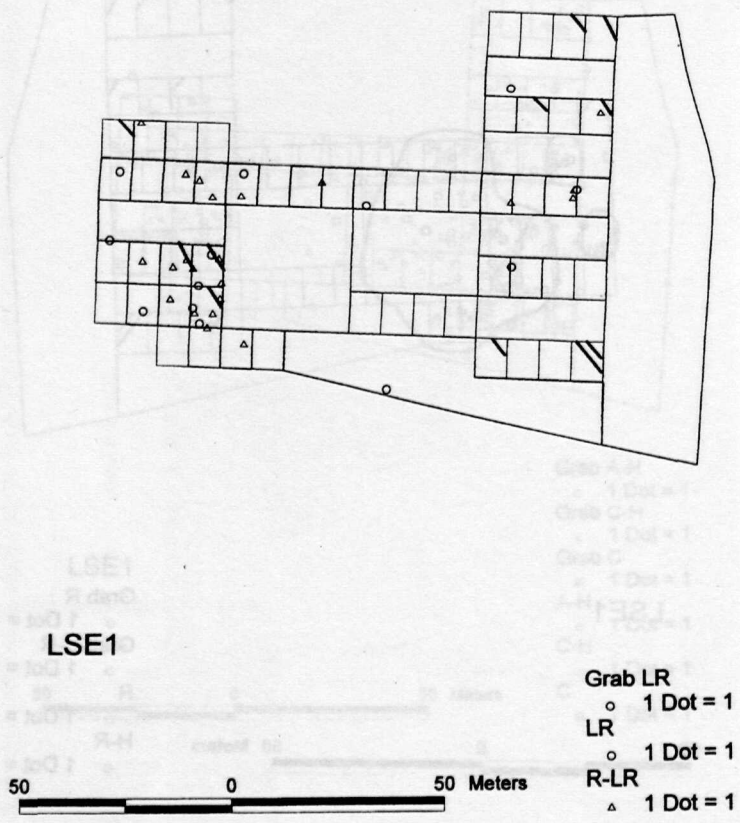

Figure 8: Distribution of dated finds collected from the survey grid over site LSE1, of Late Roman (LR) and Early to Late Roman (R-LR) date. Obliquely tagged grid collection units show those units where unusually large numbers of sherds were collected by fieldworkers.

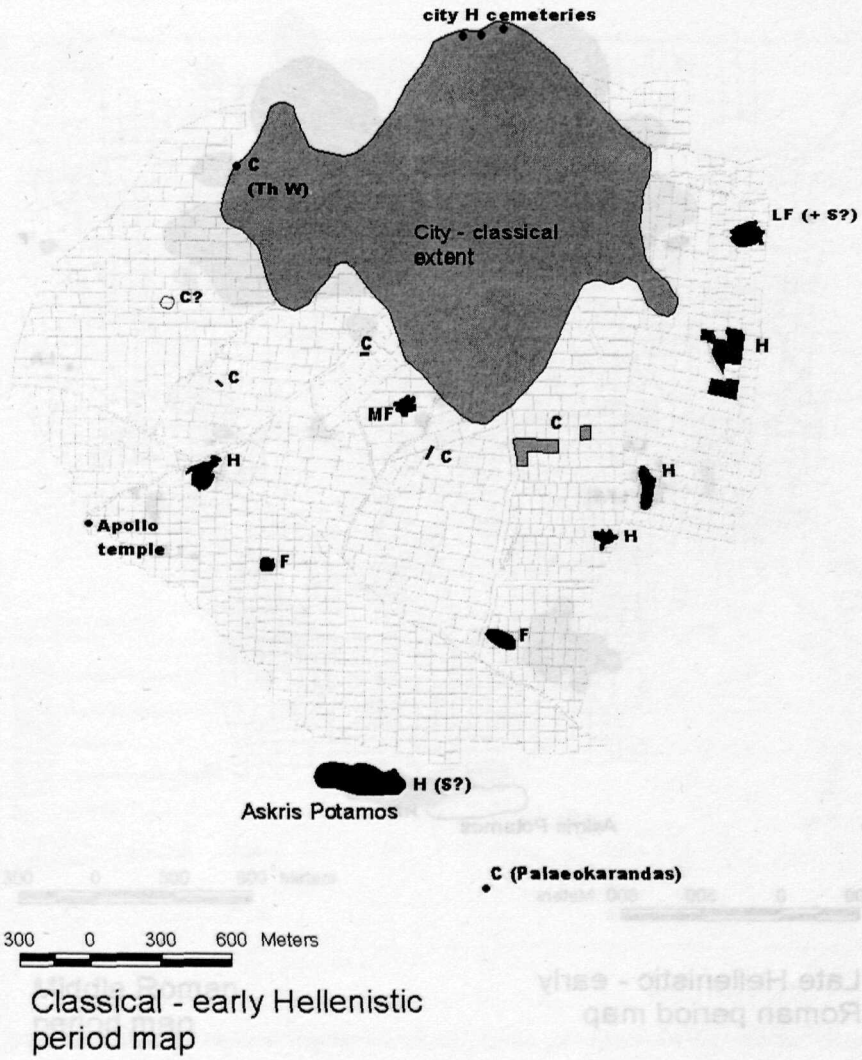

Figure 9: Settlement map for the south chora of Thespiae in Classical Greek times. Key: C = cemetery, H = hamlet, MF = medium-sized farm, F = small farm, S = sanctuary.

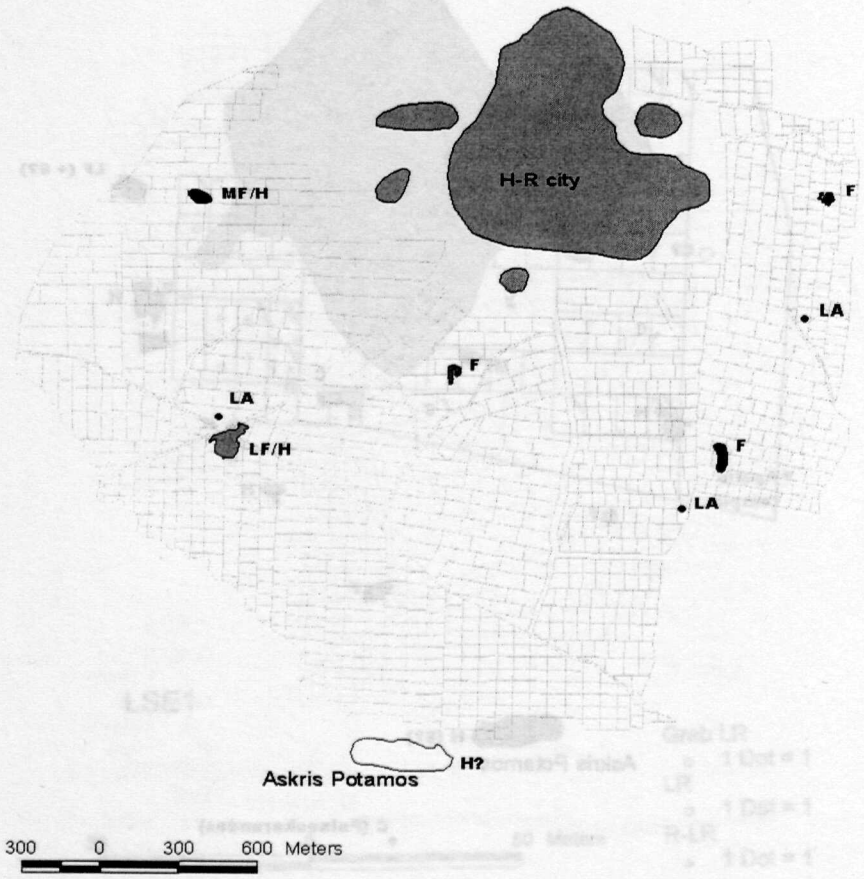

Figure 10: Settlement map for the south chora of Thespiae in Late Hellenistic and Early Roman times. Key: H = hamlet, LF = large farm, MF = medium-sized farm, F = small farm, LA = low activity (non-residential).

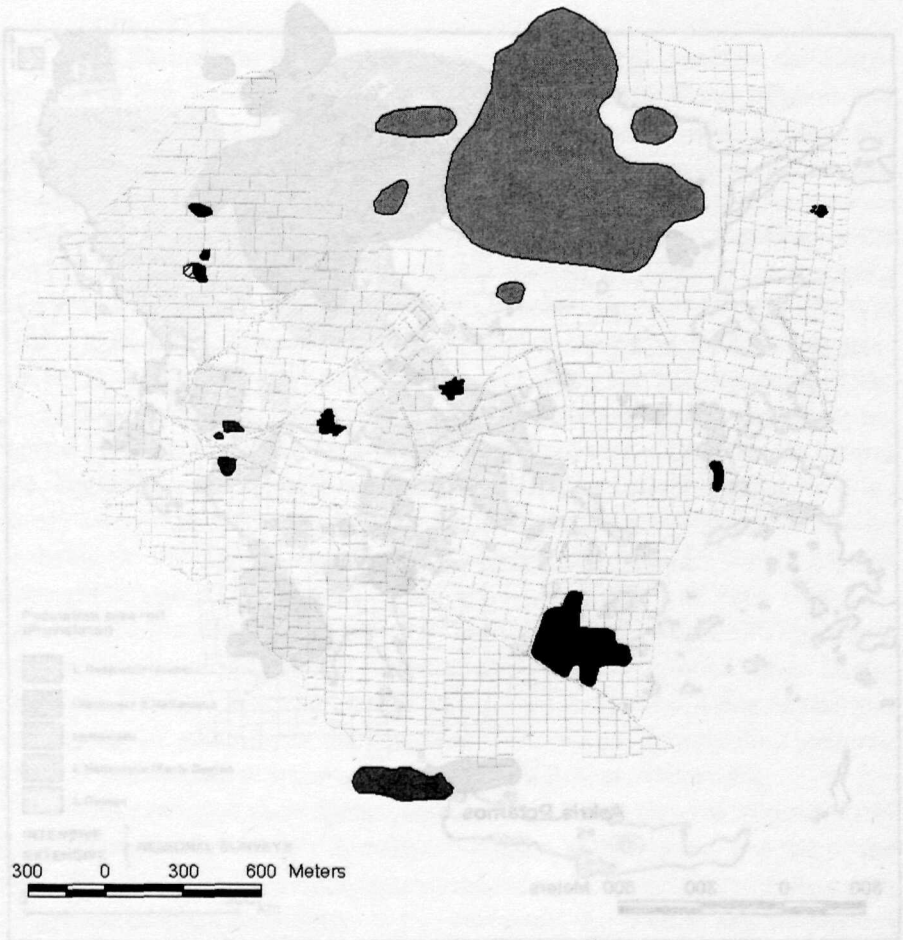

Figure 11: Settlement map for the south chora of Thespiae in Middle Roman times. Sites range from medium farms/ villas to hamlets.

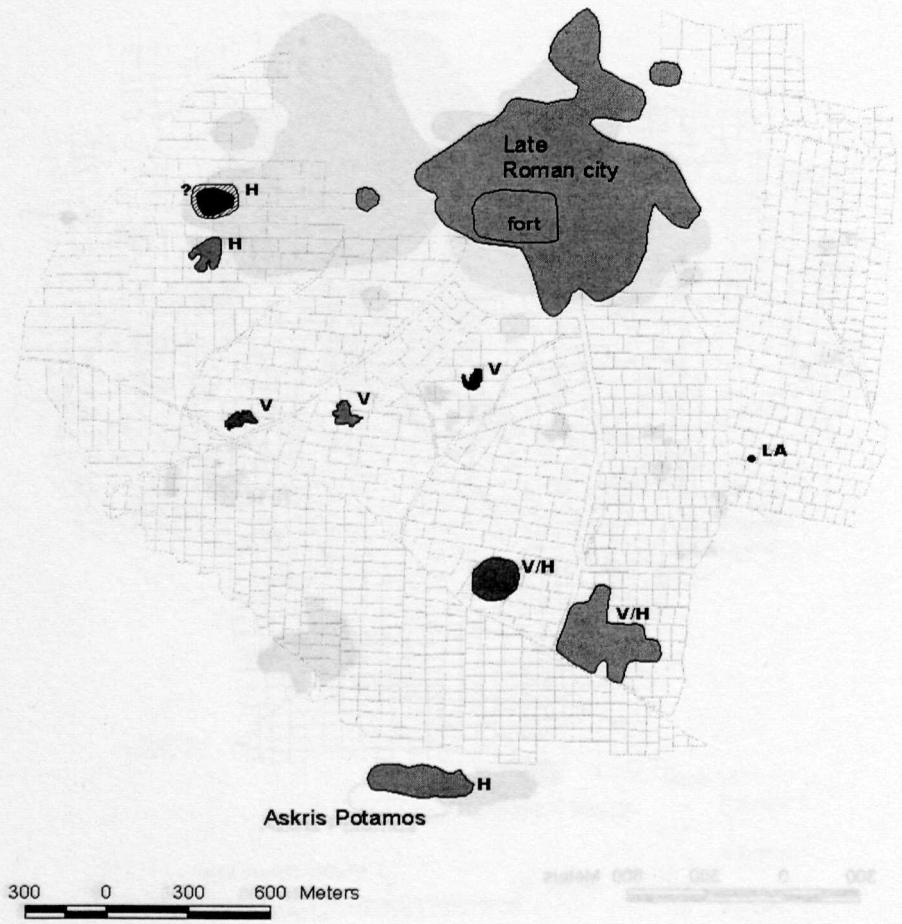

Figure 12: Settlement map for the south chora of Thespiae in Late Roman times. Key: H = hamlet, V = villa, LA = low activity (non-residential).

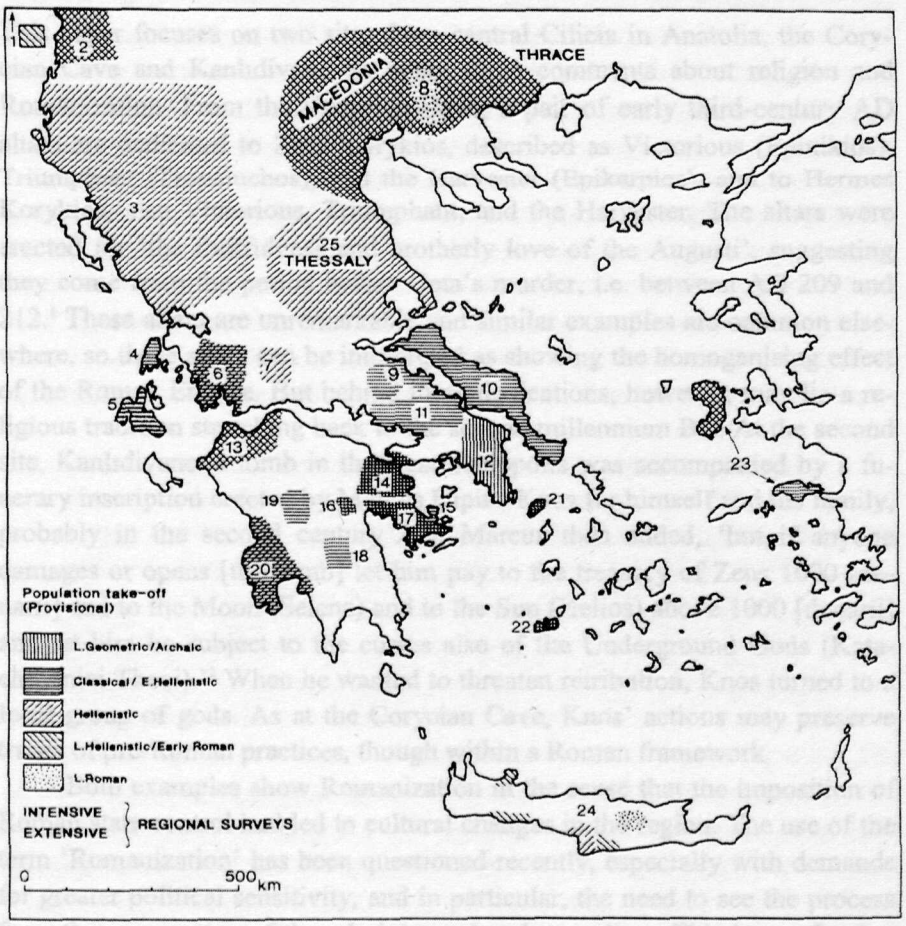

Figure 13: Phases of regional population takeoff, urban proliferation and economic takeoff in the Aegean, based on provisional results of extensive and intensive regional survey, by chronological period during Greco-Roman times.