

REVIEWS

DATING THE PAST: An Introduction to Geochronology. By F. E. ZEUNER. 8vo.: pp. xviii, 444; 101 figs., 24 plates. London: Methuen & Co., 1946. Price 30s.

'Time-scales are now available for the entire period of man's established presence on earth.' So writes Dr. F. E. Zeuner, Professor of Environmental Archaeology at the London University Institute of Archaeology, in his introduction to this volume. And he goes on to explain that tree-rings allow us to carry exact chronology back to about 1000 B.C. (chapter I); varved clays, back to about 15,000 years ago (chapters II-III); and the calculated fluctuations of solar radiation during the Ice Age, back to about one million years ago (chapter V). Chapter X expounds methods concerned with radio-activity, 'relying on the period of decomposition of radioactive minerals, covering all geological formations previous to the appearance of man, extending over about 1,500 million years'; chapter XI is entitled 'The Age of the Universe and of the Earth, and the Time-rate of Geological Progress'; chapter XII, 'Biological Evolution and Time'; and the book ends with an Index of 22 pages. It is in effect an exposition of the methods of the new science of Geochronology, which aims its efforts at an absolute chronology, transcending the relative chronology of stratigraphers.

All honour must be paid to the extraordinary facility with which the author has brought a vast specialized literature into marshalled order in its pages. His Bibliography contains no less than 650 references to books and articles, in 15 different languages. So to distil their essence for us is a real work of mercy, particularly in the case of such recent works as that of W. S. Glock on Dendrochronology (1937), of G. de Geer on varve-analysis (1940), M. Sauramo on isostatic movements in Fennoscandia (1939), H. Godwin on pollen-analysis (1941), and others that one might mention. But Professor Zeuner has had the skill to shape the results into a quite individual and characteristic exposition, calculated to satisfy both the learned, by analyses of specialist work that are always profound and exact, and also, by a presentation sedulously clear in its treatment of difficult subjects, those who are attracted to prehistory simply by way of interest in the past of humanity and the world. Moreover, scientific readers will find a more technical exposition of the same problems, in relation to the environment which became that of early man, in his other volume, scarcely anterior in date of publication, *The Pleistocene Period: Its Climate, Chronology, and Faunal Succession* (pp. xii, 322; 76 figs.), published by the Ray Society, c/o The British Museum (Natural History), London, S.W.7, 1945 (price 42 shillings).

In the present work, his study of the chief sites that provide the basis of prehistoric stratigraphy covers late-glacial and post-glacial times in chapter IV, and Palaeolithic times—through the successive glacial and interglacial (or in the lower latitudes pluvial and interpluvial) phases of the Pleistocene—in chapter VI for western, central, and eastern Europe with Siberia, in chapter VII for the Mediterranean region, and in chapter VIII for Africa, the rest of Asia, Australia and America. Then, in chapter IX, the whole result is brought together in a chronology expressed in years, into which are inserted the datable remains of early man. It may be noted in passing that these include the cranium from Keilor, South Australia, found during the war and attributed to the early part of the last interglacial. While admitting that 'this recent discovery needs further geological confirmation', the author concludes none the less that 'it suggests, together with Swanscombe man, that *Homo sapiens* was well established before he entered, or rather re-entered, the European scene at the beginning of the Upper Palaeolithic' (p. 298).

Now Zeuner's interpretation of this enormous assemblage of facts in terms of climate, and his translation of it on to the plane of absolute chronology, are bound to be regarded by some as uncomfortably rigid. Indeed, in chapters VI-IX he makes little case against a confession of total adherence to theories which may appear still hypothetical. One of these concerns the altimetric distribution (outside the regions directly affected by glacial isostasy) of raised beaches, which is based on that of Depéret, but is adapted to subsequent observations. 'I am confident', he says (p. 127) 'that the "raised beaches" will eventually provide a link in dating Pleistocene and Palaeolithic in coastal regions all over the world.' Another, based on that of Soergel, concerns the climatic and chronological significance of river-terraces. 'This work . . . has confirmed the detailed chronology based on the glacial phases of the Alps to such an extent that one is justified in abstracting from it a sequence of climatic phases applicable to temperate Europe in general' (p. 125). And lastly, there is that concerning the number and rhythm of the glaciations, after Penck, and their coincidence with the

fluctuations of solar radiation, after Milankovitch. Of Penck's geological chronology he writes (p. 135): 'Considering the very slender basis on which this estimate relies, its results are astonishingly good, as will be seen from a comparison with the astronomical figures to be given later'; and again (p. 145): 'Combining the geological evidence with the astronomical time-scale by means of the radiation-curves, an absolute chronology is obtained which can be regarded as sufficiently reliable for the purposes both of palaeoclimatology and prehistoric archaeology.' All the same, between this time-scale and the findings of prehistoric archaeology there are in fact disparities, and disparities capable of provoking astonishment. For example, the Magdalenian culture is here assigned a duration of 50,000 years, the Aurignacian one only of 30,000 and the Solutrean of 1,000. It is also disquieting that the astronomical data should not have been found capable of coinciding happily with those given by the calculation of varved clays.

On the other hand, Zeuner is less inclined to be positive on such matters when dealing in chapter IV with late-glacial and post-glacial times. He there remarks (p. 107): 'it must be admitted, then, that the absolute chronology of the time which has elapsed since the maximum of the Last Glaciation, and of the prehistoric industries of this period, relies on somewhat scanty evidence.' One would certainly think this judgement severe in comparison with the indulgence allowed in chapters VI-IX, were it not followed by this corrective: 'Nevertheless, it is possible to derive approximate figures for the age and duration of prehistoric phases from the numerous local chronologies suggested . . . On the whole, the dates are not unreasonable, considering the slender basis they have.' Yet even so, there seems to be really much more harmony between the absolute and the relative chronology for these phases than for the earlier, and likewise between the chronologies and human cultural development.

The personal equation is inseparable from all the works of man, and its presence here only makes the perusal of Professor Zeuner's book the more exciting. Due allowance for it there must be, but due appreciation also, in justice, of the value of many constructive aspects of his critical thought. And I would cite as an example in conclusion, his new views of the effects of the displacement of the caloric equator (which Milankovitch calculated), in the course of Pleistocene times, on the climate both of the tropical zones, and of their desert and sub-desert borders to north and south.

R. VAUFREY.

Institut de Paléontologie Humaine, Paris.

PAPERS OF THE PEABODY MUSEUM OF ARCHAEOLOGY AND ETHNOLOGY,
HARVARD UNIVERSITY. Cambridge, Massachusetts: published by the Museum.

Though most of the volumes hitherto published in this series deal with the archaeology and anthropology of America and the Pacific, its scope in the last 15 years has been widened sometimes to include monographs directly concerned with the Old World. These may easily be missed by archaeologists whose subjects they concern, and the following list may therefore be found convenient.

Vol. XI, No. 4 (1931): AZILIAN SKELETAL REMAINS FROM MONTARDIT (ARIÈGE), FRANCE, by RUTH OTIS SAWTELL (55 pp., 7 pls.; 75 cents).

Vol. XIII, No. 3 (1936): THE RACIAL CHARACTERISTICS OF SYRIANS AND ARMENIANS, by CARL C. SELTZER (77 pp., 2 maps, tables; 1 dollar).

Vol. XVI (complete, 2 dollars 50 cents; cloth, 4 dollars):—
No. 1 (1937): ANTHROPOMETRY OF THE NATIVES OF ARNHEM LAND AND THE AUSTRALIAN RACE PROBLEM, by W. W. HOWELLS and W. L. WARNER (96 pp., 1 pl., 2 maps; 1 dollar).

No. 2 (1940): CONTRIBUTIONS TO THE RACIAL ANTHROPOLOGY OF THE NEAR EAST, by CARL C. SELTZER and HENRY M. HUXLEY (72 pp., 8 pls., tables; 1 dollar).

No. 3 (1940): FOSSIL MAN IN TANGIER, by MUZAFFER SULEYMAN SENYÜREK, introd. by CARLETON S. COON (35 pp., 3 pls., tables; 50 cents: should be read with Vol. XIX, No. 1).

Vol. XIX, No. 1 (1941): THE PREHISTORIC ARCHAEOLOGY OF NORTH-WEST AFRICA, by FREDERICK R. WULSIN (173 pp., 92 illustrs., 3 dollars). A review, of a subject of great comparative interest for Mediterranean and West-European prehistory, based on the published literature to 1939. There is already more, to supplement it and modify conclusions; e.g. for the Lower Palaeolithic: Neuville and Ruhlmann, 'La place du paléolithique ancien dans le Quaternaire marocain', *Inst. des Hautes-Etudes du Maroc*, viii (1941); and for the Palaeolithic of the adjoining Peninsula: Breuil and Zbyszewski, 'Contribution à l'étude des industries paléolithiques du Portugal et de leurs rapports avec la géologie du Quaternaire', *Comis. Serv. Geol. Portugal*, xxiii (1942), and L. Pericot Garcia, *La Cueva del Parpalló, Valencia* (Madrid, 1942: see V. Gordon Childe in *Antiquity*, March 1944, 29-35). Wulsin continues

his study right through to Neolithic and Classical times, and well brings out the ethnological significance of his material; he also deals very thoroughly with the much-discussed North African rock-paintings and engravings.

Vol. XIX, No. 3 (1944): **EARLY MAN AND PLEISTOCENE STRATIGRAPHY IN SOUTHERN AND EASTERN ASIA**, by HALLAM L. MOVIVUS, JR. (125 pp., 47 illustrs., 6 tables; 3 dollars 75 cents). Dr. Movius here propounds the existence of a distinct Far Eastern complex of Palaeolithic cultures, including the Patjitanian associated with *Pithecanthropus* in Java, the Choukoutienian associated with *Sinanthropus* in N. China, the Soan of NW. India, the Anyathian explored by Movius himself in Upper Burma, and probably also the less studied Tampanian of Malaya. Its industries being based on the chopper, chopping-tool, and hand-adze, the complex diverges altogether from the hand-axe, flake, and blade complexes of Europe and Africa, Peninsular India and the Near East, and this study of it will remain an indispensable stepping-stone towards its fuller understanding. Movius's work has also considerable reflex value for the study of the rest of the Old World Palaeolithic; and for India, where the Soan and the hand-axe culture adjoin each other, it should be read in conjunction with the monumental *Studies on the Ice Age in India and Associated Human Cultures* by H. de Terra and T. T. Paterson: Washington, Carnegie Institution publ. no. 493, 1939. (It looks as though in India, as also in South Africa (*Man*, 1945, 37), the Levallois is not a 'Eurasian culture', opposed to the 'Eurafrican' hand-axe complex, but in some sense actually belongs to it: here in fact is a question pointing straight at our own European and British Palaeolithic studies, and more will doubtless be heard of it before long). Lastly, Movius's insistence that Palaeolithic no less than later archaeology is essentially not a 'natural', but a social science, will be warmly welcomed by all humanely-minded readers.

Vol. XX (Dixon Memorial Volume, 1943): **STUDIES IN THE ANTHROPOLOGY OF OCEANIA AND ASIA**, presented in memory of Roland Burrage Dixon, by various authors, edited by Carleton S. Coon and James M. Andrews, IV (220 pp., 20 pls., 10 maps, 10 other illustrs.; 4 dollars 50 cents). This contains the following studies:—

In the *prehistoric archaeology of Asia* (of great comparative interest to students of European pre-history): 'Observations on the Bronze Age in the Yenisei Valley', Siberia, by James H. Gaul (an important and fully-illustrated classificatory monograph, with thorough Russian and other documentation up to 1938); 'The Prone Burials of Anyang, China', by Li Chi; 'Southern Arabia, a Problem for the Future', by Carleton S. Coon.

In the archaeology of Oceania (of comparative interest to students of European *megaliths and rock-carvings*): 'Polynesian Stone Remains', by Kenneth P. Emory; 'Two Unique Petroglyphs in the Marquesas which point to Easter Island and Malaysia', by Edward S. Craighill Handy.

'Culture-Sequences in Madagascar', by Ralph Linton (an anthropological and human-geographical reconstruction of the past of an island where the native religious attitude makes active archaeology still impossible).

The remaining papers concern religion and social and physical anthropology in Melanesia (racial elements of), Polynesia (differentiation) in, Japan (types), N. India (Munda race and language), and in general ('Evolutionary Trends in Body-build', by James M. Andrews, IV).

C. F. C. HAWKES.

HET IN DE POTTENBAKKERIJ VAN DE HOLDEURN GEFABRICEEERDE AARDEWERK UIT DE NIJMEEGSCHE GRAFVELDEN. By J. H. HOLWERDA. Supplement to New Series XXIV of the *Oudheidkundige Mededeelingen* of the Rijksmuseum van Oudheden te Leiden. Pp. 50, 13 pls. Leiden, 1944.

The piece of ground known as the Holdeurnsche Hof, near Nijmegen, has long been known as the site of a Roman tiler. Excavations were begun in 1938 and were continued, even under the German occupation of the Netherlands, until 1942. The full report on this work, in which over 2,000 stamped tiles of the Xth Legion (Leg. X, stationed here from A.D. 70-105), and of the Ist and XXXth Legions (stationed here in the late second century) were found, is in preparation.

But, among the tile-kilns, smaller kilns were found which had been used for making pottery. Of these kilns A and J are dated by the tiles of which they are built, stamped with the names of Didius Julianus and Junius Macer and in other cases of the *Exercitus Germanicus*, to the late second century. In another part of the area kilns H and I, built of flue-tiles, are ascribed to the earlier period: on the floor of kiln I lay a tile of Leg. X. Quantities of sherds were found around these kilns; also a number of small, simple kilns sunk in the ground.

It is with the products of these kilns that the present publication is concerned. They prove the source of much of the pottery already collected at Nijmegen from various sites, chiefly cemeteries. Previously styled 'Nijmegen Ware', this can now be more accurately termed 'Holdeurn Ware'.

Elaborate tables give a summary of the products, based on a left-hand column in which are ranged, by type, the vessels of this fabric found in the cemeteries. Most of these are illustrated in the Plates. Thus we are given the range of the products, illustrated by complete examples. The second column records vessels or fragments of the same types found on other sites, bringing to hand the available evidence for dating the types. The third column details the actual number of fragments of each type found at Holdeurn, and in what part of the area.

The chronological evidence for dating the pottery, and checking the date of the kilns, is thus diagrammatically displayed in an excellent manner. But the reader has to memorize the letters by which the cemeteries and sites are indicated and the dates which they connote. This is not easy: the addition of a column of dates would have been a great improvement. For the benefit of those who do not read Dutch there is a summary in German; for those who read neither language, and who yet wish to use the book to help their own work on Roman pottery, we offer a key to the letters used, as follows:—

Three cemeteries belong to the period of native Batavian occupation: O is the earliest, dated A.D. 5-10 to 30; E is c. 20-40; S is c. 30-70.

OH is early, but is partly covered by the fortress of Leg. X, so that there is possibility of confusion up to A.D. 105.

RK, south of the W gate of the fortress, belongs to it, A.D. 70-105.

KKH, at the E gate, was partly in use before A.D. 70, but is mainly of about 70-105.

Br is the cemetery on the Broerdijk, south of the east gate, doubtless of A.D. 70-105.

KL and WW are cemeteries to the west of the town, apparently belonging to the (later) period of the Colonia Ulpia Noviomagus founded at Nijmegen by Trajan, from the second century to early third century.

In the second column the abbreviations used are:—

Opp. Bat. Finds from the native Batavian Nijmegen, or Oppidum Batavorum, dated c. A.D. 5-70.

Castra L.X. From the fortress of the Xth Legion, occupied A.D. 70-105, and from its *canabae*.

NOV. From Col. Ulpia Noviomagus, mostly second century.

In the third column the finds from Holdeurn itself are shown thus:—

I. *From the kiln area:—*

A. From the small kiln near the first large brick-kiln, not well stratified.

H. From before the first large pottery kiln, of same date as kiln.

I. Fragments from under the two large pottery kilns, dated by a tile of Leg. X to the end of the first century.

P. Finds from under a foundation near R.

R. From a large rubbish heap of sherds from the kilns.

S. Loose finds over the whole kiln area.

U. Sherds from a kiln sunk in the ground.

V. From a large sunk furnace, probably another kiln.

W. From another such furnace.

X. From a kiln similar to U.

II. *From another area:—*

g. From a 'kelder'.

η. From the whole area.

In the result these tables identify a large amount of the pottery found at Nijmegen as made at Holdeurn, and the evidence of columns 1 and 2 confirms and establishes the date of the kilns.

The finest product of the site, formerly known as 'fine Nijmegen ware', is fine, thin, and reddish-yellow, with a red coating, the high polish on which makes it appear darker. Horizontal marks of tooling sometimes appear. Sometimes it is baked very hard. The core may be grey occasionally almost grey right through. This ware is sometimes decorated in moulded relief or barbotine. The forms are frequently copied from metal or glass prototypes. The finest quality, with paper-thin walls, is very scarce. There is a close relationship to the red-coated 'Wetterau ware' of Germany, and both fabrics are rich in exceptional forms. As Betterman has observed, the main incidence of the Wetterau ware is in the Earth-fort at the Saalburg, which is evidence in favour of Wolf's Domitianic date for that fort, rather than Jacobi's attribution of it to Hadrian, for, as we shall see, the two wares will then be contemporary.

A coarser grade of vessels, made from the same clay, which may be described as rough, tile-red ware, constituted the greater part of the output of the kilns. Intervening grades occur, and quality and colour vary, especially in the flagons. As a rule the red colour distinguishes Holdeurn flagons from later ones. But the colour varies so much in one and the same vessel that many flagons are included here, although paling to yellow and yellow-white. As this is so and there is not actual certainty that all these flagons were made on the site, their colour is indicated in the catalogue. One form (no. 608) is not found in the cemeteries.

A number of lamps, and some moulds for terra-cotta figures, also made at Holdeurn, are held over to a second report. The size of the terra-cotta figures is not stated. At Colchester, such seem to have been about life-size.

The synopsis shows that the height of the Holdeurn activity, including the 'fine' production, coincided with the presence of Leg. X at Nijmegen; actually several vessels (nos. 420 and 445-452) are stamped LXGPF and LXG. Kilns H and J and the 'field-kilns' U, V, W, X, with rubbish dump R, are all attributed to about A.D. 100.

But there is evidence in the synopsis that this Holdeurn ware was already being made before A.D. 70; especially noticeable are the early forms of nos. 249-256, which come from early cemeteries and derive from well-known Belgic forms. Certain flagons are also of early form, e.g. nos. 473-493. Also, activity on the site probably continued after the departure of Leg. X: see flagons 504-563 and especially 566-585, dated well into Hadrian's reign, and also jars 302-307 (form 267 at Colchester).

Continued activity in the last part of the second century has been mentioned above, in kilns A and J. The author treats the presumed bee-hive shape of the latter as something extraordinary and gives us an illustration of a model of such a kiln (from Nijmegen), in which the perforated upper floor establishes its identity; whereas a similar model from Chesterford (Essex) has only one floor and would appear to represent a bread-oven. The only thing that strikes us as remarkable about the 'bee-hive' kiln here is the absence of a passage-entrance to the furnace. The products of these late kilns were not identifiable; kiln J had been previously excavated, and A had been so deeply destroyed as to be full of top-soil. Some fragments scattered about the terrain are, however, identified by the synopsis as of this late date. Such are types 60f and probably nos. 154-165; 411-418; 379-385; 454 (an upright-sided mortar, not illustrated); 608 (flagon). It is remarkable that very little indeed of this later material occurs in the cemeteries of Col. Ulpia Noviomagus.

M. R. HULL.

LONDON MUSEUM CATALOGUES, No. 7: MEDIEVAL CATALOGUE. Published at Lancaster House, St. James's, S.W.1, 1940. 319 pp., 96 plates, 90 figs. Price: paper covers 10s., bound 10s. 6d.

This catalogue does more than publish the important pieces in the London Museum's medieval collections. Within certain limits, it achieves the position of an authoritative handbook to medieval archaeology. It gives the important facts (in some instances all the known facts) about the various classes of medieval small objects and about medieval pottery, tiles and weapons, and tells one, as far as is at present possible, how to date them.

Every student of medieval archaeology will recognize the value of such a book. Published studies of individual items have hitherto been hopelessly scattered. In many instances the evidence for study had not been collected. This book gathers all the latest knowledge together and adds the results of much valuable new research undertaken by the principal author (Mr. J. B. Ward Perkins). It takes its place beside Sigurd Grieg's *Middelalderens Byfund fra Bergen og Oslo* (1933) as a leading work on medieval archaeology, and will be without doubt a God-send to all concerned with the excavation of medieval sites and to all museum curators who have to exhibit, or are called upon to identify and date, medieval small finds.

The very noticeable lack of that stratigraphical evidence to which Grieg's work largely owes its international status is a reflection not upon the authors, but upon British excavators in general. It is to be hoped that, in the forthcoming excavations of Roman London, as conscientious a watch will everywhere be kept for medieval and post-medieval stratified deposits as for Roman ones, and that abundant local evidence of this kind will be available for the next edition of this Catalogue, as well as for a sequel on post-medieval small finds, which would be very welcome; I mean such things as clay pipes, pipe-stoppers, wine bottles, apothecaries' jars and bottles, bellarmine, clocks and watches, spoons, horn-books and the common wares of Tudor and Stuart times, about which so little is known, and which are, very properly, excluded from this guide.

Meanwhile, in default of any volume of stratigraphical evidence—the best—the author has thoroughly combed the sources of dating evidence peculiar to medieval archaeology—illuminated

MSS., and monumental effigies and brasses. Dated parallels are quoted (and, happily, illustrated) from 30 illuminated MSS., 44 effigies and 108 brasses. In addition, parallels are instanced from the collections of 24 English and 19 foreign museums.

This catalogue is not, however, and was not intended to be, a complete guide to medieval archaeology. Its scope is limited to those classes of objects represented in the London Museum's collection. As it happens, this consists almost entirely of material salvaged from London's building operations or dredged out of the Thames, and some types of medieval antiquity are not represented. Thus, for example, astrolabes, alabasters, aquamaniles, censers, chalices, enamels, ivories, and vervels are not dealt with. The handiest quick reference for these remains O. M. Dalton's 1924 *British Museum Medieval Guide*. Still less is there any account in the catalogue of monumental brasses as such, or of monuments or stained glass.

The catalogue is, like its Roman, Saxon and Viking predecessors, half catalogue, half guide. Only the important examples in each category are listed and described, so that as a catalogue it is not exhaustive. But each section is prefaced by a clear, succinct and interesting account of the class of object under consideration. Take for instance the section on Pilgrims' Badges. To explain these, the main literary sources for medieval life and customs—Langland, Chaucer, de Commynes, Erasmus—are effectively quoted. Windows open on the medieval scene, and the true life and excitement of history is breathed into these depressing-looking little leaden objects. Pilgrims' badges of course lend themselves to such humane treatment, but the approach in other sections is similarly fresh and immediately informative. Any member of the public, dipping into this catalogue, would find the collections spring at once to life and meaning. This being so, it is a pity that the price puts the volume beyond the reach of all but the serious student or the well-to-do, and will prevent it from occupying the place as a popular guide that it would otherwise fill. In my opinion, publications that partake of the character of guides, as this does, should, if the cost cannot be kept down by other means, be subsidized in some way to bring the price down to what the average interested citizen is prepared to pay for museum publications, say 2s. or 2s. 6d.

The introductory essay on Medieval London is a model. Book-production is excellent. The invaluable index deserves a special mention, as do the sections on tiles, weapons, pottery (contributed by G. C. Dunning), and leatherwork. To sum up, for those interested in medieval archaeology London Museum Catalogues No. 7 may be reviewed in a few words: buy it—if you can afford to.

R. L. S. BRUCE-MITFORD.

HISTORIC FOTHERINGAY. By PHILIP G. M. DICKINSON. 1946. Pp. 36 with sketches and plans by the author. Price 2s. 6d.

It is very desirable that the publication of short monographs on individual churches and buildings in the country should be encouraged, particularly if they are produced, as in the present case, by authors who can speak with authority on the historical background. This applies particularly to buildings like Fotheringay Church, an imposing and comparatively little-known structure closely connected with the earlier princes of the House of York. The College was founded here in 1411 and the surviving nave was built under a contract of 1434. Architecturally, with its fine tower, it is a work of much distinction and Mr. Dickinson has added to the plan the lines of the collegiate choir destroyed in the 16th century and recently revealed by air-photography. The Elizabethan monuments put up to commemorate the two princes slain at Agincourt and Wakefield are also described. The author deals further with the remains of the castle and its grim associations and with the village. The whole subject is treated with full regard to the historical and documentary background, as we should expect from its author, and forms a serviceable, reliable and attractive handbook. We welcome its appearance and hope that Mr. Dickinson will pursue his studies in treating other buildings in a like manner.

A. W. CLAPHAM.