

Environmental archaeology at the Institute: the early years

Joan Sheldon

In the 1998/99 issue of Archaeology International, Geoffrey Dimbleby reflected on the period, from 1964 to 1979, when he was head of the Institute's former Department of Human Environment. Here Joan Sheldon (Fig. 1), who joined the Institute in 1948 as assistant to Frederick Zeuner, recalls how environmental archaeology developed during her 35 years on the staff.

Environmental archaeology encompasses so many aspects of the human past that it is difficult to define precisely. Let's just say that it is what environmental archaeologists do. Its diversity is reflected in the changes in the headship of the environmental department at the Institute, which occurred during my 35 years there. When I joined in 1948 it was as assistant to Frederick Zeuner (Fig. 2) in what was then known as the Department of Environmental Archaeology.¹ The teaching reflected his broad scientific training in geology, palaeontology and zoology, which he applied to the study of past environments and the dating of the early history of man.²

After Zeuner's death in 1963, and with a change of title to Department of Human Environment, the focus of research was redirected by Geoffrey Dimbleby to human

influences on the British landscape in the postglacial period, although we continued to cover the earlier periods in lectures. Pollen analysis and the study of other plant remains assumed a new importance in the department. After Geoff's retirement in 1979 and with the appointment of David Harris to the chair, the focus broadened, rather than shifted, to include social factors and to take a comparative world view of past human subsistence. These varied aspects of the subject illustrate how diverse research in environmental archaeology can be, and it is this diversity that made my academic life at the Institute so rewarding. Yet, when I joined the department, the subject was almost unknown. The only bones thought worthy of interest on archaeological sites were human; animal bones usually ended up on the spoil heaps. Pollen analysis was the prerogative of botany departments; soils were used



Figure 2 Frederick Zeuner leading a field excursion in the 1940s or 1950s; location unknown.

mainly as markers between glacial and archaeological deposits, and we struggled to find methods of dating geological strata and their archaeological content. Then, in 1951, came radiocarbon dating and life was never the same again.

In those early years the department became much involved in the question of where farming first appeared. The two sites contending for this distinction were Jericho (in Jordan), then being excavated by Kathleen Kenyon, who was on the staff of the Institute, and Jarmo (in Syria), whose excavator was Robert Braidwood of the Oriental Institute in Chicago. As a colleague of Kenyon, Zeuner visited the Jericho excavations on many occasions. In those days, before the complications of calibration were recognized, radiocarbon dates were taken at face value, and the main discussion revolved around what criteria signified farming and domestication. If leg bones of sheep and goats showed evidence of tethering, did this signify domestication or only taming? Some of these discussions seem rather naïve in the light of subsequent research, but they were part of an awakening interest at this time among archaeologists of all periods in what environmental research could tell them about the conditions under which people lived in the past. In the department we were suddenly inundated with requests to analyze soil samples, examine animal bones and pronounce on anything found that did not appear to be manmade. In those days, funding was short and we were allowed to use any fees we charged to buy much-needed equipment. In this way we acquired our first pH meter, a grinding machine for making thin sections of soils, and decent microscopes.

Zeuner was himself concerned not only



Figure 1 Joan Sheldon (left) with Gordon Childe and an Institute student on a field excursion in 1956, during a visit to the West Kennet Neolithic chambered tomb near Avebury, Wiltshire, then being excavated by Richard Atkinson and Stuart Piggott. The pile of fresh chalk in the background is spoil from the excavation, and the mechanical device on which Childe is sitting was used to move heavy sarsen stones.



Figure 3 Part of the Institute's laboratory at St John's Lodge, Regent's Park, in the late 1940s or early 1950s, showing two students seated in front of two of the models: a straight-tusked elephant (centre) and a (smaller) aurochs (left).

with domesticated animals;³ he also studied ice-age faunas. They had long been known from skeletal remains, cave paintings and occasional finds of preserved bodies of mammoths, but such animals had never been modelled in the round. At the Institute we were fortunate in having a superb artist, Marjorie Maitland Howard, who not only modelled some of the animals but also painted dioramas showing them in their glacial, interglacial and post-glacial environments (Figs 3–5).⁴ Zeuner's extensive knowledge of the continental European literature and his ability to read the original languages enabled him to compare the evidence from many sites and come to well founded conclusions. Some aspects of the research led to much discussion, such as how the back of the woolly rhinoceros and the carriage of its head should be represented. With the help of extended lunch hours spent studying modern rhinos in nearby London Zoo, it was decided that the head should be shown at the angle required to feed on low shrubs rather than grass and that the back should be slightly concave (Fig. 4). A more difficult problem was the head of the giant deer (often referred to as the Irish elk; Fig. 5). The remains of this (now extinct) post-glacial ruminant were found mainly in bogs in Ireland, and its enormous antlers, weighing up to 40 kg, were often the only parts recovered. We wondered whether the neck muscles would have allowed the antlers to be supported, as in red deer, in an upright position, or whether this would have resulted in the animals sometimes overbalancing as they leaned forwards to drink, thus accounting for so many remains being found in wetland sites.

A great feature of Zeuner's teaching lay

in its practical approach. One of my first tasks was to build up the collection of geological specimens so that the students could see the original materials from which stone artefacts were made. In August–September 1948 the International Geological Congress met in London and its members were invited to visit the Institute to see an exhibition mounted for the occasion.⁵ We were able to put on a display of artefacts from such notable Palaeolithic sites as those discovered in the Olduvai Gorge in Kenya, as well as stone tools from India, and French Upper Palaeolithic material, including casts of bone and ivory tools. One of my other tasks was to make up displays of different soil profiles for classroom demonstrations, and we also arranged day trips for the field study of the



Figure 4 Diorama of woolly rhinoceroses on a ledge above the Vézère River in the Dordogne region of France during the most recent glaciation; painted in sepia and white by Marjorie Maitland Howard (reproduced from plate 25b in the 4th edition of *Dating the past*, 1958).

geomorphology and soils of southern England (Fig. 6). On these outings there was always a stop at an exposure of a suitable soil profile. Here Zeuner's clear explanation of chemical processes in the soil would culminate in a call for the bottle of hydrochloric acid to demonstrate the fizz on the chalk bedrock, and its decline upwards through the soil. The students did their best to persuade me to substitute water for the acid in this experiment, but Frederick had a very definite feeling for the respect owed to a professor and I thought he might be too ruffled by this hoax.

Zeuner's love of teaching was self-evident in his lecturing abilities, which Grace Simpson recalled in last year's issue of *AI*.⁶ Although I attended all his lectures over 15 years, they never became stale because he rarely spoke from notes and frequently illustrated the points he was making from new sites that he had recently visited. He had a phenomenal memory, which was evident in the writing of his papers and books. We would sit with his desk covered in field notes and maps, and he would dictate the paper, which, when I had deciphered my scribbled notes and typed them, would often be the final draft, requiring little alteration. This procedure I found very daunting, because when I started I had no archaeological knowledge, and little science. Fortunately, Frederick had endless patience for someone who wanted to learn, and in due course I was awarded the postgraduate diploma in prehistoric archaeology, helped by some additional archaeological teaching from Gordon Childe and Kathleen Kenyon.

When Geoffrey Dimbleby succeeded Zeuner in 1964, he introduced a new approach to field teaching. He found day trips, which inevitably involved lengthy journeys from London, frustrating, and he replaced them with a week's field course at the end of the summer term. We were now teaching undergraduates,⁷ not the

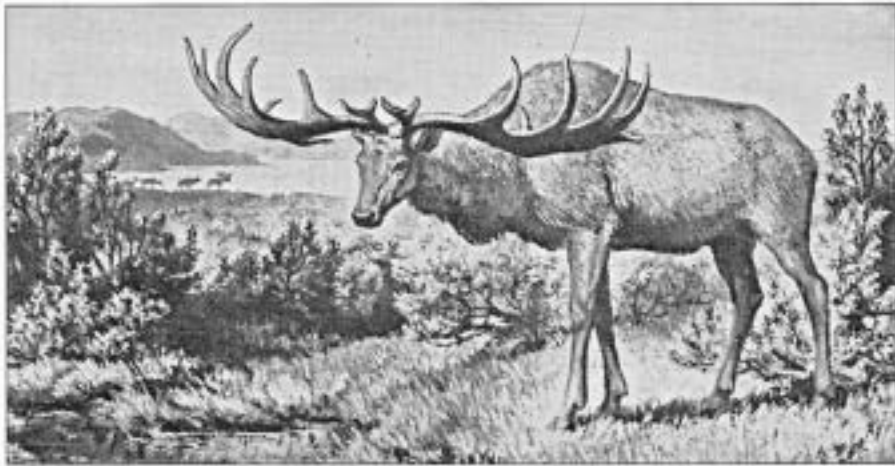


Figure 5 Diorama of giant deer (*Megaloceros giganteus*) beside a lake in Ireland during the early postglacial period; painted by Marjorie Maitland Howard (reproduced from plate 24b in the 4th edition of *Dating the past* (1958)).

mature postgraduates of the early years, and, in order to show the relevance of environmental archaeology to budding archaeologists, we persuaded our archaeological colleagues to accompany us.⁸ Geoff's favourite area was the North York Moors, which he knew well, but we also went to Sussex and the Prescelly area in Pembrokeshire. With the addition to the team of Ken Thomas, who joined the staff of the department in December 1973, we could now integrate the evidence from snails and insects into the environmental pictures we were building for the students.

I feel I was very fortunate to be associated with the Institute during a time when such progress was being made in environmental archaeology, but some aspects don't change. I can remember, when geophysical prospecting methods were first being applied to excavated sites, an

eminent archaeologist assuring us that excavation would soon prove unnecessary as we could wave machines over the ground and see the structures below without disturbing the soil. From recent television programmes I see that such machines still tend to pick up the field drains and miss the archaeological ditches, just as they did in my young days.

Notes

1. It was previously known as the Department of Geochronology; see p. 19 in the *University of London Institute of Archaeology Third Annual Report*, 1946, 1947.
2. Evident in his two complementary books that dealt, respectively, with the geological and archaeological evidence: *The Pleistocene period: its climate, chronology and faunal successions* (London: Ray Society, 1945) and *Dating the past: an introduction to geochronology* (London:

Hutchinson, 1946, with later editions published by Methuen in 1950, 1952 and 1958).

3. As reflected in his final book, *A history of domesticated animals*, published by Hutchinson in the year of his death, 1963.
4. Work on the reconstruction of animals and environments "contemporary with early man" (as Zeuner expressed it) by means of models and dioramas was begun in 1939 and resumed in 1945. It was carried out in Zeuner's laboratory by Marjorie Maitland Howard, in collaboration with Ione Gedyde of the Institute's Repair Department (forerunner of the later Conservation Department), and was intended as a teaching collection for his course "Environment and early man". He described some of the first reconstructions in three papers: *Proceedings of the Linnean Society of London* (155, 245–51, 1944, and 156, 183–95, 1945), *Proceedings of the Geologists' Association* (55, 118–19, 1944), and the dioramas were published in successive editions of *Dating the past* (n. 2 above); see also the third, fourth and fifth *University of London Institute of Archaeology Annual Reports*, published in 1947, 1948, 1949.
5. See F. E. Zeuner, *The exhibition of Stone Age and Pleistocene geology from the Cape to Britain* (Occasional Paper 9, University of London Institute of Archaeology, 1948).
6. See Grace Simpson's recollections in *Archaeology International* 2000/2001, 9–10.
7. The Institute began teaching BA and BSc honours degrees in archaeology in, respectively, 1968 and 1969; see the *University of London Institute of Archaeology Annual Reports* for 1968–69 (p. 5) and 1969–70 (p. 10).
8. The archaeologists from the Institute who came on these field courses included Professor W. F. Grimes, who was Director of the Institute from 1956 to 1973, Mark Hassall, Roy Hodson and John Wilkes.



Figure 6 Zeuner (centre, with sunglasses) leading a field excursion in 1952, at the site of Barnfield Pit, Swanscombe, Kent. The group includes Arthur ApSimon, Paul Ashbee and his future wife Richmal Disher, Margaret Bennett Clark, Jay Butler, Patricia Christie, Ian Cornwall, Elizabeth Eales, Patricia Griffiths (née Wardle), Henry Hodges, Fazal Ahmed Khan, David Kelly, Edward Pyddoke, Joan Sheldon, Isobel Smith, Roger Summers, Charles Thomas, Nicholas Thomas and, probably, Marjorie Maitland Howard. (The editor thanks all those who have helped to identify members of the group and encourages anyone who may recognize others to let him know.)