

## Chapter 6

# Site Formation Processes and the Hvar Survey Project, Yugoslavia

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### Introduction: the archaeology of Hvar

During September 1987, a team of archaeologists from Bradford University collaborated with Ljubljana University in the first season of a projected 10 year survey of the archaeology of the Dalmatian island of Hvar, Yugoslavia. The island possesses a rich and varied archaeological heritage (Figure 6.1) (*cf* Petric 1975). The celebrated material culture associated with excavated Neolithic cave sites on the island has, for example, been extensively researched and published (Novak 1955), whilst the later prehistoric period is represented by the presence of large numbers of tumuli and by hillforts. The island is also noteworthy, however, for the 4th century BC Greek colony of Faros, situated on the site of modern Starigrad, and the 'centuriated' field system associated with that city (Wilkes 1969). The area containing these land divisions, preserved within the modern field layout as a result of their immense drystone construction, has received considerable attention within recent years (Zaninovic 1983; Slapsak and Kirigin 1987; Slapsak and Stancic 1988). Consequently the distribution of numerous Roman villas, the remains of which lie within the fields (Figure 6.2), has already been established.

During the turbulent Migration period, the island was colonised by Slavs, who appear to have initiated the present settlement pattern of the island, whilst during the high- and post-medieval periods the island was possessed in turn by a number of European powers. The sophistication and wealth of the island's inhabitants during this period are testified by the presence of numerous churches and private houses, many of which are associated with the Croatian Renaissance of the 16th century. More recently, the incorporation of the island into the Austro-Hungarian Empire and a significant time-lag in the spread of the Phylloxera epidemic from West to East Europe led to a huge boom in wine output. These events are reflected in the phenomenal spread of terracing and stone clearance cairns over much of the island, including some of the steepest limestone areas of Yugoslavia.

Despite such promise and although Hvar's archaeology is much researched, the evidence is only partially understood. The early prehistoric period on Hvar is an excellent example of this. Despite the

international importance of the Neolithic of the area, the virtual confinement of recorded early prehistoric activity to cave sites could not be considered a true reflection of the potential archaeological data. Published material from other areas of Yugoslavia tends to emphasise the existence of open site and off-site activity which appears to be almost totally absent within the recorded archaeological record of Hvar (Batovic and Chapman 1985). Significantly the recovery of off-site lithics within the Starigrad Plain by the 1987 survey team indicates the potential of the island for non site-based work.

Similar problems can be cited for later periods of occupation. Although the 4th century BC Greek colony is attested both historically and archaeologically (Kirigin forthcoming), the evidence of contemporary land-use is poorly represented and little understood. Although much valuable work had been carried out in the area prior to the 1987 survey, the site- and period-specific nature of much of the research reduces the wider utility of the data collected.

Doubtless at least part of the problem of landscape reconstruction on Hvar, as in many other Mediterranean areas, is a result of present land-use (Cherry 1983). Much of the countryside is covered with mediterranean phrygana/steppe vegetation and is characterised by low ground visibility. Massive terrace walls lead to a number of logistical problems during survey, whilst the process of terracing itself results in differential masking and destruction (Gams 1987; Shiel 1988). These problems may now be considered in more detail.

### Field methodology used by the Hvar survey project

The first priority of the Anglo-Yugoslav survey of Hvar island has been to establish reliable and quantifiable survey procedures in line with the nature of the terrain. Given the relatively unknown status of the surface archaeology of the island it was decided initially to test the nature of the archaeological data and viability of chosen techniques by surveying a district between Vrboska, on the eastern edge of the Starigrad Plain, and Starigrad (Faros) on the west (Figure 6.3). This zone was surveyed to produce a quantitative distribution of cultural material across the landscape. It was inevitable that the idiosyncratic nature of land

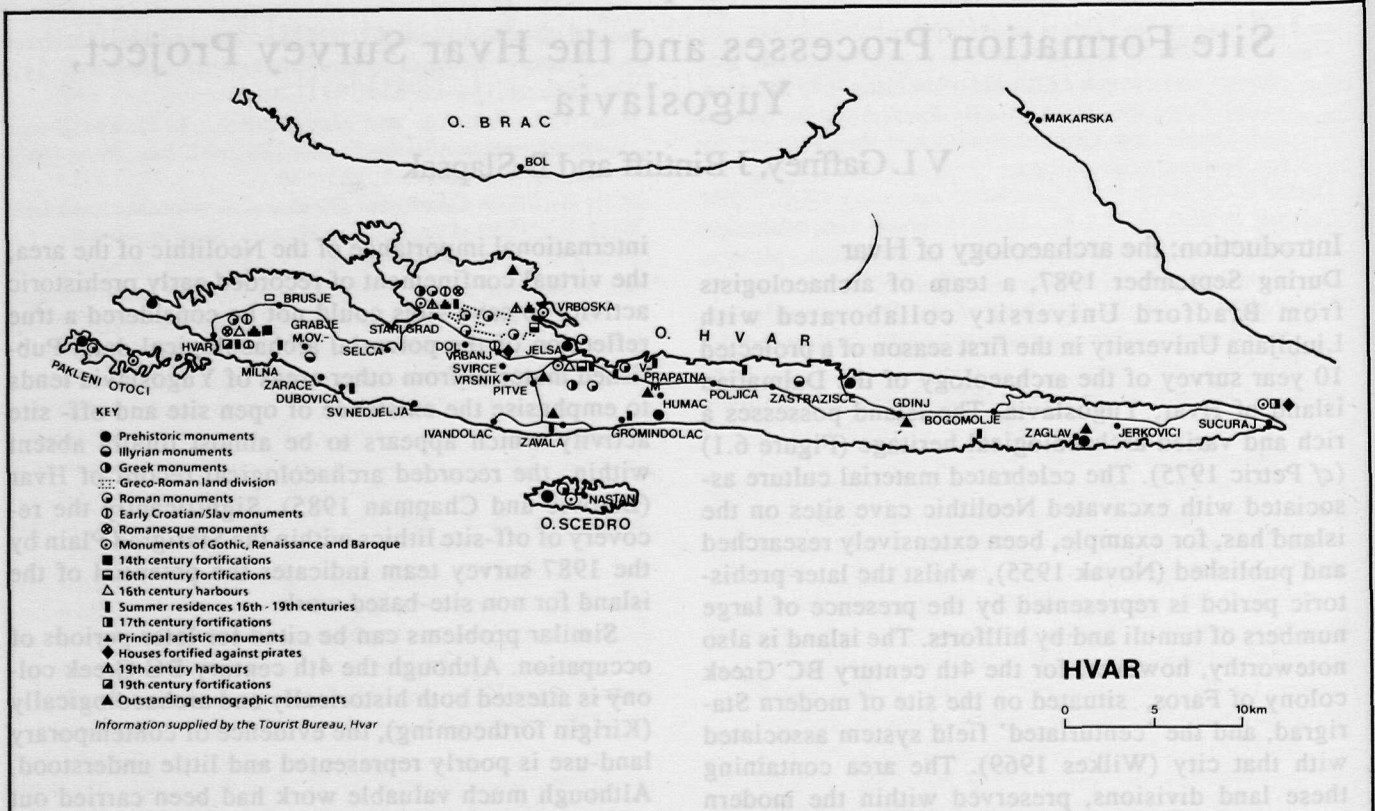


Figure 6.1 Archaeological sites on the island of Hvar, Dalmatia.

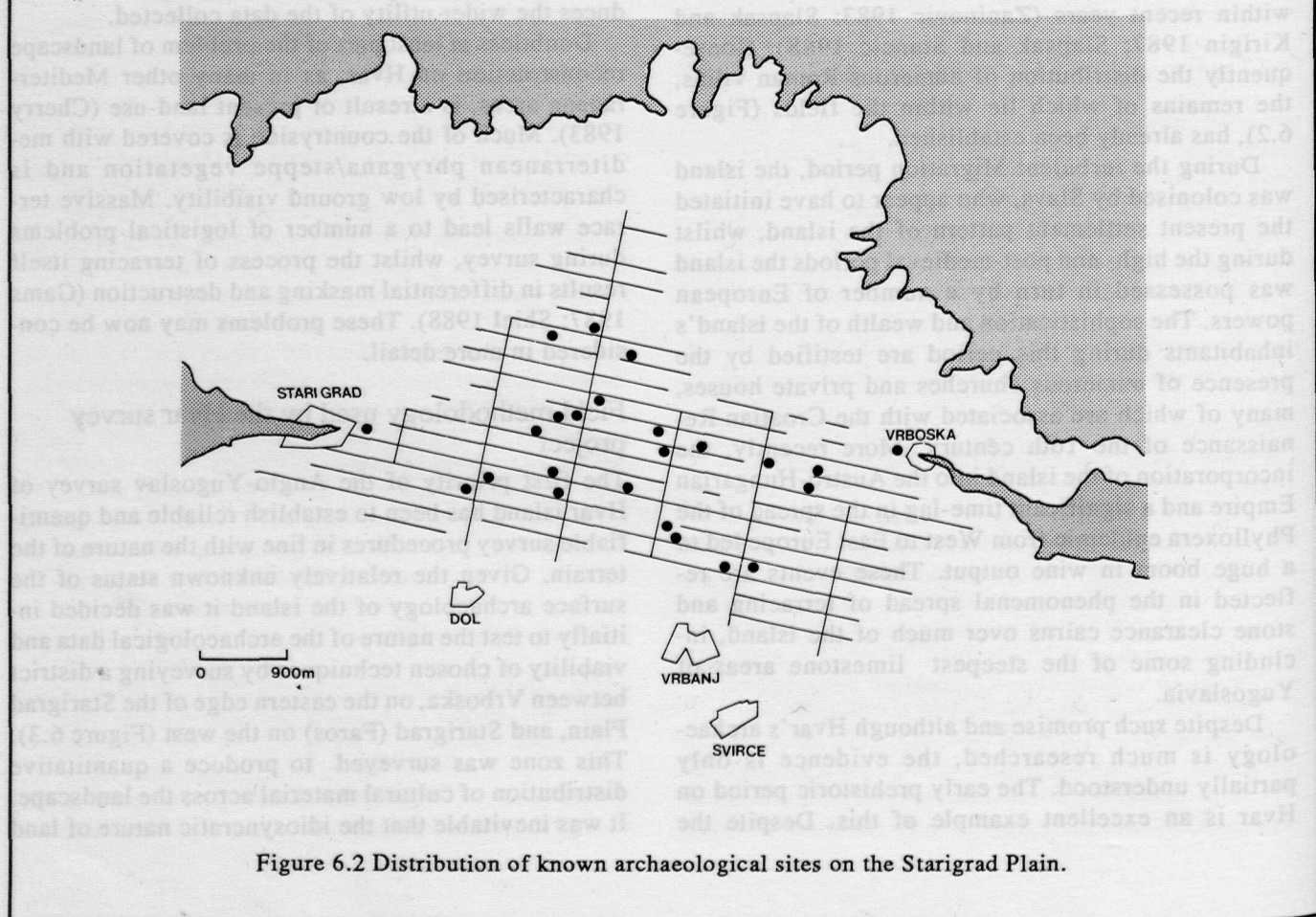


Figure 6.2 Distribution of known archaeological sites on the Starigrad Plain.



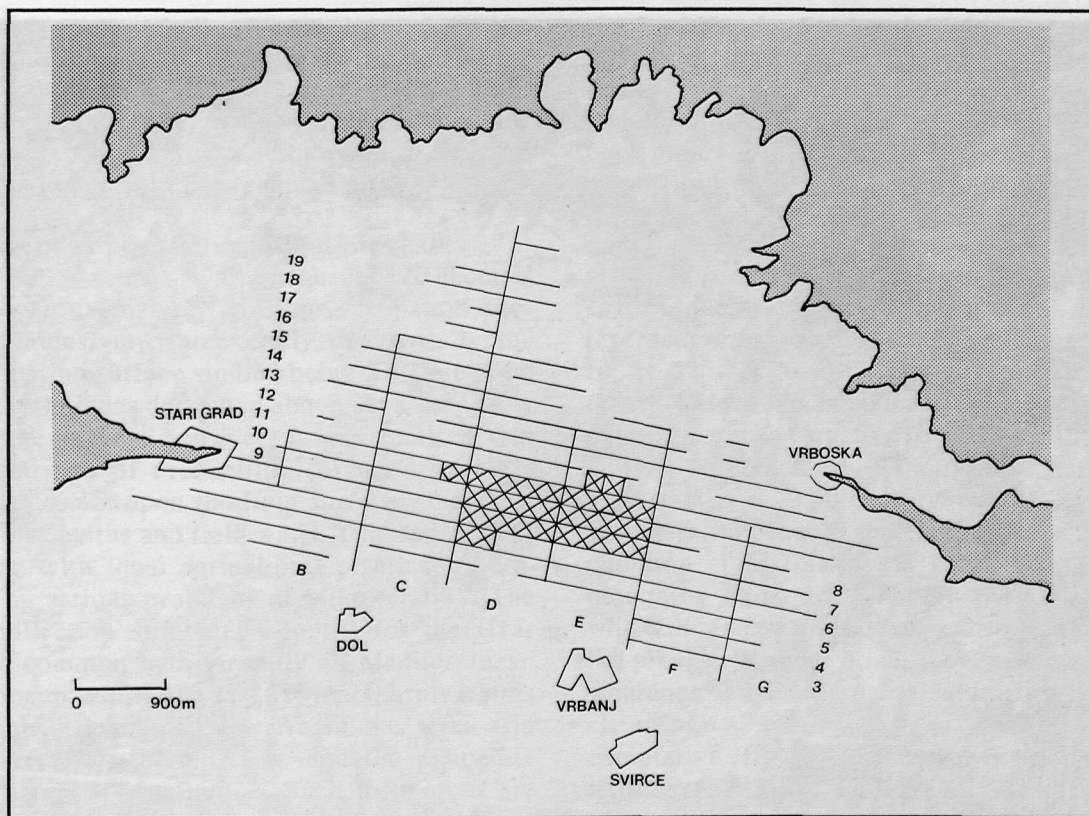


Figure 6.3 Area surveyed during the 1987 field survey season.

divisions on the Starigrad Plain has largely prescribed the nature of the extensive methodology utilised. The fossilisation of the original Greek 'centuriation' within and by a series of massive field clearance cairns and terrace walls, often up to several metres high, has ensured the survival and dominance of a regular grid based on major land divisions of 900 x 180 m and internal subdivisions of 180 x 180 m. This permanent grid is easily identified both from maps and aerial photographs and forms a convenient survey unit (Figures 6.2 - 6.4). Within each grid a series of north-south traverses are being walked at 10m intervals. Each traverse is sub-divided into four recording units of 45 m. Consequently, each 180 x 180 m square contains a total of 72 recording units. We shall term this method *extensive* surface collection.

The field methodology is in many respects a further elaboration of that developed by the Boeotia Survey in Greece (*cf* Bintliff 1985) and the Maddle Farm Project in Britain (Gaffney and Tingle 1989). Within each sub-unit all surface archaeological material is counted using a manually operated counter and all artefacts, except tile, are placed within a bag referenced to the individual 10 x 45 m collection sub-unit. The survey policy is to provide information on all periods of human activity up to, and including, the present. All material is taken back to the survey

headquarters for processing and analysis. As ground visibility is an important bias within most Mediterranean based surveys, especially those working outside intensively ploughed areas, data on ground visibility for each 45 m strip are also recorded using a scale of 1 to 10 to denote increasing visibility. All areas are surveyed using this basic technique, thus giving accurate and quantifiable information on both site-location and off-site discard across the Starigrad Plain.

Whilst providing a relatively accurate spatial distribution of material across the landscape, the above techniques do not answer all possible, or indeed relevant, archaeological questions. Therefore, when areas which appear to be associated with habitation or at least concentrated activity are encountered, a more detailed *intensive* survey is carried out. The primary aim of the second survey is to increase the artefact sample from specific locations and to provide further information on the internal structure and nature of the habitation scatter or activity form.

Intensive survey involves two distinct procedures. The first involves the total collection of all surface artefacts within a 10 x 10 m grid. This allows a rapid assessment of the extent and content of the occupation scatter and provides a greater ceramic data base, thus enhancing the likelihood of dating the scatter effectively.





Figure 6.4 Aerial photograph of Greek centuriation on the Starigrad Plain.

The second on-site survey procedure includes a sub-surface survey designed to quantify accurately the absolute density of artefacts within the topsoil. Sub-surface survey has not been widely used in Europe, although the basic principles have been appreciated for some time. Its principle value is to provide information in those areas where visibility restricts the use of traditional survey procedures. In the past it has been used in areas of woodland (Percy 1976) and sand dunes (South and Widmer 1977). Although most often used for intra-site survey (Williams 1986) the technique is now being used within a

wider landscape context (Hayes 1985; Gaffney and Tingle 1989). On Hvar, the technique is particularly attractive as large areas of land are covered by vegetation and consequently suffer from visibility problems.

Sub-surface survey on Hvar has been carried out using a "Tomos" petrol powered posthole drill. This machine, which is fitted with a 20 cm diameter bit, is used to drill small test pits up to 70 cm deep at set intervals on the same grid used for surface collection. The test holes are manually cleared and sorted, all archaeological artefacts being retained. The depth of



the test pit is measured allowing a volumetric assessment of the pit's artefact content. This procedure is useful as it allows direct comparison between the sub-surface survey and intensive collection, whilst the volumetric data allow correction to a standard volume for comparison between test pits.

#### The problem of post-depositional processes

During the 1987 season an area covering 120 hectares was surveyed extensively and four occupation sites examined intensively (three totally, one partially; the total occupation surface studied being 2.82 hectares) using the techniques described above. At a very early stage of the survey, however, it was realised that large quantities of archaeological material were being located, not upon the field surfaces, but upon the clearance cairns and field walls. This appeared to correspond with local agricultural practices, therefore raising serious problems of interpretation. The surface collection strategies adopted for the Hvar survey, in common with virtually all Mediterranean surveys begun within the last 10 years, are variants of techniques developed for use in the semi arid regions of the southern U.S.A. and the temperate regions of north-west Europe. Such techniques are implicitly designed for use within the agricultural regimes and natural weathering conditions prevalent within those regions (predominantly large ploughed arable fields or open desert / Steppe) and are characterised by grid collections which assume a direct link, via the ploughing process or semi arid weathering, between the archaeological entity and the surface distribution. In these specific environments a great deal of work has been carried out to quantify the relationship of surface and sub-surface archaeology, both by experiment (Reynolds 1982; Odell and Cowan 1987; Clark and Schofield this volume; Yorston, Gaffney and Reynolds 1990) and through empirical observation (Bintliff and Snodgrass 1988; Bowden *et al* this volume). It is as a result of such ideal conditions that survey work has been so successful within the southern States and north-west Europe in the past 15 years. There is no reason to assume, however, that such conditions should be expected outside the areas in which grid survey was developed, or that any relationship between surface and sub-surface archaeology, based upon assumptions developed in such areas, should hold true. Indeed, initial estimates from the Hvar data suggest that up to 50% of surface artefacts were being recovered from field walls and must be regarded as divorced significantly from their original spatial context.

The processes which lead to such a situation appear to result from the nature of the local geology and topography as well as the agricultural regime prac-

ticed within the Starigrad Plain. The modern field system is entirely constrained within the original Greek metrical division of 5 x 1 stadia or 900 x 180 m (Gams 1987). Within this division the land has been continuously sub-divided into a series of very small field units, many of which are terraced with massive drystone walls, a consequence of the sloping topography in the area. These walls are not, however, simply a functional response to land gradient (their scale is far in excess of such a need). Instead they represent the process of stone clearance from the fields. This is common in many limestone environments (Shiel and Chapman 1988) but is present in an extreme form on Hvar as a result of the intensive hand cultivation practised within the Starigrad Plain over the past 2,500 years. Although mechanisation is now used within the Plain, it is still a common sight to see the small tractors used for ploughing being followed by the farmer's family, who will remove any coarse soil elements exposed by the plough. Without doubt the continuing process of clearance is causing a vast modification of the archaeological record. At the time of writing, the cumulative effect of such a modification upon collection strategies and the interpretation of archaeological data was far from clear.

Given the potential scale of post-depositional change in the Hvar landscape, it seemed essential that work was carried out in order to quantify and, indeed, clarify the nature of any potential modification to the survey record. In order to achieve this, information had to be gathered concerning the wall or cairn artefact/field surface artefact ratio and upon the nature of the two assemblages.

An excellent opportunity to achieve this arose when the local authorities at Vrboska gave permission for the construction of a new road over the site of a known Roman villa at Jeze (Gaffney and Slapsak *nd*). Although the site was not within the district chosen for survey, the threat of road construction demanded that the area should be surveyed to provide information on the extent of the site. It also presented an opportunity to carry out a small scale excavation designed to provide information regarding the artefact content of the topsoil, surrounding stoneheaps and sub-surface features.

#### The case study: Villa Jeze

The large Roman villa of Jeze lies at the head of a small inlet about 100 metres to the west of the modern village of Vrboska (Figure 6.3). During the 1987 season the site was surveyed both extensively, intensively and using the sub-surface drill strategy described above. A small sondage was also excavated across a terrace wall on the proposed route of the road. This section was later extended to include a

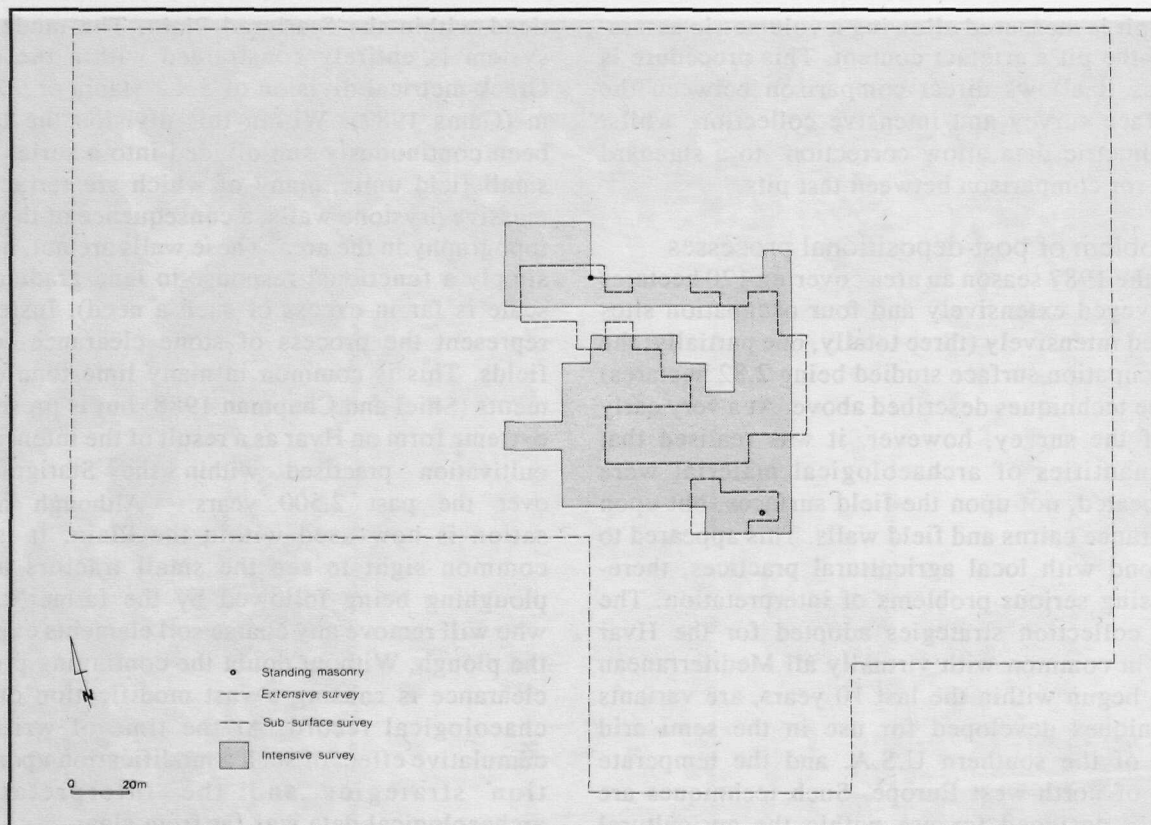


Figure 6.5 Relative positions of survey grids at the Villa Jeze.

5 x 10 m section across the terrace behind the wall and to investigate the wall's relationship with a stone built hut or "trim" which appeared to have been inserted into the terrace wall. The relative positions of the survey grids are shown in Figure 6.5, whilst Figure 6.6 shows the relationship of the extensive grid to field walls, the excavated area and surviving villa walls.

A total of 5.67 hectares was surveyed using the extensive survey technique. This produced a total of 1,531 artefacts, the majority of which were tile and pottery fragments. The distribution of this material suggested that the site lay in the middle of the extensive survey area. Comparison with visibility data (Figure 6.7) indicates that the restrictions of surface visibility prevent a reliable estimate of the probable area of the site. Consequently, visibility data has been used to correct hard data distributions using a simple correction formula devised by the Cambridge and Bradford Boeotia Survey Project (Bintliff 1985). When smoothed, the recorded artefact distribution indicates that the core spread of the site scatter extends over a minimum of 1.8 hectares. The consistent appearance of two separate artefact concentrations in all the plots of the extensive survey data is almost certainly the consequence of areas of very poor ground visibility over the centre of the site.

Analysis of the extensive survey data revealed that

no less than 45% of all material by number, was recovered from stoneheaps. Indeed, the ratio in favour of stoneheaps would probably be even greater if weight were recorded. The contrasting distributions of stoneheap and field surface data are displayed in Figures 6.9 and 6.10. The complimentary relationship between the two groups over the probable core area of the site is quite distinct. This is largely the result of poor ground visibility recorded over this area, although the association of ancient buildings, stone pile accumulation, and stone pile artefact concentrations is a noted feature of the archaeology of the Starigrad Plain. There has been a tendency in the past for the locals to use inconvenient and substantial upstanding masonry as a base for stone clearance piles. Indeed, two terrace walls at the Jeze site are known to contain structural walls, presumably of Roman date (see Figures 6.6, 6.10 and 6.11).

The data provided by extensive survey were used as the basis for the positioning of the intensive survey grid. This was placed over the centre of the surveyed area and covered an area of 0.68 hectares. A total of 4,541 artefacts was recovered from this zone. When corrected for visibility it seems likely that a total of 10,367 artefacts lies over the surface of the site core, giving a mean density of 1.52 artefacts per square metre. Again the majority of the finds were ceramic, mainly tile, dolia or amphorae, although a number of



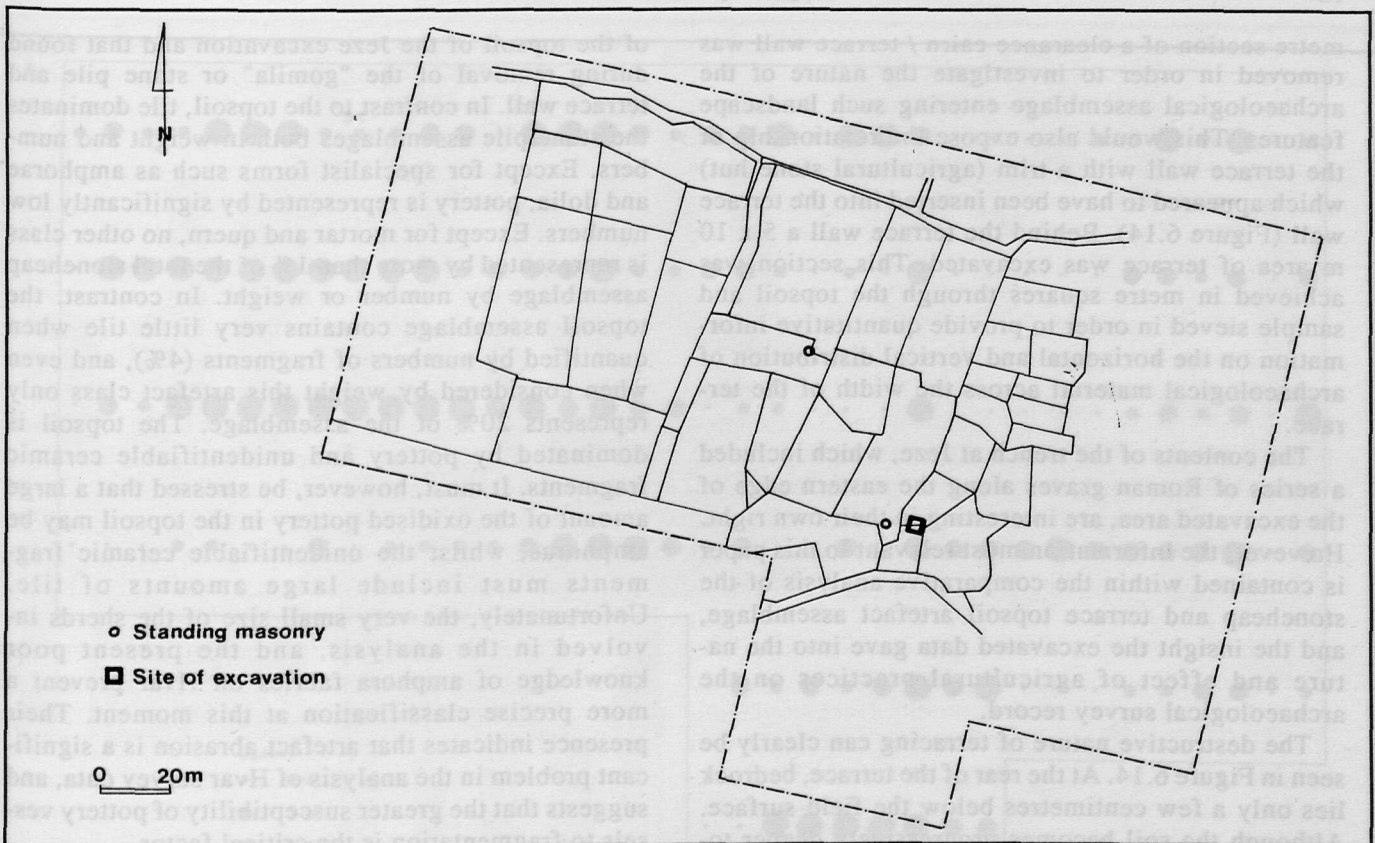


Figure 6.6 Field boundaries adjacent to the Villa Jeze excavation.

fragments of painted wall plaster and mosaic pavement, suggesting the presence of a building with some pretensions, were also recovered.

Figure 6.11 indicates the distribution of all artefacts recovered by intensive survey, the distribution tending to confirm the results of extensive collection. The core of the site appears to lie towards the south of the grid with the scatter extending both south and west, while the northern area of the grid shows a marked decline in artefact density. Corrected and smoothed data confirm the picture, but hint at further activity in the northern area of the grid.

When the intensive data are re-analysed in the form of field surface and stone heap collections, a total of 58% of the surface assemblage can be shown to be derived from the stone piles. Once again, the spatial distributions of the two data sets appear to be complementary, largely as a result of the poor ground visibility recorded in the central part of the grid (Figure 6.11 and 6.12). The artefact densities recovered from the stone piles, however, also emphasise the significance of the north western area of the grid, in contrast to the field densities, and despite the good visibility recorded in this area.

The results obtained from the sub-surface drill survey offer an opportunity to assess the reliability of the survey results in an objective way. During this survey a total of 75 boreholes was drilled every five

metres along transects spaced at ten metre intervals, and aligned on the intensive collection grid. A total of 2,445 artefacts was recovered. When considered volumetrically, figures of over 10,000 artefacts per cubic metre of soil were recorded. The majority of objects recovered were ceramic-tile, or pottery, although tesserae, glass, iron slag and mortar were also encountered. The distribution of hard data from the sub-surface survey and the volumetrically corrected distribution are given in Figure 6.13. The discrepancies between these results and those provided by intensive surface survey are considerable. The northern edge of the site, far from being devoid of major archaeological activity is shown to be a principal focus or, at the very least, a continuation of the concentration recorded further south by intensive survey. Distributions of mortar and tesserae (Figure 6.13c) also indicate that the northern area seems to be the position of what may have been a substantial building. The presence of a structural wall within a stoneheap adjacent to the northern sub-surface artefact scatter appears to confirm this.

The opportunity to excavate a small area at Jeze was an ideal chance to examine a portion of the site within the framework of the earlier survey results. The area chosen for excavation lay on the eastern edge of the principal scatter (Figure 6.6), and on the route of the proposed road. Within the trench a ten

metre section of a clearance cairn / terrace wall was removed in order to investigate the nature of the archaeological assemblage entering such landscape features. This would also expose the relationship of the terrace wall with a trim (agricultural stone hut) which appeared to have been inserted into the terrace wall (Figure 6.14). Behind the terrace wall a 5 x 10 m area of terrace was excavated. This section was achieved in metre squares through the topsoil and sample sieved in order to provide quantitative information on the horizontal and vertical distribution of archaeological material across the width of the terrace.

The contents of the trench at Jeze, which included a series of Roman graves along the eastern edge of the excavated area, are interesting in their own right. However, the information most relevant to this paper is contained within the comparative analysis of the stoneheap and terrace topsoil artefact assemblage, and the insight the excavated data gave into the nature and effect of agricultural practices on the archaeological survey record.

The destructive nature of terracing can clearly be seen in Figure 6.14. At the rear of the terrace, bedrock lies only a few centimetres below the field surface. Although the soil becomes progressively deeper towards the front of the terrace, immediately behind the terrace wall no stratified deposits survive above a depth of 120 cms. The soil within this zone of destruction is entirely mixed as a result of agricultural activity. Part of the reason for the efficiency of this agricultural destruction can be explained through reference to the nature of viticulture. One method of preparing ground for vines is through the excavation of very deep bedding pits. Several of these trenches were located during excavation and can be seen in the photograph in Figure 6.14. Repeated excavation and relocation of such features over two and a half thousand years have thoroughly homogenised the soil and guaranteed destruction of everything but the deepest archaeological deposits.

The destruction of deposits by agricultural processes is further complicated by the process of intensive field clearance mentioned above. The quantitative scale of this problem can be assessed simply by reference to the ratios of artefacts found on the stoneheaps as opposed to field surfaces during extensive and intensive survey, 48% and 56% respectively. However, the qualitative effect upon surviving assemblages can only be assessed objectively through examination of excavated assemblages. Figure 6.15 attempts this by contrasting a number of different excavated groups and separating out the artefact classes by number, weight and mean artefact weight for each group. Perhaps the most significant points can be seen in the contrast between artefact content

of the topsoil of the Jeze excavation and that found during removal of the "gomila" or stone pile and terrace wall. In contrast to the topsoil, tile dominates the stone pile assemblages both in weight and numbers. Except for specialist forms such as amphorae and dolia, pottery is represented by significantly low numbers. Except for mortar and quern, no other class is represented by more than 1% of the total stoneheap assemblage by number or weight. In contrast, the topsoil assemblage contains very little tile when quantified by numbers of fragments (4%), and even when considered by weight this artefact class only represents 20% of the assemblage. The topsoil is dominated by pottery and unidentifiable ceramic fragments. It must, however, be stressed that a large amount of the oxidised pottery in the topsoil may be amphorae, whilst the unidentifiable ceramic fragments must include large amounts of tile. Unfortunately, the very small size of the sherds involved in the analysis, and the present poor knowledge of amphora fabrics on Hvar prevent a more precise classification at this moment. Their presence indicates that artefact abrasion is a significant problem in the analysis of Hvar survey data, and suggests that the greater susceptibility of pottery vessels to fragmentation is the critical factor.

The two assemblages clearly demonstrate that the process of agricultural clearance of material from field surface to clearance cairns involves the differential sorting of artefact classes. Comparison of the mean artefact weights of material contained within the topsoil and the excavated stone heap at Jeze clearly shows that the principle criterion for sorting is by size. The mean artefact weight is 106 grams in the stone heap, but only 16 grams within the topsoil.

The point is a significant one. Archaeological literature clearly indicates that large objects tend to move to the surface of sites during cultural or agricultural disturbance (Ammerman and Feldman 1978; Baker 1978; Lewarch and O'Brien 1981) and it is these objects which will tend to be removed during agricultural clearance activities within the Hvar agricultural systems.<sup>1</sup> The process of differential sorting may be significant in the analysis of some of the Jeze survey data, especially those results produced through sub-surface survey (Figure 6.13). Here the distribution of artefacts was interpreted to indicate the possible presence of a building in the north western survey area. It is interesting, therefore, that whilst the artefact groups represented within the data set contain relatively large proportions of small building debris, for example mosaic fragments (8%), they contain relatively little ceramic material which could be positively identified as pottery. By contrast, the excavated area at Jeze, which we know does not contain any architectural evidence, contains relatively high



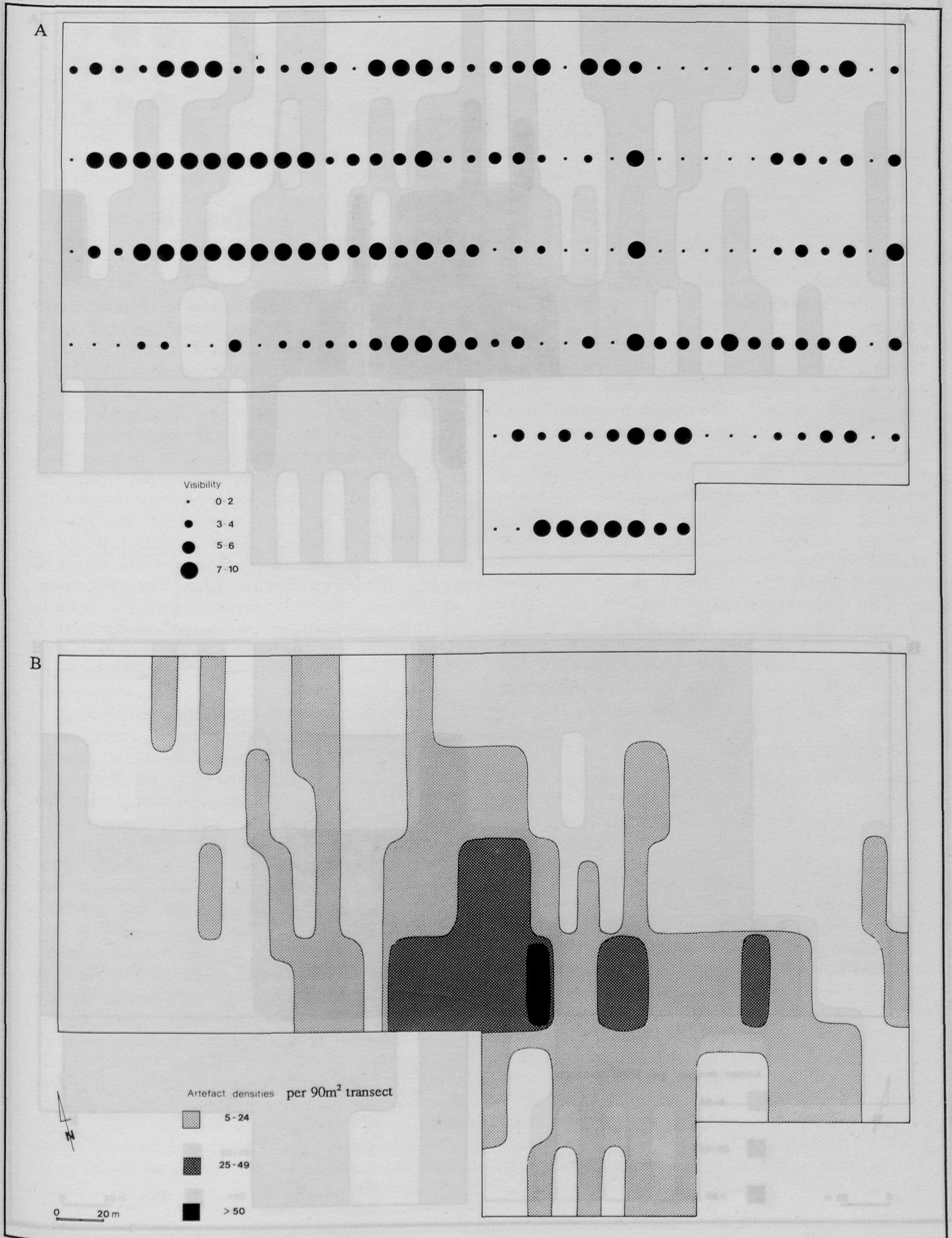


Figure 6.7 Extensive survey results. A) Visibility scores per transect. B) Raw data.

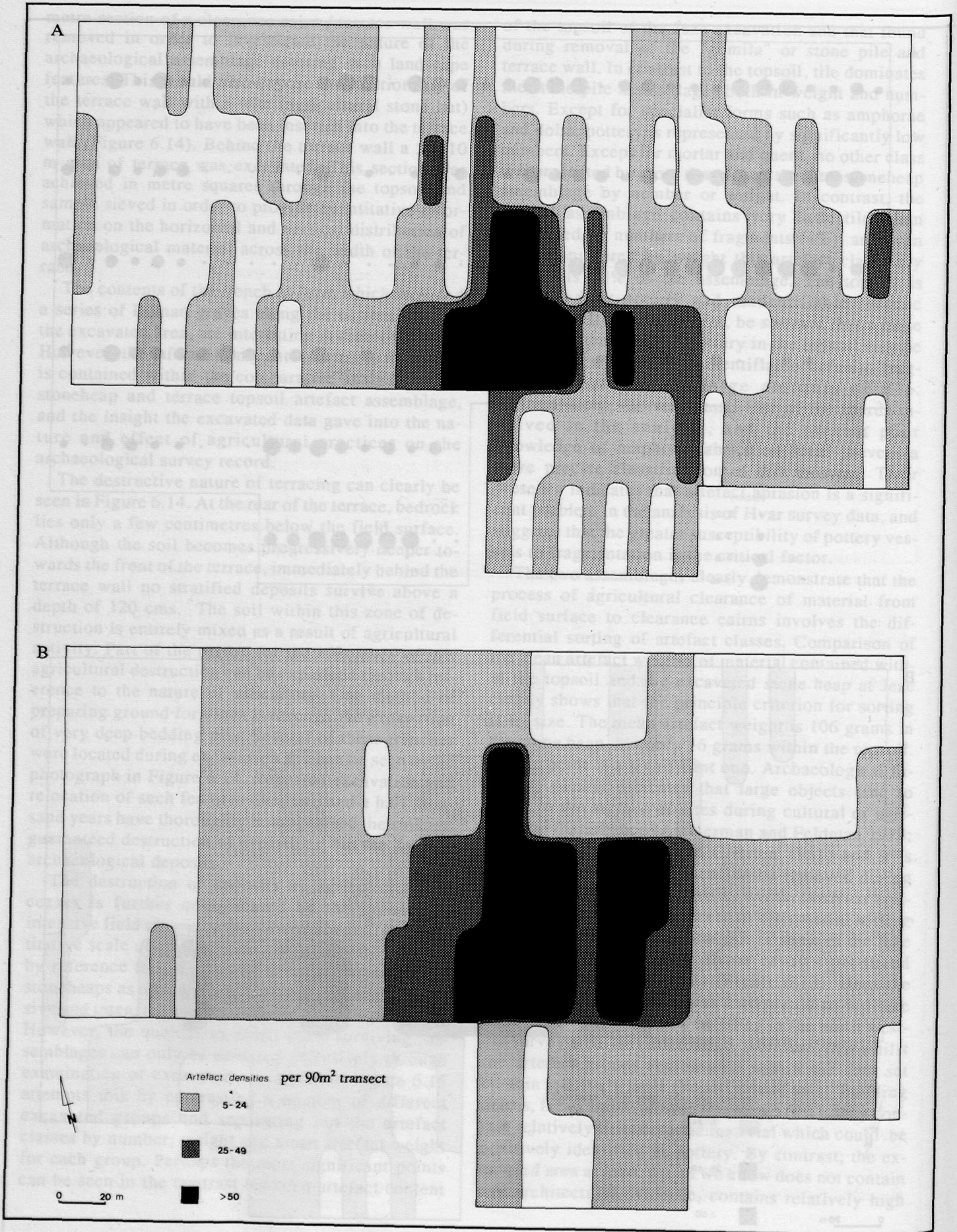


Figure 6.8 Extensive survey results. A) Data corrected for visibility. B) Corrected and smoothed data.



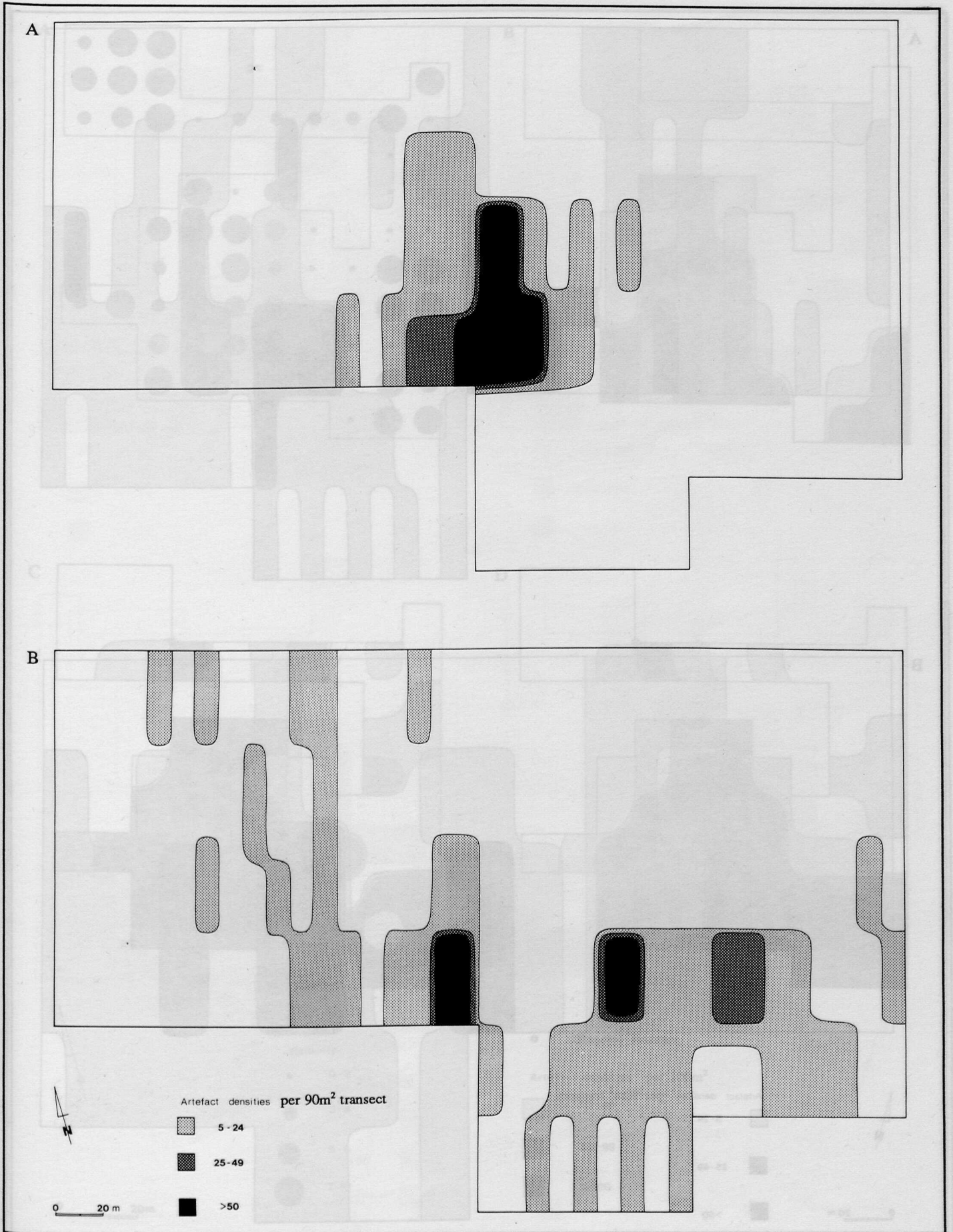


Figure 6.9 Extensive survey results. A) Artefacts collected from field clearance cairns and field boundaries. B) Artefacts collected from the field surface.

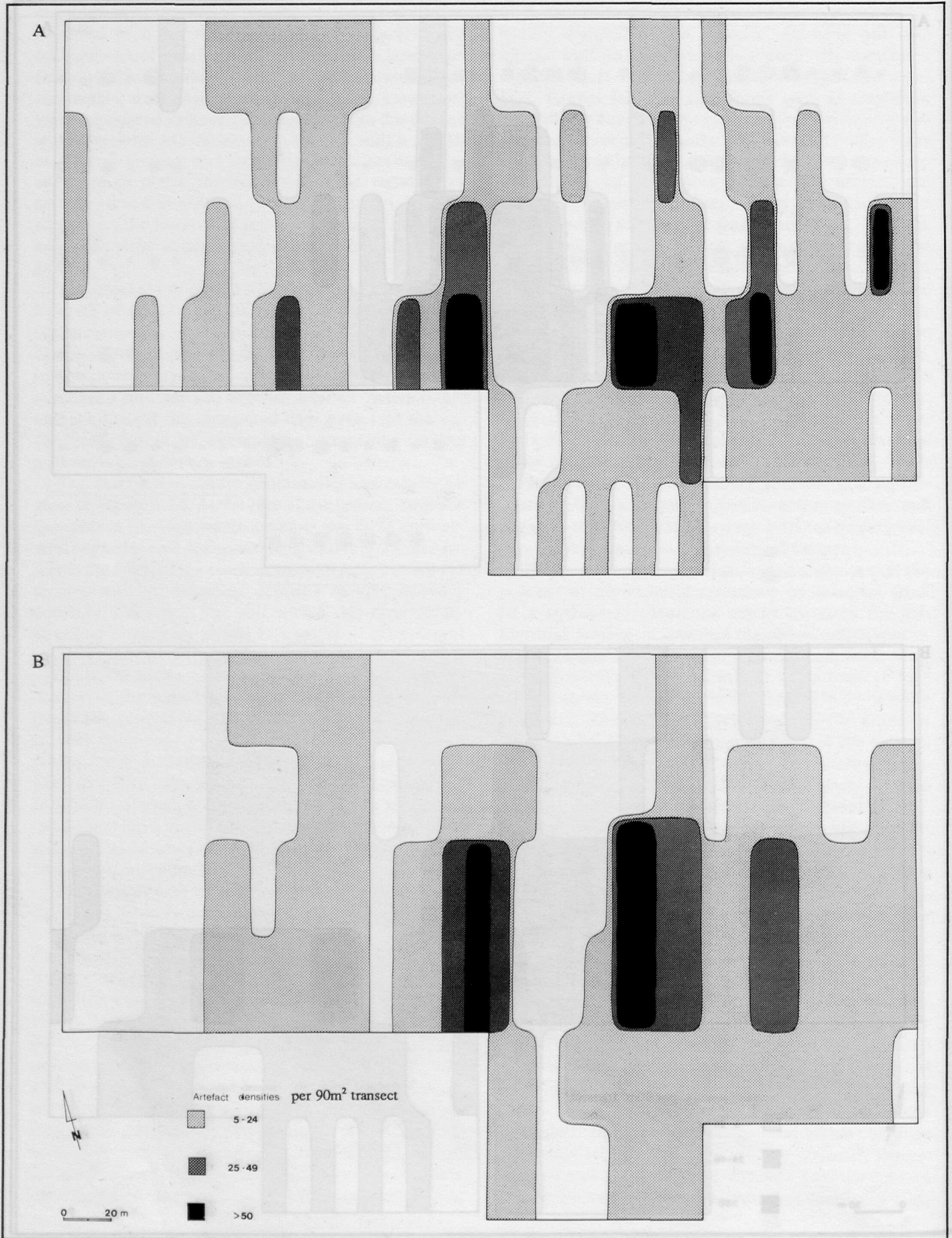


Figure 6.10 Extensive survey results. A) Field surface data corrected for visibility. B) Field surface data corrected and smoothed.



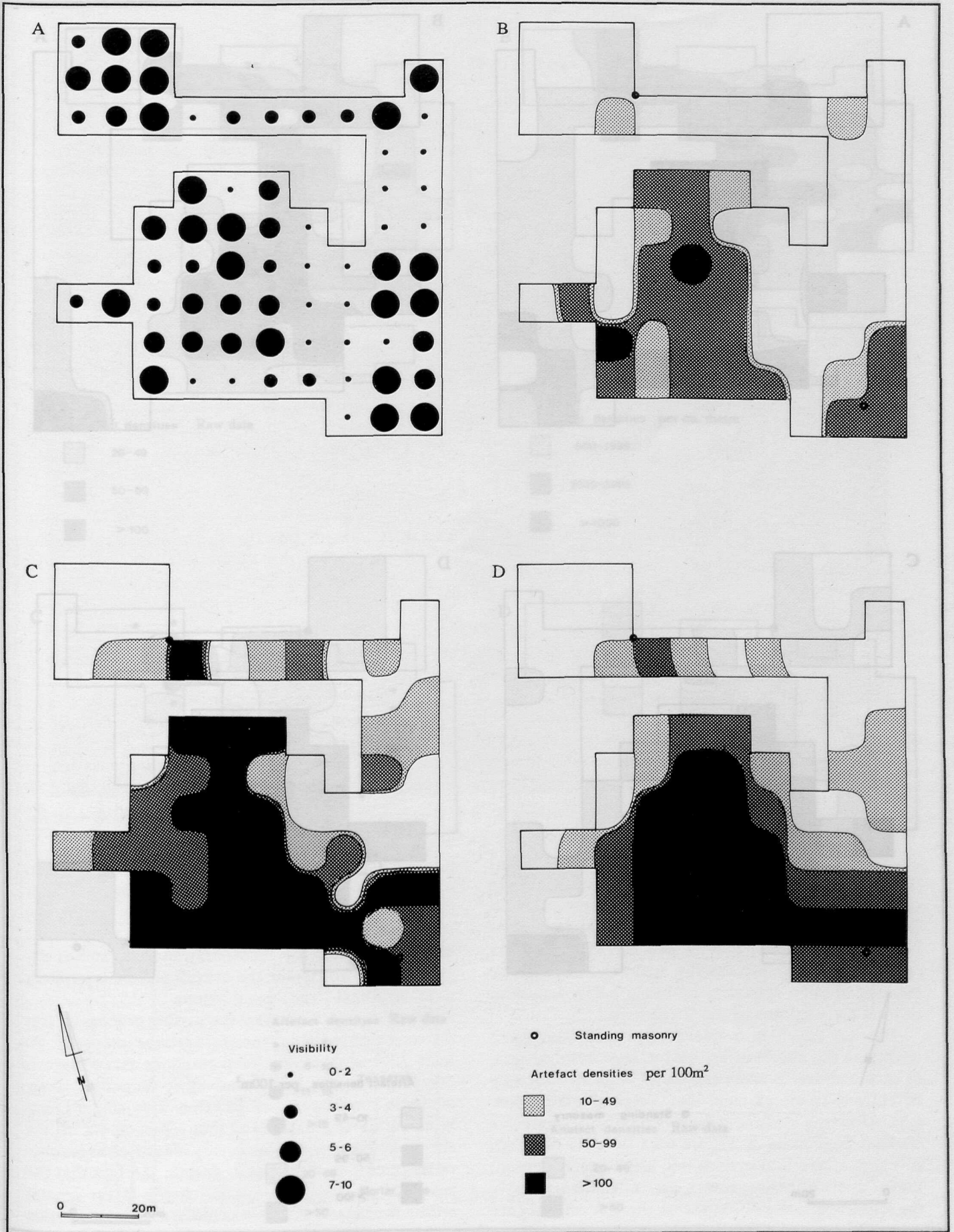


Figure 6.11 Intensive survey results. A) Visibility scores per collection grid square. B) Raw data. C) Data corrected for visibility. D) Corrected and smoothed data.

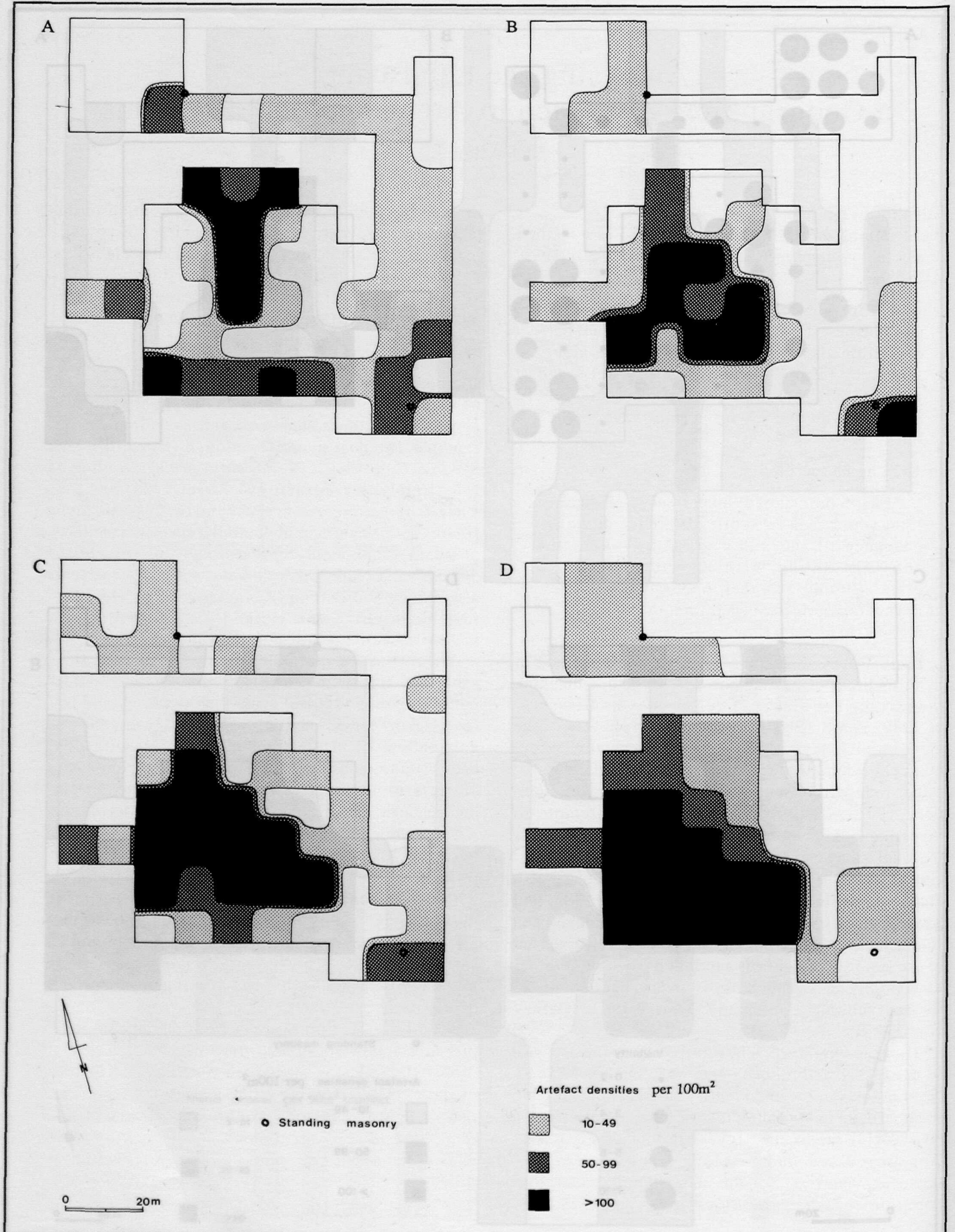


Figure 6.12 Intensive survey results. A) Artefacts collected from field clearance cairns and field boundaries. B) Artefacts collected from the field surface. C) Field surface data corrected for visibility. D) Field surface data corrected and smoothed.



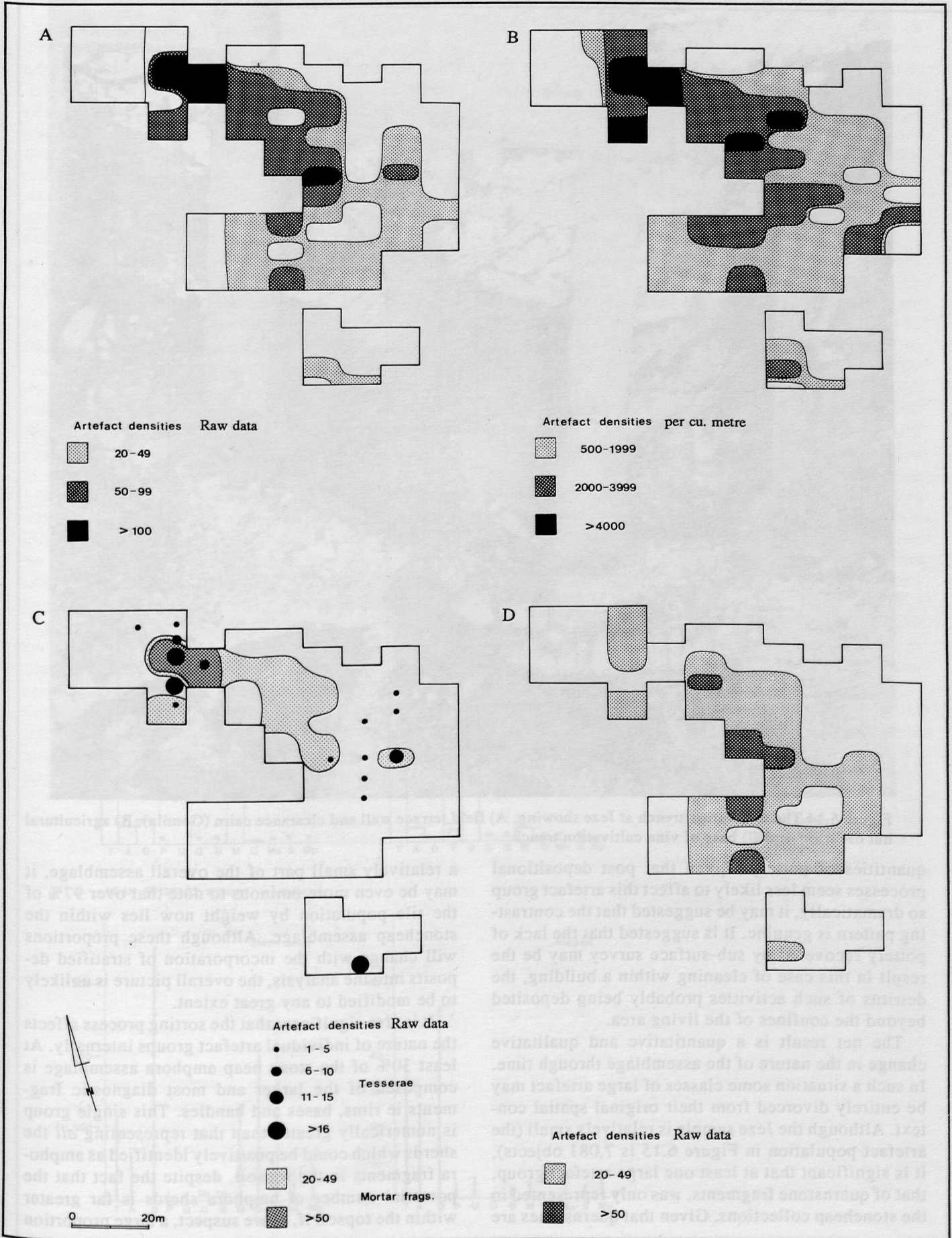


Figure 6.13 Sub-surface survey. A) Raw data. B) Artefact densities per cubic metre. C) Distribution of mortar fragments and tesserae. D) Distribution of all ceramic material.



Figure 6.14 The excavation trench at Jeze showing, A) field terrace wall and clearance cairn (Gomila), B) agricultural hut or "trim" and C) base of vine cultivation trench.

quantities of pottery. Given that post depositional processes seem less likely to affect this artefact group so dramatically, it may be suggested that the contrasting pattern is genuine. It is suggested that the lack of pottery recovered by sub-surface survey may be the result in this case of cleaning within a building, the detritus of such activities probably being deposited beyond the confines of the living area.

The net result is a quantitative and qualitative change in the nature of the assemblage through time. In such a situation some classes of large artefact may be entirely divorced from their original spatial context. Although the Jeze sample is relatively small (the artefact population in Figure 6.15 is 7,081 objects), it is significant that at least one large artefact group, that of quernstone fragments, was only represented in the stoneheap collections. Given that quernstones are

a relatively small part of the overall assemblage, it may be even more ominous to note that over 97% of the tile population by weight now lies within the stoneheap assemblage. Although these proportions will change with the incorporation of stratified deposits into the analysis, the overall picture is unlikely to be modified to any great extent.

It is also significant that the sorting process affects the nature of individual artefact groups internally. At least 30% of the stone heap amphora assemblage is composed of the larger and most diagnostic fragments ie rims, bases and handles. This single group is numerically greater than that representing *all* the sherds which could be positively identified as amphora fragments in the topsoil, despite the fact that the potential number of amphora sherds is far greater within the topsoil if, as we suspect, a large proportion



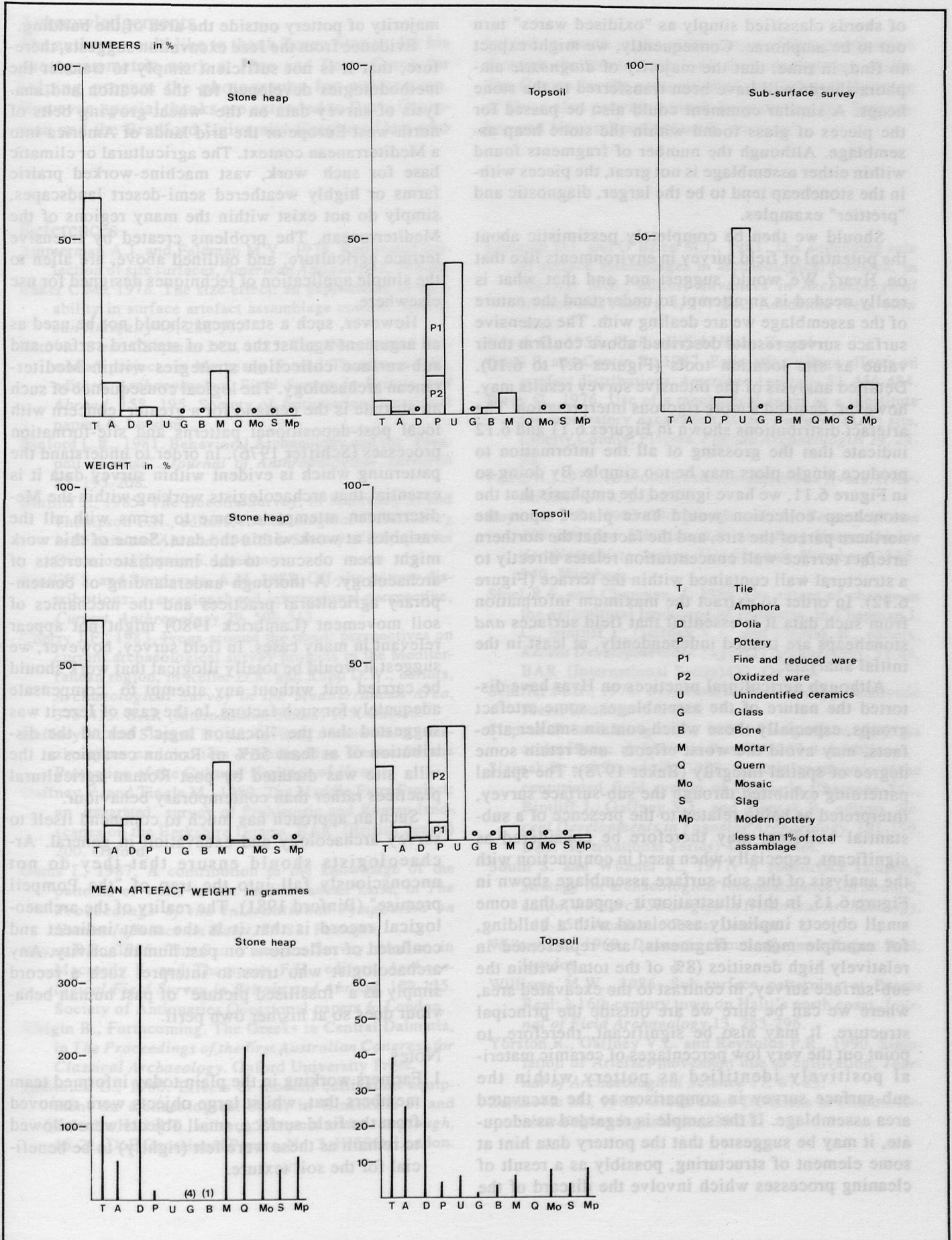


Figure 6.15 Comparison of the excavated assemblages from the stone heap (Gomila) and topsoil contexts at the Villa Jeze.

of sherds classified simply as "oxidised wares" turn out to be amphorae. Consequently, we might expect to find, in time, that the majority of *diagnostic* amphora sherds will have been transferred to the stone heaps. A similar comment could also be passed for the pieces of glass found within the stone heap assemblage. Although the number of fragments found within either assemblage is not great, the pieces within the stoneheap tend to be the larger, diagnostic and "prettier" examples.

Should we then be completely pessimistic about the potential of field survey in environments like that on Hvar? We would suggest not and that what is really needed is an attempt to understand the nature of the assemblage we are dealing with. The extensive surface survey results described above confirm their value as site location tools (Figures 6.7 to 6.10). Detailed analysis of the intensive survey results may, however, demand a more rigorous interpretation. The artefact distributions shown in Figures 6.11 and 6.12 indicate that the grossing of all the information to produce single plots may be too simple. By doing so in Figure 6.11, we have ignored the emphasis that the stoneheap collection would have placed upon the northern part of the site, and the fact that the northern artefact terrace wall concentration relates directly to a structural wall contained within the terrace (Figure 6.12). In order to extract the maximum information from such data it is essential that field surfaces *and* stoneheaps are treated independently, at least in the initial analysis.

Although agricultural practices on Hvar have distorted the nature of the assemblages, some artefact groups, especially those which contain smaller artefacts, may avoid the worst effects and retain some degree of spatial integrity (Baker 1978). The spatial patterning exhibited through the sub-surface survey, interpreted as being related to the presence of a substantial building, may therefore be considered as significant, especially when used in conjunction with the analysis of the sub-surface assemblage shown in Figure 6.15. In this illustration it appears that some small objects implicitly associated with a building, for example mosaic fragments, are represented in relatively high densities (8% of the total) within the sub-surface survey, in contrast to the excavated area, where we can be sure we are outside the principal structure. It may also be significant, therefore, to point out the very low percentages of ceramic material positively identified as pottery within the sub-surface survey in comparison to the excavated area assemblage. If the sample is regarded as adequate, it may be suggested that the pottery data hint at some element of structuring, possibly as a result of cleaning processes which involve the discard of the

majority of pottery outside the area of the building.

Evidence from the Jeze excavation suggests, therefore, that it is not sufficient simply to transfer the methodologies developed for the location and analysis of survey data on the wheat growing belts of north-west Europe or the arid lands of America into a Mediterranean context. The agricultural or climatic base for such work, vast machine-worked prairie farms or highly weathered semi-desert landscapes, simply do not exist within the many regions of the Mediterranean. The problems created by intensive terrace agriculture, and outlined above, are alien to the simple application of techniques designed for use elsewhere.

However, such a statement should not be used as an argument against the use of standard surface and sub-surface collection strategies within Mediterranean archaeology. The logical consequence of such an attitude is the demand for a greater concern with local post-depositional patterns and site-formation processes (Schiffer 1976). In order to understand the patterning which is evident within survey data it is essential that archaeologists working within the Mediterranean attempt to come to terms with all the variables at work within the data. Some of this work might seem obscure to the immediate interests of archaeology. A thorough understanding of contemporary agricultural practices and the mechanics of soil movement (Lambrick 1980) might not appear relevant in many cases. In field survey, however, we suggest it would be totally illogical that work should be carried out without any attempt to compensate adequately for such factors. In the case of Jeze it was suggested that the "location logic" behind the distribution of at least 56% of Roman ceramics at the villa site was dictated by post Roman agricultural practices rather than contemporary behaviour.

Such an approach has much to commend itself to survey archaeology and excavation in general. Archaeologists should ensure that they do not unconsciously fall into the trap of "the Pompeii premise" (Binford 1981). The reality of the archaeological record is that it is the most indirect and confused of reflections on past human activity. Any archaeologist who tries to interpret such a record simply as a "fossilised picture" of past human behaviour does so at his/her own peril.

## Notes

- 1 Farmers working in the plain today informed team members that, whilst large objects were removed from the field surface, small objects were allowed to remain as these were felt (rightly) to be beneficial for the soil texture.



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