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A DAY IN THE FIELD IS WORTH TWO IN THE LAB

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In the course of construction of a sewer outlet in September 1987, the Hunter District Water Board levelled the site of the house built for the manager of the Newcastle Copper Company's smelter in 1851. Alerted by local residents, the Heritage and Conservation Branch of the NSW Department of Environment and Planning stepped in, requiring the Water Board to undertake an archaeological investigation of the site to determine the nature and extent of the structural remains and their significance in heritage terms.

Preliminary investigation showed that although the site was of heritage significance, surviving structural remains were insufficient to justify the relocation of a major sewerage outfall. Instead the site was excavated under archaeological control to recover sufficient data to identify the buildings which formerly stood there and examine the social status of their occupants.

Documentary sources indicated that three buildings had been erected in this area: the manager's house, his detached kitchen and an unidentified building thought to have been stables for the manager's horses and for those used to transport raw materials and finished copper to and from the smelter. Excavation revealed that all that remained of what was thought to have been the house were the brick and rubble footings of one wall. The assumed kitchen site yielded one wall to a maximum height of four courses above the footings. No structural remains at all had survived on the site of the stables. This devastation was partly the result of the Water Board's activity but it was also clear that the structures had been extensively robbed for building materials probably late last century. Any interpretation based on structural evidence alone would be risky in the extreme.

Accordingly, the archaeological consultant called upon the Sydney University Centre for Historical Archaeology for analysis of the artefacts by means of the computer database

developed by the Centre within the framework of the *MINARK* computer programme, for the 1987 Regentville project which had been funded by a National Estate Grant administered by the D.E.P. (see Wilson 1988). The Burwood material provided an opportunity to test the programme against a different archaeological site of different date and locality. The outcome has more than justified the efforts that went into the programme's development and the expectations of those who funded it.

The estimation of time/cost is of vital importance in both contract work and research archaeology. Thus the figures involved are of concern to all archaeologists and to the contracting and funding authorities.

The Burwood excavation was carried out by experienced volunteers under the supervision of the consultant archaeologist who had previously laid out the area for excavation, who also dug and who later recorded the excavated site. A total of 14.5 work-days was spent on site. Of that, 2.5 days were involved in an area from which no artefacts were collected. Hence for these statistics the figure could be reduced to 12 work-days.

Some publications quote a ratio of 1:5 for field and laboratory investigation of archaeological sites. The ratio of 1:3, also often quoted, normally omits any work on artefacts. Applying this ratio to the Burwood material would allow 36 work-days for laboratory work and preparation of the report. It took much less.

The artefacts first had to be sorted, listed and bagged. As Curtis Moyer (1987) has pointed out there are no short cuts here. The time involved (the artefacts having been wet sieved on site), was 5.25 days. Data entry took 8.5 hours, say 1.25 days. Setting up the computer programme, which meant modifying the developed database to suit the Burwood material, and the subsequent computer analyses involved 13.5 hours or 2 days, but this included the production of about 50 pages of analytical tables, a complete artefact inventory and a contents list for each of the artefact storage boxes which, without a computer, would have taken a good typist more than two days, assuming that they did not go mad or resign from frustration, while analysis by hand would have taken considerably longer.

The result of these analyses was to reduce the report writing time to 12 days, which includes typing and all the running around after photocopiers, film processors and so on.

Thus we have a ratio of field days to laboratory days of 12:20.5 (5.25 + 1.25 + 2 + 12 = 20.5). The ratio of 1:5 or 1:3 has been reduced to less than 1:2 while the results of the combined structural data and artefact analysis enabled ease of interpretation not often provided.

The distribution analysis of artefact types confirmed the tentative identification of the three former structures. Artefact analysis, in this case the distribution pattern of coloured plaster, led to the conclusion that the flimsy structural remains of the manager's house represented partially an external wall and partially an internal wall. Thus the house had been L-shaped. It established also that the southern end of these footings was the remains of a garden wall which had extended from the south-east corner of the house. Artefact analysis also determined not only that the status of the occupants of the house had been high in the prevailing social hierarchy, but also that the manager's family had probably occupied the house. These results could have been obtained without a computer, but one would be loathe to do the analysis by hand. The time involved would have been prohibitive.

The Burwood investigation involved a single-occupation site which had been almost totally destroyed. The excavation, therefore, was relatively simple; hence the artefact analysis was similarly straightforward. A more difficult excavation yielding more by way of complex stratigraphy and artefacts from a variety of contexts would necessitate more detailed and sophisticated analysis. But the ratio of field to laboratory time should be about the same.

While the artefact analysis undertaken for Burwood was not exhaustive, it covered all the basic questions related to the interpretation of the site, any further work would be outside the scope of this, and most other contracts. The field to lab ratio of less than 1:2 provided by Burwood demonstrates that efficient, cost effective artefact analysis is possible, and that such analysis should not be considered as isolated from excavation. The key is the integration of data collection, processing, analysis and interpretation.

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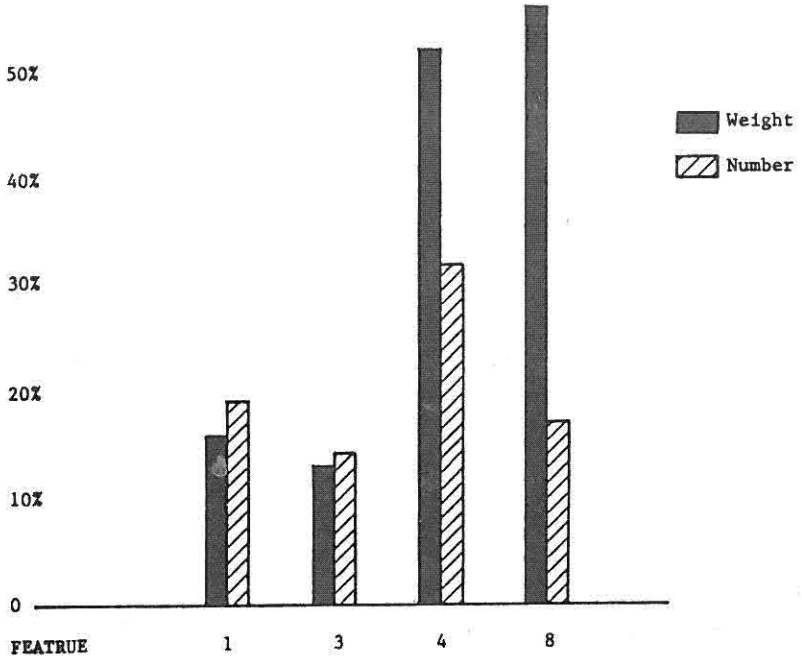
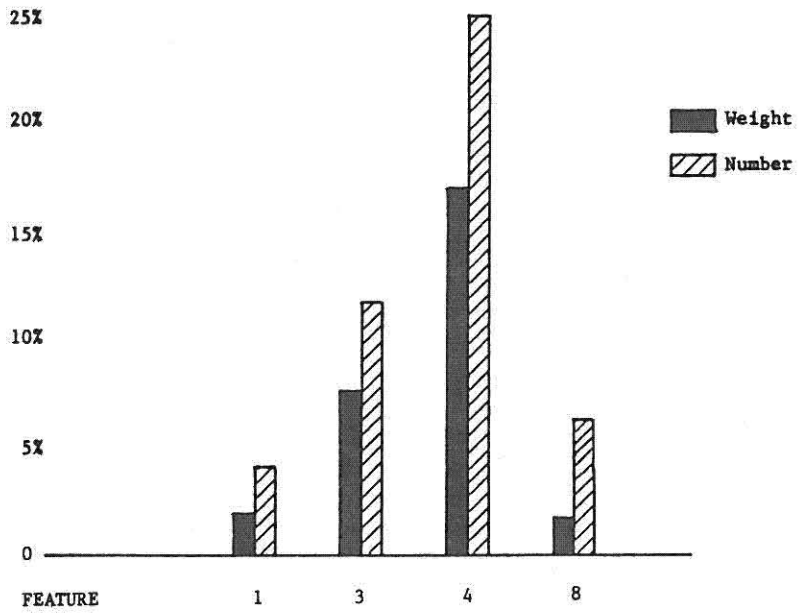


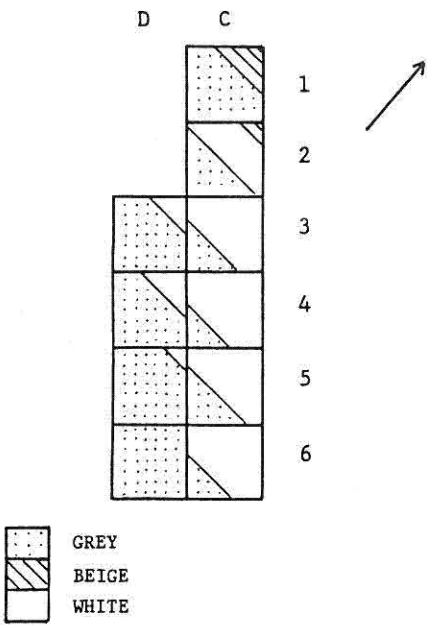
Comparison of features by ferrous metal.

Features 1 and 2 yielded low percentages by weight and slightly higher percentages by number reflecting ubiquitous nail fragments. Features 4 and 8 are obviously different. The iron in Feature 4 was sheet iron; in Feature 8 it comprised horseshoe fragments.



Comparison of features by total ceramics.

Feature 8, the stables, is again isolated.



Distribution of plaster by colour.

The line between C and D marks the surviving foorings at first thought to be of an external wall. The presence of beige plaster in C1 and 2 shows that that section of the wall was internal and that the house was L-shaped.