

Notes and News

Rye and ergot in the ancient history of Scotland

PLATES II–III

W. E. Boyd, of the Department of Botany, University of Glasgow, has written for us a comprehensive note on the presence of rye and ergot in Scottish prehistory and early history.

The recent discovery of a carbonized fossil sclerotium of the fungus *Claviceps* sp. ('ergot') at the later bronze age site at Myrehead, Falkirk (NS 969 775) (Barclay, 1983; Barclay & Fairweather, 1984) has raised some interesting points. Although much of the discussion in Barclay and Fairweather (1984) concerns the hallucinogenic, medicinal and health effects that the digestion of ergot may have upon the human body, perhaps of greater importance is their comment that ergot has possibly been overlooked amongst the remains from archaeological sites. Recent finds of fossilized ergot at Banchory (described below) emphasize this, and bring to attention the question of ergot's presence or absence in Scottish prehistory.

Ergot. Ergot is the resting stage of a fungus which infests members of the Gramineae family (grasses) (PLS II–III). Although over 600 species are known to be hosts to this fungus, without doubt the most important is *Secale cereale* L. (rye) (Bove, 1970) which it infects more vigorously than it does other plants. The importance of this lies in rye's role as one of the dominant cereal crops in North and Central Europe, and consequently the infection of rye has an important influence on the quality of food and health throughout large areas of Europe. This was especially so in the past, when rye was often the major cereal crop, when quality control was less stringent, and when communities relied largely upon their own crops and could not resort to importing better quality grain when their own was infected. Numerous cases of ergot poisoning epidemics are reported throughout European medieval history (Barger, 1931; Bove, 1970), the most recent in Britain being in 1928 (Moore, 1966). There is a rich body of folk lore and ecclesiastical myth surrounding the outbreaks of ergotism and its supposed causes and cures. The purpose of this

note, however, is not to discuss this aspect, but to examine the archaeological evidence for the presence of ergot in Scotland.

The distribution of rye in Scottish prehistory. Since rye is the principal host of ergot, it is worth looking at its present and past distribution in Scotland. Rye has the advantage over the other main European cereals in that it tolerates poor conditions of soil and climate, and is in particular well suited to growing on light dry soils and in areas of cool and dry climate, where the other cereals grow less well. Although this explains its widespread presence in Europe, in north Britain the climatic and soil conditions favour the cultivation of wheat, barley and oats (Bland, 1971) and it is only in the least suitable locations for other cereal cultivation that rye was cultivated in Scotland.

During the Middle Ages, in England, rye was cultivated only on poorer marginal lands and eaten by the poor, although the straw probably had more widespread use, and it was possibly more commonly cultivated during Viking and Anglo-Saxon times (Godwin, 1975, 415). By the 12th century, rye straw was still widely used (Bland, 1971). The replaced by wheat as agricultural techniques improved (Barger, 1931). Nevertheless, by the end of the 18th century, rye bread still formed the cereal food of an estimated one-seventh of the British population, and until the beginning of this century, rye straw was still widely used (Bland, 1970). The historical evidence in Scotland is less clear, and although there is scant mention of rye in the medieval rentals, it was apparently grown on a small scale in Central Scotland in the early 14th century, and perhaps more widely throughout Southern Scotland around the 12th century (Duncan, 1975). Although Duncan (1975) suggests that rye was virtually absent in North Scotland, there are records of rye cultivation on poor land and sandy soils in the Western isles and elsewhere in North Scotland by the 18th century (Martin, 1716).

In general, however, the climate and soil conditions probably always favoured the cultivation of

barley, oats, and perhaps in Southern Scotland, wheat, in preference to rye. Certainly by the beginning of this century rye was rarely cultivated (Handley, 1953), and if so, only on a small scale: Barger comments in 1931 (p. 2) that 'I have been informed that, owing to the difficulty of importing straw, small plots of rye are now being grown in Scottish farms for thatching purposes'. At present rye cultivation in Britain is restricted to the poorest soils in the dry south-east of England (Bland, 1970, 178; Godwin, 1975, 415). In this context it is interesting to note that there are four archaeological sites in Scotland where rye is convincingly recorded:

Myrehead, Falkirk (NS 969775); Later Bronze Age; 21 carbonised grains; (Barclay, 1983 and Barclay & Fairweather, 1984).

Castlecary, Stirlingshire (NS 790782); Roman; 4 carbonised grains; Jessen & Helbaek, 1944 p. 25.

Forth and Clyde Canal, Stirlingshire (approx. NS 8179); Roman; 1 carbonised grain; Jessen & Helbaek, 1944 p. 25.

Perth (centre NO 115235); Medieval; 10 carbonised grains, Fraser, 1981; possible testa fragments, Robinson, forthcoming.

The rye at Myrehead is interpreted as reflecting an intrusive weed element, rather than serious cultivation of rye (Barclay & Fairweather, 1984). The finds from the other three sites, however, probably represent cultivated rye, although the Roman rye possibly was imported (Helbaek, 1971; Godwin, 1975 414; cf Chambers & Jones, 1984) either from abroad or from further south and/or east in Britain.

From over one hundred archaeological sites in Scotland at which cereal remains are recorded, only medieval Perth provides physical evidence for possible local rye cultivation (Fraser, 1981; Robinson, forthcoming).

It appears therefore, that although rye had a prehistoric and historic presence in Scotland, its cultivation was probably limited. However, it must not be forgotten that *Claviceps* species infest other grasses, including the other three major cereals cultivated in Britain, and it is in this context that some recent finds from a site near Banchory, Deeside are particularly interesting.

Ergot and barley at Nethermills Farm, near Banchory. The site at Nethermills Farm (NJ 583615) is a mesolithic probable occupation site, overlain by a medieval rig-and-furrow field system (Kenworthy, in prep.) Other than charcoal and hazel nut

fragments, there are only a few carbonized plant remains. These tend to be in poor condition of preservation, and are scattered throughout the site. They are regarded as post-mesolithic, probably medieval, in age, and as a whole, the plant microfossil spectrum is limited (Table 1), resembling a typical carbonized cereal-processing waste assemblage (Hillman, 1981; Boyd, 1982-83; Robinson, forthcoming). Of particular interest here is the presence of ergot and barley, presumably representing infested barley, a condition which is perfectly likely to have occurred in medieval and earlier times.

The presence of ergot fragments has allowed detailed examination of both modern and fossil sclerotia (the descriptions will be presented in the full excavation report (Kenworthy, in prep.)). Although ergot sclerotia are broadly variable in morphology, one of the most notable characteristics of their morphology is that the carbonized sclerotia can bear a strong resemblance to poorly-preserved fossilized grain, and that it is only under closer examination at high-power magnification that the obvious difference in texture, both internal and external, are noticeable. In particular, there is no evidence for the presence of distinctive cells as in cereal grains (Körber-Grohne & Piening, 1980). This was borne out by examination of five fragments recovered from the excavation at Nethermills Farm (PLS II-III) and considered to be ergot. These all bear, to a greater or lesser extent, a resemblance to poorly-preserved carbonized cereal grain, and it is only after careful examination under high-power magnification that the textural characteristics are recognized.

Discussion and conclusion. The prehistoric and historic distribution of rye cultivation was limited in Scotland, as may also have been the presence of ergot. However, ergot need not only be associated with rye, and given Scotland's damp climate, suitable for the growth of ergot and its infestation of cereals (Bove, 1970), it is probable that the oats and, especially the barley, cultivated widely in Scotland throughout the last few millennia may have been, at times, infested by the fungus *Claviceps*, perhaps resulting in local out-breaks of ergot poisoning. Indeed the ergot recorded by Barclay and Fairweather at Myrehead may represent the infestation of the local barley or wheat crop, and it is highly probable that the ergot at Nethermills Farm represents barley infestation.

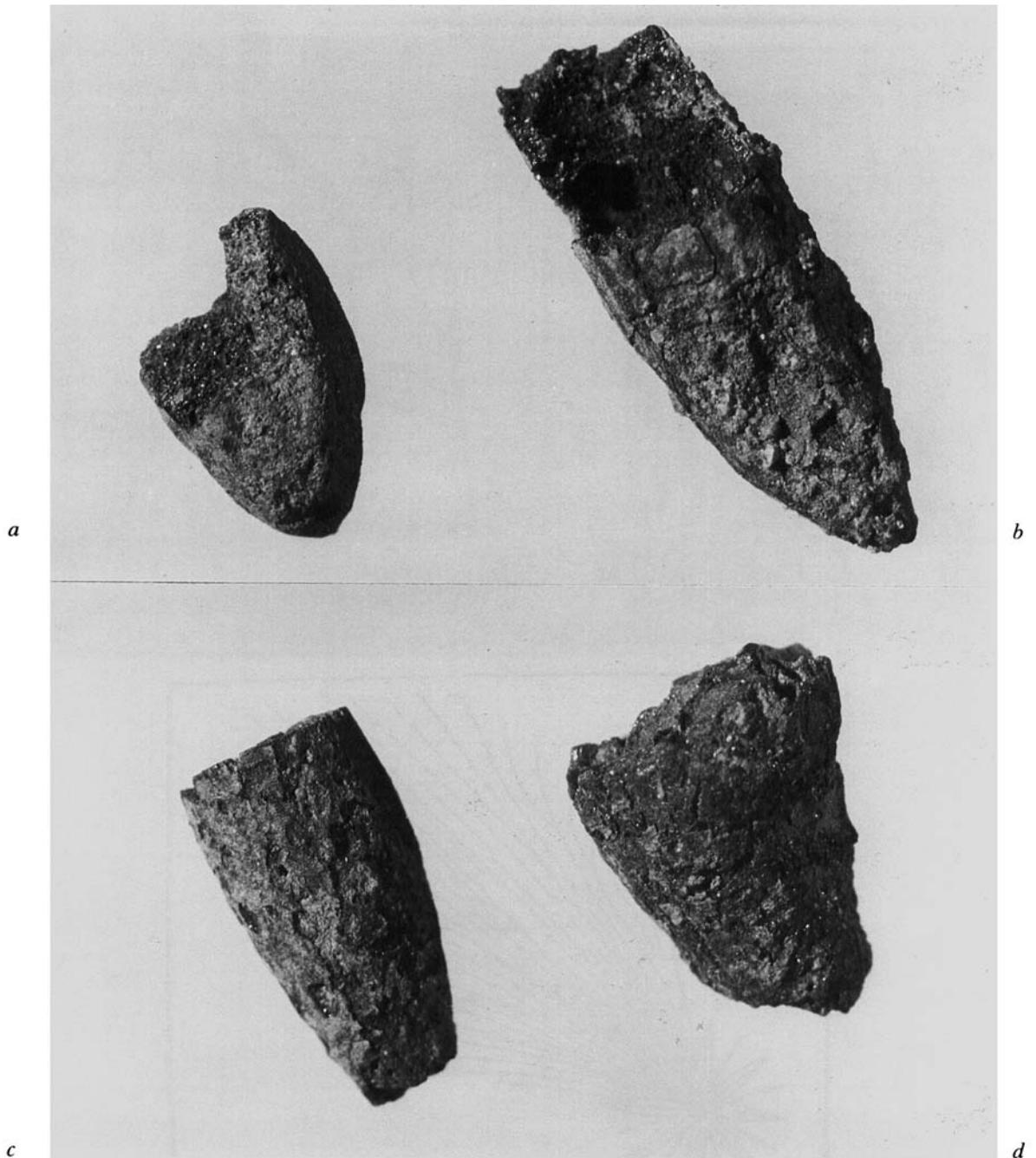


PLATE II: RYE AND ERGOT IN THE ANCIENT HISTORY OF SCOTLAND
Fossilized ergot from Banchory. (a) 6 mm long; (b) 10 mm long; (c) and (d) 7 mm long

See pp. 45-7

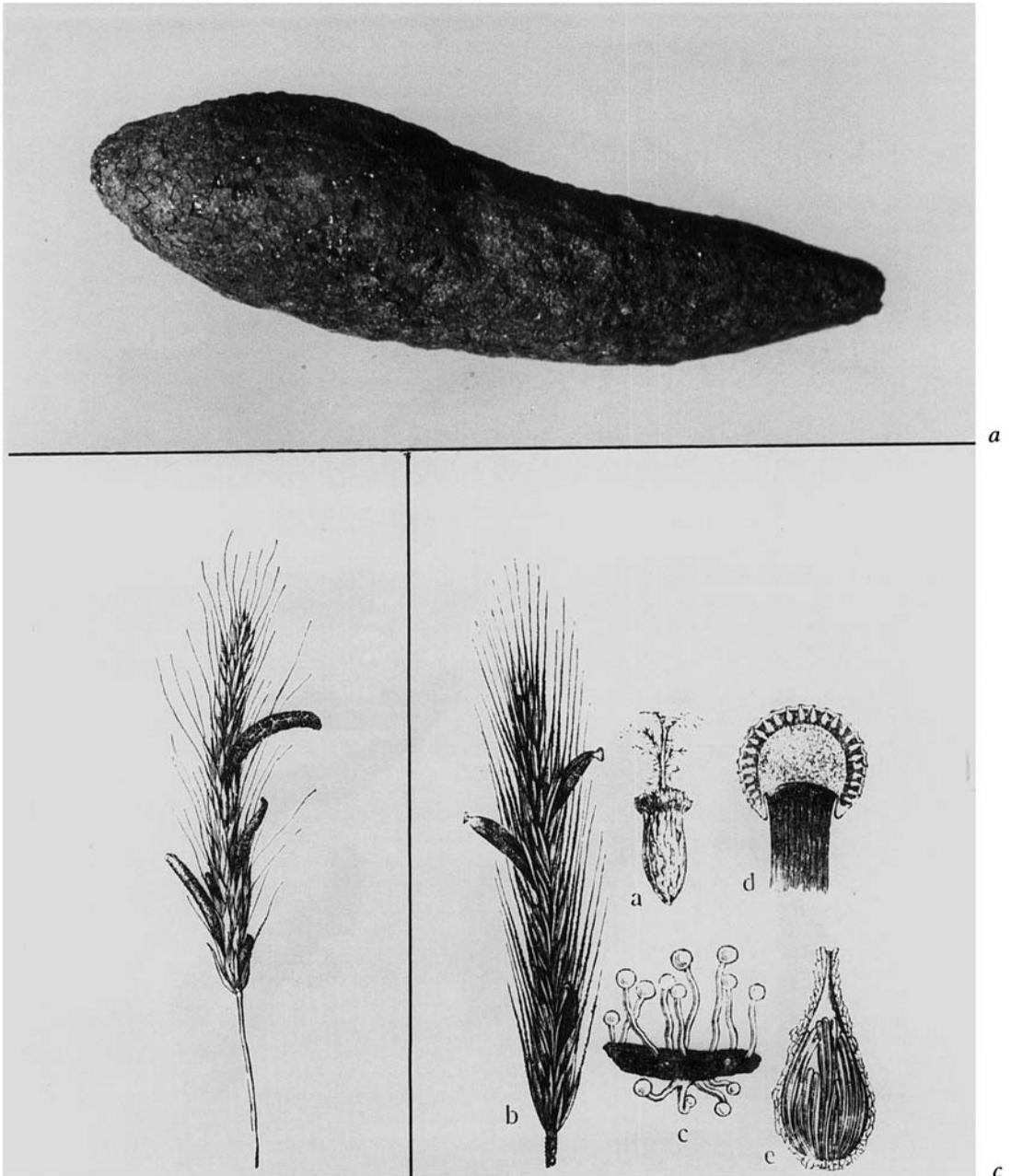


PLATE III: RYE AND ERGOT IN THE ANCIENT HISTORY OF SCOTLAND

(a) Fossilized ergot from Bunchory, 13 mm long. (b) Illustrations of ergot of rye (*Claviceps purpurea*) after (b) Duggar (1909, Fig. 104) and (c) Eriksson (1912, Fig. 78)

See pp. 45-7

	No. of finds
<i>Hordeum</i> sp. & <i>H. vulgare</i> (barley) caryopses	18
Cereal & cf. Cereal caryopses	15
<i>Claviceps</i> sp. (ergot) sclerotia	5
<i>Raphanus</i> spp. (wild radish) pod segments	3
<i>Brassica</i> spp. & cf. <i>Brassica</i> spp. (cabbages etc.) seeds	6
<i>Vicia</i> spp. & cf. <i>Vicia</i> spp. (vetches) seeds	5
<i>Galium</i> sp. & cf. <i>Galium</i> sp. (bedstraw) fruits	5
cf. <i>Rosa</i> sp. (rose) achene	1

Table 1. Summary of the carbonized plant remains (excluding charcoal and nut fragments) from Nethermills Farm, near Banchory

The presence of ergot at archaeological sites may have been previously overlooked, for several reasons. Barclay and Fairweather discuss the problem that, owing to the morphological variability of these sclerotia and their relative scarcity, 'the shape is not one that readily triggers a response to a specific search image when observed by paleobotanists' (Barclay & Fairweather, 1984). In addition to this, as indicated above, there is the problem that the fossilized ergot remains may easily be misidentified, owing to their possible superficial resemblance to fossil cereal grain. Finally, the expected association of ergot and rye, and the cereal's general scarcity in Scotland, may contribute to the low expectation that ergot is present, thus reducing the possibility that ergot is considered during the examination of unusual fossils.

It is now clear that the scarcity of rye in Scotland need not preclude the presence of ergot in prehistoric and early historical times, as has now been illustrated by the finds at Myrehead and Nethermills Farm.

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The Asota stone circle, Mardan, northern Pakistan

PLATE V

D. R. C. Kempe, Deputy Keeper, Department of Mineralogy, British Museum (Natural History), describes for us the petrology of the Asota stone circle in northern Pakistan. With Anthony P. Harvey, Head of the Museum's Department of

Library Services, he produced, in 1983, The petrology of archaeological artefacts.

Gordon (1939) described the stone circle near Asota, some two miles north of Shewa, on the east side of the small road which runs north there from

the main Mardan-Swabi road, in Mardan District, northern Pakistan. The circle has a diameter of 57 feet and was thought to have consisted originally of 32 stones. Gordon noted that, with the Burj Hama circle of Burzahom, near Srinagar, Kashmir (Gordon, 1937), these megalithic monuments were unique in the northwest of the sub-continent. The circle is in good condition (PL. v), still marked by a small 'ancient monument' sign, although it seems that many archaeologists and geologists in Swat and Peshawar are unaware of it.

Gordon & Gordon (1945) thought that the stone used for the circle was quarried at Turlandi, just south of the main road near the Asota turning (at milestone 17½ east of Mardan), where there was an important mound. It might be of interest to record details of the rock from which the circle, with its tall, narrow, bladed stones, was constructed.

Three years before Gordon described the circle, A. L. Coulson, a geologist with the Geological Survey of India, chanced upon and recorded the presence of 'porphyries' at Shahbazgarhi, some 11 miles west of Shewa (Coulson, 1936). Unaware of this, N. R. Martin, S. F. A. Siddiqui and B. H. King, conducting reconnaissance geological mapping of the region much later, noted 'albite-porphyries' and named the triangular outcrop of this sub-volcanic igneous rock, between Shewa, Shahbazgarhi and Machai, to the north, the Shewa

Formation (Martin *et al.*, 1962). Kempe (1973) described the rocks in detail, as porphyritic alkaline microgranites: they had by then already been assigned to the newly recognized Peshawar Plain alkaline igneous province (Kempe & Jan, 1970). Kempe noted that the microgranite formed the upper and (Kempe, 1973, Pl. 1a) lower Asoka stones at Shahbazgarhi, which had been inscribed in the 3rd century BC. At the other end of the outcrop, near Shewa, perhaps at Turlandi, the same rock was quarried for the Asota stone circle, which owes some of the shape of its menhirs to the jointing properties of the microgranite.

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- GORDON, D. H. 1937. The megalithic site of Burj Hama, *Antiquity*, XI, 220-21.
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- GORDON, M. E. & D. H. GORDON. 1945. A survey of ancient Gandhara, *J. Indian Anthropol. Inst.*, 1, n.s., 9-25.
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Congress of Independent Archaeologists

We asked Christopher Chippindale, Fellow of Girton College, Cambridge, to report on the meeting in Cambridge, 21-2 September last year, of the CIA which was not, he told us, the Central Intelligence Agency, but a first Congress of Independent Archaeologists.

Under the ambitious motto, 'Doubling the Output', congress organizer Andrew Selkirk was looking to the independent sector to make up the gap as public funding for British archaeology stagnates. About 140 British delegates faced the issue, finding more questions than answers, and hearing some lively opinions.

Where is the new money to come from? Not, emphasized the business delegates, from commercial sponsors, who see archaeology as a gloomy business, backward-looking, opposed to progress in its obsession with the past, dull, unbusinesslike and secretive, not even interested in the kind of treasure-seeking that brings public-relations

dividends. And sponsors' money always comes with trailing strings attached.

Brian Rosborough, director of Earthwatch, had a more positive message; his North American organization has found success in funding by personal sponsors who go into the field to work alongside the professional scientists. And there were encouraging personal stories from individual amateurs, working in spare time or enjoying early retirement, and from local research groups. The heavyweight independents were represented by Brian Hopley of the Museum of London, whose Urban Archaeology Unit has so often now secured City developers' support and funding, and by Peter Addyman from the York Trust. Addyman was able to report visitor numbers at the Jorvik Viking centre running higher in its second year than the astonishing 889,000 achieved in the first, and could look forward, once the banks are paid off, to an annual £1 million profit to spend on research and rescue work. 'Project

Britannia', a scheme in the new entrepreneurial style inspired by Jorvik, announced its existence; it plans to construct a replica Roman villa as a living museum.

What is an 'independent archaeologist' exactly? By Selkirk's definition, it is one who is, or who seeks to be, independent of support from public sources, whether a single spare-time amateur or the full-time professionals in York (who are mostly public-funded at present). Most of the Congress thought otherwise, and saw independent as a synonym for amateur. We heard of amateurs brushed aside by the arrogance of young professionals, and of good local relations, and even the survival of sites, threatened by abrupt decisions over scheduling (which was called 'a bureaucratic nonsense' and a 'complete and utter waste of time' when it came to safeguarding sites).

A new invigoration of the place for amateurs (avocational archaeologists in the American phrase) in Britain is an attractive idea, though it will no more be easy here than in the USA (Sabloff, 1985). So much is against it. The leisured cleric and country gentleman of private means, backbone of the Victorian county societies, are extinct species. With increasing specialization and more technical methods it is harder for an amateur part-timer, even in areas like field survey, to make substantial

research contributions. The large urban rescue digs, with real civil engineering and inflexible schedules to be maintained, are far beyond any amateur scope. There are real obstacles in professionals working weekdays, while spare-timers use their leisure evenings and weekends. But on the right kind of projects, a balanced mix of amateur and professional resources and technical skills has everything to commend it.

How is the amateur effort to be mobilized? Not, fortunately, by setting up yet another trade organization, the Congress felt, but through the existing network of CBA regional groups. The Congress also looked to English Heritage (which had received few kind words over the weekend) and voted to request £250,000 annually for the support of small amateur projects. Andrew Selkirk frankly admitted this did not fit his idea of independence—what kind of independent immediately wants outside support?—and thought the Congress had shot itself in the foot. And surely cooperative progress by amateurs and professionals means local initiatives and individual opportunities seized, rather than centralized six-figure budgets.

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Clubmosses from medieval Perth

PLATE IV

David Robinson, Department of Natural Sciences, National Museum, Copenhagen, formerly Department of Botany, Glasgow University, has been studying the clubmosses from medieval Perth, Scotland, and wonders if they are waste from the dyeing industry. He gratefully acknowledges personal communications from J. Fraser, Taunton, and S. Grierson, Methven, Perth, concerning plant dyestuffs.

In a recent article Hall *et al.* (1984) have outlined plant macro-fossil and chemical evidence for the presence of plant residues from the dyeing industry at the Viking site in Coppergate, York. The presence of the plant dyes indigotin, madder and possibly lichen purple was detected chemically in highly organic waterlogged material. In addition root fragments of *Rubia tinctorum* L. (madder), stem fragments of *Genista tinctoria* L. (dyer's greenweed) and shoots of *Diphasiastrum complanatum* L. (a non-native clubmoss) were recovered.

The morphology of these remains has now been described in more detail (Tomlinson, 1985).

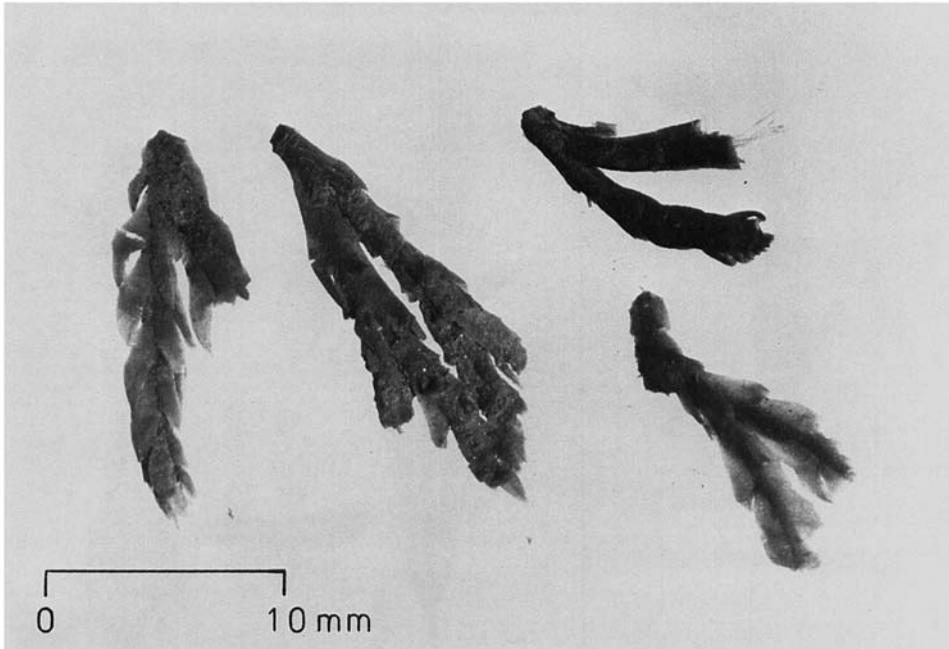
It is notoriously difficult to identify residues from the use of plant dyes and accounts of remarkable assemblages such as that described above are as yet very rare. The major difficulty arises from the fact that so many plant species which are used in dyeing have a myriad of other uses. A number are also common wasteland and arable weeds.

During the analysis of waterlogged organic material from medieval urban sites in Perth, Scotland, the remains of several possible dyeplants have been recovered. These include *Calluna vulgaris* (L.) Hull (heather) shoot-tips and flowers, *Reseda luteola* L. (dyer's rocket) seeds, *Betula* L. (birch) bark slivers, *Pteridium aquilinum* (L.) Kuhn. (bracken) frond fragments and *Potentilla erecta* (L.) Rauschel (tormentil) seeds (Fraser, 1981; Robinson, in press).

However, there was no evidence to link these



a



b

PLATE IV: CLUBMOSES FROM MEDIEVAL PERTH

(a) Shoots of *Lycopodium clavatum* L. (stag's horn moss) from a 12th-century site in King Edward Street, Perth, Scotland. (b) Shoots of *Diphasiastrum alpinum* (L.) Holub. (alpine clubmoss) from the same site

See pp. 49–50



a



b

PLATE V: THE ASOTA STONE CIRCLE, MARDAN, N. PAKISTAN

The stone circle (a) looking SW and (b) looking SE

See pp. 47–8

Photos: D. R. C. Kempe

positively with the dyeing industry. More recent analyses of material from a 12th-century site in King Edward Street, Perth (Robinson, forthcoming) may provide that link. The excavation uncovered the remains of silver-smithing furnaces associated with workshops and living quarters. Material sampled from occupation floor levels and from middens was found to contain substantial quantities of shoot fragments of two clubmosses, *Diphasiastrum alpinum* (L.) Holub. (alpine clubmoss) and *Lycopodium clavatum* L. (stag's horn moss) (PL. IV). In some cases they made up a significant proportion of the material sampled and were accompanied by remains of the dyeplants already mentioned.

There are historical accounts of the use of clubmosses in dyeing in Scotland, most commonly as mordant or colour fixative rather than as a direct source of colour (Lightfoot, 1977; Fraser, 1983; Fraser pers. comm.). They were used in place of alum, perhaps as a consequence of their high aluminium content. Modern experiments using clubmosses as alum substitutes have met with some success (Grierson, pers. comm.).

It should be mentioned at this point that the past usage of clubmosses has not been confined to dyeing. They have a history of medicinal use as antihelminthics and to treat stomach disorders (Launert, 1981) and the shoots in the King Edward Street samples may have been collected for this purpose. However, in the light of the quantities of material present and the contexts in which it was found, it seems much more likely that dyeing residues are represented.

A wooden trackway of iron age date in Ireland

Barry Raftery, Lecturer in the Department of Archaeology, University College, Dublin, gives us an interesting account of his discovery of an iron age wooden trackway at Corlea Bog, Co. Longford.

Excavations in the summer of 1985 in Corlea Bog, an extensive area of peat some 13 km south of Longford town in the Irish midlands, brought to light two timber trackways of prehistoric date. The first of these (Corlea 1) was a corduroy road of substantial proportions, the destruction of which, in the course of peat-milling activities by Bord na Mona (the Irish Turf Board), had brought about the need for rescue excavation. The second trackway (Corlea 2) was a more modest construction of

The medieval dyers must have gone to a great deal of trouble to acquire some of their raw materials. In particular the collection of *Diphasiastrum alpinum* would have involved a considerable journey as the plant is very unlikely to have been found close to the medieval town, being restricted to montane heathland habitats. Perhaps a trade existed with suppliers in outlying areas or with Scandinavia, the likely source of the York clubmoss. Certainly it is known that Perth was a major trading port and that imported dyestuffs reached the town in the later medieval period (Grierson, pers. comm.).

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 LAUNERT, E. 1981. *Edible and medicinal plants of Britain and Northern Europe* (London).
 LIGHTFOOT, J. 1977. *Flora Scotica* (London).
 ROBINSON, D. E. in press. The botanical remains, in *Excavations in medieval Perth 1978–1982*, Society of Antiquaries of Scotland Monograph (Edinburgh). forthcoming. The botanical remains, in L. M. Blanchard & L. Ross *Excavations in King Edward Street, Perth*.
 TOMLINSON, P. 1985. Use of vegetative remains in the identification of dyeplants from waterlogged 9th–10th century AD deposits at York, *J. of Arch. Sci.*, 12, 269–83.

PLATES VI–VII

brushwood, the existence of which was unsuspected until an advanced stage of the excavation.

Before work began timbers from Corlea 1 were removed by Dr M. G. L. Baillie, Queen's University, Belfast, for dendrochronological analysis. The results of this made it possible to establish that trees for the construction of the road had been felled in 148 BC.

Corlea 1: In its original state this trackway extended for about 1 km across the bog in a NW/SE direction, linking two higher areas of dry land. Local people knew of the road's existence for decades as they frequently encountered timbers from it in the course of turf cutting. To them it was known as the 'Danes' Road'. The acquisition of a portion of the

bog by Bord na Mona in the 1950s, followed by its drainage and subsequent large-scale peat-milling, lowered its level by nearly 3 m. Much of the ancient road was thus exposed and there was considerable destruction, especially in the north-west where as much as half the road has been virtually obliterated. A section of the bog in the east, however, remains in private ownership and here some 150 m of the road lie undisturbed under about 1.20 m of turf.

When archaeological investigations began in June 1985, timbers of the road were visible on the surface at several points in the south-east and the road was nowhere more than 50–60 cm below the surface. A number of cuttings was made at selected points where the road seemed well-preserved and in all some 60 m were examined.

The principal constructional elements of the road consisted of two parallel 'runners' extending along its length. Upon these a series of closely-spaced, transverse 'sleepers' was laid down. Here and there twigs, branches and wood-shavings had been casually thrown into hollows on the ancient surface of the bog probably to provide some additional support for the weight of the road. Nowhere was true brushwood encountered. It seems that much of the trimming of pegs and branches was done on the spot and the resultant debris was thrown down at random on the line of the road as the work progressed.

The runners were long, straight, specially-selected timbers of stout dimensions. Preliminary botanical investigation to date has identified oak, alder and birch. They were 20–25 cm in average thickness and varied in length from 2–3 m up to 10.40 m. They were placed some 1.20 m apart and either overlapped at their extremities or were fitted end-to-end. In some places extra runners were laid down. In one area in particular (see below), six or seven runners had been laid down side by side, thereby packing the entire width of the road. It is likely that here a sizable bog pool was encountered by the road builders which necessitated an increase in the number of longitudinal timbers so that a virtual bridge was constructed.

Runners were occasionally held in place by pegs hammered against their edges, but this was not common. An interesting detail was the discovery of what appeared to be a measuring rod. This was a straight stick, 1.46 m long and carefully pared at each end, which was found lying at right angles to the line of the road between two runners. A peg, close to its centre, helped to keep it in place. The

runners had been positioned so that their ends touched the ends of the stick. This seems to have been deliberately placed to indicate to the construction gang the required width between the runners.

The surface of the road was composed of split oak logs 3–3.50 m in average length (PL. VI/a) These were at times as much as 60 cm in width. The majority appear to be half tree-trunks, usually placed on the runners with their flat surfaces upwards. Some radially-split planks were also encountered. In general, these sleepers were closely spaced to form a compact, though uneven surface. Occasional gaps did, however, occur between the oaks, some of which were filled with birch branches.

Rectangular or trapezoidal mortices had been cut carefully into the ends of a number of the sleepers and in some cases wooden pegs had been hammered through these into the underlying peat. A few sleepers had notched ends to receive pegs and in other instances pegs were hammered up against the ends of sleepers. There was no order or pattern in the disposition of the pegs. They were frequent in some areas and absent in others. Their distribution appears to represent localized response to bog conditions met with as the work advanced.

The majority of the pegs were birch; some were of oak and some possibly poplar. In most instances their upper ends were truncated by turf-cutting machinery so that their original lengths are unknown. In a few cases, however, it can be established that some stood 20–25 cm above the surface of the road. Preserved lengths varied from 60 cm to 1.60 m. Some of the longer pegs had been hammered down to reach the basal limestone 1.50 m below the road. Birch pegs which struck the hard rock buckled and broke on impact. In one case, however, a peg of split oak had been hammered through the peat 15 cm deep into the limestone without breaking. In the course of the excavation this specimen was dislodged only with great difficulty and it may be assumed that a sledgehammer of some sort or a heavy mallet was used to force it so firmly into the bedrock.

The pegs were expertly pointed. The tools used were sharp and the precise outlines of axe- and adze-blades are in many instances clearly recognizable. Some of the pegs have long, multifaceted points, others were pointed by means of a single oblique cut skilfully struck from one side.

The investigations revealed a 17 m stretch of the track which differed appreciably from that else-

where encountered (PL. vii*b*). In this section, over a distance of some 10 m, there were three sizable gaps in the roadway where the oak sleepers were absent leaving the runners exposed, thus forming rectangular spaces 2–3 m long. Within these spaces, at the level of the runners, there were concentrations of short branches and fragmentary oak planks, many morticed at one end and many charred and blackened through heavy burning.

Following this gapped stretch of track came a 7 m section where the timbers were jumbled and haphazard and where, in fact, no formal road existed. The timbers were piled on top of one another in no discernible order, most of them lying lengthwise along the road. Some were in the form of carefully worked planks with flat or gabled ends. Three long, straight timbers which lay on top of all the others, looked as if they might have been intended as runners. One oak plank, along with some smaller timbers, lay completely outside the line of the road to the south and at right angles to it. Many of the timbers had mortices cut into them; some had double mortices. It was noticeable, however, that in every instance the mortices occurred at one end only of the timber. In no case was a peg found within a mortice.

Many of the timbers were extensively burnt and in one area there was a concentration of charcoal on the original surface of the bog. Unfortunately, at precisely this point a deep drainage channel of recent date had been cut so that details are obscured. It can be stated, however, that while some burning may have taken place where the charcoal was encountered, the random distribution of burnt timbers in close juxtaposition to unburnt ones indicates that they were deposited after the burning had ceased.

It is not clear how this section of the Corlea trackway should be interpreted. The worked planks look as if they might have come from a wooden structure which was dismantled, perhaps having been partly burned. The tumble of timbers suggests that they were dumped on the spot but were never used.

A number of fragmentary wooden objects had been discarded casually among the twigs and branches under the road. Most of these were found below that section of the roadway, referred to above, where a concentration of closely-spaced runners occurred and where, as noted earlier, a bog-pool may have been encountered by the road-builders. In this area worked timbers were

discovered as much as 1.20 m below the level of the road. Clearly, any available debris was thrown into the presumably soggy hollow to help provide a foundation. Among the artifacts recovered were several large pieces which may be portions of a cart or wagon. These include a length of wood of square section (perhaps a wagon shaft), with two short planks slotted through it (PL. vii*a*) and a crude, seat-like object, 90 cm in length, which had been carved from a single block of wood. A stave from a flat-bottomed, tub-like vessel was also recovered here as well as a handled implement of uncertain function with pentagonal head. Perhaps the most interesting of the finds were two worked and polished boards of ash, one simple, the other a complex and elaborate carving (PL. vii*b*). The latter piece, some 65 cm long, had two cylindrical perforations drilled into its flat surface. One of the long edges was divided into a series of carefully worked, angular recesses and four thin mortices had been skilfully cut or drilled into this edge, at intervals between the notches. Into these mortices fine, thin tongues of wood were inserted and these are held in place by tiny wooden dowels scarcely more than 2 mm in diameter. Two of the thin tenons passed through the board and appear to have projected from one edge, thus suggesting that the object was part of a larger unit. The nature of this object remains uncertain.

Corlea 2: Shortly before the 1985 excavation season came to an end traces of a brushwood trackway were noticed in the face of one of the Bord na Mona drainage channels. In the limited time available it was possible to investigate only a very small portion of this and five narrow test-cuttings were made, exposing a total of 7 m of the track.

Corlea 2 lies some 60 cm below the level of *Corlea 1*. It has not yet been possible to determine its full extent but so far it can be followed for about 90 m. It is first traceable 18 m north of *Corlea 1*, extending in a south/south-easterly direction to curve under the iron age road before gradually straightening to run more or less parallel with it. It is last visible 5 m south of *Corlea 1*.

Corlea 2 is composed of straight birchwood branches laid close together in a single layer along the line of the road. Their thickness varied from 8 cm to 12 cm and they rested on short, straight branches of similar dimensions laid on the ancient surface of the bog at right angles to the line of the track. These short branches were 50 to 60 cm apart. The narrowness of the excavated areas did not

permit a full elucidation of the constructional details of the track; more extensive investigation is planned for 1986. It appears, however, that the actual walking surface was flanked by two parallel rows of birch pegs 1.20 m apart. In some of the cuttings these pegs defined the edges of the brushwood. In others the brushwood extended rather untidily on each side beyond the lines of pegs. The greatest width of the brushwood spread

was 1.70 m. The pegs were consistently between 50 cm and 60 cm long and were all 4 to 5 cm thick. They projected some 10 cm above the level of the track and were spaced at intervals of 50 to 60 cm.

The date of Corlea 2 is not yet established. It is obviously appreciably older than the road dated to 148 BC and may well belong to the latter part of the Bronze Age.

C. W. Phillips 1901–1985

PLATE VIIIb

Charles Phillips, a large but self-effacing, modest man, was rocketed to archaeological fame when in 1939 he was put in charge of the excavations at Sutton Hoo (Antiquity, March 1940). He died in the early autumn of 1985. Professor Glyn Daniel spoke at his funeral on 2 October at Teddington and we print below what he said. The Times obituary (1 October) spoke of CWP's great archaeological work. This was followed (10 October) by a comment by Major-General R. C. A. Edge, for many years Director-General of the Ordnance Survey. He has kindly allowed us to reprint this.

Professor Glyn Daniel:

Archaeology, to a larger degree than most historical or scientific disciplines, has for long been advanced by amateurs. We in England have been especially fortunate in this respect and our subject boasts a long and very distinguished line of men and women who devoted their leisure to the study of the material remains of the past. Charles Phillips was for half his life an outstanding example of the great British amateur archaeology tradition.

From the time he took his degree in history in Cambridge in 1922 until the outbreak of war he was a history don, Librarian and Fellow of Selwyn College: all his spare time was spent in field archaeology especially in Lincolnshire and the Fens. He excavated in Wales, in the West Country and Lincolnshire: the Skendleby dig was the first modern scientific excavation of an earthen long barrow—a landmark in British archaeology.

In 1939 he was put in charge of the excavation of the ship burial at Sutton Hoo—the richest, most spectacular and most important find ever made in British archaeology, and that work, done quickly but with consummate skill, as the shadows of war darkened that late summer, and its subsequent quick publication, *alone* are enough to justify his assured place in the hall of archaeological fame.

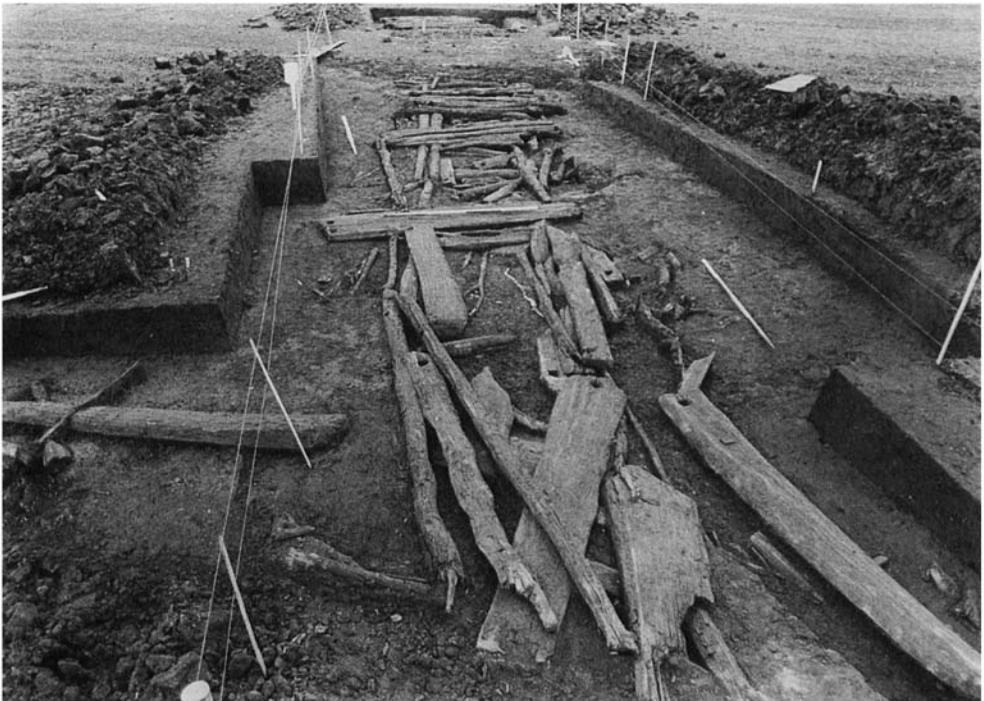
He worked on the Fenland Research Committee and together with his colleagues and friends Grahame Clark, Christopher Hawkes and Stuart Piggott turned the Prehistoric Society of East Anglia into *The Prehistoric Society* of which he was secretary for ten years. It was good that he was able to be in Norwich last March when the Prehistoric Society celebrated its 50th anniversary and that though unwell he was able to visit the new excavations at Sutton Hoo only a few weeks ago.

Then, after the war, in mid life, he became a professional archaeologist: from 1947 to his retirement he was Archaeology Officer of the Ordnance Survey. He had achieved what he once described as 'a long and oblique progress to what seemed an unattainable end'. He reformed the Archaeology Section of the Survey and by his tact and good sense achieved, in a way, even more than had his predecessor and friend O. G. S. Crawford. They were both doughty, determined and sometimes difficult men but the cartographical excellence and eminence of British archaeology is entirely due to these two men.

It is unusual for anyone to have first a distinguished career as an amateur archaeologist and then a distinguished career as a professional archaeologist, but Charles Phillips was an unusual man: he was also a kind and generous man: his bluntness and apparent brusque manner covered his goodness, warmheartedness and friendliness which so many of a younger generation remember with affection. I certainly do, and I remember with special affection his days in the Central Photographic Interpretation Unit at Medmenham in the war. He was a pillar of strength to all of us studying on air photographs the German occupation of Europe. When we had problems we invariably went to him. He became a myth at Medmenham and the rumour went round that he was omniscient. On one occasion a WAAF officer trying to plot a town in Czechoslovakia asked



a



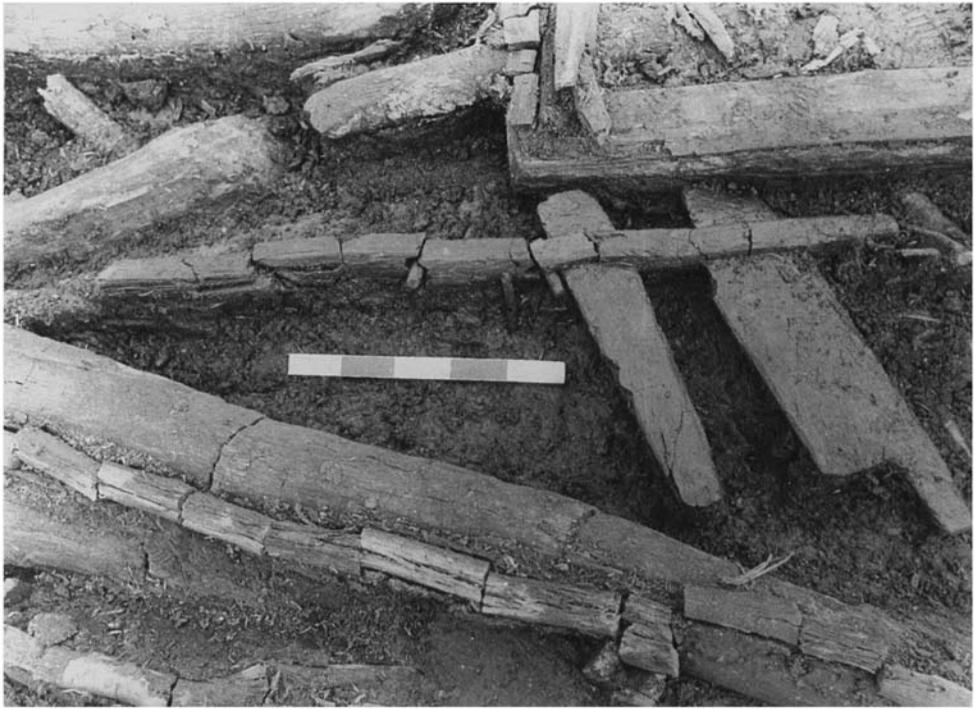
b

PLATE VI: A WOODEN TRACKWAY OF IRON AGE DATE IN IRELAND

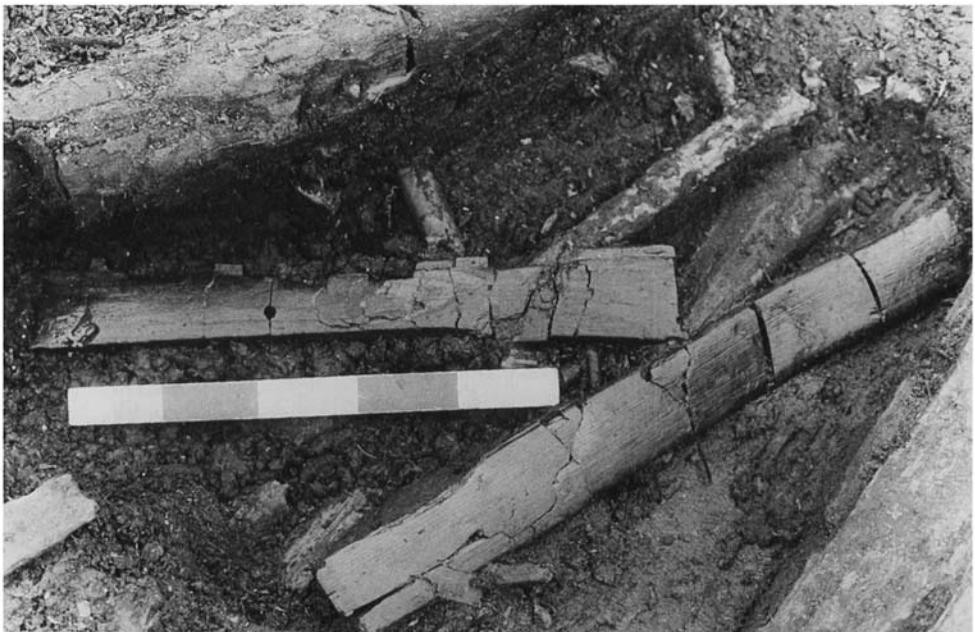
Corlea, Co. Longford. (a) Iron age roadway; (b) iron age roadway, ? unfinished section

See pp. 50-53

Photos: B. Raftery



a



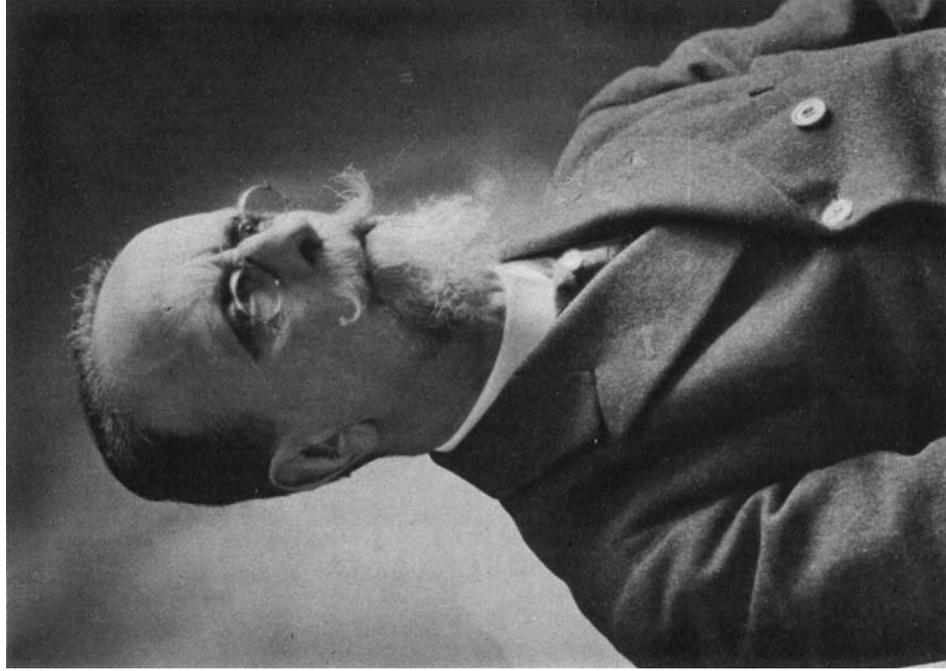
b

PLATE VII: A WOODEN TRACKWAY OF IRON AGE DATE IN IRELAND

Corlea, Co. Longford. (a) Fragmentary wooden object, possibly from cart; (b) carved ash boards of uncertain function

See pp. 50–53

Photos: B. Raftery



a

PLATE VIIIa: PAOLO ORSI (1859–1935)

*Photograph of Paolo Orsi, aged about 65, kindly supplied by
Professor Vincenzo La Rosa*

See pp. 15–20

Photo: A. Maltese, Syracuse



b

PLATE VIIIb: C. W. PHILLIPS 1901–1985

*Charles William Phillips (‘CWP’) died on 23 September 1985.
Taken in New York’s medieval museum, The Cloisters*

See pp. 6, 53–4

Photo: Bernice Groshopf

him if it had two railway stations—one on each side of the river. He was a railway buff among other things. ‘No’, he said firmly without consulting a map, ‘if it had I should have known.’ He wore his learning with modest and engaging assurance. On another occasion while studying air cover of the west coast of Normandy I thought I had found a prehistoric village now under the sea, and excitedly took my discovery to Charles. He looked at the photograph for a while and then said, ‘My dear sir, I thought you were supposed to be knowledgeable about the human geography of France: these are modern oyster beds.’

In August 1939 I drove from Cambridge with Hector and Nora Chadwick to see the Sutton Hoo dig. Phillips and Chadwick had never met and both were slightly apprehensive. The encounter turned out to be a great success. As we were leaving Chadwick said to Charles ‘Its the grave of King Redwald you know. I’ve no doubt of that.’ And when we got back to Cambridge, Chadwick said to me ‘That was one of the most memorable days of my life. I think Phillips is a great man’. And indeed he was—a great man. Future historians of British archaeology looking back at what was achieved in the twentieth century and remembering, as we do today, Charles Phillips, might well say in the words of Genesis iv ‘There were giants in the earth in those days’.

Major-General R. C. A. Edge:

The notice about Charles Phillips says virtually nothing of his career in the Ordnance Survey although this lasted 20 years and although the work he did there is, for many, the thing for which he is best remembered.

Phillips came to the Ordnance Survey in 1945 in the confused aftermath of the war. The post of Archaeology Officer, which he took over, had been created in 1920 (the archaeological tradition of the OS was, of course, much older) but the staff was

miniscule and the organization rudimentary. During the ensuing years he built up the Archaeology Division to some 60 strong and made it into an organization which was the envy of foreign visitors.

He joined the Department at exactly the right time. The post-war resurvey was just starting and the various developments, such as new towns, which are potentially so destructive of archaeological sites, were about to get into top gear. An organization was clearly needed which could harness the new survey potential to the task of recording the sites which were threatened and surveying them with an archaeologist’s eye before the bulldozers moved in.

Few could have had the energy, initiative and organizing ability, as well as the necessary expertise, to tackle such a job. But Charles Phillips was fully equal to it.

In the past the relations between the archaeologists and the surveying staff had not always been harmonious but, under Phillips’s guidance, all this changed and the recording and surveying of antiquities went steadily ahead so that, by the time of his retirement in 1965, the task was largely complete and a card index had been built up which has proved of enduring value to archaeologists all over the country—and, indeed—the world.

At the same time the production of the Ordnance Survey’s incomparable period maps was energetically pursued, to give pleasure and instruction to millions.

A few years after his retirement the Government made a fierce onslaught on the Archaeology Division and virtually eliminated it. This greatly saddened Phillips who fought to save his old organization. His efforts were in vain but the work that he did can never be wholly lost.

His records and maps remain and the standards of archaeological cartography that he and the Ordnance Survey set will endure as will the reputation of this very great archaeologist.

Archaeology in Denmark

We print this letter (dated 18 November 1985) which we received from Thorsten Madsen, Chairman of the Institute of Prehistoric Archaeology in the

University of Aarhus, and Klaus Randsborg, Chairman of the Institute of Prehistoric Archaeology, University of Copenhagen.

A new number of ANTIQUITY is always opened with great interest and anticipation. In the Editorial for this month, you rightly regret the fact that the Danish universities now have two vacant professor-

ships in prehistoric archaeology. The reason is, of course, the severe financial situation of the two main universities, in Copenhagen and Aarhus, where in the years to come at least a couple of

hundred lecturers will have to be discharged. However, prehistoric archaeology, we are happy to say, will suffer only lightly compared with other fields.

Since 1970, after the introduction of the new law of administration of the universities, the professors have had exactly the same rights and obligations—in administrative as well as academic matters—as the lecturers, so there is no obvious reason why the universities should turn a few members of the already existing staff into ‘expensive’ professors. Rather, the problem is how to create new university posts for the new generation of scholars.

When you, in your Editorial, urge the Danish establishment to reaffirm its belief in its past, you seem to overlook the fact that Danish archaeology at present is doing quite well in spite of the, hopefully

transient, financial problems of the universities. In particular the provincial museums have expanded in recent years and dozens of new jobs have been created for our graduates. With this stress on the practical and administrative aspects of Danish archaeology, our main concern is not the lacking, mere nominal, appointment of a few professors, but rather the lack of possibilities for carrying out major projects in terms of excavation and research, and the rather tenuous interest in the academic aspects of our profession, that has characterized the past ten years.

Thanking you very much for your kind and continuing interest in the archaeology of the country of Thomsen, we are happy to reassure you, that his heritage is being well looked after.

Glynn Isaac 1937–1985

We asked Professor J. Desmond Clark to tell our readers something of what Glynn Isaac meant to the study of early man and in particular to his colleagues and students for 17 years at the University of California at Berkeley.

The tragic, untimely death in Tokyo of Glynn Llywelyn Isaac on 6 October this year has left his many friends and colleagues with a sense of deep shock and loss. He was in his 48th year at the peak of his career and the acknowledged leader in research into the evolution of early human culture and African prehistory.

*Glynn Isaac was born in 1937 in Cape Town where, with his twin brother Rhys, he developed a deep feeling for the flora, fauna and peoples of Africa and, by the time of his death, he had walked through and got to know the range of varied savanna, desert and forest localities and their animal and human inhabitants.

He received his B.Sc. at the University of Cape Town in 1958, gaining distinction in both the natural sciences (geology and zoology) and archaeology/anthropology. This combination of understanding of the biological processes with that of how human populations interact with their environment, together with his African background contributed considerably to his success. He went up to Peterhouse and took the Archaeology and Anthropology Tripos at Cambridge where he received his B.A. in 1961 and his Ph.D. in 1969 for his, now classic, work at the Middle Pleistocene

Acheulian site at Olorgesailie in the East African Rift. He was the Warden of Prehistoric Sites in Kenya (1961–2) and then, from 1963–5, Deputy Director of the Centre for Prehistory and Palaeontology at the National Museums of Kenya. It was here that he benefited greatly from his close association with Louis and Mary Leakey.

In 1966 he joined the Anthropology Faculty at the University of California, Berkeley, and here for 17 years, he worked with Sherwood Washburn, Clark Howell, myself and others in developing a programme and training students in the archaeology of early man and in fieldwork in East Africa, in particular in East Turkana where he was Co-Director with Richard Leakey of the Koobi Fora Research Programme. Those he trained there, white and black, are themselves, many of them, in the forefront of the research on early hominid living places in the continent where it all seems to have begun. In 1983 he accepted appointment as Professor of Anthropology at Harvard University where, with his friend the palaeontologist David Pilbeam and others, he was continuing and developing a new programme for early man research.

Glynn wrote or co-edited seven books and 67 papers in scientific journals, many of them seminal advances in methodology and in developing new approaches to investigation and interpretation of very early archaeological residues.

Possessing a keen intelligence, he was a brilliant, witty and highly stimulating lecturer and teacher. Add to this an energy, vitality and enthusiasm

sufficient for two or three normal people and you have a personality that infected with enthusiasm and excitement those who worked and came into contact with him. Because of the breadth of his understanding of the whole field of palaeo-anthropology and his so likeable nature, he formed a bond between disciplines that was a major factor behind the advances in early man studies over the past 24 years.

But what made Glynn so outstanding, besides his intellectual perceptiveness and his success as a teacher, was his essential kindness and fairness. He inspired those with whom he was associated and received in return their affection and respect. His hospitality was proverbial and he got us all talking to each other at meetings, informal discussions and parties that created a bond which often led on to

important collaborative projects and more firmly cemented friendships.

It is true to say that we have learned more about the early cultural stages of our human ancestry in the years that Glynn Isaac was active in the field than we did in the whole of the previous part of the century. A very large part of this was due to his leadership. While we mourn the passing of a very dear friend and colleague and our deepest sympathy goes out to Barbara and their two daughters Ceri and Gwyneira at this sad time, yet we cannot but be thankful for and rejoice at the new incentive and new directions that Glynn gave to the science of early man. These will always remain as a lasting tribute to a great and such a very human and lovable man.

Adam Sedgwick's archaeological excursions

Peter Addyman, Director of the York Archaeological Trust, has reminded us of the 200th birthday of Adam Sedgwick, Yorkshire Dalesman, Woodwardian Professor of Geology at Cambridge, and definer of the Cambrian system, which took place on 22 March 1985. Lest the celebrations should entirely be monopolized by Dalesmen and geologists he suggests we reprint excerpts from two distinctly tongue-in-cheek accounts of Sedgwick's attendance at barrow-digging parties at the Bartlow Hills, Essex, in April 1835 and April 1840. One comes from the vitrol-dipped pen of Sedgwick's old sparring-partner at Trinity, Dr Whewell. The other, addressed to a 12-year old niece, comes from Sedgwick's own.

The bicentenary of the birth of Adam Sedgwick, one of the great figures of British geology, saw a spate of commemorative events, both in Cambridge, where as Woodwardian Professor of Geology from 1818 to 1873 he spent his career and in the Sedgwick Museum he has his memorial, and in Dent and Sedbergh, in his native Yorkshire Dales (now technically in Cumbria, a change he would surely have opposed). Sedgwick's researches were normally into a far remoter past than concerns the readers of ANTIQUITY. On one occasion, however, he was driven to an excursus into later history, with two remarkable accounts of the recent past of his own dale, produced as part of a campaign to right the wrong naming of the new chapel at Cowgill near Dent. This he achieved, but only by Act of Parliament and after invoking the active support of

Queen Victoria. These perceptive and unique evocations of 18th- and 19th-century dales life have recently conveniently been reprinted (Boulton, 1984). It is the purpose of this note to make similarly accessible two accounts of another of Sedgwick's excursions into the later past, his avid following of the excavations at the Bartlow Hills in Essex. Both have a modest interest for the social history of archaeology; and both in their own odd ways shed a kindly light on the savant himself. They make an appropriate archaeological birthday tribute.

The well-known Roman burial mounds at Bartlow in Essex were the subject of a series of excavations in the 1830s and 1840s, carried out for the owner, Viscount Maynard, by John Gage, Director of the Society of Antiquaries (Gage, 1834; 1836; 1840; 1842). The openings became social occasions, and Sedgwick, along with other Cambridge colleagues, became a regular attendee at house parties organized by Lord and Lady Braybrooke at Audley End, to witness the denouements. When the largest barrow was investigated in 1835 Sedgwick was evidently there (Clark & Hughes, 1890, i, 506–9), as was Dr Whewell his Trinity colleague, who purported to describe the occasion in *An Eclogue* almost worthy of Thomas Love Peacock:

April 21st, 1835.

Mr Gage. My antiquarian bosom burns to explore
These relics of the art of men of yore.

Professor Sedgwick. Stay, my good sir; control your zeal, or lose it.

This is no work of art; 'tis a *deposit*.

Gage. Geologist, avaunt! and hide your head:
Ne'er was deposit thus deposited.

Sedgwick. I hold, despite your antiquarian pride,
That Bartlow's tallest hill is stratified.

Gage. Your theory of strata, sir, is rickety:
'Tis a Romano-Dano-Celt antiquity.

Sedgwick. Sir, your antiquity's a joke to me:
T'was left here by 'the last catastrophe'.

Gage. I tell you, sir, that Queen Boadicea

Killed fifty thousand men, and put them here.

Sedgwick. Sir, throw your queens and battles to the dogs:

Twas when the Deluge made the Gogmagogs.

Lady Braybrooke. O gentle swains! Be for a moment mute,

For here is that will settle your dispute.

The spade proceeds, the earth is outward thrown,

And now at last we find a bit of bone.

Gage. Ha! give it me. It is, upon my word,
A British heel chopped by a Roman sword.

Sedgwick. No; with your idle tales no longer weary 'em:

'Tis a new fossil beast—the *Bartlotherium*.

Dr X. Now, gentlemen, since bones are my affair,
I, as anatomist, the truth declare:

The bone is a heel-bone—observe it thus—

The beast, the *Asinus domesticus*.

No theorist is safe from trifling ills:

So to the Lord and Lady of these hills

Pay, as becomes you, thanks and reverence due,
And then proceed to theorize anew.

There was another vernal junket at the Bartlow Hills in April 1838, when, according to Romilly quoting Lodge, 'Sedgwick exhibited to the mob a pot, which he declared had belonged to Julius Caesar', and yet another in April 1840. Of that occasion Sedgwick himself left an account (Clark & Hughes, 1890, ii, 9–13) in a very long letter to his 12-year-old niece Fanny Hicks:

TRINITY COLLEGE HALL
April 23rd, 1840

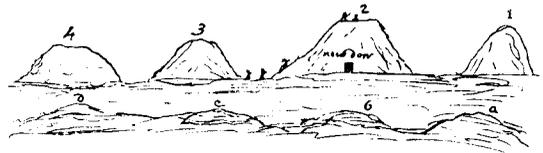
My dear Fan,

I wish you could only see me, looking sour as a crab, and dignified as a round of beef, surrounded by sixty-nine unfortunate undergraduates, whom I

am tormenting with long Latin passages that I have set them to translate . . .

On Monday I halted only a few hours at Cambridge, and then went on to Lord Braybrooke's, for the purpose, not merely of partaking of his hospitalities and meeting a large and pleasant party, but also in the hopes of assisting at the opening of a great barrow or *tumulus*, at Bartlow, a village about seven or eight miles from Audley End. I have been there on several similar occasions, and I am sorry to say that this is the last, for all the great barrows have now been opened and despoiled of their contents . . .

. . . I wish I could draw, and then I would send you a beautiful picture of them: but I cannot draw half so well as a pig's foot, which can make its own likeness in mud and clay . . . But if a pig's foot can draw, let me try my hand. So here is a picture for you!



Now my dear little antiquary, the first question is, What do these big mounds of earth hold? and the next question is, How to get at them? Now in the little *tumuli* or barrows (which from their size one may call wheel-barrow, *a, b, c, d*) it was soon found that bones and works of Roman art were placed exactly on the level of the ground, and in the exact centre of the barrow—all under little brick vaults. Hence it was supposed probable that all the furniture of the great hills might be packed in a similar way. Therefore Lord Maynard (to whom the ground belongs) ordered cuts to be made on the level of the ground, and to be driven to the centre of the circle that forms the base of each mound (see my beautiful drawing, hill No. 2); and in each case the result was the same (with the exception of hill No. 4, which some thief had entered before us, and taken care to carry away all the furniture of the larder) . . .

Sedgwick hereafter gives a description of the well-known Bartlow Hill finds, and concludes:

Now only think! we found the bones of the cock which had been sacrificed to the god Aesculapius, and a bunch of boxwood which had been used instead of myrtle, which of course was not to be found in our climate. In short, dearest Fan, I could

almost have fancied that Old Time had put back the pointer of his clock full 1600 years, and that we were living again with the old Romans. Dear me! I thought I should never fill the sheet, and now I have no room for the direction. But I really have done my long story. So fancy us all going to eat lunch with the clergyman; and fancy a party of twenty-two getting into four carriages; and fancy a great crowd of country people gradually dispersing; and fancy one or two eager antiquaries remaining behind to scratch away the earth and rubbish that had been left, in the hopes, no doubt, of finding a bit of an old Roman, or something that once

belonged to him; and fancy their disappointment when they found only three or four pieces of gingerbread, which a mischievous uncle of yours put among the dirt to puzzle them . . .

Your affectionate uncle,

A. SEDGWICK.

If there are barrows in the Elysian Fields, who can doubt that Adam Sedgwick and his aristocratic and academic friends will still be continuing their springtime fieldwork and pastoral disputes, occasionally burying their ambrosia to fool poor John Gage?

BOULTON, D. 1984. *Adam Sedgwick's Dent* (Sedbergh and Dent).

CLARK, J. W. & HUGHES, T. MCK. 1890. *The Life and Letters of the Reverend Adam Sedgwick* (Cambridge), i and ii.

GAGE, J. 1834. A plan of barrows called the Bartlow hills, in the parish of Ashdon, in Essex, with an account of the Roman sepulchral relics recently discovered in the lesser barrows, *Archaeologia*, 25, 1–23.

1836. The recent discovery of Roman sepulchral relics in one of the greater barrows at Bartlow, in the parish of Ashdon, in Essex, *Archaeologia*, 26, 300–17 and 462–3.

1840. Account of further discoveries of Roman sepulchral relics at the Bartlow hills, *Archaeologia*, 28, 1–6.

1842. Account of the final excavations made at the Bartlow hills, *Archaeologia*, 29, 1–4.

England and Ammerland—a long-lost link?

Dr Nowell Myres, that distinguished Anglo-Saxon scholar who was President of the Society of Antiquaries from 1970–75, sends us this note of an incident in 1965, which, he says, 'has resurfaced in the course of my tearing up (in aid of my Executors) all the less memorable papers of my not very memorable past'.

In April 1965 I attended, as was my habit in those far-off days, a meeting of the *Sachsensymposion* of the *Arbeitsgemeinschaft für Sachsenforschung* which was held that year at Oldenburg. Among the strenuous activities of a busy week was a day-long excursion to examine the Dark Age antiquities of Ammerland. This is a little known and entirely rural region lying quite off the beaten track to the north-west of Oldenburg and extending towards an unfrequented stretch of the North Sea coast between the Ems and Weser estuaries. The people of Ammerland have maintained a strong folk culture reinforced by a distinctive dialect with traditional linguistic peculiarities of which they are very proud.

After a long day spent viewing the principal early Germanic sites in a very English-looking and peaceful countryside we were finally taken to the Ammerländisches Bauernhaus at the picturesque little town of Badzwischenahn for a sumptuous banquet of local specialities in food and drink. The

Bauernhaus is a massive timber hall, apparently of considerable age and heated for our benefit by an enormous fire of logs on an open central hearth from which the smoke curled away into the dim recesses of the high-pitched roof. The splendid feast, which included among other local delicacies a very tasty concoction of eels, was enlivened by traditional songs and dances performed by local talent. I noticed not only that our hosts were all the time raising their glasses in Germanic fashion to members of our party and to one another, but that this repeated ritual was always accompanied by what sounded like a quite extensive but always identical exchange of compliments couched in a version of the local Ammerländisch dialect.

I asked my neighbour at table about this apparently formal procedure and he said that the practice was indeed customary on all specially festive occasions in Ammerland, and that the formulae used were traditional and of unknown antiquity. He was kind enough to write down for me the dialogue between proposer and recipient in a simple phonetic form thus—

A Ick sah di

B Dat froit mi

A Ick sup di fa

B Dat du

Then both say *Prosit* and drink together

A Ick habe di fosapen

B Hast den rechten doapen

which may be roughly translated:—

A I see you

B I am glad you do

A I will drink to you

B Please do

Prosit

A I have drunk to you

B You have done the right thing

I thought at once of the similarity this ritual bears to the formulae once in common use, especially in East Anglia and Essex, when one man stands another a drink in an English pub. There are many variants of this customary exchange of compliments once in vogue on such occasions. This one may

Piltdown and Professor Hewitt

Peter Costello's article 'The Piltdown Hoax reconsidered' in our last issue (1985, 167–83) has received widespread publicity and cuttings have come in from newspapers published as far afield as Albuquerque and Santa Barbara. The Editor, Professor Glyn Daniel, here adds a footnote to Mr Costello's article in the light of some startling letters he has received.

The BBC mounted a short programme on Costello's article in *Newsnight* on 22 November, in which Costello repeated his theory that Dawson was innocent of the hoax and the real culprit was his friend and colleague Samuel Allinson Woodhead, and Woodhead's son Lionel firmly denied this. In a letter to the Editor (28 November) Mr Woodhead says, 'One day I expect the truth will be known and I hope that Mr Costello will then admit that he blackened a dead man's character quite abominably in spite of masses of evidence to the contrary.'

The day after the broadcast a Mrs Elizabeth Pryce wrote me the following letter:

Last night we watched 'The Piltdown Man' on BBC Television and felt we must write to you. We moved to Hurst in 1952 opposite Dr John Theodore Hewitt O.B.E., F.R.S., Ph.D., M.A., Emeritus Professor of Chemistry University of London, born 12.10.1868. Dr Hewitt would have many a Sunday lunch with us, and at one of these meals he told my parents and me that he and a friend had made the Piltdown Man as a joke. We have no documents only this conversation to tell you about, and have no idea who the friend was, or if in fact it is true, but

serve to illustrate their general likeness to the Ammerland version:—

A I looks towards you

B I takes your eye

A You does me proud

B I likewise bows

The close similarity between the traditional English ritual and that still in use in Ammerland is very striking. It can hardly have arisen in recent times when social contacts between ordinary folk in England and Ammerland have been minimal, if not non-existent. Can it be that we are here in the presence of a piece of formal behaviour already familiar on social occasions among the good folk of Ammerland before some of them brought it over here by joining in the hazardous movement to Britain in the fifth century AD?

Dr Hewitt was an honourable man and a dear friend to me as a child and we have no reason to believe that he made this up. My mother, who is now 77, can remember no more of the conversation.

My excitement at receiving this letter can well be imagined. We have had people like Martin Hinton and Emeritus Professor A. J. E. Cave who declare that they knew who perpetrated the hoax—and Cave still says he will reveal the name in his posthumous memoirs—but to the best of my knowledge no one who has said he was the man, or that he and a friend did the deed. I wrote to Mrs Pryce at once and she replied (5 December 1985) that she and her mother . . .

have talked about the time when Dr Hewitt, as we knew him, spoke about the making of the skull. How he laughed when he said, 'One day they will find out it was made by man.' My mum says she can close her eyes and see this, but I'm afraid Samuel Woodhead is not a name she remembers: she is sure he only said 'a friend'.

My wife and I went to see Mrs Pryce and her mother, Mrs Hawkins, now aged 77. Mrs Hawkins had the clearest recollection of the conversation, which took place sometime in 1952/3. They knew nothing of the debunking of Piltdown, in November 1953, and the names Le Gros Clark, Weiner and Oakley meant nothing to them.

Who then was John Theodore Hewitt? He was born in 1868, was, curiously enough an undergraduate of St John's College, Cambridge, the College of W. J. Sollas, Sir Grafton Elliot Smith,

Louis Leakey, and where I now write these words, and became Professor of Chemistry in Queen Mary College (formerly the East London College, and before that, when he joined the staff, the People's Palace Technical Schools). He was a brilliant scholar and teacher: he has a long obituary in the *Phil. Trans. of the Royal Society* for 1955 by E. E. Turner which ends with these words 'a chemist, a gentleman—a gay, kindly figure who could have had no enemies and need never have bothered to count his friends.'

He lived most of his life in London moving in 1928 to a cottage at Hurst near Twyford. He was unmarried, lived with his sister and, after she died in 1943, alone with his three cats. He was knocked down by a car and killed outside his cottage in 1954. Can we discover any connexion with Dawson and Woodhead? Yes. In 1898 Dawson made an important discovery of natural gas at Heathfield and the hotel and station on the London Brighton and South Coast railway was lit by it for many years. On 8 June 1898 two papers were read to the Geological Society on the Natural Gas at Heathfield Station: the first was by Charles Dawson, the second by J. T. Hewitt (*Trans. Geol. Soc.*, 1898, LIV, 564–74). Hewitt made one analysis of the gas: another was made by S. A. Woodhead, County Analyst for East Sussex, who 'fitted up a laboratory on the spot, and checked all his results twice'. Dawson, Woodhead and Hewitt were, therefore,

involved in legitimate scientific work in Sussex in early 1898. It was twelve years later that Dawson was given the first piece of the skull (the so-called coconut) by Alfred Thorpe. More pieces were not found until the spring of 1911. The announcement to the world of the finds was made in December 1912: the debunking in November 1953. Before this Woodhead, who died in 1941, had told his wife in the thirties that Piltdown was a hoax. In 1952 Hewitt had told Mrs Pryce's parents that he and 'a friend' had made it. Who was the friend? Woodhead or some other figure un-named? Turner wrote of Hewitt, 'He enjoyed his life and his memories. I have never heard anyone say anything derogatory about Hewitt. He was always good company and had a strong sense of humour.' What a pity he didn't write his memoirs!

Peter Costello has now established that Woodhead and Hewitt were fellow members of the Society of Analysts and, indeed, members of its Council during 1911–1913, the crucial years of the Piltdown hoax. It seems to me reasonable to conclude, on the evidence we now have, as a result of Peter Costello's painstaking and scholarly researches and the testimony of Mrs Hawkins and Mrs Pryce, that Hewitt and his friend, ? Samuel Woodhead, played a jape on Charles Dawson, already overexcited by a pathological skull from a medieval plague pit, which he misinterpreted as very old.

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Rural houses of the Lancashire Pennines 1560–1760 by Sarah Pearson. RCHM Supplementary Series. London: HMSO, 1985. 202 pp., 113 pls., 89 figs. £16.95.

Exploring Scotland's heritage: Argyll and the Western Isles by Graham Ritchie & Mary Harman. Edinburgh: HMSO for RCAHM (Scotland), 1985. 168 pp., many illus. (some colour) and figs. £6.95.

Neolithic Europe, a survey by Alasdair Whittle. Cambridge World Archaeology. Cambridge: University Press, 1985. 364 pp., 116 figs. £27.50 (hardback). £9.95 (paper).

Middle Saxon palaces at Northampton by John H. Williams, Michael Shaw & Varian Denham. Northampton: Northampton Development Corporation, 1985. 80 pp. with 37 figs. and 20 tables, plus 11 figs. and fiche in folder. £12.50.

La protohistoire de l'Europe. Le Néolithique et le Chalcolithique by Jan Lichardus & Marion Lichardus Itten with Gérard Bailloud and Jacques Cauvin. Nouvelle Clío: L'histoire et ses problèmes 1B. Paris: Presses Universitaires de France, 1985. 640 pp., 53 figs.

Pylos: palmprints and palmleaves by Karl-Erik Sjöquist & Paul Åström. Studies in Mediterranean Archaeology, Pocket Book 31. Göteborg: Paul Åströms Forlag, 1985. 107 pp., 37 illus.

Atlas des représentations Chypro-Archaïques des divinités by Sophocles Sophocleous. Studies in Mediterranean Archaeology, Pocket Book 33. Göteborg: Paul Åströms Forlag, 1985. 252 pp., 45 pls., 25 figs.

Corpus of Cypriote antiquities 10: Cypriote antiquities in Wolverhampton Art Gallery and Museums by David Symons. Studies in Mediterranean Archaeology, Vol. XX: 10. Göteborg: Paul Åströms Forlag, 1984. 38 pp., 141 illus.

Cáceres el Viejo by Günter Ulbert. Madrider Beiträge Band 11. Mainz: Philipp von Zabern, 1984. 320 pp., 80 pls., many figs.

Use-wear analysis of flaked stone tools by Patrick C. Vaughan. Tucson: University of Arizona Press, 1985. 204 pp., 21 figs. \$49.50.

The Roman soldier by G. R. Watson. London: Thames and Hudson, 1985. 256 pp., 26 illus. £6.95.