

records, charcoal, in general, being of course superseded by coal (coke) in the 18th century, and this in turn of course has been an additional reason for the neglect of the subject. The only recent technological reference I am aware of is Tylecote's (p. 292), who, having dismissed peat earlier in his work, paraphrases a 19th-century paper [6] thus: 'wood and peat-charcoal was used for smelting'; but the implications of this seem to have been missed as indeed has a fairly detailed account of peat-charcoal making in the same paper. There are other 19th-century references [7] but the record is very scanty. Consideration of the possibility of excavational evidence raises the major problem of how to distinguish partially combusted peat from peat-charcoal—they are of course identical materials. The present writer in excavating Iron

Age and medieval sites in the Hebrides where iron slag deposits indicate considerable metal working, is particularly conscious of this problem (Tylecote's comment, p. 264—'one cannot neglect the possibilities that bog iron-ore and peat were used'—is very relevant for this area). Any appreciable heap of charcoal unassociated with a hearth may presumably be regarded as the deliberately refined form of peat. As is generally realized the population of the north-west of Scotland, especially of the Hebrides, has been forced by isolation and a subsistence economy to conserve a technology of medieval (if not Iron Age) aspect; details of this economy, *pace* Curwen, are perhaps not so well known as they might profitably be from a comparative viewpoint.

I. A. CRAWFORD

NOTES

[1] H. H. Coghlan, *Notes on Prehistoric and Early Iron* (Oxford, Pitt Rivers Museum Occasional Papers on Technology, 8).

[2] R. F. Tylecote, *Metallurgy in Archaeology* (1962).

[3] H. Hodges, *Artifacts* (1964).

[4] Cecilia A. Western, 'Wood and Charcoal in Archaeology' (ed. E. S. Higgs and D. Brothwell, *Science in Archaeology* (1963)).

[5] I. A. Crawford, 'Gual Gaidhealach: Peat Charcoal', *Scottish Studies*, 8, pt. 1, 108.

[6] W. I. Macadam, 'Notes on The Ancient Industry of Scotland', *Proc. Soc. Ant. Scot.*, XXI, 1886-7, 89.

[7] A. Ross, 'Old Highland Industries', *Trans. Gaelic Soc. Inverness*, XII, 1885-6, 389.

Taking the Baulks Home

PLATES XXX-I

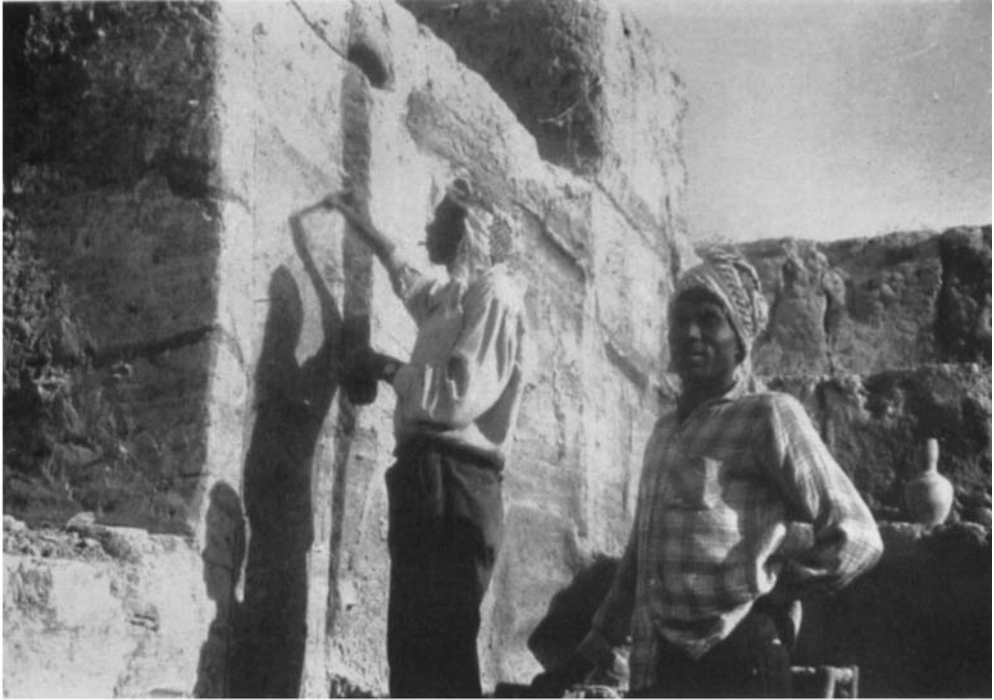
The following note is sent to us by Dr H. J. Franken, Lector in Palestinian Archaeology, Faculty of Theology, Leiden University, Holland. This note will briefly touch on the reasons for taking 'squeezes' of sections, some ways of taking them on a Near Eastern site, and their usefulness.

Tell Deir 'Alla is a site in the Jordan valley which has been excavated for the past 4 years by a Dutch team whose aim was to get a very finely stratified type series which would form a basic chronology for trans-Jordanian pottery. The dig was also intended as a training ground for Dutch students who might one day be interested in working in the Near East. With these two factors in mind it became increasingly desirable to take home a more actual record of key sections than just section drawings and colour

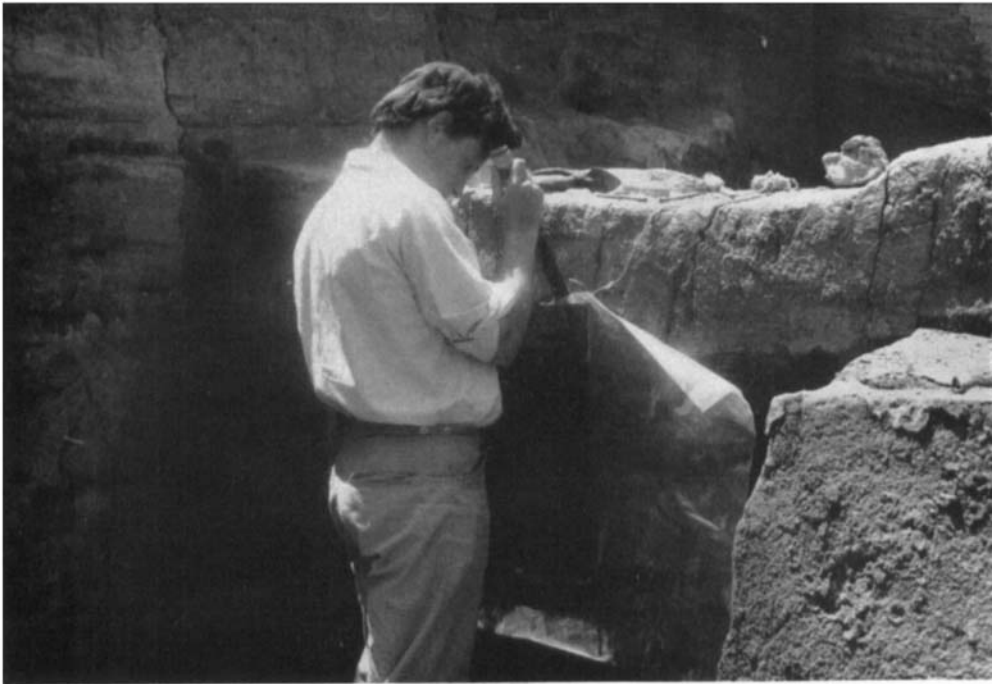
slides. The team is in the field 3 months of the year and the vital work on interpreting the stratigraphy must perforce take place, at least partially, thousands of miles from the site. Furthermore it is a new Dutch venture to excavate anything so large or so out of the way as a Near Eastern tell. Few colleagues could afford the time off to come and see for themselves what was going on in Deir 'Alla, so the answer seemed to be to take home some sections as they are, and argue out points of interpretation from the soil itself rather than from drawings, which demand some amount of interpretation before they can be drawn.

Taking a squeeze is not the correct terminology, and perhaps taking a 'pull-off' would be a more accurate phrase. What has been done is not the taking of an impression but the lifting

PLATE XXX



a



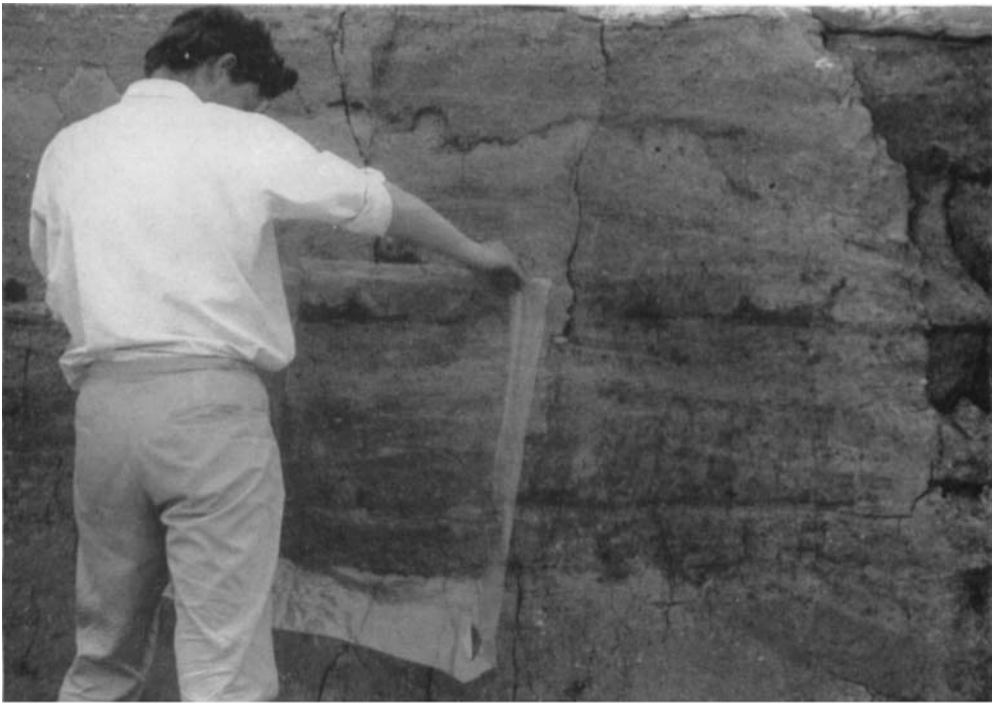
b

TAKING THE BAULKS HOME

(a) *Applying Arborite.* (b) *Disengaging the 'pull-off'.*

See pp. 140-2]

PLATE XXXI



a



b

TAKING THE BAULKS HOME

(a) Comparing the 'pull-off' with the section itself. (b) The tallest 'pull-off' taken—2 m. 80 cm. long—having the surplus earth removed.

See pp. 140-2]

of a thin vertical slice of superimposed horizontal levels of soil. It is a technique used by prehistorians in Holland and by soil specialists at the agricultural college of Wageningen. As far as the author knows the experiments at Deir 'Alla are the first of their kind to be made on a Near Eastern tell. As the composition of the soil and the climatic conditions are so different in the Jordan valley from those encountered in Holland, it seemed more practical to experiment with materials that could be bought locally than to send for chemicals used in Holland, which would have been expensive and not necessarily successful.

EXPERIMENT 1

An area of a section was thoroughly cleaned down and a very thin solution of celluloid and acetone was rolled on, followed by three thicker coats. It dried swiftly and could be peeled off the section easily enough except where there was some unevenness such as a pebble. This sort of obstruction left a hole which weakened the whole 'pull-off'.

The initial patch was enlarged to an area of 80 cm. \times 45 cm. This was less satisfactory but possibly open to improvement if several more coats were applied as the whole was too brittle for easy handling.

Conclusion: This method can satisfactorily be used on small sections which are not full of small stones, flint chippings and the like. As the 'pull-off' is paper-thin obtained this way, it must be mounted on cardboard or hardboard if it is to be preserved undamaged. This was a cheap and easy method though it was impossible to spray on the solution as the hot, dry atmosphere caused the acetone to evaporate too quickly, with the resulting blockage of the nozzle of the spray.

EXPERIMENT 2

With a view to producing a more flexible end result, a plastic laminate was tried. This was a Canadian product called Arborite Contact Cement which is normally used for bonding leather, metal or wood together or glueing Formica to such materials. A similar German product, Pattex Special Glue, was also used with

exactly the same results as those obtained by using Arborite.

An area 106 cm. \times 80 cm. was scraped clean and Arborite applied. Part of this area had a very crumbly, porous surface being composed of mud-brick debris which had in antiquity been almost fused by the intensity of a fire which raged through the room. This part refused to take the Arborite which became clogged with surface dust and blurred the lines of stratigraphy. The area was cleaned once more and one coat of the celluloid solution used in Experiment 1 was painted over the worst patches. This gave a firm enough surface on which to apply the Arborite. Two 2-quart tins were used to give two fairly thick coats. In order to get so large a section off successfully, a sheet of plastic from plastic bags was stuck on to the last coat of Arborite while still wet, well overlapping the edges of the treated area. Then the whole section was cut back about an inch. A crate lid served as a stretcher and the block of earth was carried down to camp. The surplus earth was removed first with a knife and then by blowing to prevent ash layers being spread on to their neighbours confusing the stratigraphy.

Conclusion: A very successful method. The Arborite is rubbery enough to take lumpy objects in its stride, even lifting sherds and metal slag protruding from the section's face. Nor does it tear when encountering the sharp edges of flint chippings, etc. It gives a much tougher and more flexible result than the celluloid, and can be rolled for transport.

Some of the most complicated and interesting sections at Deir 'Alla have now been lifted and will hang in the Palestine workrooms of Leiden University for colleagues to analyse and students to puzzle over and learn to draw. They will be there in the workrooms as a book of reference is in a library: seismologists can see for themselves some of the earthquake cracks which distort the sections, and soil specialists can see where some of their samples came from and how the levels were in relation to each other *in situ*. How long the colours of the soil will remain distinct and how the damp Dutch climate will affect them remains to be seen. It may be that the damp will draw all the salts out of the earth, covering

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the surface of these 'pull-offs' with a white film. If this happens, our labour will have been in vain.

Anyone interested in seeing such a 'pull-off' in England should contact Mr Julian Berry, New College, Oxford. * It was largely due to his

enthusiasm that these experiments were undertaken and he is willing to show some samples to other enthusiasts.

* The 'pull-offs' can be viewed, by appointment with Mr Berry, at 4 *Roper's Orchard, Danvers Street, London, S.W.3.*



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