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THE ROLE OF THE SOIL SCIENTIST IN RESCUE ARCHAEOLOGY

INTRODUCTION

Every archaeological site contains evidence about ancient evironments. Extraction and interpretation of as much of this evidence as possible is the main aim of Environmental Archaeology. Scientists from many disciplines - botanists, zoologists, geographers, soil scientists, etc - work together in order to obtain information about landscape history - biological remains such as pollen, seeds, molluscs, animal bones, wood, charcoal and insects are recovered from archaeological deposits and studied with this end in view.

Although it is often possible to obtain lists of identified material recovered from archaeological deposits, the interpretation of this information, from an ecological point of view, is often difficult (especially for urban sites). At present there is a fundamental lack of basic research into how biological materials are incorporated into deposits and their subsequent preservation.

The soil scientist can gain valuable information about pedogenesis from archaeological sites, especially where buried soils are preserved, and can often aid excavators in the archaeological interpretation of a given site.

RESCUE ARCHAEOLOGY

Rescue archaeology implies excavation of sites which are threatened by destruction. Such destruction is usually imminent; hence the excavations are carried out as repidly as possible. This poses problems for the soil scientist which are rarely encountered elsewhere. A soil surveyor expects to make soil maps which are relevant for many years. A research worker sampling a particular site assumes that, should he/she wish to return in a few years time to take further samples, the site will be more or less as it was on the initial visit. The archaeological soil scientist deals with different types of deposits which do not have the permanency of those studied by his agricultural counterpart.

Archaeological sites are constantly endangered by the activities of modern society and certain natural phenomena. Agencies such as deep ploughing of farmland, road

building, urban development, gravel and mineral extraction, artificial drainage and natural erosion maintain a constant threat of destruction to surviving evidence of Man's activities in the past in Great Britain.

Each year many rescue excavations are carried out and a significant number of these extend for periods of several months. Despite attempts at long-term planning, many of these sites have to be excavated with some urgency. Since each of these sites may supply information about past environments it is clear that the number of scientists working in environmental archaeology, particularly soil scientists, is too small to deal adequately with this potential.

The soil scientist working in rescue archaeology is therefore faced with the followi problems:-

1. It is impossible to study all the archaeological sites excavated and therefore some selection must be made. The dilemma of dealing with perhaps two sites a year in depth as opposed to twenty sites a year, probably barely adequately, is extremely difficult to resolve.

2. The soil scientist has no margin of error: The excavation must be visited at exactly the right moment before the feature of interest has been destroyed. There is usually little opportunity to take further samples later as the site will have been obliterated.

3. As there are few archaeological soil scientists, the fundamental research required to enable better interpretation of archaeological site investigations is, to a large extent, left undone. Consequently evolution of a specific theoretical approach to soil studies in archaeology is slow and much informatio continues to be lost, particularly from those sites where conventional techniques cannot easily be applied. Example of topics which might be examined are :- 1. the build-up of deposits on urban sites, 2. silting of pits and ditches, 3. the way in which biological materials are incorporated into archaeological deposits, 4. preservation of biological materials in soil, 5. post-burial changes in buried soils, 6. geochemical indicators of man's activities.

The experimental earthworks at Overton Down, Wiltshire (Jewell and Dimbleby, 1966; Crabtree, 1971), and Wareham, Dorset (Evans and Limbrey, 1974) have been built in order to enable some of these problems to be studied. However, there is a need for more detailed and, perhaps, short-term experimental work as well.

SUMMARY

Rescue archaeology offers a potential source of information for soil scientists which, as yet, has not been adequately realised. It is essential that basic research is carried out into some of the neglected, but fundamental, aspects of environmental archaeology, although this would require more fieldworkers, especially soil scientists, than are at present available.

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