publications. Subscribers should write to the Council for Old World Archaeology, 11, Divinity Avenue, Cambridge 38, Mass, U.S.A. The annual subscription (covering eleven areas issued in two groups) is four American dollars. A preliminary look at what the Council has already published shows that, although intended for America, its surveys and bibliographies will be indispensable for all archaeologists working in the Old World. We have no comparable survey and bibliographical machinery; COWA is just the learned service agency for which so many of us have been hoping for so long. The list of its Trustees inspire confidence, and its first sample publications demonstrate that this confidence is not misplaced.

THE CARNEGIE TRUST AND ARCHAEOLOGY

Since 1951 the Carnegie United Kingdom Trust has had a policy of grant-aid for groups of amateurs practising the visual arts. During 1957 the trust embarked on a policy of grant-aid for amateurs whose spare time interests lie in science rather than the arts, and, avoiding for the time being the physical sciences, has decided to begin with activities in natural history and archaeology which take amateurs into the countryside. The policy is in three parts, all with the object of assisting the group activities of societies whose members are mainly, if not entirely, amateurs. The first part of the policy is the offer of bursaries to adult amateurs to enable them to attend courses offered at Field Studies Centres. The third part of the policy is an attempt to improve the record of information about local scientific societies by preparing, through the British Association for the Advancement of Science, a directory of societies and unions of societies. It is the second part of the policy that will most interest readers of ANTIQUITY; it is a scheme devised in conjunction with the Council for British Archaeology of grant-aid for amateur field work in archaeology. To quote from the Trust's 1957 report ' the object of this scheme is to encourage local archaeological societies to arrange practical group activities among their members not limiting their outdoor work to excavation only, but taking in general field work as well. Grants will be offered primarily for the fees and expenses of the directing staff of approved projects, and it is hoped that this offer may encourage enterprising groups to tackle work they have not so far been able to contemplate. Grants will also be available towards the purchase of equipment for particular projects. The emphasis on this scheme is on the practical side of archaeology and passive activities will not qualify.' The Trust emphasizes that it is not its intention to compete with the training schools organized by University Extension Extra-mural Activities Departments. Applications for grants (which should be from recognized societies or groups of societies and which should involve projects mainly for amateurs) should be made in the first instance to the Council for British Archaeology, 10 Bolton Gardens, London, S.W.5.

AN EARLY BRONZE AGE KRAAL AT BISKUPIN PLATE XVI

In the years 1952–54 excavations were carried out on one of the hills near the well-known Lusatian earthwork stronghold of Biskupin in North-West Poland (ANTIQUITY, 1938, 311). Long ditches with deep deposits containing Early Bronze Age finds were discovered, and in 1956 six weeks' excavations were undertaken by the State Archaeological Museum in Warsaw. The ditches are situated on the highest sandy hill on the shore of the Biskupin lake. It is surrounded on three sides by low peaty meadowland. On the fourth side the hills are connected with an upland of rich soil (PLATE XVI, *c*). The original, upper layer of the sandy hill, 1·5 m. deep, consisted of alternate thin layers, 20–50 cm. thick, of sand and clay. Here and there occur traces of moraines, stratified with sand, clay, gravel and boulder. The hill, which eighty years ago was birch-forest, is now under cultivation.

The complicated geological system of the upper strata made for many difficulties in the field. In 1956 an attempt was made to discover the function of the ditches. Trenches were cut across them at intervals varying from 5 to 20 m. Twenty such trenches were cut during the six weeks. Parts of the ditches on the eastern and southern sides were completely excavated (PLATE XVI, *a*, *b*). Difficulties were caused by the ditches being hardly noticeable on the surface, sometimes indistinguishable even at the depth of 0·8–0·9 m. The upper portions of the ditches had been washed away by the action of surface water from the steep top of the hill. Only the lowest portions of the ditches, on an average 0·3–0·5 m. above the bottom were well preserved.

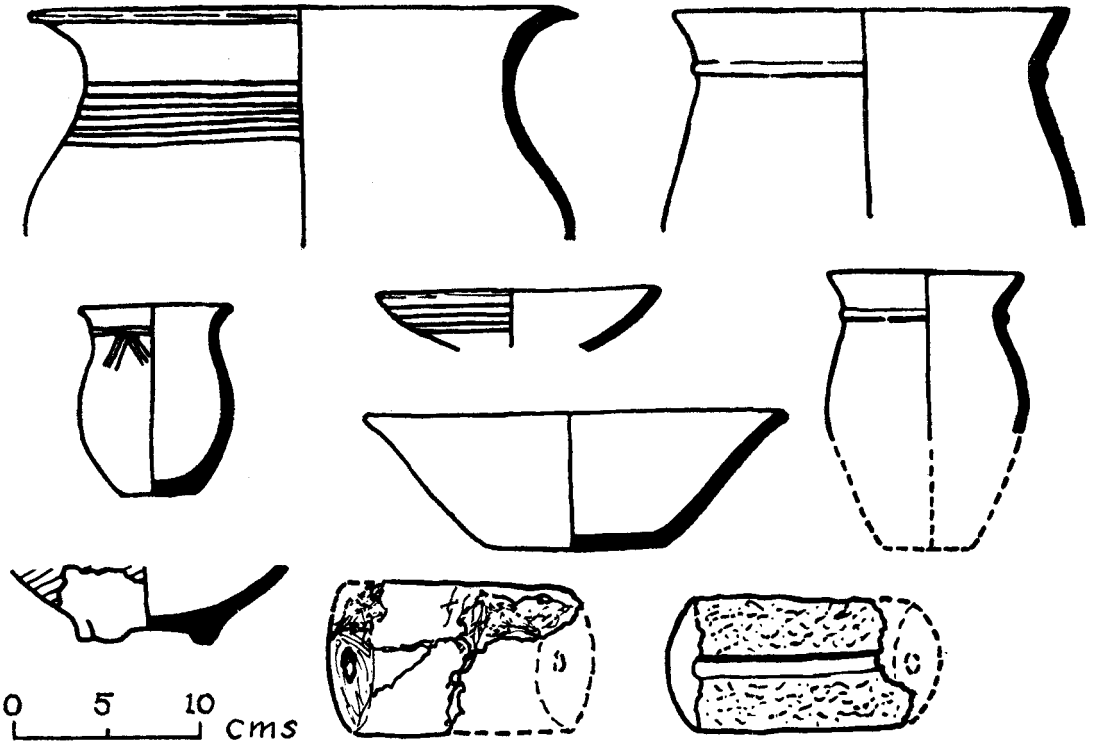

FIG. 1. Pottery and loom-weights of the Iwno Culture from the kraal.

The total length of the ditches was about 250 m. The chief ditch embracing the whole area was 210 m. long; the shallower outer one, situated on the southern, more accessible side, 40 m. long. The supposed original depth of the steep-sided main ditch was about 1·7–1·9 m., that of the shallower outer one about 1·5 m. Hearths irregularly placed just above the bottom were discovered in both ditches. To date six hearths have been found in the chief ditch. Four of them were placed near narrow 1 m. wide causeways running across the ditch from the side of the old lake. Two other hearths in the north-eastern part aroused special interest because two pairs of damaged, oblong, 10–12 cm. long loom-weights were found in them (FIG. 1). These may be related to primitive vertical looms producing textiles not more than 24 cm. wide. Bones of domesticated animals were also found in the hearths: cattle bones mainly, with swine and sheep next. There were, moreover, great quantities of pond-mussels and of bones of common fishes such as perch,

pike and bream, around the hearths. Many pottery fragments occurred in the hearths and at the bottom of the ditches. Pots with cordons round their necks, and dishes, were the most common forms. Thin-walled vessels ornamented with grooves and tassel-like motifs, characteristic of cemeteries of the period, were rare. Several small irregularly shaped implements (most of which were scrapers), two cores, several flint flakes, and one antler chisel were found. A plain bronze pin with a thickened upper part was discovered in one of the hearths.

In the plan (PLATE XVI, *c*) the area embraced by the ditches (about 3,900 sq. m.) was roughly oval, about 90 m. long and 35–50 m. wide. The flat top covered about 900 sq. m.; the western slope 1,200 sq. m., and the eastern slope 1,900 sq. m. The greatest difference between the levels within the area was 2·5 m. The main ditch had two 15 m. wide causeways (gates). The shallow, outer ditch consisted of three parts, several metres long. Two of them run parallel to the southern part of the chief ditch for a distance of 1·5 –3 m. The third part was situated opposite to the chief southern entrance (gate) for a distance of several metres.

The ditches must have belonged to a kraal for animals, chiefly cattle. It is situated near the lake and the low-lying meadow land. Owing to the continuous winds there were probably no gad-flies on the hill. For this reason a great quantity of cattle could be kept in the kraal, in spite of the near vicinity of swamps. The steepness of the kraal probably did not create difficulties, as some of the profiles suggest that a low earth rampart was made from the soil dug out from the ditch. The rampart would perhaps have been strengthened with a hedge or fence of blackthorn. Cattle and other animals herded here together all night long must have completely denuded the kraal of vegetation. In consequence the upper layers of the hill and a part of the ditches were washed away. Shepherds seem to have lived in sheds built probably directly above the ditch over the hearths. The causeways were probably closed with a fence of wattle-work. About 500–800 head of cattle could be kept in the kraal. The works having been repaired several times, it is possible that the breeders returned to their base settlement each autumn. Their food consisted of the meat of domestic animals, with pond-mussels, fish, and probably also corn.

The Early Bronze Age kraal of Biskupin is the first of its kind in Europe to be examined almost completely. The finds enable it to be dated to the end of the first period of the Bronze Age (according to Montelius). They belong to the local West Polish-Kuyavian culture of Iwno which was contemporary with the Unětician culture.

ALEXANDER GARDAWSKI

ARCHAEOLOGY IN OXFORD UNIVERSITY: TWO RECENT DEVELOPMENTS

1. *The Research Laboratory for Archaeology and the History of Art*

The project of a Research Laboratory to work on the archaeological applications of physical science was first put forward in Oxford in 1950, and was finally realized in the early part of 1955, when, after receiving grants from the Wenner-Gren Foundation and the Nuffield Foundation, the University created the Laboratory by statute and installed it in its premises, 6 Keble Road. A chief part in its creation was taken by the late Viscount Cherwell, who was then still the professorial head of the Clarendon Laboratory, and had long seen what archaeology and art-history would stand to gain from analytical treatment of their materials by the techniques of physics. The new laboratory's governing committee includes the present holder of Lord Cherwell's post (Prof. B. Bleaney) and the Professor of Geology and Mineralogy (L. R. Wager), while its chairman is the Keeper of the Depart-