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PROCESSING, ANALYSIS AND INTERPRETATION IN HISTORICAL ARCHAEOLOGY.

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In discussing artefact examination, there are two stages or types of activity which need to be considered, processing and analysis. Processing artefacts is the series of operations which prepares artefacts for analysis, conservation and storage. Initial washing away of soil; air drying; rough sorting into materials and artefact types; numbering with permament standardized proveniences; cataloguing; master-listing or data entry; rebagging into clean bags or containers; and grouping by provenience, material or some other standard, are all processing steps. These are usually rather mechanical, repetitive, and highly standardized, not in order to numb the lab workers' minds, but in order to ensure uniformity of data quality, greatest efficiency in keeping up with field work, and to prevent the loss or ambiguity of field information.

The problem of washing and drying artefacts is an old and thorny one in processing procedures. It is so labour intensive, and can be so slow, that it drives lab supervisors crazy. People have tried racks under running water, soaking systems, dishwashers with modifications and fiddles, ultra-sound - none have proved successful over the long term. Ultra-sonic cleaning will detach loose glaze fragments and over-glaze gilt or paint from ceramics, as well as gilt and enamelled decoration from glass. If glass is deteriorated to some depth, ultra-sound may cause it to completely collapse. In addition, ultra-sound is not the most efficient method of removing field dirt - it is slower than a soft brush and running water, if less labour intensive. It seems that there is no improvement upon the use

of gently running water, soft toothbrushes, two human hands and two human eyes as standard equipment. Old fashioned but effective. Helps to support the hand lotion industry. Drying systems are more flexible - some kind of forced air works fine, even air with low heat, playing through racks of open screened trays. Drying too rapidly, or with any great heat, can have unhappy consequences for many types of artefacts.

Analysis, in archaeology, has two meanings. Archaeological analysis, involving feature elucidation and chronology, uses techniques such as cross-mending, vessels counts and typologies, and identification and dating of unique or unusual artefacts. It is thus a macro-level of investigation. Scientific analysis (not meant to be a pointed distinction!) involves simple chemical or even visual (such as microscopic) examination, or more complex instrumental analysis, in an attempt to define the chemical nature of a substance in order to identify or date it. It is thus a micro-level of investigation. These two types of analysis obviously articulate with each other, but are frequently performed by people with different skills, working in different labs, or even institutions.

While the interaction of processing and analysis can be crucial to the ultimate interpretation of an artefact, a feature or a site, the nature of this interaction is frequently ill or undefined. Problems may arise from the usual, and, in a project of any size, necessary separation of these two stages. When the two halves of examination are being performed separately by a processor or an analyst, communication and coordination are obviously important. Two points should be made:

1. Processing necessarily precedes analysis. Therefore, whatever information processing destroys, or fails to record, will almost certainly not be available for analysis.

2. Processing procedures frequently provide the only occasion for any artefact-by-artefact examination to be made. The analysis of a large site (or numerous sites) with innumerable artefacts sorted into dozens of features, material and typical subgroups leaves most analysis little or no time to consider any but the most 'spectacular' or 'anomalous' artefacts in any individual

detail. 'Spectacular' and 'anomalous' are in themselves frequently determined, initially, by the processors.

All of this places a large burden upon those who must process artefacts. While they must possess the knowledge and experience to recognize and record the evidence contained in the finds individually (what ware is this little sherd? should we keep this shred of fibre? is this a button or a coin?) they are also, usually, under a certain pressure of time and space. They must attempt to keep up with the flow of excavated material in process, maintain organization, and at the same time recognize, record and safely retain a limitless (and ususally ill-defined) body of evidence. Frequently they must do this with inexperienced or volunteer staffs and poor facilities.

We are all familiar enough with the problems. The solutions have yet to be arrived at. The crucial issue is answering the question 'what constitutes evidence?' This is a question which must arise anew at each site, with each archaeologist. As exciting and fascinating as detective stories revolving around a single obscure artefact may be (vide Mr. Noel Hume), the fact is that most archaeological analysis of 18th and 19th century sites revolves around ceramic seration according to type and chronology, along with historic documentation, and of course the site's features themselves. I think it is very important that any other sources of evidence be evaluated to some extent beforehand and some decisions made as to how much weight to assign them.

The fact is that there is no standardized approach to recovering a body of evidence which is as varied as daily life itself. Therefore, the maximum recovery of evidence requires the maximum divergence from standardized processing. And yet the efficiency and accuracy of processing depends upon its standardization, usually, if not invariably. Dilemma! What is needed are realistic compromises and clear communication establishing what types of evidence are most important in each case, and establishing them, moreover, in an overt and predetermined manner. Considered rationally, what is known or expected of the site based on its general environmental situation, similar or adjacent sites, or historical research should determine some of these analytical goals or strategies. However, less abstract

factors, such as the personal interests, abilities or experience of individual staff members, or of the archaeologist or analyst working on the report, and, eventually, the resources in time, money and space of the project as a whole, will have an equally important impact upon these decisions. Frequently analytical strategies which might seem to be rationally indicated are simply not possible due to the nature of the available resources. At some point, before excavation, analytical goals and techniques which are appropriate and realistic should be defined. The fact is that the conceivable limits of scientific (and, ultimately, of archaeological) analysis will always exceed the resources available to support them. Therefore, choices will have to be made as to what evidence one can in fact afford to record and analyse, and the decisions reached can then be worked into the standardized processing system. To make the processors responsible for both defining and retaining evidence cannot be a workable system.

Nothing is more frustrating (to quote a personal example) than to spend days with a seed atlas identifying seed cases preserved in copper alloy corrosion products, hours of tedium at the microscope and time lost doing other things, and to realize after the fact that, although everyone found the results 'fascinating', it in fact made not a whit of difference to the interpretation of the feature or the site. If the analyst is not interested in the information yielded, or cannot logically relate it to other information or conclusions, or hasn't the time to consider it in its full context, why should the processor spend valuable time recognizing, recording and safely retaining it? (There are very good reasons why the processor should still do it, but you get my point!) Therefore, in artefact examination, what constitutes evidence is determined not only by what can be analysed from a practical point of view, but what is conceptually important in the context of the individual site and its current interpretation.

The latest developments in artefact processing depend, as above, upon what type of analysis one is processing the artefacts in preparation for; thus, these developments change as fashions and technical advances cause analytical techniques to change. All one can say is that processing should not destroy the evidence, however defined, wherever possible