RECORDING ARCHAEOLOGICAL EXCAVATIONS.

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Those who attended last year's conference and heard John Wilcock and Paul Buckland discuss their system may wonder why I am suggesting another scheme for recording excavations with the help of a computer. However the aims of the two systems are not the same and their users are likely to be quite different. The 'Wilcock' system made use of a teletype and transferred the information over a GPO line to the computer at Keele and the facilities of his PLUTARCH package were then available to analyse the information. This implies a moderately large excavation with funds to hire the GPO line, if not the teletype as well, and to employ at least one teletype operator. I am concerned with the small excavation which finds such facilities beyond its grasp. In particular, I am concerned with the situation which so often arises in rescue archaeology.

For example, consider the building of a new road, one section of which crosses a particular county. There will be a number of sites in the line of this road. Some of them may have been partially excavated in the past and records from these excavations may be available. Others will only be known as cropmarks on air photographs. There will be some personnel available to excavate and record these, usually a group of amateurs possibly a local society or volunteers collected by the county archaeologist. They may be led by one or more professional archaeologists or they may have been keen enough to have trained themselves during their holidays from normal work. My use of the term 'amateur' is in no way disparaging - I simply mean someone who earns his or her living at some other job. They may be very skilled and very experienced or they may be complete beginners. The factor they all have in common is that their time is limited and the effort involved in an excavation may represent a very real sacrifice in other respects - for example three weeks attendance at a dig may well mean no holiday away from home with the rest of the family. The amazing thing is that we do continue to get these groups of amateur archaeologists playing a very large part in rescue archaeology.

So we have our new road and we have our groups of amateur archaeologists. What happens next? The first threatened site is available for two to three weeks - it may be a large field full of interesting cropmarks. Ideally it should be excavated over a matter of years with a much larger work force digging it full time. However in three weeks time it will all be destroyed, so the group select a likely looking spot and explore as much as possible. They fill several site notebooks, collect quantities of finds, mainly fragments of indeterminate coarse pottery, and make careful drawings and photographs of the features they uncover. All this work may reach an extremely high standard. Then, when the time is up, the contractors move in and start building. By this time another site is available and those who still have time to devote to archaeology must move on to this and repeat the same heroic struggle. Eventually the construction moves on to the next county and another similar group takes over.

By this time, all the members are utterly exhausted and even those who have not used up all their allocation of holidays for a long time to come have probably used up their reserves of good will and understanding on the part of family and friends and must now devote some time to them.

So what becomes of the results of the excavation? The finds are probably cleaned, packed together and donated to the local museum, which is often very under-staffed and can only stow the box of finds away in a cupboard somewhere. Any valuable or interesting pieces will receive better attention, but not the bulk of the material. The plans and site notebooks may also be stored in the museum, or they may be retained by the excavator in the hope that someday he may have time and strength to prepare a report for publication. But as long as there is a continual demand for the excavation of threatened sites and only a limited number of people with the skill to direct an excavation, the majority of such digs will remain unpublished. Worse than this, the information is, at present, completely lost until the site has been published. This is where the computer system can help. It cannot possibly write the report - computers are very fast and very accurate but they have absolutely zero intelligence. The role it can fill is to make available some of the information from the site before the full report is published. And if, as is too often the case, the report remains unfinished at the excavator's death, at least some of the data is generally available. Instead of a single copy of the plans and site notebooks, which the owner is probably unwilling to part with, even when you can locate who has them, the copy of the information on the computer is known to be at some university or data centre and a copy can quickly be produced whenever anyone wishes to refer to it. This copy may be a full list of all finds and features uncovered, together with some plans or sections of the site - a typical example is given in figs. 1 and 2. This is the obvious presentation but time may show that others are more useful.

From the excavator's point of view, the only difference the system will make to him is that his records must be written on coding sheets instead of in notebooks. These coding sheets must be sent to the computer centre, who will use them to produce a copy on punched cards and then return them. So he will be left with a folder of coding sheets instead of his notebooks. It will also be necessary to print the records in block capitals and to write legibly so that the copy punched on cards is correct, but I should think easily read entries would be an advantage in any case.

The computer system is arranged in a simple hierarchy. The main unit is the "site". This is made up of "feature"s - e.g. layers, pits, post-holes, walls, etc. Each 'find' is associated with some feature, and to make this apply to all cases, we assume that the first feature on any site is the layer of unstratified topsoil and this contains all unstratified finds. In future, it must also be possible to have features within features, e.g. layers within a large pit, but this is a matter of programming and will not alter the method of recording.

Once the information has been copied into the computer, it can be accessed in many ways. The simplest is a listing of features 1,2,3 etc., with their associated finds. However, the whole site need not be listed, specified features may be chosen, all finds may be listed, grouped together in types or only selected types need be listed. We may also choose to list the full

description and list of finds for those features which have a particular type of find associated with it. And listings are not the only form of output. The Richborough report contained a histogram of coin types, showing the number found from each time period. This represented a great deal of work, but when records are stored on the computer it is trivial, and could become standard output for any site producing a large enough number of finds.

Plans and diagrams can also be produced. Fig. 2 gives an idea of the standard of such plans, though of course the more measurements recorded for each feature, the better the resulting plan. In recording, it must be remembered that the computer will join the points recorded by straight lines, and enough points should be taken to make this a reasonable representation.

At present, the system is being developed and tested. When it is working, I shall make it generally available to all excavators who are interested. For each site, I shall require a brief description of the position and background of the site and the reasons for excavation. This should include the name by which the site will be known and the O.S. map reference. It will be printed out to accompany any other output from the computer. During the excavation, the finds and features will be recorded on the forms provided and during or immediately after the excavation, they will be copied onto punched cards and fed into the computer. The excavator will keep the sheets and may also keep the punched cards, while the copy of the information on magnetic tape or disc will remain in the computer centre. The excavator will also receive a complete listing of the site, a plan of the site and sections drawn through chosen points. He may also request certain histograms and summaries.

The system and forms of output are deliberately kept as simple as possible and it is my hope that the excavator, with archaeological training and no computing or mathematical background will be able to understand the output and feel at home with results. I shall try to present them so clearly that they make the job of writing the final report easier and so possible in the available time.

One final bonus will become available in the future. Once a site is stored on the computer, any new site can easily be compared with it and so the problem of selecting other similar sites with which to compare the present one can be partly carried out by the computer. This will become more useful as the collection of such sites becomes greater.

I shall be glad to hear from any arcnaeologist who may be interested in the system and will gladly provide a full description of the data sheets and method of recording to anyone who requests this. Examples of output for various sites will become available as I continue to develop and test the system.

FIGURE 1 LISTING OF FEATURE.

FEATURE NO. 4 FROM SITE EXC1 IN COUNTY SA.
TYPE NUMBER 06.FINAL STATE EXCAVATED. TREATMENT RXDXEM
5 VALUES OF POSITION. 4 COMPUTER WORDS OF TEXT.

POST HOLE CUT THROUGH LAYER 2.

COORDINATES.		
X	Y	Z
23.	15.	0.
24.	18.	0.
26.	19.	0.
27.	17.	0.
25.	14.	0.

1 ASSOCIATED FINDS.

FIND NUMBER 1 FROM FEATURE 4. FIND SPOT - 25. 15. 0.
TYPE 1805. DIMENSIONS
FRAGMENT OF COARSE GREY POTTERY FOUND IN FILL OF POST HOLE.

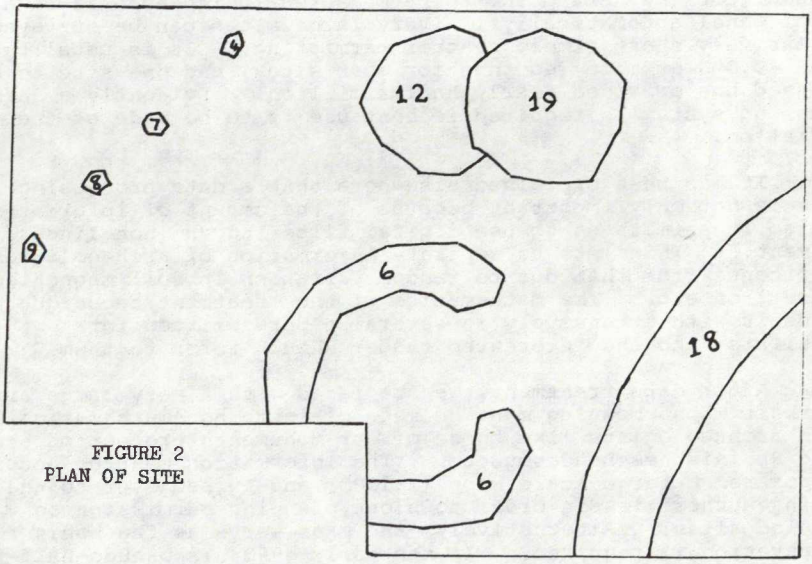

FIGURE 2
PLAN OF SITE