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Edited by GEORGE GRANT MACCURDY, Director

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REPORT OF THE DIRECTOR

To the Board of Trustees of the American School of Prehistoric Research:

EXCAVATIONS for our School were carried on by J. Reid Moir of Ipswich, England. The field work was confined largely to the Cromer Forest Bed in Norfolk. He succeeded in finding a representative series, a description of which will be found in his Report (see p. 141).

The School's share of the rich material results of the final excavations (1934) in the Mugharet et-Tabūn, near Athlit, Palestine, came to Peabody Museum of Harvard University in two shipments (some 20,000 specimens). The specimens were distributed by our School from Peabody Museum of Harvard University, early in 1935, to twelve member institutions (the School retaining one pro-rata share for itself), as follows: Peabody Museum of Harvard University; Brown University; Mount Holyoke College; Museum of Natural History and Art, Holyoke, Mass.; Wesleyan University, Middletown, Conn.; United States National Museum; Art Institute, Detroit, Mich.; Museum of Anthropology, University of Mich., Ann Arbor; University of Chicago; Public Museum, Davenport, Iowa; University of California, Berkeley.

Models on a reduced scale of some of the Neandertal skeletons from the caves of Skhūl and Tabūn have been received at Peabody Museum for the School. There remain to be shipped to us several lots from the Palestine caves, including some of the original Neandertal skeletons, a portion of the more than 80 skeletons of a Mesolithic race, faunal remains, artifacts of bone, shell beads, bone pendants, etc., from Mugharet el-Wad and Mugharet el-Kebara, and casts of the individual Neandertal bones. The rich finds made in these four Palestine caves have created a demand for exchanges of specimens, which we should endeavor to meet. Two such exchanges have already been provided for. There is also an increasing demand for our Bulletin.

As for the Neandertal skeletal remains, the Department of Antiquities of Palestine will retain only: 1) the infant's skeleton and the most complete adult skeleton (probably No. IV), both from the cave of Skhūl; 2) the adult male lower jaw from the cave of Tabūn. The remainder, including eight skeletons and various fragments, will be divided equally between our School and the Royal College of Surgeons of England. Our School will likewise receive a large share of the Mesolithic skeletons. During the year,

three special temporary exhibitions of specimens from the Palestine caves were held in London and papers on the results of the Palestine excavations were read by Miss Garrod, Sir Arthur Keith and Mr. McCown, at the Norwich Meeting of the British Association for the Advancement of Science.

A major problem now before the School is to secure funds to meet its share of the cost of publishing the results of the seven seasons of joint excavations in Palestine. The plan is to publish two large, fully illustrated, quarto volumes. The manuscripts are almost ready for the press; those on the cultural remains are by Miss Garrod of Newnham College, Cambridge, and T. D. McCown of our School and the University of California; those on the human skeletal remains are by McCown and Sir Arthur Keith.

Respectfully submitted,

GEORGE GRANT MACCURDY.

NOTICE—Bulletins 3 to 11 of the School are now out of print. There is still a demand for them. All who have copies, of which they have no special need, will confer a favor to the School by sending such copies to the Director: DR. GEORGE GRANT MACCURDY, Old Lyme, Conn.

NEOLITHIC SITES IN THE MORAVO-DANUBIAN AREA (EASTERN YUGOSLAVIA)

By Vladimir J. Fewkes

INTRODUCTION

THE SUBJECT matter here treated is based upon the writer's archaeological field work in Yugoslavia which comprised excavations, soundings, reconnoitering, and museum studies.[1] These were conducted under the auspices of the University Museum, Philadelphia, Pa., the Peabody Museum and the Fogg Art Museum, both of Harvard University, and the American School of Prehistoric Research.[2] All the exploration was done in cooperation with the National Museum at Belgrade, and also the museums at Negotin (Krajina), Niš, and Skoplje.[3] In the field, particular attention was devoted to the eastern portion of the country which occupies a significant geographic position in the Balkan peninsula. This territory bridges Southeastern and Central Europe and contains a large number of archaeological sites. It embodies several natural avenues for cultural movements, and as such it offers splendid opportunities for a study of the various phases of local civilizations, especially from the Neolithic Age onward. As a result of topography, climate, nature of soils, and economy, the area of Eastern Yugoslavia presents a series of geographically distinguishable regions. These, as a rule, are further delineated by drainage distributions. The archæological patterns of some of these districts point to common cultural bonds, which appear to have existed either throughout antiquity, or at least during certain stages of the past. The latter instance is especially well

[1] The original manuscript of this work was completed in May, 1935. Although subsequently amended, the present treatment does not include any finds which have been made in the territory of its chief concern since July 25, 1934. That day marks the termination of my field work in eastern Yugoslavia in 1934, and I did not visit the region since then. While I have received several reports on additional discoveries there, especially from the Niš Museum, I have not included these in the present writing simply for the reason that I have not yet examined the material itself. Undoubtedly, there are several Neolithic localities amid the new finds, all, insofar as written information warrants my judgment, definitely related to those here presented. Nevertheless, I prefer to defer their description until future opportunity offers examination of the specimens now in the Niš Museum. However, I wish to express my gratitude to this institution for its numerous valuable reports submitted to me since my last sojourn in Niš. (Individual acknowledgments are, in all instances, stated in appropriate notes.)

[2] Cf. Fewkes, Goldman, Ehrich, 1:17 ff., and 2:33 ff.; Fewkes, 1:26, 2:29 ff., and 3:10 ff. A list of bibliography appears at the end of this article. In the text individual citations are stated by the name (s) of the author (s), followed, after a comma, by the pertinent citation. In those instances in which two or more works under the same authorship are used, these are individually numbered under the respective name (s). The sequence, chronologically arranged, is specified in the bibliography. Works not listed in the bibliography are appropriately detailed in corresponding foot notes. Serbian and Bulgarian entries are given in transliterated equivalents. Native nomenclature is followed in all cases of individual place names.

[3] Sincere gratitude is hereby expressed to all these institutions for the numerous kindnesses with which they facilitated the investigations described in this paper.

demonstrated in the case of the Neolithic development within the Moravo-Danubian area. There are, however, marked differences in other districts, especially in the southern and northwestern sectors of Yugoslavia.

GEOGRAPHY

In geographic definition, our region may be identified with the drainage area of the river Morava, or the Morava valley system. This river has two main branches, the Southern and the Western; the upper course of the latter branch, moreover, from its source to its junction with the Moravica, is known under the term of Binačka Morava. From the confluence of the Western and Southern branches, just above the town of Stalač, the stream is simply called the Morava, and pursues a steadily northern flow to join the Danube approximately half-way between Belgrade and Golubac. This entire territory coincides with the southeastern extremity of the Middle Danubian Basin.

The topography of the Morava river drainage area represents a dendritic pattern of valleys, which, interspaced by uplands and mountains, accommodate the several tributaries of the main branches. The predominant orientation of these valleys is in the general direction of south-north, and to a lesser degree west-east, and least of all east-west. The main corridor stretches from the Morava-Vardar divide in a north-north-westerly direction towards the Danube. At first it forms a part of the region called Žegligovo, which embodies the divide proper. There is no abrupt break between the two systems.[4] On the contrary, the moderate relief of Žegligovo continues southward to the Basin of Skoplje, which belongs to the upper Vardar valley.[5] However, northward of the watershed, especially above the town of Vranje, and on until the Basin of Leskovac is approached, the valley of the Morava narrows progressively. The gaps of Džep and Grdelica, both located within this stretch, impose certain impediments to communications.[6] From the Basin of Leskovac further down stream towards the Danube no other barriers are encountered in the valley proper.

[4] Cvijić, 2:20, points out the interesting case of the river Nerodimka which divides its stream in the Basin of Kosovo to join the Vardar (indirectly) through one branch and the Morava system through the other.

[5] Cf. Fewkes, 2:44 ff.

[6] Cvijić, 1:31, states that in Roman and later times (*i. e.* as late as the 17th century), the Morava-Vardar route avoided the Grdelica gap; the main course went from Niš to Kosovo, and then to Skoplje (apparently likewise avoiding the Džep gap); from Leskovac to Vranje the route used in 1669 led through the valley of the Veternica (cf. Brown, E., p. 44, in which Vranje is referred to as *Urania*). However, Roman, Byzantine, and later antiquities do exist in the vicinity of the Džep and Grdelica gaps; these would suggest that already in Roman times a road followed the Southern Morava even through these two gaps. At Grdelica there are the ruins of a medieval fortress (cf. Vasić and Jovanović, col. 27), and only a short distance to the north of this site, namely at the village of Mala Kopašnica, Roman sherds and bricks have been noted (cf. Fewkes, 2:12). Moreover, in the immediate vicinity of Džep, especially at strategically significant points, peasants frequently find Roman pithoi (information obtained in the field, season 1934). Professor Vasić's reconnoissance in this region (cf. *ibid.*, col. 1 ff) resulted in the finds of "prehistoric" tumuli (perhaps of the Bronze or Iron Ages?) as well as Roman and later sites.

The Morava valley system is bounded by the Danube on the north; in the south it transgresses into the upper Vardar valley, and to the east and west it is delineated by mountains. The tributary valleys, both on the east and the west of the main body, provide connections with adjacent regions. The valleys of the Binačka Morava and the Toplica open the way into the Basin of Kosovo. That of the Nišava, on the other hand, offers communication with the Basin of Bela Palanka and that of Pirot; these two, in turn, facilitate an entry into the Basin of Sofia (Bulgaria), and thus to the drainage area of the Iskar, a tributary of the Danube.[7] The difficult gap of Sičevo, which separates the Niš Basin from that of Bela Palanka, can be avoided by proceeding through either the passes of the ranges Suva Planina (to the south) or Svrljiška Planina (to the north).[8] Northward of Niš, the tributary valleys provide comfortable openings in the direction of the west; and eastward, towards the valley of the Timok, several passes are available.[9]

The mountain ranges which line the main body of the Morava valley system both on the east and the west, form two more or less continuous chains. The one on the western side begins with Skopska Crna Gora and runs in the direction of the northwest, eventually terminating in the upland which spreads to the confluence of the Sava with the Danube; its highest internal ranges are those of Kapoanik and Rudnik. The eastern chain represents a sector of the Balkan-Carpathian mountain system, which approaches the Morava-Vardar divide through the Rujen spur, and after a steadily northward trend spreads on the left bank of the Danube where it is known as the Transylvanian Alps.[10] The Suva Planina is the highest range in this formation insofar as it borders on the Morava valley.

The limits of the Morava drainage area fall within an inverted, curvilinear triangle, irregular in shape, of which only one side, *i. e.* that coinciding with the Danube and the Sava, is sharply defined. The vertex lies at the rise of the Moravica in the region of Žegligovo, the northwestern point is given by the confluence of the Kolubara with the Sava, and the northeastern point coincides with the foothills of the Tuman spur near Golubac on the Danube.[11] This triangle occupies the northwestern portion of the anthropogeographical

[7] The upper reaches and affluents of the Nišava drain a territory directly adjacent to that of the headwaters of the Struma. Communication between the two systems finds conducive means in following the valleys whereby the most difficult relief can be conveniently circumvented. (For distribution of archæological sites and sundry finds of the Neolithic and later times, in this area, cf. Mikov, 2:41 ff., and map.)

[8] This, judging from the distribution of sites and the remnants of roads, seems to have been the case in Roman and Byzantine times, during which the routes from Naissus (Niš) to Serdica (Sofia) circumvented the Sičevo pass by way of the two ranges just mentioned (field notes, seasons 1932 and 1933, hitherto unpublished). Cf. also note 330, *infra*.

[9] Cf. Cvijić 2:69 ff.

[10] Between Golubac and Sip, the Danube cuts a narrow passage through the Balkan-Carpathian formation. This gorge, known as the Iron Gate, may well be considered to be the true division between the middle and the lower divisions of the Danubian basin.

[11] Hydrographically, the northwestern "corner" forms a part of the Sava-Danube drainage as well, whereas the northeastern "corner" embodies the lower course of the Mlava and the entire length of the Pek.

concept of Cvijić which he defined as the Central or Morava-Vardar area.[12] Moreover, the main body of our valley system corresponds to the Morava or Šumadija region of Cvijić's subdivision.[13]

The climate of the Moravo-Danubian area is of the continental type. In the southern extremity, Mediterranean influences are felt, and there are certain local variations in atmospheric conditions. The prolonged autumns, with ample precipitation, which are especially characteristic of the region of Šumadija, greatly benefit agriculture and horticulture.[14] The presence of loess and black earth[15] is an important factor in this respect. Cereals are the chief crops. Fruit and grape culture, and stock raising, are likewise abundant. There are plentiful forests on the hillsides. In mineral wealth, this region surpasses any other part of the Balkans.[16] Outstanding among the ores are iron, copper, antimony, and silver-bearing galenite.[17]

The present day economic structure of the Moravo-Danubian area rests upon a foundation reflecting a heritage derived from Neolithic achievements. Although many cultural and ethnic changes are attested by evidence documenting various developments and events of the past, a continuity in the mode of life is strikingly apparent. There are numerous instances of individual cultural survivals which illustrate the role of natural conditions in relation to potential artificial attainments. Once introduced, applied, and experimented with, the Neolithic rudiments appear to have remained. Subsequent developments, irrespective of new ethnic strains and additional cultural inflows, invariably demonstrate a dependence upon a similar economic basis. Although tangible evidence is still inadequate, it does not seem unreasonable to presume that topographic conditions, soils, and climate of the Moravo-Danubian area have not undergone any radical changes since Neolithic times.[18] Apparently, the historically first settlers of this region, a people possessing the knowledge of agricultural pursuits, found a physical environment of essentially the same character as that of the present day. The stamina and determination of the Neolithic pioneer, however, had to over-

[12] *Op. cit.*, p. 61.
[13] *Op. cit.*, p. 62.
[14] Cvijić, 2:64.
[15] *Ibid.*, p. 84.
[16] *Op. cit.*, p. 86.
[17] *Ibid.*
[18] The site of "Belo Brdo" at Vinča, the classical archaeological station in our area (discussed at some length in the following pages), affords a useful case in point. Its 10.5 m. of culture deposits represent a successive series of occupations, which, although not necessarily contiguous, are nowhere marked by sterile layers; yet, the Neolithic, Bronze, and Iron Ages are clearly distinguishable. Indeed, a mediæval monastery once stood more or less on the vantage point of the site, and the contemporary village occupies a considerable portion of the deposits. Inasmuch as the first Neolithic settlement at Vinča penetrated into the loess foundation (through a rather thin coating of humus), and the subsequent vertical accumulation of debris contain only culture bearing deposits, it would seem that no serious geologic changes took place during the active utilization of "Belo Brdo". Apparently, the formation of the loess marked here the last acute physiographic process. It seems significant to note that virtually all the open sites located in river valleys of the Moravo-Danubian area have their oldest Neolithic deposits resting directly upon loess foundations.

come the obstacles to his type of economy, thereby opening the country for posterity. Some millenia later, the Old Serbian tribes arrived, and gradually a nation grew up whose history, in the light of remote and recent past events, again demonstrates the role of human geography. In fact, the contemporary local peasant still subsists under economic factors which were first recognized in Neolithic times. However sophisticated and perverted his current surroundings, the tiller of Šumadija's soil, the most prevalent resident in this area, reflects much of the aboriginal mode of life. The archaeologist may well take this phenomenon into consideration in his otherwise subjective attempts to reconstruct the picture of the history of Balkan civilization; it offers a feasible means for the logical procedure from the known to the unknown.

ARCHAEOLOGY

The region under consideration still suffers from an incomplete knowledge of its culture history. My aim is to review the work already published, and to call attention to certain recent, yet undescribed finds. In limiting the subject to that period of time which bears the standard (though inaccurate) designation of *the Neolithic Age,* I am fully cognizant of the decided absence of a sharply delineated terminal boundary. If it is at all possible to establish such a demarcation, then suffice it to say that this treatment ends only with the fully developed *Bronze Age, i.e.* that stage of Central and Southeastern European culture history in which *local metallurgy* forms a constituent element. Hence, the insipid *Copper* or *Chalcolithic Age* does not concern us as a separate phenomenon, for whatever may be the stray occurrences of copper or even bronze objects within the contexts with which we have to deal, they cannot be proved as locally manufactured articles. Such objects, whether obtained by trade from outside of this region, or perhaps produced by chance in the locality at which they are found, did not in themselves, insofar as one is able to judge from the vestiges thus far discovered, effect any noticeable changes in the domestic cultural expression. Turning our perspective in the direction of the beginnings of the Moravo-Danubian Neolithic Age, our search for evidence of any possible antecedents ends quite abruptly with the Aurignacian phase of the Upper Palaeolithic Age.[19] In reality, however, Aurignacian levels, attesting human existence during that phase in the area under discussion, have not been ascertained. The material described by Breuil, said to have been obtained from caves in the vicinity of Belgrade, has not been traced to any specific site or deposit. Since the Solutrean and Magdalenian subdivisions of the Upper Palaeolithic, and the Mesolithic phase itself, are totally unrepresented in our area, the status of a *hiatus* must be

[19] Cf. Breuil, p. 333 (on this Fewkes, 4:661-662), and Župančić, p. 331 ff.

recognized. Therefore, it must be postulated that the Neolithic Age in this territory represents, in its beginning at any rate, a new phenomenon, both ethnically and culturally.

The history of archaeological researches in the Moravo-Danubian area comprises three major periods.[20] The first of these terminated with the year 1870, the second with the year 1883, and the third began with "the placing of prehistoric research upon a modern basis, the foundation of which, insofar as Serbia is concerned, is due to Professor Vasić".[21] "Felix Hoffmann was the first writer of a purely prehistoric work in Serbia (*i.e.* 1882) . . . and Žujević added to this by his contributions of 1883, 1886, and 1893. That would seem to be the foundation of prehistoric studies in Serbia."[22] The most prolific of the contemporary local students is Professor Vasić, who may well be designated the *Nestor* of modern archaeological research in the area under consideration. At first as an assistant in the National Museum at Belgrade, and later as its director, as editor of the *Starinar* from 1908 to 1911, and now as professor of archaeology at the Belgrade University, Dr. Vasić has devoted almost four decades to active fieldwork. His name is especially identified with excavations at the remarkable site of "Belo Brdo" at Vinča,[23] and further at "Čaršija",[24] "Mali Drum",[25] "Jablanica",[26] "Žuto Brdo",[27] "Gradac",[28] etc., as well as his reconnoitering along the Danube,[29] and in the valley of the Southern Morava.[30] Professor Vasić must always be credited with a large amount of original work in Danubian archaeology. It is a separate matter whether one agrees or disagrees with his interpretations and the many, often changing theories.[31]

Active explorations have suffered from various interruptions, especially the Balkan War and the World War. Perhaps the greatest drawback, the absence of a comprehensive system of chronology, may be attributed more or less directly to outside causes. On the other hand, it must be noted at once that during recent years much progress has been made in this direction, although a general synthesis has not yet been attained.[32] Insofar as Neolithic

[20] Cf. Petrović, 1:185 ff.
[21] *Ibid.*, p. 185.
[22] *Ibid.*, p. 189.
[23] Vasić, 26:III.
[24] Vasić, 8:165 ff.
[25] *Op. cit.*
[26] Vasić, 1:517 ff.
[27] Vasić, 11.1 ff.; 16:1 ff., and 22:1 ff.
[28] Vasić, 19:97 ff.
[29] Vasić, 16:2 ff.
[30] Vasić and Jovanović, cols. 1 ff.
[31] For a brief tabulation of these cf. Fewkes, 4:651-653.
[32] The National Museum at Belgrade, and the museums at Niš and Negotin (Krajina), are especially active in exploring the Morava valley and the lower Danube regions. Professor Vasić, having organized the University Museum which houses the "Vinča" material obtained by him during the last decade, is now concentrating on this site alone, having always directed its excavations. The field which falls within our territorial concept is very rich in sites, and the deposits in the majority of these are of considerable thickness. Despite the inevitable limitations which lie entirely outside the control of professional interests, namely inadequate funds, a truly impressive progress is being made.

studies are specifically concerned, a serious handicap is imposed by the inconsistent and not infrequently bizarre interpretation and dating advanced by Vasić for the key site of "Vinča." Furthermore, routes of diffusional movements are inadequately known, and pronounced gaps in geographic distribution present many difficulties. Happily, in the Moravo-Danubian area the data are more intraregionally unified than is the case in other parts of Yugoslavia.

The procreative antecedents of the Neolithic complexity reflected in the stratigraphically earliest remains at "Vinča" must be considered more or less collectively with questions pertaining to Neolithic origins at large. In Danubian Europe this immediately involves extraterritorial incentives, for it is from the very beginning of local Neolithic manifestations that outside areas must be considered if an attempt be made to rationalize their initial appearance. It would be ludicrous, in view of the incompletely understood state of affairs, to inquire into the perennially interesting, but thus far totally undocumented aspects of those inceptions which eventually led to the cultural attainment now called Neolithic. It cannot be denied that experimental efforts from which to deduce conscious beginnings ultimately promoting the realization of a culture milieu which the archaeologist designates as the New Stone Age, are nowhere in evidence. On the other hand, it seems incompatible to entertain an assumption that so pronounced a change in the mode of human life as seems reflected in Neolithic complexities may represent a rapid mutation. Insofar as the Danubian portion of the continent is concerned, matters are greatly facilitated, and indeed simplified, by the unavoidably applicable theory of *hiatus*. This, it need not be particularly stressed, depends solely upon the weight of negative evidence and purely consequentially involved deductions. It may well be argued that in an area not yet thoroughly explored any operation with such independable means cannot permit conclusive interpretation. An objection of this kind immediately finds that elsewhere *e.g.* in certain parts of central Europe, no amount of archaeological "fine combing" has been able to disprove the local *hiatus*,[88] and that, moreover, positive

[88] An unqualifiedly applicable "break," speaking collectively of ethnic and cultural aspects, between the two major divisions of the archaeological Stone Age cannot be demonstrated as a universal phenomenon. In Europe, the hiatus seems to be more a matter of a series of local criteria rather than an all-continental standard. In the individual loci thus far unimpeachably commanding its recognition, the case is not at all clear as to whether the rupture in cultural continuity so implied is equally applicable in the purely ethnic sense. The very presence of a hiatus, it must follow, is indicative of fresh cultural derivations if Neolithic existence is also locally demonstrated. If distributional factors may be depended upon for interpretation in this regard, it seems only logical to presume that the initial introduction of Neolithic economy was achieved through the medium of newcomers. It is signally significant that, on the continent, Palaeolithic survivals admit of consideration in areas geographically distinctly peripheral to truly early manifestations assignable to the New Stone Age. In any of these instances an autochthonous Neolithic growth, however strongly claimed by certain schools of thought, is not convincingly demonstrable. Insofar as the Mesolithic period is concerned, a tendency is apparent to rationalize its cultural and chronological position in the manner of a compromise, and to relegate it partially to the Palaeolithic and partially to the Neolithic spheres. But as an "age," the Mesolithic certainly fails to make an impression exactly in those regions in which sound Neolithic complexities are established culture history, and wholly independent of any local antecedents.

stratigraphic evidence clearly proves its existence at least in certain sites.[84] In the Moravo-Danubian area, the celebrated Neolithic represents, *ipso facto*, a truly phenomenal complex of a radically new cultural accomplishment which differs from whatever existed nearby in anterior times. Above all, it marks a fresh appearance of a developed and rounded cultural expression which, irrespective of possible ethnic survivals (as yet unrecognizable), does not seem to have been rooted in local antecedents. With the single exception of a questionably "Palaeolithic" skull found in the loess at Belgrade,[85] there are no indications of either Palaeolithic or Mesolithic occupation anywhere in the Moravo-Danubian area. Purely from the cultural side, these two subdivisions of antiquity are similarly unproved there. The Aurignacian flints from "caves in the vicinity of Belgrade", first noted by Breuil,[86] cannot even be allocated.

A brief digression is now in order. It seems entirely plausible, empirically viewed, that certain rudiments of Neolithic economy were among the possessions of Palaeolithic man. It is not necessary to venture on any specifically designated proposals as to temporal and spatial placements with respect to this feasibility which, quite admittedly, remains largely without tangible proof. The variance in the time scale, growth, and spread of the sundry manifestations of Palaeolithic existence is in itself sufficient to preclude broad generalizations. Above all, the present knowledge of these aspects, and of the totality of Palaeolithic culture history at large, is quite fragmentary.

In view of the circumstance that plastic modeling was by no means unknown to Aurignacian and Magdalenian artists (*e.g. as* exemplified in France and Moravia), even ceramics, or at any rate a true forerunner of pottery, cannot very well be dismissed as a possible Palaeolithic contingency. The rather abused tendency to do so on *a priori* grounds fails to take into consideration certain inadequacies and shortcomings of former and current excavating methods. The recent significant observations of J. R. Moir in England, however qualifiedly or reservedly viewed, command deference; and they certainly merit serious consideration.[87] At Dolní Věsstonice, Moravia, a series of human (male and female) as well as animal figurines, all manufactured of a mixture of clay and burned, triturated animal bones (or, in certain individual cases, ivory), have been recently found during explorations in the extensive Aurignacian station. In addition to fully

[84] Cf. the interesting discourse involving the question of *hiatus* in Stocký, 2:33, ff. (The deposits of the Pekárna cave, Moravia, are perhaps a classic example of a stratigraphically established *hiatus*; cf. Absolon, K. and Czižek, R., *Práce z Palaeolitického oddělení moravského zemského musea*, No. 1 (1926), p. 15, and Second Report (1927), pp. 14-15, and Pl. II:f [XII:f—colored].

[85] Originally reported by Jovanović, 1:30 ff. For the subsequent controversy of Žujović, who refuted the interpretation advanced by Jovanović, cf. Župančić, p. 331 (who, incidentally, was unable to locate the specimen shortly after the World War, it having, apparently, been lost during that conflict, *l. c.*).

[86] *Op. cit.*

[87] Cf. *Man*, XXX (1930), especially p. 83. (Cf. also Burchell, J. P. T. and Moir, J. R., *Man*, *XXXV* [1935], pp. 23 ff.)

modeled specimens and unfinished pieces, examples of the prepared, kneaded medium, were also recognized.[38]

It would seem that excavations in sites yielding this category of objects should be particularly concerned with searching for possible remains of air-dried, *i.e.* non-fired, clay-base substances, whether manipulated into expressive shapes or not. Indeed, unintentionally or consciously fired clay-paste fabric, that is to say true pottery, may well be held in abeyance when exploring Palaeolithic deposits. In either case, if ever present, such material tends to be preserved in accordance with natural laws and should be physically recognizable, although it may readily allure the eye or tool of the excavator. Clay, once changed into paste in order to promote plasticity (irrespective of presence or absence of aplastic inclusions, which, in themselves, are not necessarily imperative, yet often convenient), and kneaded (*i.e.* manually compacted to enhance plasticity), undergoes deflocculation. The floccular arrangement of the original clay is thereby altered, and the resulting medium, if left in deposits must differ perceptibly from its surrounding artificial debris and natural accumulations. A higher or lower degree of disintegration, under favorable conditions is, of course, not to be excluded, the probability of a low frequency of such instances notwithstanding. Even then megascopically recognizable criteria of the process must remain. Absolute destruction of artificially manipulated clay-base substances is virtually tantamount to the highest degree of improbability. Once subjected to firing, irrespective of the time duration or the degree of heat, the resulting fabric is virtually indestructible. Again, decomposition may sometimes take place, depending on factors promoting chemical reaction. Nonetheless, at least some traces of the material so affected, or of the action involved, must remain. Wherever naked eye observation is insufficient, a power lense offers convenient help. Hardened, deflocculated clay (paste), and especially fired paste (pottery fabric), lend themselves to absolute isolation and observation; moreover, they can be objectively analyzed and interpreted. Such work, naturally, requires specialized training and laboratory equipment. A resort to its indubitable utility is simply inevitable in order to deal with the important implications involved in a manner for which a strictly methodical approach can be formulated. The commonly favored view that ceramic products simply must be relegated to Neolithic and later types of economy is derogated by Moir's observations.[39] The tantalizing vagueness which marks any attempt to justify pottery making as a Neolithic invention (or discovery) is in itself ample

[38] Absolon, K., in *The Illustrated London News* (1929), pp. 890 ff., and 934 ff., and in the latter illustrations 21, 22, 25-30, and 31. (The author predicted that similar discoveries will be made in Russia and Asia, without, however, expressing any reasons for the fancy.) Cf. also same author in *I. L. N.* (1936), pp. 499 ff. and pp. 544 ff., where *baked* figurines, made of the same mixture, are specifically mentioned (p 547).

[39] *Loc. cit.*

proof of the difficulties involved in such endeavors. Opinions differ widely with regard to single or multiple origins of pottery.[40] The continuous distribution of the industry, empirically speaking, is a well recognized principle; however, this does not automatically imply a concurrent time equation, nor a single origin of the craft. Indeed, it is manifestly demonstrable that vast differences exist in the temporal and spatial appearance of pottery. Nor is it established that pottery and agriculture form an inseparable complexity. The question of agricultural origins, comparing, for the sake of simplicity, the Old World and the New World alone, certainly admits of no single concept of beginnings. Indeed, this very circumstance vitiates any such thesis. The claims of Palaeolithic plant cultivation (hoe culture) in Europe,[41] thus far wholly speculative, receive little credence. And independent rise of pottery making and agriculture in Northern Europe, as promulgated by Kossina,[42] can well be discarded on the face of the case itself for a distinct lack rather than presence of both is noticeable in the relevant archaeological deposits. The much-favored opinion that the type of economy in which ceramics and hoe culture (and, usually, also animal husbandry) are characteristic, necessarily reflects sedentary life, cannot be granted unqualified support. Certain sessile peoples apparently never had pottery; a complete absence of ceramics exists with some contemporary ethnic groups. Historically considered, pottery need not immediately imply hoe culture or agriculture, and, conversely, the opposite is equally true. That the Neolithic mode of life—as the archaeologist reconstructs it from tangible records—displays significant differences from its antecedents is, most admittedly, not disputable. Under the present state of knowledge, the total of such distinctions tends to suggest radical mutations. Indeed, the phenomenon is labeled as a revolution in culture history.[43] However, such an assumption is unfounded in fact, and even if used merely as a means towards broad categorical divisions, it nevertheless remains under the stigma of historical distortions. For at the present time we know only the well rounded, that is to say more or less complex (regionally, at any rate) stage of Neolithic achievements. The course of events leading up to the realization of this state of human culture is a perplexing matter. Indeed, an enigmatic one. It would be unmethodical

[40] R. H. Lowie, in his review of H. S. Harrison's work, stated: "I regard the invention of ceramics as little short of a miracle and until someone refutes Linné's statement I shall be loth to believe that true pottery was often invented and am quite willing to believe that it may have been invented only once. If earthenware is so obvious a thing why was it never produced by the Magdalenians?" (*American Anthropologist*, n.s. 31:3 [1929], p. 504). Cf., however, Linné's "Darien in the Past," *Göteborg Kungl. Vetenskaps-och-Vitterhets-Samhälles Handlingar Fjörde Följden*, Ser. A, 1:3 (1929), especially p. 270: "We can assume with some certainty that the art of making pottery was independently invented in America." And further the probability of a separate diffusion of the craft into North America from Asia, *l. c.*, p. 271. (With respect to Palæolithic pottery, cf. Moir, *op. cit.*)

[41] *E. g.* Bayer, J. *Eisseit und Urgeschichte*, *V*:1 and 2 (1929), especially pp. 36 ff.; Menghin, 3:142 ff.

[42] Especially in *Die Indogermanen* (Leipzig, 1921).

[43] Cf., *e. g.*, Childe, 7:8 ff.

to dismiss all possibilities of culture-historic forerunners of those attainments which are now designated by the none-too-happily chosen term Neolithic. The one truly significant difference between the manner of Upper Palaeolithic (and Mesolithic) and subsequent human existence seems to lie in the degree of "harnessing" nature, and producing, rather than simply gathering the food supplies. Even the Early Palaeolithic deposits bespeak sedentary inclinations—if not habits—as is plainly shown by the nature and proportions of their debris. Some of the Middle and Upper Palaeolithic sites rival, insofar as their areal extent is concerned, the size of Neolithic settlements. The Upper Palaeolithic pits in Eastern Europe more or less recently discovered, do not differ a great deal from Neolithic "house pits". And if the techtiforms of Western Europe really portain dwellings, then they may well indicate organized habitations. Again, we must remind ourselves of the element of time differentiation. The Aurignacian of Siberia, for example, seems nowhere on par with Central and Western European chronology. It is exactly in those regions in which the fully developed Neolithic is so prominent a phenomenon that Palaeolithic survivals seem only peripherially demonstrated. But nothing is definitely known of the obscure interim. In view of the foregoing it seems desirable to stress the necessity of an open mind regarding such historical aspects of culture as now lack specific factual documentation.

In the Moravo-Danubian area there are no acceptable signs, however meager, with which to postulate a locally autochthonous development. We have, then, to deal, first of all, with a case of primary diffusion, both in the cultural and ethnic senses. This, necessarily, is merely an assumed thought, yet one which is directly commanded by the sum-total of circumstances.[44] By the time that such neo-populating and culture-propagating process became locally endemic in a degree sufficient to found settlements (now archaeologically ascertainable), its material attainments had outgrown immaturity. In the light of existing data it would be difficult to argue against the apparent dual phenomenon of ethnic plus cultural rise of new conditions which reflect the locally earliest human manifestations of the Neolithic Age. The initial foundation of this stage remains obscure, but present indications distinctly favor extraterritorial derivations. At least insofar as the very beginning of the local Neolithic Age is concerned, none but a postulation of new arrivals of man and culture seems compatible with the present knowledge of Danubian archaeology. As a working means toward further investigations, this view meets with tolerable acceptance. On the other hand, opinions are nowise in accord with regard to the original source or sources of the likely original derivation.

[44] Palaeolithic survivals are not to be excluded, but at the present time they cannot be proved to have existed.

"Whence European Neolithic?" remains a query yet to be taken out of the realm of speculative theories (not to mention hypotheses), many of which bear the stigma of surreptitiously injected (and often forced) grounds. Moreover, the probable routes by which the rudiments of Neolithic germinations may have been diffused, are, indeed, unsubstantiated by acceptable proof in evidence.[45] Yet, the consensus of opinion supports the thought that Neolithic "culture" or "cultures" originally came into Southeastern Europe from the direction of the east. Hither Asia, or the "Ancient East",[46] or at any rate regions lying across the Bosporus, the Sea of Marmara, and the Dardanelles, are thereby implied. Attractive as this view may seem it certainly lacks in specific documentation; yet it does merit tentative consideration inasmuch as the ground in question remains relatively little explored. "Vorläufig", wrote Bittel, "ist nicht eine einzige Station in Anatolien bekannt, die eine reine, d. h. völlig metallose, steinzeitliche Besiedlung ergeben hat."[47] This statement is not subscribed to by Przeworski who names several sites which contradict it.[48] Blegen, reporting briefly on the 1934 preliminary soundings pursued by the Troy Expedition at the site of Kum Tepe, says: "the lower layers belong to Troy I and the early beginning of this . . . culture, as represented at the lower strata at Kum Tepe falls still within the Neolithic Age . . . [and] . . . seems to give a phase antecedent to any yet found at Troy itself."[49] (There is no detailing of this important observation insofar as the finds themselves are concerned.) It seems that future work must be depended upon to determine first of all the true nature of Neolithic existence in Anatolia,[50] and the immediately neighboring parts of Europe, before relationships between the two regions can be evaluated. It would be most unmethodical to center attention on a unilateral, *i.e.* east-west process of movements. In the meantime any operation with the incomplete state of knowledge must be strictly provisional. Although the case seems clear that the *Ancient East* claims historical precedence over Anatolia and Europe in Neolithic chronology, oppositely directed pulsations, *i.e.* west-east cultural trends, are likewise discernible.[51] Are these indicative of inter-

[45] It is my firm belief that technological researches offer potential means with which to approach, much more tangibly than can otherwise be hoped, this perplexing question. Another important aid in this regard exists in recognition of the principle that other than a strictly primary diffusion, *i. e.* one in which people and culture advance into a previously unoccupied territory, cannot very well be imagined to represent a wholly unilateral stream of goods. To quote Lowie, R. H., *American Anthropologist*, 32:1 (1930), p. 167: "Where, in the historically known cases, is there not rather an interchange than an irreversible stream of goods?"

[46] Childe, 6:3 ff.

[47] P. 10.

[48] Col. 667.

[49] Col. 305.

[50] I am disregarding the arbitrary classificatory separations of "Chalcolithic" and "Copper" ages (*e. g.* von der Osten, Schmidt, Bittel, etc.), for it seems to me that the relevent developments so earmarked still lack acceptable proof of local metallurgy. (The connotation "Neolithic", as already stated, is, of course, likewise vulnerable to definitional criticism; yet it appears to me that it serves less ambiguously and provides a single, well rooted term.)

[51] Speiser, E. A., *Excavations at Tepe Gaura* (Philadelphia, 1935), pp. 145 ff., and especially 175; Bittel, pp. 95 ff.

changes? If so, then they must be excluded from the category of primary diffusion, lest it be assumed that the "barbarian" recipients possessed goods attractive enough to the "merchant-explorers". By the time of Troy II it is permissible to speak of well-established, mutual trade which spanned, apparently by intermittent stages, such widely separated and ethnocentrically unrelated emporia as Bohemia in the west and Iraq in the east. This, however, is much too late in point of time to be of germane value with respect to Neolithic percolations, for metal products (probably relatively equally precious whether made of bronze, electron, silver, or gold) figured especially prominently amid the commodities of such commerce. Nonetheless, the routes then followed should provide substantial aid towards attempts at retrospective identification of older movements; that these existed before the rise of Troy II is well supported by actual finds.[52]

The strongest claim to non-European origin and derivation of Neolithic attainments underlying the florescent Danubian developments rests on the thus far unchallenged presence of a Danubian *hiatus*. I do not mean to imply that in the "Ancient East" there is a recognizable continuity from Palaeolithic or Epipalaeolithic into Neolithic existence. To the specialists of that field the very term Neolithic is not particularly a savory one. It is rather in recognition and respect of the aforementioned apparent culture-historical priority of the region, as contrasted with Europe, that I venture to stress the well supported opinion of non-European Neolithic origin. Perhaps I should say origins, since I am not an adherent of cultural monophyleticism, but even then, I hasten to add, Europe still remains without a valid claim of independency.

"The Danubians" according to Childe, "had an East Mediterranean mentality."[53] Indeed, a "common origin, possibly in preceramic stage of culture" was postulated by the same author as a means of accounting for analogies between East European and Butmir wares.[54] Menghin's "village culture"

[53] In Anatolia it is notably at Alişar Hüyük that ceramic analogies with certain Danubian varieties of ware have been discovered during the recent excavations of the Oriental Institute, University of Chicago. With the kind permission of the Oriental Institute, which is hereby gratefully acknowledged, I wish to mention some of the most striking identities between the wares from Alişar (which I have examined through the courtesy of Dr. H. H. von der Osten) and the corresponding categories from "Vinča" and "Grad," Starčevo. There is specific agreement not only in forms and general surface treatment, but also in many significant aspects of technology. The red-slipped (basic color English red, after Ridgway—*vide* note 111 *infra*), burnished, barbotine, and plain-smoothed classes of ceramics from the three sites display no megascopically discernible differences. (Microscopic examination, petrographic identification, and tecto-analytical studies have not been adequately pursued thus far.) In the nature of plainly visible details of tectonics, in pyrogenetics, aplastic inclusions (mineral and organic varieties), embellishment and decoration, an unusually high degree of similarity is clearly in evidence. Textures, surface colors (basic hues and their several ranges), decoration (techniques of execution as well as designs and motifs), profilations (*e. g.* a thickening of the break of the shoulder in open bowls with a conical basal portion—a typical criterion of the Danubian class of fluted ware), placement of barbotine applique, execution of the separately added bottom-fill in cup-based vessels, and differential oxidation in an open fire, are virtually identical in repeated examples from the three sites. An evaluation of the apparent relationships thereby implied as well as chronological correlations depend largely on technological analyses which must also include the pertinent comparisons in Western Anatolia and the Lower Danubian area.

[52] 6:260. (Just how such a mentality may manifest itself in archaeological remains, or what measures to use in ascertaining it, is not stated.)

[54] Childe, 1:274.

(*i.e.* Neolithic) of Southeastern Europe belongs to the Aegeo-Anatolian sphere of development".[55] In either case, evidently, reference is made to the established, *i.e.* physically recognizable, state of Neolithic capital. We must first examine the pertinent evidence present in the region here treated, and then return to questions arising out of its general implications. At the moment it is imperative to distinguish the following concepts in the Moravo-Danubian area:

a) A primary or introductory stage, logically presumable until evidence to the contrary refutes it. This embraces the postulate of experimentary beginnings. Their allocation is extraterritorial rather than Danubian.

b) An incipient, basically local growth, arising from recondite inspirations, and eventually resulting in the florescent Danubian cultural expression. (Usually equated with "Vinča I".) This reflects a well-rooted Neolithic mode of life even in its earliest, chronologically and stratigraphically speaking, manifestations. (Outside contacts are not to be excluded.)

c) A subsequent development, largely a continuity of b), in which the previously established foundation remains paramount. Local territorial expansion is demonstrated in diffusion southward of the Danube, *i.e.* into the upper Morava drainage, where it represents the locally initial (introductory) phase. (This stage is usually equated with "Vinča II".) The northward and westward spreads, as well as intensified incoming contacts, apparently followed trends established during b). The termination of stage c) coincides with local adoption of metallurgy and the rise of the Bronze Age. The beginning of this process was not, it is safe to say, chronologically on par from section to section. No clear delineation seems to exist as to where the Neolithic "ends", and a true metal age "begins". In certain individual instances absence of metal appears to have continued well into the Bronze Age proper. It is undesirable to enforce a "Chalcolithic Period" on the face of the existing historical evidence.

The Neolithic sites in the Moravo-Danubian area are located either on the floors of valleys (usually near rivers), or on hilltops and mountain spurs,[56] and occasionally in caves.[57] They represent settlements exclusively; no separate cemeteries have been discovered yet. However, at "Vinča",[58] one tomb with a "dromos", containing nine skeletal interments,[59] and one grave with a contracted skeleton,[60] have been found. From the unusually large number

[55] 3:353 ff.
[56] Cf. Vasić, 19:165, and 12:318.
[57] The cave stations may well be sites of a transitory nature.
[58] The site of "Belo Brdo", located at the village of Vinča, is best known in literature by the name of the modern village. Adopting this incorrect, but well rooted usage in the present writing, we use quotation marks whenever referring to the archaeological station proper.—Similarly, all other local terms for sites will appear in quotes.
[59] Vasić, 26:26 and 102. (The floor of this tomb was situated at a depth of 11.4 m. from the present surface; all vertical measurements at "Vinča" are taken from the surface level established by Vasič in 1908.)
[60] *Op. cit.*, p. 26 (recorded at a depth of 8.75 m.).

of clay figurines, as well as the frequent occurrences of human osteological fragments (especially those of the skull), Vasić first concluded that the people of "Vinča" buried immediately in the settlement, and that "numerous and heterogeneous statuettes were placed alongside the corpse".[61] More recently the same writer advanced the view that these interments were cinerary.[62] It is exceedingly difficult to imagine that in either case the burials would not have been originally placed in grave pits of which at least some indications, if not actual traces, might be preserved in the deposits. However that may be, "Vinča" stands out as the only exception among the Moravo-Danubian Neolithic settlements in which graves datable to the same age have come to light.

As far as known none of the Neolithic sites within our region were originally fortified. The moat and the smaller ditches at "Vinča" are said to be of La Tène age,[63] to which, most likely, is also to be assigned the ditch at "Gradac".[64] It must, of course, be remembered that future explorations may lead to additional observations in respect to fortification features.

As a rule, the sites are situated near ample water supplies, and in territories which are suitable for hoe culture and stock raising. As evidenced by the underlying virgin ground in most of these localities, the formation of the loess deposits was a completed process by the time Neolithic occupation began. The surface of the majority of these sites is now under cultivation.

The individual archaeological stations which fall within the scope of our inquiry are here considered more or less in the geographic order of their distribution as one proceeds from the northeastern extremity of the area southeastward. Their locations are identified in relation to modern communities, and the locally applied nomenclature is followed. In all cases the native Serbian terminology is transliterated, and whenever possible, etymological notes are added.

"Vinča".

As will become apparent from subsequent treatment, the material found in the several sites here examined is analagous with the cultural contents of "Vinča". The deposits of this unique locality, 10.5 m. thick,[65] provide a convenient means for comparative studies inasmuch as they have yielded

[61] *Ibid.*, p. 27. This interpretation, the author professed, was based upon the discovery (in 1930) of a "tholos tomb", which proved to him the *general* custom of burying within the limits of the settlement, and also explained the large quantity of ceramic figurines. Yet, the "tomb with the dromos", evidently undisturbed, contained no furniture. Vasić mentioned the remnants of a wooden superstructure (*i. e. roofing, l. c.*:102), and placed the sepulcher "chronologically and stratigraphically in the same period of time as the culture pits" (*ibid.*). The barbotine sherd found above the collapsed superstructure (*l. c.*, p. 91, and Fig. 133 [Pl. XXIX])—a typical "Grad", Starčevo piece—was then similarly dated by him.

[62] Cf. Vasić, 28:69.

[63] Vasić, 17:25, and Pl. 7 a, c; and 20:131.—Schuchhardt's statement (p. 469) that "Vinča" is "eine Burg" must be rejected insofar as it refers to the pre-La Tène occupation of the site.

[64] Vasić, 19:97-98.

[65] Vasić, 26:97.

ample qualitative and quantitative examples paralleled in other sites of the Moravo-Danubian area. The total of the several classes of material appearing at "Vinča" is nowhere fully duplicated. On the other hand, at the same time, there is little that is truly unique and exclusive at "Vinča", for although some of the other sites may lack certain individual elements, their total expressions are genetically mutually related. "Vinča" stands out unparalleled in the nature and thickness of its culture-bearing deposits, the superimposition of debris which produce unusual stratigraphic conditions, and its geographic position.

My recently published brief resumé of Vasić's interpretations and datings of this site, together with a critical inquiry into the arbitrary I and II divisions originally advanced by Childe, deals with the nature of "Vinča".[66] That "amusing note", as it is called in the review by O. G. S. C[rawford],[67] did not take up the matter of the excavating method and technique employed by Vasić in his serial campaigns at the site. This now becomes particularly necessary as a preface to a description of the material remains of this important station. As I have previously maintained, an exhaustive publication of "Vinča" pottery has not been presented.[68] The excavating procedure was described by Vasić in 1908,[69] and again in 1932.[70] The method is well known, and has found the endorsement of Stocký,[71] Frankfort,[72] Childe,[73] and others. It depends on vertical slicing, ten centimeters at a time, in a horizontally restricted area. Since there is no provision for stepping beyond the limits of the horizontal sector currently under excavation, a given perpendicular wall, regardless of height, remains a sheer drop, and, naturally, cuts through the deposits irrespective of their contents. The observer can then readily note stratigraphic conditions as they come to view in the face of the vertical sides of the cut, and count the individual features (*e.g.* pits,

[66] Fewkes, 4.

[67] *Antiquity* (March, 1936), p. 119. I confess that I was more amused by reading this review than I was in writing the paper. It appears that a highly significant correction must be called to the attention of the Editor of *Antiquity*: In accordance with Professor Vasić's view expressed in 1934 [28:70 ff.], "Vinća", it would follow, "began [not *ended*, as stated in *Antiquity*] sometime *after* the date when he thought, in 1905, that it ended" [not *began*, as printed, *ibid.*].—I should caution against the application of the nomenclature *tell* to "Vinča", as Professor Vasić himself used the term in parentheses and with an interrogation point (17:23), and it was in direct quotation only that it appeared in my paper (4:665, note 36). Too much of the site has been eroded by fluviatile and atmospheric action to permit precise objectivism in the matter, and the excavated area is likewise insufficient to support adequate judgment.

[68] Perhaps the most complete treatment involves figurines. Even these, however, are not systematically exhausted, and certainly not tabulated. Insofar as lithic, bone, etc. remains are concerned, the situation remains quite similar to that of the pottery. At the risk of duplicating my previous statement (4:657 ff.) it seems advisable to repeat that a comprehensively categorical description of the material must always be desired first of all from the excavator himself. As matters stand now, one is compelled to wade through a mass of reports entirely preliminary in nature, and the one large publication on "Vinča" (Vasić, 26) deals only with certain selected material (mostly figurines). It is clearly evident that comprehensive, broad detailing of the ceramics was sacrificed to a host of theoretical (largely speculative) thoughts. The author explains his regrets that this "publication on Vinča cannot, unfortunately, be such as the writer himself would like to realize," and much is deferred to later presentations (p. XI).

[69] Vasić, 17:24.

[70] 26:XII, 101, and *passim*.

[71] 2:39.

[72] 1:46.

[73] 4:26.

debris of houses, post molds, etc.) revealed, to a greater or lesser degree, by this process.[74] The ceramic and other material is collected in lots, cleaned, and marked by depth, usually to a decimal point of the meter, occasionally even to the half centimeter. In the illustrations shown in the 1908 publication certain pieces display such marking, preceded by a capital letter, evidently indicating the section of their provenience.[75] In the 1932 presentation the symbol ▽ is used, to denote depth, throughout the text, but a variation is seen in the individual marking of the specimens themselves.[76] The text citations of depths are usually preceded by "found at". In a very few instances association with pit is mentioned.[77] There is no tabulation of relative frequencies of the several classes of material, nor indications of pit or hut units by the individually recurring tectonic features. While several houses are described as to their structural nature and interior arrangement (with plans and photographs), there is no conscious effort to detail the cultural contents thereof. Such information, it seems, still remains in the form of notes yet to be published.

It cannot be said that the system is without merit. The individual marking of specimens has its virtues as the material is made public or observed in collections. The author has taken pains to state the depth in every case in which he dealt with the material itself in his major "Vinča" publication.[78] However, the arbitrary, constant progression by ten centimeter intervals (this, of course deviates with pits, houses, ovens, post molds, etc.), is certainly open to criticism. On the face of the circumstances, such a method presupposes recurrent, continual deposition on a horizontal plain. Curiously enough, the profiles of "Vinča" (as revealed in July 1934, when I last saw them) appeared to have fairly well aligned horizontal contours. That, however, does not imply that within a few meters farther into the site like conditions must be expected. A given wall profile at "Vinča" discloses equally clearly that the individual debris of houses (pits, etc.), partially sliced and exposed by the excavations, are not situated upon strictly horizontal coeffi-

[74] Cf. Vasić, 17:Fig. 2, Childe, 4:Fig. 9, and Vasić, 26:Figs. 10, and 16-20, and 25:Fig. 1 on p. 664.

[75] Vasić, 17: *e. g.* Fig. 4, third from the right (reversed in photographic printing—mirrors as *A 6.5*), Pl. 9:c (b 4), Pl. 16 (drawings), etc.

[76] Vasić, 26: *passim*; Fig. 22 a, (b), c shows 7.8, Fig. 132 b, is marked +▽9.3 (found in a pit, *l. c.*, p. 90), Fig. 133 has writing on the outside surface of the sherd (reproduction not legible—possibly "kosturnica", *i. e.* the "tholos tomb" [?]—specimen found upon the collapsed superstructure of the burial chamber, *l. c.*, p. 91), Fig. 90 c, shows "1481", Fig. 96 bears "jama [pit] W" and under this 6.3, Fig. 140 a-c, is labeled "No 1372", etc.

[77] Such is the case, *e. g.*, on p. 45 (referring to Fig. 94), and p. 90 (regarding Fig. 123 a); in the first, we read that "the fragment was found in pit W and that it belongs, therefore, to the oldest period of the settlement at Vinča", and in the second that the specimen was "found in a pit ["zemunica"], the edge ["obod"] of which lay at ▽ 9.3 m. below the surface."—A La Tène burial was found (in 1911) "at the depth of 2,89 m. under the surface" (*l. c.*, p. 26), and a contracted burial was found (also in 1911) "at the depth of ▽ 8,75 m. under the surface" (*ibid.*). Of the famous burial chamber we read: "Kosturnica [grave] with dromos, was dug into the loess . . . the passage beginning at ▽ 9,3 m., and the ground of the chamber reaching to ▽ 11,4 m." (*l. c.*, p. 102).

[78] Vasić, 26.

cients.[79] Examination of the "Stehengebliebenes Profil der Kulturschicht an der Wand" of "Vinča", drawn in 1908,[80] suggests that the following five niveaus of "floors"[81] (some representing a collapsed superstructure as much as 1.15 m. in thickness[82]), may be recognized:

1) 5.6 m. to 6.8 m. (In section K six superimposed layers are shown.)

2) 5 m. to 5.6 m. (Superimpositions in sections G-L continue above the 5 m. line.)

3) 3.7 m. to 5 m. (Superimpositions in sections F-E, J-L, R-S.)

4) 2.3 m. to 3.7 m. (Superimposition in section F-E marks a continuation from 4.8 m. to 2.75 m.)

5) 1.2 m. to 2.2 m. (Barely below the level marking the left-hand edge of the moat.[83])

The several superimpositions (floors, sundry debris, ash pockets, etc.) are indicated as directly contacting areas. The maximum span between two individual, vertically more or less aligned occurrences of the "GEBRANTER HÜTTENLEHM", sections B-C and B-C-G respectively, amounts to 2.4 m. (reading taken in section C). Conversely, the minimum, ascertained in sections J-L, our niveaus 1) and 2) respectively, ranges from 0.3 m. (extreme left) to 0.6 m. (extreme right). Horizontally, the following intervals between like features, within a given niveau, are noticeable: the maximum, niveau 3), equals 7.7 m. (sections E-B); the minimum, niveau 1), equals 1.5 m. (sections B-C). The greatest vertical thickness of an individual area marked "GEBRANTER HÜTTENLEHM", section C, niveau 2), measures 1.5 m.; elsewhere the average oscillates between 0.2 m. and 0.5 m. There are no sterile layers above the loess foundation. Even the "Alterer Humus" zone (7.5 m.—7 m.) shows a pocket of "Holzkohle u Asche".[84]

That the diagram just discussed is not conclusively representative of the site at large may best be seen from the fact that a definite house was recorded

[79] Cf., *e. g.*, the plan of a house from "Vinča" illustrated in Vasić, 26:Fig. 17 (on p. 14), in which the stated levels of the floor oscillate between 3.2 m. and 3.62 m. A thickness of deposits corresponding to this difference (0.42 m.) might conceivably lead to stratigraphic deductions in a locus not offering so dependable a determinative means as a floor of a house.
[80] Vasić, 17:Pl. 7, a), the only one thus far published.
[81] So designated by Vasić, *l. c.*, p. 24.
[82] Cf. section C of the aforementioned diagram.—The measurements here given are expressed in rounded means rather than in absolute values with each variation, and strictly with the aid of the scale accompanying the diagram. The legend is punctually observed.—The zero level coincides with the maximum of the shown surface.—The numerical arrangement of the niveaus here calculated progresses upward from above the "Alterer Humus" zone.
[83] The opposite edge of the moat lies within the first meter of the deposits.
[84] Section G of the diagram.

at a depth of 9.3 m.[85]—that is to say partially within the bothros level which is said to persist to 9.1 m. from the surface.[86] Furthermore, remains of ovens (earthen construction) were found at 8.81 m. and at 9.2 m.;[87] higher up in the deposits these are often situated within huts.[88] It would seem, then, that yet an additional niveau may perhaps be deduced, this time between 9.3 m. and 6.8 m. Indeed, the margin of 2.5 m. of deposits thus demarcated might well accommodate two independent horizons of houses if the diagram of 1908 may be taken as a measure of averages. We must also note that according to the excavator, "the transition from the bothroi to the rectangular hut with a flattened floor represents no interruption in the cultural life of the inhabitants of Vinča".[89] In this respect the published diagram fails to show any instances of a pit to house superimposition through direct contact.

The question next arises: how many houses are represented in the diagram, and what was found in their portions removed by the excavation? It is in this regard, as well as in the matter concerning the total number of houses and bothroi (although these are frequently individually mentioned), that the published reports on explorations at "Vinča" are either vague or entirely mute. Moreover, the ceramic and other finds have not been described by such association. For this reason, the value of the individually stipulated depth record, so meticulously carried out with each specimen, is in itself only of limited utility. It is to be remembered that although the vertical position is given together with the section or pit letter in the earlier excavations,[90] the later seasons, in which the symbol ∇ replaced that practice, show a change in policy. The bulk of the relics is then simply marked by depth, no section being recorded on the actual specimen.[91] It is not possible to construct, purely on the basis of the publications, a tabulation of the finds into a meaningful scheme. Obviously, to go by the sections (insofar as the older excavations

[85] Vasić, 26:101. House debris have been found even at a depth of 2 m.; *l. c.*, p. 10. While structurally, as much as can be judged from the published data and examination of the profiles of the site, the various instances of house ruins within these two maximi do not appear to reveal any radical differences. This, of course, is merely a superficial impression and no conclusions can be drawn therefrom. The matter of constructional technique of "Vinča's" dwellings is yet to be given detailed attention. It seems reasonable to expect that ceramics and other material found within individual habitation units should lead to a dependable time placement interpretation. In view of the circumstance that a pronounced continuity of occupation is well evidenced by the nature of the deposits it seems especially important to analyze, insofar as actual remains permit, the tectonic methods and their relationship to time sequence and cultural phases. Certainly not all the houses between 9.3 m. and 2 m. are of a Neolithic origin. We may point out, in this connection, that at "Vinča" there are no traces of a true megaron. Schuchhardt, C., *Alteuropa*, 2nd ed. [Berlin und Leipzig, 1926], p. 150, stated that one of the house plans showed to him by Professor Vasić in 1913 [the dwelling was not fully excavated at the time] "versprach eine Vorhalle zu liefern." Apparently, this impression was dispelled by later work, for there is no account of such a feature by the excavator. Insofar as the pit dwelling is concerned, it seems well to stress that although the subterranean portion of such a structure, as now revealed by the corresponding pit or pits, may have either a circular or an oval contour, this in itself does not necessarily imply a round ground plan. At "Grad", Starčevo, examples quite to the contrary have been observed.

[86] *Ibid.*

[87] *Op. cit.*, p. 13.

[88] *Ibid.*, pp. 10 ff.

[89] *Ibid.*, p. 102.

[90] Cf. Vasić, 17 (and examples cited in note 76, supra). The specimen shown in Vasić, 26:Fig. 94, marked "pit W", suggests, by virtue of this sign, that it was found before the change in the system was installed.

[91] Cf. note 77, supra.

are concerned), would lead to no accuracy, for their areas varied upward from 15.7 square meters,[92] and their allocation, of course, was wholly arbitrary. The material *in situ*, sometimes illustrated[93] or indicated by an arrow,[94] has no stipulated house number[95] or section[96] designation; vertical depth measurements, however, are given.[97] The group find of 1930, including the famous "Hyde vase",[98] was recorded at the depth of "▽ 7,05".[99] Examination of its published illustration clearly reveals the fact that some of the pieces are not completely exposed, and that the freed portions do not come to the same level; all protrude above the ground. Evidently, the collective depth equivalent reflects the ground level, but there is no reason not to suppose that a means was calculated, since the text is silent on the point. The "Hyde vase", seen in the foreground to the left, in a reclining position, must have, upon computation based upon the stated measurements,[100] spanned approximately 0.15 m. The vessels appearing in the background are definitely embedded in the deposits, and, therefore, partially below the exposed level. Assuming—merely for illustrative purposes, and wholly without factual evidence, lest the shadows of the photographic record be misinterpreted—that their embedded portions amounted to a mere 0.05 m., we arrive at the height of 0.2 m. as the total measurement expressing the vertical zone occupied by the whole group of the ceramics. Taking the position of the "Hyde vase" as the determining criterion, it is obvious that the probable error entering our calculation is restricted to the maximum of 0.05 m. In any case, a discrepancy of 0.15 m.—approximately and most conservatively estimated—obtains. The specimens in question represent a group find; their mutual relationship, insofar as deposition is concerned, rests on the principle of association. It matters little whether the span which we have attempted to calculate was originally 0.15 m., 0.2 m., or more: the *in situ* position makes the find a very definite unit. Obviously, its history is of signal importance. As shown in the illustration and described in the text,[101] it is not possible to visualize the nature of the deposits which formerly overlaid the group. The state of preservation of the individual specimens does not reflect abnormal pressure, and each vessel, as the illustration reveals, was in a more or less completely restorable condition. Only the "Hyde vase" is described in detail.[102] Nothing is said of the niveau upon which the group-

[92] Section R of Vasić's diagram.
[93] *E. g.* Vasić, 26:Figs. 10 ("warming pan", *l. c.*, p. 12, seen at the feet of Professor Vasić), 18, 20, and 110.
[94] *E. g. ibid.*, Fig. 19, "Mangal" ("warming pan").
[95] Applicable in Figs. 18, 19, and 20.
[96] Applicable in Fig. 110.
[97] *Ibid.*, p. 13.
[98] *Ibid.*, p. 61 and Fig. 110.
[99] *Ibid.*, also Vasić, 25.
[100] Vasić, 26:61.
[101] *Op. cit.*
[102] *Op. cit.*, p. 60 (interpreted as a "cosmetic vessel"), and Fig. 109 a-c.

unit was situated, and the illustration itself,[103] showing a limited, surrounding area, does not permit dependable deductions. That it is of extreme significance to know whether or not this valuable unit was associated with a house, pit, etc., cannot be denied. Only the excavator can amend the existing deficiency, and submit the lacking data.

Retaining well in mind the case just described, we may next inquire into the manner of excavating and marking such material as occurs more or less haphazardly within the deposits. A given ten centimeter zone, having been loosened by the diggers, naturally brings about a dislodging of smaller remains so situated. The sundry pieces are collected, apparently by sections, and the correlate of the depth currently under exploration is entered, after washing, directly on each specimen. We have already noted the inconsistent mode adopted for the purpose; in certain instances numbers prevail, elsewhere the pit with a letter is given, sometimes an explanatory remark appears, and in the most recent campaigns, the symbol ▽ predominates. However, the majority of the material, irrespective of season, does not allow—taking into consideration all "Vinča" reports available to me[104]—individual isolation of its horizontal placement outside of a given section. And the more recent marking does not stipulate sections. The text, we have seen, does not alleviate the situation. Again, then, it is not possible to work out relationships of many of the sherds, stones, bones, etc., with houses, pits, floors, and the like. Supposing that only two fragments are found in a given section: their marking is identical, but the reader has no way of ascertaining their individual relation to the section beyond the stipulated areal designation (by letter) and the vertically recorded depth. Once more association is not specified. The obvious shortcomings are most involved. It is not my intention, nor is it justifiable by the scope of the present writing, to go into this matter in greater detail. Suffice it to say that I have examined most of the "Vinča" material contained in the National Museum and University Museum at Belgrade (and some, during excavations, or otherwise, at the site itself), and found no extenuating evidence in its marking. The liberty here taken in scrutinizing the distinguished excavator's field methodology is an unavoidable preamble to my utilization of his depth records. Their inclusion, wherever available, in the present treatment, therefore, must be appreciated strictly in the light of their acquired, not intrinsic, meaning. Statistical data on frequency, constancy, association, etc., of "Vinča's" material by strata (or by the arbitrary 0.1 m. levels, for that matter) are not available. To attempt to compile these from the published reports is, in view of the foregoing, most difficult if not entirely impossible. (Again, I may point out,

[103] *Ibid.*, Fig. 110.
[104] Vasić, 8-13, 15, 17, 18, 20, 21, 23-26, and 28.

such an endeavor would here be wholly disproportionate.[105]) That tabulations—and I have in mind such serviceability and general practicability as really help archaeology—should be facilitated by the very nature of the site, is, under the circumstances, selfevident.

My references to vertical distribution of the material found at "Vinča" cite only published records. Their value is far from satisfactory, for, as has been shown, associations remain obscure. It does not necessarily follow that the pieces of a given category of material, *e.g.* the "Ritztechnik" pottery, found from 2.5 m. to 9.5 m.,[106] immediately imply uninterrupted continuity throughout the corresponding span. The lower limit of their initial appearance belongs within the bothros level. To quote: "Die Ornamente der üblichen Ritztechnik . . . trifft man in der Tiefe von 2,5 bis 9,5 *m.* Auf den Scherben aus den tieferen Schichten sind die eingetieften Ornamenten der Regel lehr . . . ; die eingeritzten Ornamente sind in den jüngeren Schichten selten; statt ihrer kommt eine besondere Art solcher vor, bei welchem die Zeichnung in den weichen Ton mit einem mehr oder weniger stumpfen Instrumente eingetieft wird . . . . Solche Beispiele sind gefunden worden in der Tiefe von 0,9 bis 2,3 *m.*"[107] The two categories of ceramics thus involved cannot be considered genetically related, for the "eingetieften Ornamente" belong to the Vatin phase of the advanced Danubian Bronze Age; its chronological predecessors, *i.e.* the expressions recognizable in the Banat (Mokrin, Omoljica), fail to support possible survivals from Neolithic times. Is it not plausible, in view of the author's statement regarding the rare appearance of "eingeritzten" pieces in the younger levels, that this very observation may well indicate a decline in their production in the higher horizons in distinct contrast to an opposite case in the lower niveaus? Shifting of habitats is well documented by the nature of "Vinča's" deposits; mixtures and intrusions are likewise demonstrated. It is the more desirable, therefore, to insist upon specific interpretation of the totality of the sundry phenomena. In the meantime, operations with depth values must suffer the inevitable consequences of the inadequacies inherent to the existing system.

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[105] Recent efforts in this direction soon proved the futility of the undertaking, for no accuracy can be achieved without access to the material itself. This immediately involves publication rights. At any rate, the task is one that concerns, directly and primarily, the excavator himself. No progress can be expected without resort to the field notes.

[106] Vasić, 17:29.

[107] *Ibid.*:29-31.

The representative Neolithic material from "Vinča" may be briefly sketched as follows:[108]

I) Ceramics.

A) Pottery:

1) The barbotine ware, found in the bothros level and as far up as 8.5 m., is identical with similar examples from "Grad", Starčevo.[109] Complete forms are yet lacking at "Vinča", but the sherds suggest semi-globular and open shapes as at "Grad", Starčevo, which lies across the river, on an ancient Danube bank,[110] 8 km. to the northeast. The outside surface has positive applique which is worked by hand or tool either into a streaked or a lumpy finish. The colors range from light pinkish cinnamon to hair brown on the exterior side, and from avellaneous to fuscuous on the interior side.[111]

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[108] No attempt is here made to present this outline in any definite order suggestive either of chronologic or stylistic sequence. It cannot yet be proposed with precision which of the several classes of material may be "oldest" or "youngest", for even in the bothros zone a veritable medley of different classes has been observed (Vasić, 26:89 ff.). Moreover, similar conditions, apparently, prevail in the higher deposits as well. Inasmuch as pit-unit or house-unit contents are not stipulated in the publications on "Vinča", a most potential guidance in this regard, *i. e.* truly dependable associations, remain unreported. These, rather than individual occurrences of the sundry material must form the basis of any and all stratigraphic deductions for classificatory purposes. Admittedly, such material as is found more or less haphazardly outside of pits, houses, graves, refuse accumulations, etc., is equally significant, but its depositional interpretation, unless correlated with definite units, is merely relative and not always conclusive. It is only in the case of the barbotine ware that a limited existence, confined fairly strictly to the "lower level" (including the bothroi), *i. e.* below 8.5 m. (Vasić, 26:*ibid.*), seems well established. For this reason I place this category at the head of the list. The subsequent order is purely incidental. There is no recognized, uniform nomenclature for Danubian archæology, and the terms here employed are taken from sundry literary sources. The word *barbotine*, best expressive of the most common pottery found at "Grad", Starčevo, is here retained in precisely the same connotation as used in the preliminary report on the American excavations at that site (Fewkes, Goldman, Ehrich, 2:43 ff.). The designation *crusted* is adopted from Professor Childe, and *burnish-decorated* from Dr. Frankfort.

[109] Vasić, 26:Figs. 132 a, 132 b, and 133; text pp. 82, 90-91. The author designated this ware at "Vinča" as one of "special appearance", and compared it with "Starčevo", fully recognizing the identity. However, his Macedonian comparisons, *l. c.*:91, were not particularly well chosen. (Cf. Fewkes, 4:665, note 104.) In addition to technical differences, the chronological circumstances in the two areas are quite dissimilar. (At "Grad", Starčevo, the barbotine ware is absolutely the oldest.) The comparisons drawn from examples in Chalkis are likewise disputable, while the citation of the rock-work piece from Knossos confuses an entirely unrelated technomorph with the barbotine ware, *i. e.* that barbotine class which is so common in the Danube region. I should say that the *barbotine* or *prickle* ware of Knossos, initially found in M. M. I *a* (Evans, Sir Arthur, *The Palace of Minos*, etc., vol. I [London, 1921], p. 179), but especially florescent, in combination with polychromy, in advanced M. M. I and "about the beginning" of M. M. II (*ibid.*:179 and 239), and surviving into M. M. III (*ibid.*, p. 602), has nothing to recommend either parentage or descent in relation to the Danubian category of barbotine ceramics. (If there is a filial lineage of the two, it remains for future work to ascertain it.) The M. M. III example illustrated by Evans, *l. c.*:Fig. 442 (and p. 602), represents, as far as I know, the nearest Cretan approach to a Danubian comparison; however, the similarity prevails only in the relief effect. Vasić's inclusion of the relevant sherds from the so-called "Tumulus of Protesilaos" among his superficial endeavors to locate similarities with the barbotine ware of "Vinča"—and, incidentally, "Grad", Starčevo—in the Ægean region (*l. c.*), is fully justified. The Gallipoli peninsula site shows several ceramic analogies with the Danube and Anatolia (Alişar, *supra*) alike. While the author mentioned the occurrence of the barbotine ware in the Lower Danubian valley, his remark that such material "as far as I know, [is not] found to the northwest of Vinča" (*ibid.*), is no longer true; cf. Banner, 1:30 ff. (map on p. 29), and 2:97 ff.

[110] Fewkes, Goldman, Ehrich, 2:34. (Correct the first sentence under the caption THE SITE to read: Starčevo is situated 8 km. southeast of Pančevo which, in turn, is 12 km. east-northeast [*not northwest*, as incorrectly printed] of Belgrade . . .)

[111] All color equivalents here used in connection with pottery are given in terms of Ridgway, R., *Color Standards and Color Nomenclature* (Washington, D. C., 1912). I have elected to give this a preference over Maertz, A. and Paul, M. R., *A Dictionary of Color* (New York, 1930), for the simple reason that it contains only named colors. It is not an easy matter to decide which of these two means offers more serviceability to the archaeologist. Personally I have found both equally useful as well as equally cumbersome. It seems to me that a specifically designed compromise is desirable if a color standard scale is to be adopted for practical application in archaeology. The main need is the basic color and the range of hues, and since these may be ascertained most objectively, any standard scale must be preferred to mere guessing.

2) The incised ware[112] represents the most characteristic and constant pottery at the site.[113] This group is the so-called "typical carboniferous Danubian ware", varying in color from pale pinkish buff to brick red, and from pale mouse gray to black. It is decorated by incising which usually forms bands filled with indentations, dimplings, or short cuts (either parallel to the outlining determinatives, or athwart). The motifs are geometric, and embody both curvilinear and rectilinear designs. This class of ware is always well fired, smooth-surfaced (by hand or burnishing tool), often with differentiated smoke-shading and carbonization blotches, but never—as far as I know the material by examination—slipped. In 1908 its vertical distribution was reported at various depths from 2.5 m. to 9.5 m.[114] "Die Spirale kam vor in der Tiefe von 2,5 bis 6,8 *m.* Die 'eckige' Spirale wurde angetroffen in den Tiefen von 2,5 bis 5,5 *m.*"[115]

3) The burnished ware, not always segregated in literature, is separately identifiable as a technologically distinct class. In surface color the ranges embrace pale smoke gray to practically black, and from maize yellow to burnt sienna (or chestnut brown). The surface, in or out, is not slipped, nor washed, but burnished. That is to say the built up piece, still in its plastic stage, but subsequent to the drying process, was rubbed, over a moistened surface, with the aid of a hard substance (pebble, bone, wood, old sherd, etc.). The action employed varying degrees of pressure, sometimes even on the same specimen, but always had an unmistakably recognizable effect: in the burnished areas the clay particles were much more highly compacted than those in areas not subjected to the treatment. As a more or less inevitable consequence of the mechanical action involved, a shiny surface was obtained. Both the hardness of the surface and the lustrous quality were accelerated during the firing. (It seems very likely that the shine was restored by polishing the fired vessel, either warm or cool, with an appropriate medium.) The presence or absence of burnishing is readily ascertainable megoscopically, or, in extreme cases, by power lens examination. Viewed in cross section, such ware reveals a thin "film" marking the burnished area; its hardness, likewise objectively measurable, is greater than that of the interior of the vessel's body, and, as a rule, there is also a noticeable difference in color.

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[112] Vasić, 17:Pl. 14; 8:Pls. 16:31, 25 (all), and 31:61 c; 26:Figs. 105 ("found [1911] in a hut, at the depth of 6,6 m.," *l. c.*, p. 52), and 106 ("found, in 1911, at the depth of 6,6 m., and in the same hut in which was found the anthropomorphic vessel [illustrated] in Figs. 89, 90," *ibid.*;—the text is not clear as to whether one or two "huts" are to be understood).

[113] This, as will be shown shortly, is also the case in the majority of the Moravo-Danubian sites here discussed.

[114] Vasić, 17:29.—Nestor, p. 35, in his reference to Vasić (25:199) appears to have misunderstood the specific stipulation of *incised anthropomorphic lids*, for the latter author did not then deal with the generally utilitarian incised pots of "Vinča".

[115] Vasić, 17:31.—The statement of Menghin, 3:353, that at "Vinča" the first spiral designs begin at 5.6 m., is contrary to the excavator's report.—In 1932, when I visited the site with members of the American School of Prehistoric Research, spiral-meandric incised sherds *in situ* were visible, in sporadic instances, at the 9 m. line. In an exposed profile of a pit, was then seen practically a duplicate of the sherd illustrated in Vasić, 17:Pl. 14 d.

The "film" is a constituent part of the vessel's compositional paste, distinguishable only by its hardness, color, and the lustre of the surface. Pyrolytically, the difference between the fusion of this "film" and the remaining thickness of the wall is considerable. That, of course, is explainable chiefly on two grounds: (1) the compacting occasioned by the pressure of the burnishing tool; (2) more complete evaporation throughout the firing process. (The one is purely mechanical and effected during the plastic state of the vessel, the other is the result of physical and chemical changes occasioned by the heat of the potter's fire.) The most important aspect to stress is the absence of a slip in the burnished ware. It would not be proper to designate the purely burnished surface by the term "mechanical slip", for there is not an added coating.[116] The burnished ware category, as here used, is fully justified purely by the *rubbed* treatment of surfaces. When such technique involves elements of embellishment producing either negative or positive designs, it is necessary to speak separately of the burnish-decorated ware.[117] In either case, however, slipped ware, whether burnished or not, must be excluded. (I know of no example amid the Danubian Neolithic material in which burnish-decoration exists upon a slipped piece.) Initially, the burnished ware of "Vinča" probably belongs to a very early niveau. Pedestalled vessels with a massive foot, such as those reported from 8.2 m. to 3.9 m.,[118] with a varying degree of burnish, suggest that this manner of surface finishing is to be associated even with a horizon more or less directly above the bothroi. (I have noted several characteristic sherds of the plain burnished ware at the site *in situ* within exposed profiles of pits under the 9 m. line.) The burnish need not necessarily cover the entire surface. A zone below the rim or on the neck, the shoulder, a portion of the body, or the base may, indeed, be treated either entirely alone or in combination with other areas.[119] Vessels with a high, roughly cylindrical stand, completely burnished (and, sometimes, "crnopremazane",[120] *i.e.* crusted [with resinous matter?]), are said to have been found even in the bothros zone,[121] *i.e.* at depths below the 9.1 m. plane. Insofar as predominating shapes of the burnished ware are concerned, open bowls with either rather a severely profilated or a rounded

[116] Cf., in this connection, Harrison, H. S., "Pots and Pans", *The Beginning of Things*, 8 (London, 1928), p. 46.

[117] As defined by Frankfort, 1:30.

[118] Vasić, 17:28, Pl. 11, a; (in four instances between 1.8 m. and 2.9 m.).

[119] Thus, *e. g.*, the bowl illustrated by Goldman, Fig. 90, is not "burnish-decorated" as there labeled, but an example of all-over burnishing without elements of designing. Examination of the original in the National Museum at Belgrade revealed a differentiated intensity of the mechanical pressure employed, with the resulting burnish especially intensified in the zone between the lip and the shoulder of the specimen.

[120] Vasić, 26:89. Cf. also Vasić's 7:119; the incomplete specimen from "Čaršija", there illustrated in Fig. 36 [printed upside down], has full analogies at "Vinča". (The "Čaršija" example shows a practically intact, hollow stand the form of which is not strictly cylindrical, but gently flaring from the bowl juncture towards the base. Its maximum height is given as 0.17 m; *l. c.* The corresponding specimens of "Vinča" likewise have the stand built in the form of a modified, rather than an absolute cylinder.)

[121] Vasić, 26:89.

shoulder, and globular or conical varieties without a demarcated shoulder, are typical. On the whole, however, a precise segregation of the forms is yet to be established.

4) The burnish-decorated ware[122] embodies decorative motifs fairly restricted to straight lines. The most recurrent shapes are open, profilated or round-shouldered bowls of moderate height. There can be no doubt that at "Vinča" (and other Moravo-Danubian sites[123]) this class of pottery belongs to the Neolithic deposits,[124] but its precise placement by strata has not been specified.[125] Genetically, this category seems to be related to the plain burnished ware. In color range, the ground embraces a similar pale smoke gray foundation and its hues to olivacious black.[126] The areas of the design usually mark the darkest tone which is often approximately black.[127]

5) The fluted and ribbed ware,[128] a restricted class insofar as decoration

[122] For the characteristics distinguishing this ware from other categories of pottery, as well as a partial explanation of the technique involved, together with certain determining criteria thereof, cf. Frankfort, *op. cit.* Just what may explain the difference in color between the resulting design and the ground (which itself is often burnished to a lesser or greater degree), is not stated by this author who, evidently, assumed that the pressure medium alone was the sole cause. In my opinion this is not physically probable, for the difference between the color and luminacy of the much more intensively burnished areas (*i. e.* the design), as contrasted with the less accentuated burnishing of the background, is not merely the result of mechanical action, but, apparently a consequence of an additional agency. Only technological research can settle this point.—It is well known that in Europe "prehistoric" pottery has not yet received proper analytical attention. Extremely promising opportunities for such endeavors are quite abundant, but very little capitalized. Matters pertaining to ceramical technology are objectively ascertainable, and resort must be made to purely inductive methodology in order to rationalize the various phenomena involved. The common tendency to "interpret" the manner of firing, the nature of fire used, degree of heat, "levigation" of clays, quality of kneading, slip, burnish, etc., by inaccurate, and often quite erroneous "estimates", with which one meets so often, cannot, as long as it is based wholly on megascopic observations and deductions, claim scientific recognition. Such inadequacies may be avoided by adopting the principles of proved researches. (For an excellent illustration of the vital value of ceramical technology cf. the unique work of Shepard, A. O., in Kidder, A. V., *Pottery of Pecos*, II [New Haven, 1936], pp. 389-587. Miss Shepard's mastership of this field and her admirable presentation of the subject are indeed extraordinary. She has established a new discipline, the objectivism and methodology of which are applicable to any efforts which deal with the study of ceramics.)

[123] Cf. Vasić, 17:29; also *vide infra.*

[124] Vasić, 17:29, reports: "in Vinča erscheint sie in der untersten Wohngrubenschicht und entwickelt sich parallel mit der Technik der eingedrückten Ornamente bis zum Schlusse der jüngsten Schicht." Insofar as the incorrectly presumed "übergezogene Oberfleche" of Vasić (*l. c.*) is concerned, cf. Frankfort, *op. cit.*, p. 30, note 1. The scraping technique, as far as I know, is unparalleled in the material from "Vinča" and elsewhere in the area here directly considered.

[125] Vasić, 26:95, speaking in terms of "crno-uglačanih ornamenata", *i. e.* black-smoothed ornaments (lexically also translatable as black-pressed ornaments), states that the first instance in which the design is placed on the inside of the vessel was recorded "tek na", *i. e.* not until, a depth of 6.2 m. The specimen, as the author points out in note 60, *l. c.*, is illustrated in his work here numbered 17, *i. e.* Fig. 13. I do not assign any definite significance to this observation, because I myself have noted sherds with burnish-decoration placed on the inside area of the wall *in situ* and within house debris well below this depth in the deposits at "Vinča". It is further worthy of note in this connection that the material from the sites of "Čaršija" and "Mali Drum", both of which, despite the less imposing accumulations of deposits (and their total thickness) are fully akin to "Vinča" (*i. e.* the so-called "Vinča I"), contains similarly placed decoration (*vide infra*).

[126] Vasić, 17:29, speaks of a "weisslichgrau" ground and black ornamental designs.

[127] Menghin, 3:355, considers the burnish-decorated class of pottery a non-Danubian element originally belonging to his Anatolian sphere. This, and yet other views expressed by this author (*l. c.*), seem to disregard the totality of finds from "Vinča", and the Danube area at large. His conclusion: "In Vinča I [which he delineates with the 5.6 m. line, p. 353] sind also echt bandkeramisch nur die Schuhleistenkeile. Das andere entstammt vorwiegend der ostmediterranen Kultur, als deren nördlichsten [*sic!*] Vorposten wir Vinča I betrachten dürfen" cannot be endorsed in the face of known evidence. (In this connection, cf. our quotation from Nestor, note 235, *infra.*)

[128] Vasić, 17:Pl. 11, b; also 26:Pl. XXIX, Figs. 128-131 (depth marks 6.5 m. to 9.3 m.—pp. 88-89), of which Figs. 128, 130 a, and 130 b are said to have the rim (zone) smeared with a similar resinous matter as was used for crusting the bands of the "Hyde vase". (The author here made interesting comparisons with the Minyan ware—wholly, it is evident, on purely superficial signs which do not warrant serious recognition—and concluded that at "Vinča", in the bothroi (*i. e.* 9.1 m. to 10.5 m.), "real Minyan pottery was not found." This, we may add, seems entirely in keeping with the cultural position of "Vinča".)

and form are concerned, is well represented. The shapes are largely profilated bowls which, when viewed from cross section, show a decided thickening of the wall in the break of the shoulder. There are, however, some rounded forms without a demarcated shoulder, either with a fluted or a ribbed decoration. The technique in executing the design employed a blunt tool of some firm substance (perhaps of stone, bone, or wood, in any event, it seems, without any sharp edges), or at times the tip of a finger, to produce shallow, well defined canalations. The tool appears to have given the minute widths, while the finger decoration (and this should be determinable by power lens observation) seems to have resulted in broader, yet shallow depressions. The ribbing is nowhere truly independent from fluting, and it is for this reason that the two modes of technique, evidently quite inseparable, can be classed under the same heading. The chief difference between the two variants is seen in the actual relief effect. Fluting when found alone penetrates into the surface, but its margins coincide with the plane of the wall. When, on the other hand, the attained effect combines positive relief, we speak of ribbing. It is conceivable, of course, that an instance of the latter design might present a case in which the maximum plane of the whole might not come quite to the level of the wall surface, but the principle would be the same insofar as technology is concerned. It may perhaps be desirable to segregate the two types of design into a strictly fluted group, and a ribbed (that is to say fluted-ribbed) group. However, the point cannot be pressed in the case of "Vinča", for in this site the two variants are not clearly separable. It seems best, therefore, for the time being at any rate, to retain the collective designation. In all instances the decorative motifs are rectilinear, forming horizontally, vertically, or obliquely directed designs. The obliquely placed variant is often arranged in a triangular fashion. As a rule (and this is subject to further investigation), the placement of decoration is limited to the upper portion of the vessel. Curvilinear motifs seem to go with rounded form.[129] The color ranges are approximately the same as in the case of the plain burnished ware. (Perhaps the majority of the pieces which I have examined in the Belgrade collections, and at the site itself, fall within the pale smoke gray to practically black range of hues.) The most constant criterion of the fluted and ribbed pottery class is the proportion of shoulder thickness in contrast to the rest of the wall. As the curvature of the shoulder progresses from below the rim on, its thickness increases until the zenith of the arc is reached, and thereupon diminishes in the direction of the base. In many examples of sherds, in which the cross section of the shoulder is preserved, astonishing regularity and grade of

[129] It would be premature to infer chronologic differences from this interesting, but thus far incompletely rationalized aspect.

such thickening are plainly visible. (Whether the peculiarity is to be explained purely on tectonic grounds remains open to investigation, but it is signally important that its appearance has a wide Eurasiatic distribution, although its appearance is not necessarily limited to the sole class of ware under discussion. *Vide infra.*) At "Vinča", the chronological and relative stratigraphic position of the fluted and ribbed class of ceramics cannot be ascertained from the published reports. Vasić originally placed its vertical distribution "in den tiefsten und mittleren ebenso wie in den aljüngsten Schichten in Vinča".[180] Whether this is to imply continual occurrence or not, cannot, of course, be deduced.

6) The slipped ware, *i.e.* the celebrated "red-slipped ware", is not necessarily always red. (I am referring strictly to the pigment of the slip proper.) Its color range cannot be given without exhaustive examination of the material at Belgrade, based on matching with a standard scale. Ridgway's English red is perhaps nearest to the majority of the color represented by the surface of the slip of this class of ceramics as represented at "Vinča" (and "Grad", Starčevo). Vasić first assigned "der rote Überzug" exclusively to the "Fusschale" group.[181] These were recorded at various depths between 8.2 m. and 3.9 m.[182] Later, the same author stated: " . . . from 6 metres below the surface and downwards are vessels mounted on a stem generally painted red and dark red . . . ", thus again implying his (slipped) "Fusschale" type of 1911.[183] At "Grad", Starčevo, we found many examples of slipped, identically colored (*i.e.* English red) pottery, yet none which could be interpreted as a form analogy with the footed type at "Vinča". On the other hand, illustrations are not at all rare to show that both sites have yielded fragments of similarly slipped pieces which cannot be relegated to the "Fusschale" group. Their general character compares to the Anatolian "red wash" ware as described by Frankfort.[184] It should be possible to trace the technological history of this category of ware in the Danubian area, and to establish, with reference to "Vinča", at any rate, its stratigraphic placement, and thus, eventually, its chronology. At "Grad", Starčevo, the slipped ware seems to be related to the painted variant on the one hand (perhaps genetically), and to the burnished class on the other (perhaps merely through technological circumstances). Typologically, at that site, the black-on-red painted category may well be considered only as a contemporary of, if not somewhat of a more or less immediate successor to, the slipped ware.[185]

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[180] *Op. cit.*, p. 29.
[181] *Op. cit.*, p. 29.
[182] *Ibid.*, p. 28.
[183] 24:199.
[184] *Op. cit.*, especially p. 69 ff. Cf. also note 52, *supra.*
[185] The Danubian slip technique cannot be called "a skeuomorphic red-ware technique" as Myres (p. 286) has done with the Troadic-Aegean variant, for the slip itself produced no design.

Elsewhere, *i.e.* at "Dizaljka", Lipovac, slipped sherds sometimes have incised decoration (*vide infra*). It does not seem necessary to seek the origin of the slipped ware in Anatolia, where its role remains equally unclear.[136] Frankfort's suggestion of independent developments from a common base and similar inductive circumstances[137] merits a fully justified preference, for it finds ample support in the actual evidence thus far recognized in both areas.[138] In Southeastern Europe as well as in Anatolia "red-washed" or "red-slipped" ware is subsequently either burnished or polished, but not in every instance; the wheel-made Anatolian category[139] remains totally undocumented in the Neolithic collections from Danubian sites.

7) The painted ware can here be presented least adequately of all the pottery classes from "Vinča". "Die Technik der roten Mattmalerei", first reported from the site in 1908,[140] is demonstrably not the earliest painted pottery ever found there; for not only was this innovation later than the "Fusschale",[141] which Vasić considered to represent "monochrome painting",[142] but in more recent seasons analogies with the black-on-red variety of painted ware, as commonly found at "Grad", Starčevo,[143] have also been excavated at "Vinča".[144] Both the red painted and black painted varieties were colored before the firing. (The crusted ware is entirely distinct.) Frankfort's view that "coloring before the firing was . . . out of the question [in the Danubian region], and *all* the coloured wares were painted after the pot was technically finished",[145] is wholly contrary to the evidence before us. Examples of "die Technik der roten Mattmalerei" of the "younger Vinča deposits"[146] were not discovered at "Grad", Starčevo. At that site, the black-on-red ware is definitely a somewhat later phenomenon than the barbotine pottery. Just what may be the relationship of the two classes at "Vinča" remains to be reported.

[136] Bittel, p. 107.
[137] *Op. cit.*, pp. 8 ff.
[138] Similar natural resources and convergently tending cultural growths in the two areas promoted, as time went on, further independent developments, especially with respect to metallurgy. The beginning of this industry cannot yet be isolated or specifically allocated in either locus. In the Balkans, it appears, local production of metal objects is nowhere traceable until bronze came into use. The copper trinkets sporadically found there in several sites have not yet been satisfactorily analyzed to determine the provenience of the metal. And there are no indications whatsoever with which to argue for local manufacture of copper articles. That the initial appearances of such material, either in Europe or in Asia, do not necessarily fall within a uniform time scale is well supported by the nature of the total cultural contexts within which they are registered. Even though the "true home of aeneolithic metallurgy" as conceived by E. E. Herzfeld (*Archaeological History of Iran* [London, 1935], pp. 1-2) be granted the vast, contiguous area stipulated by him (*i. e.* Armenia, Asia Minor, the Balkans, the Caucasus, and South Russia), there is no ground for assuming a single origin therein. Certainly there are historically well established cases of wholly independent metallurgical parallels in yet other parts of the world.
[139] Frankfort, *op. cit.*, p. 70.
[140] Vasić, 17:29, Pl. 15, a; depths 0.7 m. to 4.6 m. (p. 30).
[141] Vasić, *ibid.*, and 12:334-335, in which a depth of 0.7 m. to 6 m. is given for the appearance of the matt-painted ware.
[142] *Op. cit.*, p. 334.
[143] Fewkes, Goldman, Ehrich, 2:45 ff., Pls. IX-XIII.
[144] Now in the University Museum collection, as yet unpublished. (Cf. Fewkes, Goldman, Ehrich, 2:48.)
[145] *Op. cit.*, p. 27. (The italics are mine.)
[146] Vasić, *op. cit.*

8) The crusted ware, *i.e.* that class of pottery in which pasty paint was applied subsequent to the firing, is comparable, both in technique and motifs, to similarly decorated pieces from Čoka,[147] and the neighboring Tisza region in Hungary.[148] Its frequency and stratigraphic allocation at "Vinča" is not clear from the literary sources. Certain specimens, as reported in 1930, "are ornamented with ribbons of a black material which burns in the flame of an acetylene lamp".[149] Their vertically measured occurrences were given respectively as 6.3 m., 6.5 m., and 7.05 m.[150] Yet another instance was recorded at 8 m.[151] The crusted ware at "Vinča" is entirely distinct from the Thessalian and Macedonian crusted pottery of Period III[151a] which is abundant in southern Yugoslavia,[151b] but as far as I know, totally absent in the Moravo-Danubian area.

9) Miscellaneous embellished ware.

a) Specimens with impressions of basketry on the bottom,[152] are reported from various depths between 6.2 m. and 4.5 m.[153] These do not necessarily constitute a separate category insofar as paste, texture, firing, surface finish, etc. are concerned, for their sole differentiation from other wares, technologically viewed, rests largely in the manner of the bottom treatment. The result may well be interpreted as embellishment irrespective of its original cause. It is not determinable whether the potter employed a basket mold upon which to build the vessel, or simply impressed the bottom of a previously constructed piece while it was in the plastic state, for the individual examples are too fragmentary to deduce the process involved.

b) The so-called "pictographic marks" or "script", again not assignable to a separate category, rather appearing on sherds belonging to the burnished (through surface finish) or fluted and ribbed (in form) classes, are, it seems, a rather late phenomenon at "Vinča". In 1911, their occurrence, vertically ascertained, was said to have been noted from 2.5 m. to 5.4 m., "aber auch in der Wohngrubenschicht".[154] The specimens from the bothros level, as much as I have examined them, show, in my opinion, no more than meaningless scratches. Although the possibility of proprietary marks[155] is not to be denied, it is to be stressed that some of the examples from the upper portion of the deposits distinctly suggest Slavic pieces.[156]

[147] Childe, 4:27 ff.
[148] Tompa, pp. 55 ff., Pls. LIII ff.
[149] Vasić, 24:199; there also comparison with the Bükker and Tisa material.
[150] *Ibid.*
[151] Vasić, 26:72-73; for illustrations cf. Pls. XXIV, Fig. 109 a-c ("Hyde vase"), XXVIII:127 a, b, XXIII:103 a-c. The crustation in all of these instances is said to be "black resinous matter"; pp. 61, 72.
[151a] As defined by Wace and Thompson, *loc. cit.*, and Heurtley, 4 and 5.
[151b] Cf. Fewkes, 2:50 ff.
[152] Vasić, 8:274, and Fig. 63 a, b.
[153] Vasić, 17:31, and Pl. 16.
[154] Vasić, 17:31, and Pl. 16 (drawings).
[155] Childe, 4:31.
[156] Cf. Vasić, *ibid.*: Pl. 16 first and second illustrations in the top row, counting from the left; depths 0.6 m. (!).

10) The unembellished, plain ware, as much as it may be segregated from the burnished category, either hand smoothed or only superficially tool-rubbed, includes sundry culinary, storage, and other vessels. To this group probably (?) belongs the "warming pan".[157] Detailed data regarding our category 10) as a whole—here applied in a broad sense and wholly for a provisional purpose—must await further specific studies.

11) Anthropomorphic and zoomorphic vessels,[158] and anthropomorphic lids.[159] The vessels have either crusted,[160] fluted,[161] applied relief,[162] or incised[163] embellishment.[164] In vertical deposition such specimens have been recorded between 8.2 m. and 4.6 m.[165] The lids, mostly with incised or relieved details, appear to have a similar distribution, 8.3 m.,[166] evidently, being the maximum depth record published for the incised type.[166a] However, Vasić places "anthropomorphic vases" among the characteristic remains of the bothros niveau.[167]

12) Vessels with a prosopomorphic, anthropomorphic, or theriomorphic depiction, in which such a feature is entirely independent of the body form which accommodates it. That is to say instances in which the respective vessel shape, tectonically speaking, is not anthropomorphic or theriomorphic, but one common to other classes of pottery.[168] The relief varieties include the human face,[169] entire human body,[170] and animal forms.[171] Their depositional depth, as far as published sources show, was recorded respectively at 6.6 m., 7.6 m., and 8.5 m.[172]

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[157] So called by Vasić, 26:12 and 15, and Figs. 9 and 19 (*i. e.* the diagonal indicator marked "Mangal" ["warming pan"] which points to the specimen in question, obscured, in the illustration, by the wall of the dwelling seen in the foreground; cf. Fig. 20 for a distant view of the vessel *in situ*). This "warming pan" was recorded at a depth somewhere, apparently, between 3.2 m. (*i. e.* as stated for the entire house) and 2.91 m. (marking the raised floor of the oven at its entrance). It was found to contain ashes. Cf. also p. 15 for the mention of a fragment of a similar, larger specimen, from a depth of 8.38 m., as well as other (depositionally not specified) occurrences of like pieces.

[158] Vasić, 17:28-29, Fig. 7; 24:199; 26:42 ff., Figs. 89 (90), 91, and 113 a (113 b); also 7: Fig. 37.

[159] Vasić, 7:113 ff., Figs. 26-32; 17:28, Fig. 8; 26:54 (*i. e.* the "prosopomorphic lid . . . found at ▽8.3 m."), Fig. 107 a-c.

[160] *Op. cit.*, pp. 60 ff., Fig. 109 a-c—the "Hyde vase", which combines fluted decoration as well.

[161] *Ibid.*, p. 52, Fig. 89 a-c (90 a-c). (Professor Vasić's criticism that Dr. Grbić and I have published an illustration of this specimen in 1931, may be answered as follows: The vessel is the property of the National Museum of Belgrade, where it is on exhibit. Dr. Grbić, as a curator of that institution, submitted its photograph together with his original draft of the article appearing in *Discovery*, University Museum, Philadelphia [May, 1931]. Although I translated and somewhat changed Dr. Grbić's original manuscript, the inclusion of my name in co-authorship was an editorial error. I never saw the proofs.)

[162] Vasić, *ibid.*, p. 66, Fig. 113 a (113 b); the ridge of the four plastic ribs, placed in a chevron-shaped fashion on each side of the vessel, bear transversely executed depressions.

[163] Vasić, *ibid.*, Fig. 91 (text p. 42), illustrates a combination of positive applique, negative relief, and fluting.

[164] Vasić, 7:Fig. 37 (Chance find, before excavations began.).

[165] Vasić, 17:29.

[166] Vasić, 26:54.

[166a] The six pieces illustrated in Vasić, 7:*ibid.*, represent chance finds.

[167] 26:89.

[168] The specimen illustrated in Vasić, 26:Fig. 91, is perhaps to be placed at the border line of this division? It represents, however, only a fragment, and as such it offers no conclusive means of delineation.

[169] Vasić, 26:Fig. 105 (plastically depicted and fluted); 7:Fig. 34 (incised eye and modeled nose—incomplete).

[170] Vasić, 26:Figs. 96, 97 a (grotesque shapes, applied in relief).

[171] *Ibid.*:Fig. 97 c (applied in relief).—Figs. 97 a, and 97 c show separately the two features appearing on the same vessel; Fig. 97 b reveals both from a single view.

[172] *Ibid.*, p. 46 (Fragments found between 8.5 m. and 8.1 m.)

13) The so-called libation tables (or altars),[173] are decorated with incisions, geometrically designed, or occasionally with crustation; some have modeled animal heads.[174] Bi-, tri-, and quadri-legged varieties are common.

B) Figurines:

1) Anthropomorphic.[175] Female and male statuettes, with incised, painted, or crusted embellishment, are either seated, kneeling, reclining, etc., or in an upright position. Many specimens have perforated head, shoulders, hips, or waist. Great variety in torso shapes, individual features, embellishment, and sundry details exists. At least some anthropomorphic figurines are found at all depths. A detailed classification into categorical groups is indeed difficult, for there is really no constancy in association of individual elements. A truly objective segregation into "types" must take into account various aspects which are not always clearly separable. Incising, fluting, coloring, modeling, etc., are not confined to individual classes. Torsomorphically, distinct varieties are recognizable, but how these may be correlated with depositional stratigraphy, is not quite determined. A rather "simple" form was found at a depth of 9.3 m.,[176] and again at 7.7 m.,[177] and, indeed, at 5.8 m.[178] (In all of the three instances with perforations in the arm stumps.) A "more sophisticated" product comes from several depths between 6.7 m.[179] and 4.6 m.,[180] usually with incised embellishment, the arrangement of which is temptingly suggestive of a skirt[181] or a girdle,[182] and in one example perhaps of a shoulder wrap (?). More or less "stylized" torsos, usually with a "crested" head, have been found within the span between 5 m.[183] and 2.5 m.[184] (The "occiput" is usually longitudinally drawn out in a ridge-like manner and perforated in several places at more or less equidistant intervals, while the "head-crest" itself, and at times also the "temples", or "cheeks", are likewise similarly pierced.) Among the rather infrequent occurrences may be recalled: the detailing of toes on one torso fragment preserving the joined legs, with a frontal groove to distinguish the separate limbs, and the feet modeled so as to protrude independently;[185] the "hooded" examples;[186] pieces with depictions suggestive of hair flowing

[173] Vasić, 8:Fig. 36 a, b; 17:Fig. 9, and 14:Figs. 13 (there called "stand [*postolja*] for a double axe" [1], pp. 102 ff.), 14, 16 and 17.
[174] Vasić, *ibid.*, and 25:Figs. 14 and 16, on p. 666.
[175] Vasić, 17:Pl. 9 a-h (i, included under the "Tonstatuetten" label of the plate is of bone, cf. text p. 28), and 26:Figs. 22-26, 34-46, 48-50, 92, 93, 95, 98, 100-102, 108, 135-146 (of these, Figs. 37, 38, 41, 42, 44, 46, and 48-50, *i. e.* Pls. XXXV-XXXVIII, are duplicated in colors, which, however, fail to do justice to the originals).
[176] Vasić, 26:Fig. 135.
[177] *Ibid.*:Fig. 136.
[178] *Ibid.*:Fig. 137.
[179] *Ibid.*:Fig. 142.
[180] *Ibid.*:Fig. 145.
[181] *Ibid.*:Figs. 145 (4.6 m.), 146 (6.3 m.), and 144 (checkered design with intermittent, dimple-filled, rectangular fields—found at 6.3 m.).
[182] *Ibid.*:Fig. 142 (6.7 m.).
[183] *Ibid.*:Fig. 39.
[184] *Ibid.*:Fig. 118.
[185] *Ibid.*:36. (The decorative technique suggests grooving rather than fluting: depth 5.1 m.)
[186] *Ibid.*:Figs. 24 (depth 6.2 m.), 26 (7.3 m.), and 100 (8.7 m.).

down the back;[187] a specimen with one arm stump outstretched horizontally, the other raised upright from the elbow;[188] another suggesting the so-called kourotrophos type (?);[189] some seated figurines, either with a "throne",[190] or simply unattached to any supporting contrivance. The colored pieces, sometimes painted,[191] sometimes crusted, combine various shades of red and gray, placed in a zoning effect more or less over the entire surface.[192] As a rule, the majority of the figurines are well burnished.[193]

2) Theriomorphic. Technologically, these assimilate the foregoing category, but the models which originally inspired them are not always recognizable as to species. The ruminants, apparently, were well favored.[194] In this category may be placed the askoi found at "Vinča" before 1908.[195]

C) Quasi-figurines and/or amorphic objects. These include more or less oddly shaped products which do not lend themselves to a specific classification. The three examples published by Vasić, and considered by him to be ornaments,[196] present three distinctly different forms. One suggests a headless torso with raised arm stumps, the second is analogous to the "bead" published by Childe,[197] and the third seems to portray two separate animal heads (?) modeled upon a single body shape.[198]

C) Miscellaneous ceramic objects include pintaderas,[199] whorls,[200] and weights.[201] (Wall plaster, because of its specific function, is treated under

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[187] Vasić, 7:Fig. 18; 17:Pl. 9, e and f; and 26:Fig. 142 (?—the author considers both the incisions on the shoulders and down the back as representing hair [p. 121]; inasmuch as the specimen is incomplete, and the head itself is missing, only conjectures are possible. It is worthy to note, however, that the shoulder embellishment runs down to the waist line, is interrupted there by a belt (?), and resumes again below it. The arrangement is more suggestive of a garment than of hair dropping over the shoulders).

[188] *Ibid.*:Fig. 98 (depth 7.8 m.). The arm treatment assimilates that seen in *l. c.*, Fig. 97 a; cf. p. 46.

[189] *Ibid.*:Fig. 41 (*i. e.* the "Lady of Vinča", p. 31). The specimen is described as representing the kourotrophos style, p. 119, although there is no direct evidence of trophism; the right arm rests on the chest and terminates with the left breast, while the other arm is now broken off at the shoulder. (Found at a depth of 4.38 m.)

[190] *Ibid.*:Fig. 34 (depth 5 m.), and, according to the author, also Fig. 41 ("Lady of Vinča"—fragmentary); also Vasić, 7:Fig. 12.

[191] Childe, 4:Fig. 35 b. (This author, speaking of figurines from "Vinča", *i. e.* those assignable to his "Vinča I", described them [p. 29] *inter alia*, as "crudely modelled; . . . the only article of clothing is the necklace", and said: "All such figurines seem to be females, depicted in an erect posture . . . ".

[192] Vasić, 26:Pls. XXXV-XXXVIII, of which all but XXXVIII are probably crusted.

[193] Vasić, *ibid.*, p. 27, expressed the opinion that the large number of figurines at "Vinča" is "reliably explained" through the custom of burying directly within the settlement. For, he maintained, although actual graves were few, the "chamber with a dromos", found in 1931, and the sporadic occurrences of fragments of human skull (1929-1931), conclusively prove inhumation (p. 26). However, in 1934 we are informed by the excavator that interments in the settlement at "Vinča" were cinerary (Vasić, 28:69).

[194] Vasić, *ibid.*:Figs. 117 (marked 4.7 m.), 118 (7.6 m.—p. 68), and 119 (7.5 m.). The last two named specimens are explained by the author as "fragments of cosmetic vessels in the form of a ram"; pp. 68-69. They are here cited to illustrate the general form of the modeled figures.

[195] Mitić, pp. 185 ff., and Figs. 1 and 2.

[196] 7:111, and Fig. 22 a, b, c (all chance finds).

[197] 4:30, and Fig. 15 (possibly a sketch of the piece illustrated by Vasić, *op. cit.*, Fig. 22 b ?); included in this author's "Vinča I".

[198] Vasić, *ibid.*:Fig. 22 c.

[199] *Ibid.*:Fig. 47, and p. 33. The specimen has a series of grooved, running chevrons, arranged in a compact group; found at a depth of 7.3 m. Also Vasić, 7:Fig. 24, a chance find, with incised, spiral-meandric design.

[200] *Ibid.*:Fig. 23 (chance find, but duplicated by similar pieces found during the excavations).

[201] Vasić, 26:Fig. 110, extreme right.

a separate category; *vide infra.*)[202]

II) Bone, horn, and antler implements,[203] such as needles, awls, spatulae, and picks, are common. Harpoons with two rows of bars, always made of deer horn, evidently belong to a later development at "Vinča", for they have not been found below the depth marked by the 5.8 m. line.[204]

III) Artifacts shaped out of the shell of various bivalve mollusks. "Muschelringe"[205] and "Anhängsel",[206] and fragments thereof, are reported from various depths between 7.8 m. and 1.4 m.[207]

IV) Stone work.

A) Celts of the shoe-last type and derivatives thereof,[208] made of slate and allied material, are common to all niveaus.[209]

B) Hard stone (flint family) flaked artifacts comprise knives, scrapers, arrow heads,[210] and blade-shaped or irregular chips.

C) Objects of obsidian may be classified into blades and flakes.[211]

D) Mace heads and buttons are manufactured of marble and limestone.[212]

E) Miscellaneous stone artifacts include: minute, pestle-shaped pendants (?),[213] gorgets (?),[214] and the so-called palettes,[215] all of marble; marble pieces, such as the "amulette shaped like an Egyptian axe",[216] quite indeterminable as to function; more or less "violin-shaped", flat, marble pieces, reminiscent of figurine torsos;[217] milling stones, querns, polishers, whetstones, and abrading stones,[218] usually made of sandstone or limestone;

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[202] As a rule, the ceramics of "Vinča" are well fired. Exceptions to the contrary are relatively negligible. All the wares reflect open fire pyrogenation. The ovens, quite frequent at various depths, are said to have been heated with the aid of warming pans; pp. 14 and 12. As far as I know there are no records of finds indicating anything like a potter's workshop. The technology of the "Vinča" ceramics has not received proper attention yet, and very little indeed is known about the actual manner of its manufacture. Insofar as I am aware, no petrographic identification of aplastic inclusions, or chemical analyses of the pastes used, have been published. It cannot be doubted that such studies offer highly potential means with which to rationalize, not only at "Vinča", but elsewhere as well, many aspects of culture history for which ceramics certainly present valuable clues.

[203] Cf. Vasić, 26:Pl. 16 (depths 9.1 m.-4.6 m.), and 17:Fig. 6 ("of about the same time as the harpoons", cf. p. 27).

[204] Cf. Vasić, 17:p. 27, and Fig. 5.

[205] Vasić, 17:Pl. 10 b).

[206] *Ibid.*:Pl. 10 a), upper right.

[207] *Ibid.*:28.

[208] Vasić, 7:Pl. VI, 9 a-h, and 17:Pl. 8 a.

[209] *Ibid.*:27.—According to Childe, 4:30: "In the lower strata at Vinča a model shoe last-celt of beautiful nephrite was discovered . . . "; there is no source reference, and as far as I know the specimen was not published by Vasić.

[210] Vasić, 7:Pl. VI, 8 a-d. and Vasić, 17:Pl. 8 b.

[211] *Ibid.*:Fig. 4; recorded at various depths between 6.5 m. and 2.6 m. (The raw material is said to be of Hungarian provenience; Vasić, 12:320. The minute chips seem to indicate local manufacture at "Vinča".)

[212] Vasić, 25:753, Figs. 16 (mace head of marble, found at a depth of 8.2 m.), and 15 (two buttons of marble, each pierced, found at a depth of 8.3 m.).

[213] Vasić, 26:Figs. 64-66, described (p. 38) as triturating tools (the term "rastirač" being used); recorded depths 8.7 m., 6.4 m., and 6 m.

[214] *Ibid.*:Figs. 62, 63, called (p. 38) miniature palettes (6.6 m. and 8.4 m., respectively, indicate their depositional depths).

[215] *Ibid.*:Figs. 57-61; (recorded at various depths between 5.5 m. and 7 m.).

[216] Vasić, 14:Fig. 11 a, b (two specimens), and Childe, 4:Fig. 14, and p. 30.

[217] As far as I know unpublished; specimens in Belgrade.

[218] *Ibid.*:Figs. 27-30 (found at various depths between 8.1 m. and 4 m.).

and hammers and mauls of pebbles.[219]

V) Wall plaster of fired clay paste[220] with organic inclusions, with impressions of twigs, branches, or posts, is plentiful throughout the deposits from the initial niveau upward. In rare instances the plaster was modeled, as, for example in the case of an animal head, which, however, was found at a depth of 3.5 m.[221]

VI) Copper, cinnabar, galenite. Pieces of raw cinnabar, said to have been obtained in the galleries at "Šuplja Stena", about 16 km. westward of "Vinča", are "found at all levels".[222] Various bits of galenite, some with a perforation, again from the close hinterland of the site, were found, as reported, at 6.5 m. and 4.2 m.[223] These two minerals, as well as pieces of red paint[224] (ochre?), and green paint,[225] are interpreted as raw material for cosmetic products, and the preparation is said to have been utilized for personal adornment and for painting ceramic figurines.[226] Copper, invariably in the form of small beads or amorphous bits, was found, sporadically,[227] as far as 8.1 m. below the surface.[228] Whatever the reason for their appearance at the site, the sporadic occurrences of copper trinkets do not form a constituent part of the Neolithic contexts at "Vinča".[229]

Although Vasić at one time properly interpreted "Vinča" as Neolithic,[230] his subsequent views[231] mark a process of date reducing which finds no comparison in the history of European archaeology. The culmination of this scaling is to be seen in Vasić's recent supposition that the site was founded as an "Ionian Greek colony around 600 B.C."[232] The 10.5 m. of deposits at "Vinča" do not represent only Neolithic accumulations. The Bronze and Iron Ages each separately share in the upper horizons. The individual delineations between the several cultural stages documented by the material remains have not been established yet. There are no sterile layers, and the excavator has consistently abstained from a schematic division of levels. However, others have established at least two strata, "Vinča I" and "Vinča II" respectively, both of which they understand as Neolithic.[233] The line

[219] *Ibid.*:Figs. 31-33 (found, respectively, at a depth of 6.9 m., 6.5 m., and 4.7 m.).
[220] *Ibid.*, pp. 8 ff.
[221] Vasić, 25:665, Figs. 3 and 4.
[222] Vasić, 26:4 ff.
[223] *Ibid.*:34; the perforated piece is shown in Fig. 52.
[224] *Ibid.*:35; recorded at 4.9 m. and 6.5 m.
[225] *Ibid.*; found at various depths between 7 m. and 4.1 m.
[226] *Ibid.*:8 ff., and 34 ff. (The book devotes many pages to the subject.)
[227] Vasić, 24:200.
[228] Vasić, 17:31 (mostly above the 6 m. level); and 27:*ibid.* (Childe, 4:30, states: "At a depth of 9.5 m. at Vinča a copper bead was found", without, however, a source reference).
[229] The foregoing enumeration of the main classes of the material represented in the rich deposits of "Vinča" is purposely circumscribed to conform to the needs of this paper. While it is an incomplete listing, it is, I think, adequate for the comparisons to be drawn from the other sites which will now be considered.
[230] Vasić, 8:165-166.
[231] Vasić, 7:34 and 126; 17:127; 24:200; 26:97 ff.; and 28:65 ff.
[232] Op. cit., pp. 70 ff. (Incidentally, the *terminus post quem* of the "prehistoric" settlement at "Vinča" is identified by Vassić with the arrival of the Romans in the region in the year 6 A.D.; cf. *loc cit.*, and 26:97.
[233] Childe, 4:26, and Menghin, 3:353.

separating the two zones, *i.e.* the 5.5 m. of Childe,[234] and a depth of 5.6 m. chosen by Menghin,[235] is most arbitrary and ambiguous. The nominal "convenience" which such a dual division of Neolithic "Vinča" tenders in provisional labeling does permit—but most emphatically does not justify—moderate acquiescence. The decisive determination of stratigraphic phenomena at "Vinča", for which the very nature of the remarkable deposits provides unique possibilities and entirely dependable means, must, it cannot be denied, come directly from the ground. Apparently, the excavator has not deemed it necessary to entertain this issue thus far, although he is not in agreement with the absurdities just cited.[236] Nor has he presented an exhaustive tabulation of his finds. The importance of the site commands attention from all archaeologists concerned with the Danube area, and many, indeed, have devoted much thought to its culture historic values. Secondary as such endeavors must necessarily be, their chief contribution lies in the resulting dissemination of information about "Vinča". It is, therefore, most imperative that such concerns respect the true nature of the site, and that the excavator himself lead the way in a comprehensive presentation of his exploratory results.[237]

The Neolithic Age at "Vinča" is amply documented by the character of the material and the nature of the deposits. The site affords outstanding opportunities for studies in Neolithic culture history. The valuable records which it presents with respect to the initial stage of Danubian civilization—using this term in the sense of its recognized archaeological connotation—remain fully unrivaled. The central position and situation upon so convenient a location seem to have given "Vinča" a distinct advantage over the rest

[234] *Op. cit.*; cf., therein, p 65, note 1, for the author's uncertainty.

[235] The discrepancy of 0.1 m. in Menghin's concept of the "division line" is not explained.—Nestor, p 35, commenting on the "zwei phasen" at "Vinča", and pointing out the unfinished "Untersuchung der Ansiedlung", sapiently remarks: "Demnach arbeiten wir vorläufig, wie dies auch Childe betont, mit einigen unbekannten Grössen". With respect to Southeastern Europe at large, this author, *l.c.*, p 31, most appropriately comments that "jeder Forscher ein eigenes Lied singt." This is particularly true, it follows from our discourse, of "Vinča", the material of which, obviously, lends itself to strictly objective interpretation. But it is necessary first of all to sacrifice speculative theorizing to an understanding, appreciation, and interpretation of the tangible remains. Superficial interregional comparisons are most misleading, and it must be remembered that not everyone concerned with the archaeology of Southeastern Europe has always an access to the material itself. Gross misconceptions of "Vinča", for example, have been widely circulated in many serious and otherwise valuable literary sources. We find them in works generally used in academic studies, and as these are read, either the teacher (unless he is a field man) or the pupil (and it is he who is here completely at the author's mercy) must either heed to the thesis, or form their own suspicions. How many institutions of learning (or museums, for that matter) outside of Belgrade can boast of a representative collection from "Vinča" with which the fallacy of the dual division can be exploded?

[236] Personal information. (The fact must at once be kept in mind that Professor Vasić does not accept a Neolithic existence at "Vinča" whatsoever.)

[237] These critical remarks must not be misconstrued as lamentations over past events. They are prompted by my conviction that "Vinča", as more or less generally realized, is a unique Danubian site, and a potential key to many highly significant aspects. Elucidations of certain culture historic events which are overt in its deposits are a necessary prerequisite in numerous endeavors aiming at further understanding of Danubian archaeology. Comparisons with "Vinča" are mandatory in dealing with most, if not all sites situated within the area adjacent to this focus. The vast task entailed in the explorations at "Vinča" is unquestionably appreciated and respected by all who know the character of its deposits. The excavating technique, as designed and executed, was not, as evidenced by the records thus far published, always quite equal to the needs. The unexcavated portion of the site still provides vast possibilities with which to amend previous work.

of the sites within a large, contiguous territory. That "Vinča" was the focal point in relation to the series of Neolithic sites thus far known in eastern Yugoslavia southward of the Danube seems to be, as will presently be seen, not a matter of conjecture, but one which is well reflected in the character of the remains from locality to locality.

In the Moravo-Danubian area, and especially in the *banovina*[238] of the Morava, many new sites have recently been recorded.[239] The Neolithic material found at these localities points to close cultural affinities with "Vinča". While the majority of these instances represent surface collections or objects which were dislodged from the deposits by erosion or other causes, some excavations and soundings have also been done. The whole adds materially to the knowledge from previously explored sites in the area. The account which now follows takes into consideration already published sites as well. We shall first devote our attention to the localities which have been explored and described.

"Čaršija".

Located within the land which belongs to the village of Ripanj, barely 20 km. southward of Belgrade, and about the same distance from "Vinča",[240] the site of "Čaršija"[241] was partially excavated in 1904.[242] Here Vasić found a culture level averaging 2 m. in thickness[243] and containing material which "belongs to the purely Neolithic Age".[244] The site lies upon a natural knoll and its deposits consist of pits cut into the loess foundation, and the debris superimposed thereon.

The material includes:

1) Incised ware with ribbon motifs in rectilinear style. The bands are filled with dimplings or indentations. Among the decorative patterns the triangular and meandric designs are the most frequent elements.[245]

2) Fluted and ribbed ware, as a rule burnished, in which the decoration, consisting of oblique or vertical parallel lines, is restricted to the upper part of the vessel (neck, shoulder). The shapes are based upon the shouldered bowl form, in which the break is often quite severe and angular and usually thicker in cross section than the rest of the wall.[246]

[238] A *banovina* is one of the nine administrative districts into which the country was divided by the royal decree of 1929.

[239] The museums at Niš and Negotin (Krajina) have been particularly active in this respect. During the seasons of 1933 and 1934, the Harvard Expedition, and the American School of Prehistoric Research, both under the direction of the present writer, cooperated in the field work of these two institutions (cf. Fewkes, 1:24, 2:29 ff., and 3:10 ff.).

[240] Cf. Vasić, 8: map on Pl. I, and our sketch map (Č).

[241] The name signifies a trading place, *i.e.* a bazaar.

[242] Vasić, 3:236 ff.

[243] *Op. cit.*, p. 237; the maximum depth amounted to 3 m.

[244] Vasić, 8:170.

[245] *Ibid.*, pp. 229 and 234, and Pls. XI:44 c, and XXIV:48.

[246] *Ibid.*, pp. 214-215, and Pls. XIX:38-40 a, and XX:40 b.

3) Burnish-decorated ware, especially well represented by the round-shouldered, broad bowl, decorated over the entire outside surface.[247] This specimen has one of the curious marks sometimes called "script", which appear in various forms on other sherds at "Čaršija".[248]

4) Undecorated, hand-smoothed, or partially burnished ware, among which a jar with a globular body, and a broad, gently graduated neck terminating in a slightly everted rim, is almost complete.[249] This particular vessel has a cork-shaped lug. Other varieties of lugs, sometimes perforated, are also present, but not the true handle. However, the lug-handle does appear.[250]

5) One fragment of an anthropomorphic lid.[251]

6) Fragments of altars or seats. Their decoration is incised, and the motifs include spiral and meandric designs.[252] In one example a coating of red paint is reported.[253]

7) Figurines of baked clay, which comprise rather crude as well as fine specimens.[254] Their embellishment is incised with spiral designs.[255]

8) Wall plaster of fired, straw-mixed clay, found in association with round culture pits, *i.e.* remnants of dwellings.[256]

9) Lithic artifacts, among which the shoe-last celt and forms based upon its shape, as well as knife blades and scrapers of flint, are common.[257]

There are no painted or crusted pottery vessels. However, some of the fragments of figurines do show traces of red pigment,[258] and one seat fragment, as already stated, has a red spiral.[259] It is not possible to ascertain from the sources here utilized whether these instances represent true painting or crustation.[260]

The material from "Čaršija", technically and stylistically viewed, closely parallels that of "Vinča". As far as was determined by the excavation which was done by 0.1 m. levels,[261] the deposits were purely Neolithic.[262] There

[247] *Ibid.*, p. 247, and Pl. XXVIII:55.
[248] *Op. cit.*, p. 274, and Pl. XXXIII:64 (which contains drawings of examples from "Čaršija" as well as from "Mali Drum" without stating their individual provenience; nor does the text elucidate this point. I very much doubt that *l* represents a Neolithic sherd, rather it seems like a wheel-made Slavic piece.)
[249] *Ibid.*, p. 208 (where the specimen is called a "schlauchförmig" pithos), and Pl. XVII:34.
[250] *Ibid.*, p. 209, and Pl. XVII:35 a. (This was produced by tunnelling through a mound-shaped appendage; while the ultimate result attained a functional homology with a handle, there were no separate attachments characteristic of the true handle.)
[251] *Ibid.*, p. 266, and Pl. XXXI:61 a, b.
[252] *Ibid.*, p. 176, and Pls. XI:16, 17, 18, and XII:19.
[253] *Ibid.*, Pl. XI:18; the specimen is described as a seat with a red, hooked spiral (cf. *l. c.*, p. 176).
[254] *Ibid.*, pp. 173, 175, and 199, and Pls. VII:10 a, b, 11 a, b, XVI:32, IX:14 a, b, and X:14 c, d, and 15.
[255] Of the finer examples the large fragment of a seated female is especially well known; cf. Hoernes, p. 317, Fig. 5, and Childe, 4:Fig. 35, c.
[256] Vasić, 3:238.
[257] Vasić, 8:167, and Pl. III:4 a-e, and 5 a-e.
[258] *Op. cit.*, pp. 173 ff., and Vasić, 3:240.
[259] Cf. note 253, *supra*.
[260] The collections of the National Museum in Belgrade were greatly damaged during the World War. Among the salvaged material there are only a few specimens of the original "Čaršija" collection; this includes the well known seated figurine.
[261] Vasić, 3:238.
[262] Vasić, 8:170.

were no houses comparable to those found above the bothros[263] or "Wohngrube"[264] niveau at "Vinča".[265] A cultural affiliation between the two sites[266] is clearly demonstrated.[267] This, in turn, suggests an ethnic kinship,[268] inasmuch as in both instances[269] the regionally primary Neolithic culture growth is represented.

"Mali Drum".

Some 5 km. to the southeast of Ripanj lies the village of Popović, near which, on the left bank of the Ralja brook, is situated the site of "Mali Drum".[270] Its exploration, carried out by Vasić, was done about the same time and in a similar manner as at "Čaršija".[271] The position, nature, and deposits of "Mali Drum" virtually duplicate the site of "Čaršija".[272] There is likewise very close agreement in the material remains of the two localities. All the classes of ceramics, figurines, fired plaster, and stone artifacts listed for "Čaršija" find repetition at "Mali Drum".[273] The same is true insofar as the cultural interpretation of this site is concerned. The affinity with Neolithic "Vinča" is again vividly shown.

"Kremenite Njive".

This site is situated in the locality known as Barajevo which lies about 7 km. westward of "Mali Drum".[274] The results of its partial exploration were published in 1891.[275] Vasić refers to the material from "Kremenite Njive"[276] as being analogous with "Čaršija" and "Mali Drum".[277] We have, then, a third instance of essentially the same type of site as the two localities

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[263] Vasić, 12:319.

[264] Vasić, 10:26.

[265] The presence of the plaster itself, however, indicates daubed dwellings.

[266] As well as "Mali Drum" and "Kremenite Njive", *vide infra.*

[267] It will be remembered, however, that the excavations at "Čaršija" were done within a much smaller section of deposits than at "Vinča".

[268] Cf. Vasić, 8:165.

[269] And at "Mali Drum" and "Kremenite Njive", *vide infra.*

[270] Cf. Vasić, 8: map on Pl. I, and our sketch map (M.D.)—The name means little road.

[271] Vasić, 3:236 ff., and 8:164 ff.

[272] *Op. cit.*, p. 165.

[273] *Ibid.*, pp. 167 ff., and Pls. IV:a-o, V:a-h, VIII:13 a, b, XII:20, 21, XIII:23 a, b, and 25 a, b, XV:28, XVI:33, XVII:35 b, c, XVIII:37, XX:41, XXI:43 a, b, XXII:45 a-e, XXIII:46 a-c, and 47 a, b, XXIV:48 b, c, and 49 a-d, XXVI:52 c, e, f, XXVII:53, and 54 a-c, XXVIII: 56, XXIX:57 a, b, XXX: 58 a, b, XXXIII:64 a-u. (Pl. XXXIII shows sherds with "script" from "Mali Drum" and "Čaršija" without differentiating the two sites.)

[274] Cf. *op. cit.*, map on Pl. I, and our sketch map (KNj).

[275] Cf. Žujović and Valtrović, pp. 1-17; first reported by Valtrović, p. 96.

[276] The name means fields with silicious stones.

[277] Vasić, 8: *passim.* The author describes only one specimen from this site, *i. e.* the seated figurine illustrated on his Pl. XII:22, (text p. 177). It is to be remembered that at the time of Vasić's writing (1906) "Vinča" was known only from stray finds presented to the National Museum at Belgrade (cf. Vasić, 7:90 ff., and 4:259 ff.). The similarities of that material with the finds from "Čaršija", "Mali Drum", and "Kremenite Njive", however, were immediately noted by Vasić (cf. Vasić, 8:165).

previously dealt with, again not far from "Vinča".[278] Although "Kremenite Njive" seems to have been less systematically explored than other sites,[279] it may be classed together with "Čaršija" and "Mali Drum", and as such correlated with Neolithic "Vinča".[280]

"Jablanica".

Located between the 4 km. and 4.5 km. points on the railroad line from Mladenovac to Misača, and about 58 km. distant from Belgrade,[281] the site of "Jablanica"[282] occupies a natural low knoll, which was dissected for the right of way.[283] The partial excavation was executed by Vasič who published the results in 1902.[284] The culture level which he investigated measured 2.5 m. in thickness and contained round pits[285] penetrating into the loess foundation (virgin ground), and a superimposed accumulation of debris.

The incised,[286] fluted and ribbed,[287] and burnish-decorated[288] wares, as well as figurines,[289] altars or libation tables,[290] stone implements,[291] and bone and antler artifacts,[292] again approximate those of "Vinča". On the whole, however, the material remains from "Jablanica" are of inferior quality in this comparison. The small, quite crude cups, either of profilated,[293] globular,[294]

[278] Two other localities may be included in this connection: 1) "Šuplja Stena", near Belgrade, situated upon the summit of the hill containing cinnabar from which, according to Vasić (26:4 ff.), the people of "Vinča" obtained the supplies of this mineral. The site is dismissed by Vasić as "a poor prehistoric settlement" (*loc. cit.*, p. 6). Recently, the foundations of a large building were laid here, and the work incidental thereto led to extensive construction excavation which cut through and under the deposits. When I first visited the site in 1931 with Dr. Grbić, the culture deposits then exposed measured as much as about 1.5 m. in thickness. (Vasić, *op. cit.*, speaks of a niveau 0.8 to 1.00 m. thick.) Some stray La Tène sherds were noted on this occasion. (cf. Fewkes, Goldman, Ehrich, 1:31, note 69), and later incised Neolithic sherds were found here. Vasić figures one specimen of this type (*loc. cit.*, Pl. II:4) which was collected in one of the mining galleries nearby. With the location of the site already marked, a trial excavation, despite the difficult terrain (thick timber growth), would seem advisable. The mines themselves call for a thorough investigation in order to establish their dating with precision. 2) "Avala", the hill which lies about 3 km. northward of "Šuplja Stena", from the slopes of which "prehistoric material" is reported (cf. Hofmann, pp. [39] ff.). Neolithic comparisons with "Vinča" are suggested in the finds presented there. However, the term "Avala", as used by Hofmann, is applied collectively to "Šuplija Stena" and "Mala Stena".

[279] *I.e.* "Čaršija" and "Mali Drum"—So Vasić, 8:177.

[280] The accumulations of fired plaster, suggestive of collapsed superstructures, as well as scattered fragments of "well fired plaster", were noted, during the explorations, either in the exposed profile visible in a cut of the Belgrade-Rudnik highway, and were also found in the actual process of excavation; cf. Valtrović, *ibid.*, and Žujović, Valtrović, pp. 3, 15, and Fig. 15.

[281] Cf. Vasić, *op. cit.*, map on Pl. I, and our sketch map (*J*); also Vasić, 1:517.

[282] The name seems to be derived from the stem *jablan* which means poplar tree.

[283] Vasić, *op. cit.*

[284] *Ibid.*, pp. 517-582.

[285] *Ibid.*, p. 518.

[286] *Ibid.*, p. 578, Figs. 128 and 130 (rectilinear designs, Fig. 130 with dimple-filled diamonds), and Figs. 129 and 131 (curvilinear designs, in both cases with indented bands).

[287] *Ibid.*, Fig. 140, lower (shallow finger fluting on a vessel of globular shape with a truncated neck); p. 576, Fig. 134 (form common to fluted and ribbed ware), and Fig. 135 (planed ribbing).

[288] *Ibid.*, pp. 577-8, Fig. 140, left.

[289] *Ibid.*, pp. 520-539, Figs. 1-60, and pp. 550-553, Figs. 70-80. These are rather crude in comparison with "Vinča", yet stylistically very similar. There is close agreement in many details, such as the shape of the head, the depiction of facial features, embellishment, or indication of dress and adornment, as well as in the perforation of arm stumps.

[290] *Ibid.*, p. 555, Fig. 90 (a tri-footed specimen), and p. 554, Fig. 89 (a quadri-footed example).

[291] *Ibid.*, p. 579 (knives, scrapers, hammers, celts, and raw material for the manufacture of these, compared by the author with "Butmir", are not illustrated; however, a representative series of this class of objects from "Jablanica" may be found in Vasić, 8: Pl. II:2 a-f, which shows flakes and blades of flint, and 3 a-c, which shows typical shoe-last celts).

[292] Vasić, 1:579 (no illustrations).

[293] *Ibid.*, Figs. 98, 99 (right), and 104.

[294] *Ibid.*, Fig. 103.

or bi-conical[295] shapes, suggest degenerate forms. The vessel with a solid pedestal[296] finds frequent similarities at "Butmir"[297] and at "Vinča".[298] The knobbed handles[299] have no analogies among the Neolithic material from "Vinča",[300] nor "Čaršija",[301] or "Mali Drum".[302] In one example from "Jablanica" a lug-handle has a protruding, knob-like terminal,[303] suggestive of a proto-type (?) for the true handles, some of which are similarly finished at the apex.[304]

While somewhat debased in general character, the majority of the material from "Jablanica" is definitely related to "Vinča" (more so to "Vinča II" than to "Vinča I"), as well as to the other sites thus far examined here. We shall find additional parallels as we proceed eastward of this locality. Vasić compared "Jablanica" with Troy and Butmir.[305] Childe understands it as an indication of "a large extention of the settled area in the Middle Danube Valley",[306] and as such, chronologically on par with "Vinča II".[307] A similar view is held by Menghin, who speaks of a "serbische oder Jablanica-gruppe" as a branch of his "südbandkeramische Kultur".[308] "Jablanica" is an integral unit within the Neolithic culture expression which forms a common bond of the entire area under discussion.

"Dizaljka" (Lipovac).

The village of Lipovac lies about 6 km. southward of Arandjelovac, which in turn is about 70 km. distant from Belgrade.[309] The site, locally known under the name of "Dizaljka",[310] is situated upon a natural knoll which is about 1 km. long, and as much as 350 m. wide. At its southern foot runs the Kamenica brook which offers ample water supply even in dry season. The road from Rudnik to Arandjelovac follows the edge of the knoll on its western side and partially cuts through it. Its construction resulted in the exposure of some of the deposits, in which culture pits and an overlying level can be plainly distinguished.

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[295] *Ibid.*, Figs. 99 (left), and 101.
[296] *Ibid.*, p 569 Fig. 113.
[297] *Ibid.*, where the following comparisons are cited: Radimský, p. 17, and Fiala, 4:29, and Pl. VII:11, 12.
[298] National Museum, Belgrade, and University Museum, Belgrade.
[299] Vasić, 1:573, Figs. 121-124.
[300] The true handle seems to be absent in the primary neolithic contexts at "Vinča", but it does appear in its later deposits.
[301] Cf. note 114, *supra*.
[302] For true handles from "Kremenite Njive" cf. Žujović, Valtrović, *ibid.*, Figs. 4-6.
[303] Vasić, 1:573, Fig. 125.
[304] *Ibid.*, Figs. 122 and 124.
[305] *Ibid.*, *passim*.
[306] Childe, 4:68.
[307] *Op. cit.*
[308] Menghin, 3:372. As may be seen from the foregoing, this concept calls for revision for it is not tenable to separate "Jablanica" from other Neolithic sites within the Moravo-Danubian area.
[309] Cf. Vasić, 18: map on Pl. I, and our sketch map (L).
[310] The term is probably derived from the stem *dizati*, *i.e.* to rise. The natives of Lipovac seem to have no clear understanding of the meaning of the name.—The "prehistoric" settlement of "Dizaljka" was ascertained by Vasić in 1911; cf. Vasić, 20:257 ff.

Soundings were executed at this site on three occasions: 1) by the National Museum of Belgrade, under the direction of Dr. M. Grbić, in 1929;[311] 2) by the American Expedition (season 1931), in charge of this writer, and in cooperation with the National Museum of Belgrade;[312] 3) by the American School of Prehistoric Research (season 1933), in charge of the present writer, again in cooperation with the National Museum of Belgrade, primarily as practice for the students of the School.[313] While I am fully aware of the disadvantage of dealing with only a fraction of the material excavated at the site thus far,[314] I wish to point out that this share is adequately representative for this purpose. Through the kindness of Dr. Grbić, I have had several opportunities to examine the finds of his independent season (1929).[315]

The deposits, ranging in thickness from 0.8 m. to 1.2 m. below the relatively recent humus zone (averaging 0.35 m. to 0.4 m.), rests upon a loess foundation. Culture pits of rounded plan and oval in cross section, penetrating into the virgin ground, and rectangular huts recognizable by floors, have been ascertained in the course of each of the three soundings.[316] Similar features are visible in the profiles exposed during the construction of the highway.[317] The upper portion of the culture bearing stratum has been considerably disturbed by modern ploughing. A great deal of ceramic remains, stone implements, and fired wall plaster of baked clay may be found in secondary position on the surface. The site appears to have been under cultivation for a considerable period of time. The vineyards, due to the deep, vertical shifting of ground which they periodically necessitate, have been especially responsible for many recent disturbances. It seems that perhaps the entire knoll was occupied in aboriginal times, and that the settlement is only of the Neolithic Age.

The material contains:

1) Incised ware (Pl. II:1-11) with rectilinear (meanders, triangles, diamonds) and curvilinear (convolute spirals) designs, either in single or multiple lines, or in bands which are usually filled with dimplings or short cuts. Indentations, larger and deeper than the dimples, are seen in several cases. The forms, as much as can be deduced from the sherds, are predom-

[311] Cf. Grbić, 2:197; this was the most extensive of the three explorations; the material then excavated is at Belgrade, as yet unpublished.

[312] The results, hitherto unpublished, are now presented; the material found during this campaign is at the Peabody Museum, Harvard University, which sponsored the 1931 Expedition jointly with the University Museum of Philadelphia, Pa.

[313] Cf. Fewkes, 1:26. The material found during the last exploration is now in Belgrade; however, the field records, and notes on objects, have been drawn upon for the current purpose.

[314] Not quite a third of the total is at the Peabody Museum.

[315] With Dr. Grbić's consent, which is hereby duly acknowledged, I am here incorporating my observations noted during these studies in two instances, namely in referring to the crusted sherds and figurines.

[316] Information on the season of 1929 from Dr. Grbić.

[317] These were particularly clearly visible during our work at the site in 1931, having, prior to our arrival, been freshly washed by heavy rains.

inantly globular, and have cylindrical necks. The cruse with a tapering neck is also represented. On either surface the color ranges from pale pinkish buff to terra cotta, and from pale mouse gray to almost black. The texture is rather fine, the aplastic inclusions consist of grit, and the firing is uniformly good.[318] There are a few examples of deep and broad incising which may be called grooving; this is highly reminiscent of the Tisza ware technique (Pl. II:12).[319] Two of the rather finely incised sherds show definite traces of a slip (original color indistinct).

2) Fluted and ribbed ware (Pl. III:7-9, 11, 1-2, and 16, and Pl. II:13-21), represented by shouldered bowls, which in cross section are invariably of greater thickness at the break than in the rest of the wall. The decoration, predominantly rectilinear, rarely curvilinear, was effected either with a tool or a finger tip. The design consists of parallel lines forming fields or zones of rectangular or triangular shapes in the case of the straight line varieties. The curvilinear motifs form arches and volutes. The color range varies from English red to approximately black on both surfaces, and the firing is thorough.[320]

3) Burnish-decorated ware, of which only two sherds were found in 1931.[321] The designs (incomplete in both cases) embody rectilinear motifs. In one instance a group of radiating lines is drawn from the base of the vessel up the wall.[322] (Color range mouse gray to blackish mouse gray; fine sand grit inclusions.)

4) Undecorated ware, either hand-smoothed, or lightly burnished, which includes: open, conical bowls, straight-walled cups (Pl. III :12) and low bowls (Pl. III:10); jars with a high, rounded body, an open, cylindrical neck (Pl. III:3), and either a flattened (Pl. III:13), beveled (Pl. III:14), or thickened rim; large, open storage (?) vessels, either conical in shape (approximating the form of a modern flower pot), or with a constricted neck (Pl. III:5); small, round-shouldered bowls and cups (Pl. III:4, 15); large, thick-walled, casserole-like vessels (Pl. III:6). The texture of this class of pottery ranges from a coarse to a medium grade, inclusions sometimes consist of small pebbles and crushed stones, and the manufacturing technique in general is inferior to that of the other classes of ware. However, at least fairly good, and in the majority of the cases a quite thorough degree of firing is in evidence. Judging by the actual traces recognizable on the specimens themselves, the circuit process of wall building and direct shaping

[318] For comparative examples from "Vinča" cf. *P. Z.*, II, Pl. 14:a-c; the motif which appears in figure d of the same plate (left) also finds an analogy at "Dizaljka", but without the incrustation, which was there noted only in one instance (white paste).

[319] Cf. Tompa, Pl. XLIV:1-3.

[320] For "Vinča" analogies cf. Vasić, 17: Pl. 11: b (first row, extreme right, second row, all three, and third row, extreme left).

[321] Additional examples were noted during the 1933 soundings.

[322] For a stylistic similarity cf. the decoration on the lower portion of the open bowl from "Čaršija" figured by Vasić 8: Pl. XXVII:55.

by modeling appear to have predominated in the potter's industry. True coiling, *i.e.* "die Spiralwulsttechnik" is not in evidence. Lugs are of the following types: cylindrical, conical, discoidal, crescent (Pl. II:22-25), and ledge, *i.e.* "Zapfen" (Pl. II:26). The true handles are of the broad, sometimes flattened, roll kind, rather than of the ribbon variety (Pl. II:27-31). Anvils, *i.e.* rounded handle sherds, are not uncommon (Pl. II:31); their edges are well worn, and it seems that the specimens were originally used as potter's tools, *i.e.* for surface smoothing, or as a support in the building process. There are several fragments of colanders (Pl. II:41-42), and one large, flat sherd suggestive of a lid, plate, or grill-disc.[323]

5) One fragment of what originally may have been either an anthropomorphic or a theriomorphic vessel. The face is represented by modelling in such manner that the nose stands out plastically, while the eye sockets and cheeks are depressed. The pupils are executed by shallow dimpling. Above each eye is a plastic wart. Off the left eye, moreover, oblique shallow flutings are visible (Pl. IV:7). The basic color of both surfaces is blackish mouse gray. The specimen is made of fine, well compacted paste, without aplastic inclusions, and is very well fired (probably under fuel-smothered conditions of limited oxidation).

6) Altars and libation tables, recognizable from frequent leg fragments (Pl. II:32-40), some of which are shaped to simulate the head of an animal (Pl. II:35).[324] It has not been possible to identify the original models from the examples thus far found.

7) Clay figurines, one male,[325] several female,[326] and one fragment with traces of red crustation.[327] The majority of these have perforations on the head, shoulders, and sometimes at the waist or on the buttocks. The embellishment, depicting hair, neck bands, or dress, is either incised or grooved (Pl. IV:1-6).

8) Clay weights, which fall into two classes: a) discoidal, vertically perforated, flattened on one side (Pl. II:44, 45), sometimes with incised decoration (Pl. III:17); b) cone-shaped, horizontally perforated, with a flattened bottom (Pl. II:43). The majority of these objects are fire crackled,

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[323] Examples of crusted ware were found in 1929. However, there seem to be no traces of painted ware.

[324] For similarities from "Grad", Starčevo, cf. Fewkes, Goldman, Ehrich, 2:Pl. VII:b, especially the upper row, and the lower row, right.

[325] In shape (Pl. IV:1) there is a similarity to the specimen from "Vinča" figured by Vasić 26: Pl. XXXI:141 a-c; however, our statuette has completely preserved, stump-like arms, and the individual legs are partially indicated both in the front and the rear; furthermore, an incised neck band, opened off the left shoulder, is depicted, and somewhat of a girdle effect is recognizable on the posterior side; the penis is produced plastically.

[326] Stylistically, and in many individual details, these compare with certain "Vinča" examples; cf. Vasić, 17: Pl. 9:b, and 26: Pl. XII:41, and XXX:135 a-b, and 140 a-c.

[327] Crusted figurines are best represented in the 1929 collection.

and often coated with clayey corrosion which in certain instances approaches the nature of kiln slag.[328]

9) Stone work: a) celts of the shoe-last type, and modified forms thereof, invariably made of slate (Pl. III:19, 20),[329] and now often chemically altered; b) one butt-end fragment of a perforated axe, of slate (Pl. III:21);[330] c) one perforated hoe, also made of slate;[331] d) knife blades, scrapers, and flakes of flint (Pl. III:22-24), jasper, chert, and shale, usually with secondary retouching (there are several instances of chemical altering among this material); d) miscellaneous pieces, such as milling stones, abrading stones, whetstones, either of sandstone or limestone, hammers and mauls of quartzitic pebbles (Pl. III:25, 26), blanks and refuse of slate, flint, and shale, and cores of flint.

10) Fired wall plaster of straw-mixed clay, the majority of which is in large pieces, with impressions of branches, saplings, and heavier timbers, perhaps posts (Pl. III:18 a,b). These contain chaff and straw temper, and within thicker bodies carbonized organic matter is discernible.[332]

11) A few animal bones, among which domestic cattle and pig have been identified.[333]

[328] During the 1931 soundings, eighteen discoidal weights were found upon a fire hearth on the remains of a hut floor. Their heavy, secondary firing suggests that they were used in connection with cooking, perhaps in heating liquids off the flame.

[329] For analogies cf. Vasić, 8: Pls. II:3 a-e ("Jablanica"), III:5 a-e ("Čaršija"), V:7 a-h ("Mali Drum"), and VI:9 a-i ("Vinča", which is repeated in Vasić, 17: Pl. 8:a).

[330] For close parallels cf. Radimský, Pl. XIX:16, and Fiala, 4: Pl. XV:10.

[331] In the private collection of Mr. M. Petrović at Venčac.

[332] All the wall plaster found at "Dizaljka" is fired either to a fair or to a thorough degree. The rather loose texture of the finished product is to be explained as being due to the coarse clay utilized in its preparation and to the nature of the admixed chaff and straw. These ingredients not only provided a convenient binding factor while the paste was in the plastic state, but their usefulness was especially prominent with respect to porosity. It seems inconceivable that all the plaster appearing at "Dizaljka" (its quantity is considerable) could be accounted for by accidental firing. I am of the opinion that the principle of the manipulation of wall plastering involved intentional firing which was done soon after the application. That this was accomplished at least at the lower parts of the dwellings seems to be indicated by the following observations: a) Many of the large pieces of plaster represent terminal fragments, that is those originally resting upon a solid foundation which produced their flattened underside. (In some cases the foundation upon which the paste originally rested at the base of the wall appears to have been plain ground, while in other instances the impressions suggest horizontally laid timbers.) b) The pole impressions in these fragments taper from the flattened underside upward. (This phenomenon seems especially significant in the cases of corner pieces which seem to have coated the heaviest posts.) c) The very thickness of the plastic application, and its weight, should have distorted the planed outward surface, unless the medium of firing produced a substantial fusion. (Although air and sun drying would have a somewhat similar ultimate effect, the process would necessarily be retarded, and distortion of the smooth outside surface would not be completely avoided.) d) Accidental firing, *i. e.* one occasioned by a catastrophe, does not offer a satisfactory explanation with respect to the prevailing uniformity of the hardness which is so characteristic of the wall plaster at "Dizaljka".—As much as may be judged from the evidence noted thus far, all the daubing at this site was applied only on the outer side of walls. There is nothing to indicate that a similar finish may have been used in roofing.—Several examples show excessively fired pieces of plaster, all very porous, light, and slag-like in texture. It seems very likely that these were secondarily fired through accidental means, perhaps the burning of the structure in which they originally formed a part of the wall.—Even to these days, the peasants of this part of Europe (and elsewhere) employ the principle of a similar daubing technique, although they do not increase the durability of the plaster by artificial firing. However, the covering so produced is not nearly so thick as in the case under discussion, and the raw material, as a rule, contains a greater percentage of organic inclusions which consist mostly of chopped straw. On the other hand, ovens constructed of a similarly prepared medium, and usually with quite thick walls, automatically benefit from the heat incidental to their utilitarian purpose. (On the artificial firing of clay-coated, wooden foundations of hut floors at "Vinča", cf. Vasić, 26:10 ff.)

[333] By Professor G. M. Allen of Harvard University.—There are no implements of bone, horn, or antler among the material thus far collected.

12) Unio shells, some with abraded edges which suggest that they originally may have served perhaps as pottery scrapers.

In his preliminary notice on the soundings of 1929, Grbić referred to the finds from Lipovac as closely comparable to "Vinča".[334] This view has been fully substantiated by the subsequent explorations. Moreover, the bulk of the material finds similar analogies in other Neolithic sites of the Morava-Danubian area.

Not far from Lipovac at least two other localities with essentially the same classes of ceramic and lithic remains are known,[335] and there are indications of still other sites of the same period elsewhere in the immediate vicinity.[336] Moreover, near Rudnik, a town which lies further to the south of Lipovac, certain Neolithic finds (amid much later remains) were reported some forty-five years ago.[337] Vasić refers to "sites in the Rudnik Mountains" as "comparable to Vinča",[338] including in his statement "Pločnik" and "Gradac". Vasić's view that "it is still a problem whether Gradac and Pločnik belong to the narrower sphere of Vinča's influences or under the dominance of the Aegean"[339] is to be discounted. It will be remembered that Vasić interpreted "Gradac" as a fortress of the La Tène phase.[340] Grbić placed "Pločnik" in the Late Neolithic or Eneolithic Age.[341] In either case the dominant stamp of the culture expression is wholly Neolithic,[342] although the time element involved at both sites, as well as the very nature of the finds, bespeak an advanced period of existence when compared to the lower levels of "Vinča".

"Pločnik"

Situated on a natural knoll upon the left bank of the river Toplica, the site of "Pločnik"[343] was artificially revealed by the construction of the

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[334] Grbić, *2*: *ibid.*

[335] *I. e.* "Polje" at the village of Venčac (between Lipovac and Arandjelovac), now under vineyards, and as such unavailable for exploration without considerable compensation; and "Blaznava" on the Jesenica brook, near Šatornja, southward of Lipovac. Mr. M. Petrović, inn-keeper at Venčac, has a private collection of surface material from both of these sites (also from "Dizaljka", and further from "Garnica" at the nearby village of Banja, from which he has secured only Roman and later antiquities) which I had the privilege to examine in 1933. With the single exception of the perforated hoe (cf. note 331, *supra*), his finds from Lipovac duplicate our own. Among the objects from "Polje" and "Blaznava" which Mr. Petrović possesses, I noted incised and fluted sherds, figurines, and stone artifacts comparable to the remains obtained at "Dizaljka". I have seen and scouted only the site of "Polje" during the School's stay at Venčac. For the information regarding "Blaznava" I am obliged to Dr. Grbić who called the site to my attention in 1931. (From the neighborhood of "Blaznava", Vasić, *20*:258, records cinerary graves which were ploughed up by peasants, and apparently destroyed; there is no indication of their age.)

[336] Information from Mr. M. Petrović of Venčac.

[337] Cf. Trojanović, especially p. 106—perforated stone axe; also Stanojević, Al., pp. 107 ff. and Fig. on p. 108.

[338] 26:110; no individual references are given.

[339] 26:110; free translation.

[340] Vasić, 19:97 ff.

[341] *Pločnik*, *ibid.*, p. 18.

[342] "Gradac", in addition to the Neolithic remains has characteristic La Tène material as well, whereas at "Pločnik" Roman graves occur.

[343] First noted by Vasić, 15:182, as "Vodenica" (grist mill) at *Bace*. Locally, the term "Selište", *i.e.* settlement, is applied by the natives; however, I follow the usage established by Grbić, *l.c.*

railroad line from Niš to Kuršumlija, in 1928, at the beginning of the forty-second kilometer.[344] The deposits explored by the National Museum of Belgrade varied in thickness from 1.2 m. to 3 m. under the surface,[345] and contained culture pits and superimposed debris.[346] The vertical measurement of the humus layer, ascertained at that time, amounted to 0.4 m.-1.8 m.[347] The eastern edge of the knoll terminates abruptly off the river, the erosion of which has cut a very instructive vertical profile through the deposits.[348]

The material may be briefly reviewed as follows:

1) The incised ware is represented by sherds with rather heavy, rectilinear and curvilinear decoration.[349] The meandric bands are sometimes crusted in red,[350] and the lines incrusted with white paste.[351]

The forms, judging from the fragments, are essentially globular.

The firing is thorough,[352] the paste is of good texture, the surface color ranges from pale mouse gray to red and blackish tones, and the temper consists of sand grit.

2) The fluted ware, dark-colored, of rather fine-textured paste, and well fired, has two basic forms: the shouldered bowl[353] (with thickened shoulder), and the open dish-bowl.[354] The ornamentation of the first named variety follows the straight line,[355] whereas in the open bowls the curved line seems to rule.[356] From the shouldered bowl is perhaps to be derived the "broad, bi-conical amphora"[357] from which, in turn, may have developed the "high, sharply profilated amphora",[358] and eventually, possibly, also the pitcher.[359]

3) The plain-smoothed, or burnished ware, which is largely undecorated, is usually colored in dark hues. Its fabric ranges from very fine to quite coarse, and the shapes include: globular vessels,[360] open conical bowls,[361]

[344] Cf. Grbić, *op. cit.*, p. 7. (The sherds and celts originally reported by Vasić, *ibid.*, [also 19:116-117] probably came from the vicinity of the grist mill—*vide infra.*)
[345] *Ibid.*, p. 8. (The work was in charge of Dr. Grbić.)
[346] *Ibid.*, p. 9.
[347] *Ibid.*, p. 8.
[348] Along the bank of the Toplica, in the cut of the right of way, and on the surface of the site, scattered material is always to be found. On the three occasions of my visits to "Pločnik" (cf. Fewkes, Goldman, Ehrich, 1:25, and Fewkes, 2:23, and 3:11), fairly representative collections of such material were obtained, all of which fall within the classes of objects excavated in 1928 (material deposited in the National Museum at Belgrade, and the Niš Museum).
[349] Grbić, *ibid.*, pp. 12 and 14, and Figs. 57-60.
[350] The author refers to these instances as "rotgefärbten" bands (*l. c.*, p. 12) without stating the nature of the technique. From my observations of the material at Belgrade and at the site itself, I feel that examples of true painting, *i. e.* executed before the firing, have not been ascertained at "Pločnik" thus far.
[351] *Ibid.*, p. 12, and Fig. 59.
[352] *Ibid.*, p. 10.
[353] *Ibid.*, pp. 10-11, and Figs. 27-30, 34, and 35.
[354] *Ibid.*, p. 11, and Figs. 31-33.
[355] *Ibid.*, Fig. 28.
[356] *Ibid.*, Figs. 31-33.
[357] *Ibid.*, Fig. 14.
[358] *Ibid.*, Fig. 13.
[359] Cf. *ibid.*, Figs. 16, 19, 15, 21, 18, and 20, in the order named, for a suggestive typological sequence.
[360] *Ibid.*, Figs. 22-26. Fig. 25 illustrates a differentiated rim drawn upward and two warts on the belly. Fig. 24 shows a similar principle, but exaggerated so as to produce a straight neck; this specimen has two horizontally elongated lugs. In Fig. 26 the neck is constricted and the rim has two warts (*l. c.*, pp. 10-11).
[361] *Ibid.*, Figs. 36-38.

pitchers,[362] jugs with two handles,[363] straight-walled and profilated jars,[364] cup forms,[365] and miniature vessels based upon these shapes,[366] and some pieces with a solid foot.[367] The burnish-decorated ware seems to be represented by an incomplete shouldered bowl,[368] and stray sherds.[369] The round-shouldered, incomplete jar,[370] apparently an isolated case, cannot be fully reconstructed.

4) The plain lids, resembling the form of a shallow bowl, have either a band handle or a lug-like cylindrical stem, placed at the center of the convex side; some of these specimens have incised, meandric decoration.[371] Under lids Grbić includes a squarish form suggestive of the model of an oven (?) or a hut (?), originally with a handle.[372]

5) The altars are of the triangular variety, either with or without feet, decorated with incised, straight line ornament (sometimes with white incrustation), or crusted in red;[373] in one example a human head is modeled on one corner at the upper plane of the altar.[374]

6) The figurines are stylized to a greater or lesser degree. The forms imitating the human body are either cylindrical or triangular in shape; the greatest modelling details appear on the heads. The embellishment consists of incising, white incrustation, and red crustation. Separately indicated legs may be seen in one example. Incised, negatively relieved, or positively appliqued eyes, seem to be equally common.[375] The theriomorphic specimens[376] cannot be identified as to the originals which may have inspired them.

7) The anthropomorphic covers with a plastically presented face, incised meanders and hatched triangles, some with red crustation, are known from fragments only.[377] However, the specimen figured by Grbić,[378] unreconstructed, gives a fair example of its original nature.

8) Ceramic weights and whorls:[379] the weights, all horizontally perforated, have a parabolical profile, and a flattened bottom; the whorls are bi-conical in cross section, and are vertically perforated.

9) The "Fragmente zweier Öfen",[380] I am inclined to believe, belong to the category of wall plaster which is so plentiful at the site.

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[362] *Ibid.*, Figs. 18-21.
[363] *Ibid.*, Figs. 5-8.
[364] *Ibid.*, Figs. 10-12.
[365] *Ibid.*, p. 10, and Fig. 9.
[366] *Ibid.*, Figs. 39 (printed upside down)—43, and 45-47.
[367] *Ibid.*, p. 11, and Fig. 48 (printed upside down).
[368] *Ibid.*, p. 12, and Fig. 55.
[369] Material in the Niš Museum.
[370] *Ibid.*, p. 12, and Fig. 56.
[371] *Ibid.*, p. 12, and Figs. 49-52.
[372] *Ibid.*, p. 12, and Fig. 54.
[373] *Ibid.*, pp. 12-13, and Figs. 61-67.
[374] *Ibid.*, pp. 11-12, and Fig. 61.
[375] *Ibid.*, pp. 13-15, and Figs. 68-80, and 84-94.
[376] *Ibid.*, p. 14 and Figs. 81-83.
[377] *Ibid.*, p. 12.
[378] *Ibid.*, Fig. 53.
[379] *Ibid.*, p. 16, and Figs. 131-136.
[380] *Ibid.*, p. 17 ("Ton-öfen"), and Figs. 137-8.

10) Stone artifacts:[381] a) celts based on the shoe-last type, some flattened and tapering towards the butt-end,[382] made of slate, many now chemically altered;[383] b) knife blades, scrapers, and chips of flint;[384] c) three marble pieces, one faintly suggestive of a stylized human bust,[385] another a cube, possibly, according to Grbić, used in connection with "painting"[386] (*i.e.* crustation), and the third a zoomorphic form, perhaps a horse's head (?);[387] d) whetstones, abrading stones, milling stones.

11) Artifacts of bone and antler include; Spatulae and awls of bone,[388] and one bone whorl;[389] antler hammers and prong-picks,[390] and one fragment of a socketing sleeve.[391]

12) Copper: A cache, containing twelve thick celts, each with a convex bit and a flattened pole, and one shaft-hole hammer axe,[392] were found in association with five stone celts of the shoe-last type, at a depth of 0.8 m.-1.00 m. below the surface, and at the border line between the humus and the culture level.[393]

Stylistically, the material from "Pločnik" belongs to an advanced stage of the Moravo-Danubian Neolithic culture. The artifacts of copper do not imply local production. Indeed, their shapes are distinctly foreign at the site, and the very fact that they occurred as depot precludes their definite time placement despite the apparent association with the shoe-last celts. At any rate, in our conception of the duration of the Neolithic Age, as pointed out at the outset of this article, such isolated finds are not to be excluded. Note also the very position of the cache, and the total lack of any indications whatsoever which might point to local metallurgical knowledge. The affinities of the bulk of the finds from "Pločnik", as Grbić states, point to "Gradac", "Jablanica", "Vinča", and "Butmir".[394] To this may now be added "Dizaljka", which we have already discussed, and "Gumnište" ("Barak")-"Čukar", which will be treated presently.

"Velika Humska Čuka".

This site is located on the larger of the two hills above the village of Hum, 7 km. north of Niš.[395] The excavations carried out by the National Museum

[381] *Ibid.*, pp. 15-17.
[382] *Ibid.*, Figs. 103-112.
[383] *I. e.* the specimens "aus weichen Gipsstein", *l. c.*, p. 9.
[384] *Ibid.*, Figs. 117-120, and 113-116.
[385] *Ibid.*, Fig. 139.
[386] *Ibid.*, Fig. 140, and p. 17 (traces of red coloring).
[387] *Ibid.*, Fig. 141.
[388] *Ibid.*, p. 16, and Figs. 126-130.
[389] *Ibid.*, p. 17, and Fig. 143.
[390] *Ibid.*, p. 16, and Figs. 123-125.
[391] *Ibid.*, p. 17, and Fig. 142.
[392] *Ibid.*, Figs. 98-102.
[393] *Ibid.*, pp. 9 and 18.
[394] *Ibid.*, p. 18.
[395] Cf. Fewkes, 2:41, note 42; also our sketch map (VHČ). (The name means the Great Hill of Hum.)

of Belgrade (in charge of Dr. Grbić) during the season of 1934 revealed only Bronze Age and later deposits, although stray Neolithic artifacts (celts) were also found.[396] On previous occasions, however, the Niš Museum, either alone, or together with the American Expedition and the School, collected surface material among which incised and fluted sherds, and flint and obsidian blades, are represented in addition to celts of the shoe-last and the trapezoidal forms.[397] Grbić is of the opinion that "Velika Humska Čuka" has deposits only of the Bronze Age and later periods.[398] I am inclined to view this site as one which was utilized by Neolithic occupants even if only temporarily.[399] Nevertheless, until a report on the excavations and an analysis of the finds obtained thereby are available, I should prefer to qualify my opinion as tentative.[400]

"Gradac".

Situated on the hill top bearing the same name,[401] which rises above the confluence of the Jašunjska brook with the Southern Morava,[402] at the village of Zlokućane, the site of "Gradac" commands a naturally protected position.[403] Its partial excavation was executed by Vasić in 1909,[404] who described it as "a fortress protected by a ditch and a dry masonry wall"[405] comparable, in its total character, with "other prehistoric strongholds".[406] The culture deposits then examined averaged from 0.3 m. to 0.8 m. in thickness, and in depth occasionally reached the maximum of 1.3 m.[407] The instances of the greatest depths, the author stated, corresponded to depressions and pits of dwellings.[408] Fired wall plaster was found only in certain places.[409] "The remains of dwellings (*i.e.* pits and plaster) and the finds of domestic objects undoubtedly prove that the fortress was a settlement. However, the site probably also served as a place of refuge, for at the foot of the hill, on the right bank of the Jašunsjka brook, a prehistoric settlement, known as *Ćiler*, was ascertained."[410] The report does not include any description of the finds from the site of "Ćiler".[411] "Gradac" itself is compared with the site of "Hisar" above Leskovac, which is deemed to be "a fortress with

[396] Cf. Fewkes, 3:11, note 13.
[397] Material deposited in the Museum at Niš.
[398] Letter of February 20, 1935; cf. Fewkes, 3:11, note 13.
[399] A secondary deposition of the strictly Neolithic material is wellnigh unthinkable in view of the physical nature of the site.
[400] I recognize, of course, the post-Neolithic elements as separate phenomena.
[401] The term signifies a stronghold.
[402] Cf. Vasić, 19:Pls. I-III, and our sketch map (Gr).
[403] *Op. cit.*, p. 97.
[404] *Ibid.*
[405] *Ibid.*
[406] *Ibid.*
[407] *Ibid.*
[408] *Ibid.*, p. 98.
[409] *Ibid.*
[410] *Op. cit.* (free translation); cf. also Pl. III:4, therein.
[411] Professor Vasić kindly informed me (season 1933) that the same classes of objects were noted by him at both of these sites.

similar features".[412] To cull out of the confused deposits at "Gradac" a "La Tène site in which Neolithic survivals persisted virtually unchanged" as our author has done,[413] is a gross methodological error.[414] The contrast in the character of the Neolithic and the La Tène remains, a factor which is self-evident from the published report here cited, is further substantiated by the portion of the original collection at the National Museum in Belgrade, as well as by the surface material still abundantly available on the site.[415]

The closest resemblance of Neolithic "Gradac" seems to be with "Pločnik"[416] and "Dizaljka".[417] This, in turn, implies a relationship with "Vinča". In a single instance a rim sherd is highly suggestive of the barbotine technique.[418] Among the lugs, the flat, discoidal,[419] and the modelled, button-like[420] varieties are represented. One example suggests an anthropomorphic form.[421] The lug-handles are either single[422] or double.[423] The true handles are of three types: a broad ribbon,[424] a flattened, angular shape which broadens towards either of its terminals,[425] and a plain roll, with a knobbed protruberance.[426]

The lopsided interpretation of "Gradac" advanced by its excavator can be rectified by additional field exploration which should take into account the neighboring site of "Ćiler" as well. The two form an important link between the main body of the area here treated and the narrow upper portion of the valley of the Southern Morava in which only one site with comparable material has been recorded thus far.[427]

"Gumnište" ("Barak")-"Čukar".

The natural knoll rising above the left bank of the Southern Morava, which now accommodates the village of Pavlovce (about 10 km. southward of Vranje), is divided by the bed of a seasonal brook. Due to the existence

[412] *Op. cit.*, p. 98. I have visited both "Gradac" and "Hisar" on several occasions. As far as I am aware, only Roman and later remains have been noted at the latter site; cf. Krasovski, pp. 202 ff., and Dimitrijević, pp. 311 ff.

[413] Vasić, *ibid.*, *passim*.

[414] Cf. Menghin's review of Vasić's publication on "Gradac" in *M. A. G. W.*, XLIII (1913), pp. 240 ff.—"Gradac" is generally accepted as a Neolithic site.

[415] Cf. Fewkes, 2:40, note 41.

[416] Cf. the forms of the shouldered bowls (Vasić, *ibid.*, Pl. XII:30 and 31), the fluted decoration (*ibid.*, Pl. XX:49 b, and g-k), bowl-shaped lids either with a handle or a lug on the concave (interior) side (*ibid.*, Pl. XII:29), anthropomorphic lids (*ibid.*, Pl. XVII:44), details in figurines (*ibid.*, Pls. VI:10, and XI:22), and celts (*ibid.*, Pl. V:8, shoe-last forms, and Pl. VI:9, trapezoidal shapes).

[417] *I. e.* incised ornamentation (*ibid.*, Pls. XIX:46-48, XXI:50 a, and i-j, and XXII:51), undecorated ware (*ibid.*, Pls. XII:26-28, XIII:30-32, and XIV:35), shouldered bowls (*ibid.*, Pl. XIII:30), sherds of colanders (*ibid.*, Pl. XVII:42), details in altars or libation tables (*ibid.*, Pl. XIX:46 b-d, 47, and 48), figurines (*ibid.*, Pl. VI:10), and stone implements (*ibid.*, Pl. V:8, shoe-last celts, and Pl. V:7, flint blades).

[418] *Ibid.*, Pl. XXV:58, and p. 105 (the positive relief was produced by hand).

[419] Vasić, *ibid.*, Pl. XVIII:45 p.

[420] *Ibid.*, Pl. XVIII:45 f (perforated), j, l, and n.

[421] *Ibid.*, g.

[422] *Ibid.*, a and b.

[423] *Ibid.*, c.

[424] *Ibid.*, o (printed side-ways).

[425] *Ibid.*, i.

[426] *Ibid.*, m.

[427] *I. e.* at the village of Pavlovce; *vide infra*.

of a shallow ravine, the site, which seems to occupy a greater portion of the rise, is known under the name of "Gumnište"[428] or "Barak"[429] on the southern side of the brook, and "Čukar"[430] on the northern side. The site was first recorded in 1933[431] and a brief sounding was undertaken there later during the same season.[432] In 1934 the American School of Prehistoric Research pursued further reconnaissance at this locality, collected additional material, and added to the previously made observations.[433]

The total results of these investigations may be summed up as follows: The site is a Neolithic settlement containing pits and remnants of rectangular huts; the total thickness of the debris has been ascertained to measure as much as 1.10 m. in thickness. The virgin ground consists of soft shale. The vertical top limits of the culture bearing deposits have been disturbed by ploughing to an average depth of 0.2 m. from the present surface. Between the humus, which now provides the nurturing zone for vegetation, and the Neolithic culture level proper, no sharply defined distinction has been noted either in the course of the soundings, or in examination of the banks of the highway which cuts through the eastern portion of the knoll. The extent of the occupational Neolithic stratum, insofar as its plane area is concerned, could not be determined by the preliminary work. Surface indications, *i.e.* stray material, of which large quantities exist here, provide no satisfactory means with which to judge this aspect, for the ground around the village is under cultivation and subject to recurrent disturbance. On the whole, the physical nature of the site recalls those of "Jablanica", "Pločnik", and "Kavolak".[434]

Among the material remains thus far discovered here only objects of fired clay and stone are present. These include:

1) Incised ware with dimple-filled bands, with rectilinear and curvilinear motifs; no complete forms have been obtained, but the sherds suggest globular shapes (Pl. V, B:1-4, and 7).

2) Barbotine ware with hand executed applique; some bottom fragments show a considerably thickened base (Pl. V, B:8) which is so characteristic of this class of ware at "Grad", Starčevo.

3) Fluted ware with straight line design, predominantly black in color; the forms are shouldered bowls and jars, often quite angular in profile, and showing, in cross section, an increased wall thickness within the break (Pl. V, A:1-7).

[428] The term means threshing floor.
[429] This has the same connotation as the English term barracks.
[430] The meaning of this name is not quite clear to me. The natives of Pavlovce do not seem to be cognizant of its origin or significance. The nomenclature may possibly be derived from the stem *čuka* which designates a hillock.
[431] Cf. Fewkes, 2:42.
[432] By the Harvard Expedition; material deposited in the National Museum Belgrade.
[433] Cf. Fewkes, 3:13.
[434] *Vide infra.*

4) Undecorated ware, the fragments of which illustrate spherical shapes with a broad, tapering neck, and either a plain, beveled, or thickened rim, and plain, open bowls with similarly finished rims (Pl. V, A:8-9, and B:6). The base sherds have a flattened bottom (Pl. V, B:6, 7, and 9-11), or a raised foot resembling a truncated tumbler, which is either equi-lateral or conical in cross section (Pl. V, B:12-15). The lugs are drawn out and usually modelled in a knob-like fashion (Pl. V, A:17-20, 22, and 23), or as if in imitation of an animal head (Pl. V, A:21). Roll and ribbon handles (Pl. V, A:16 [roll], 24 and 25 [ribbon]) are likewise represented. One fragment is suggestive of a possible double handle (Pl. V, A:26). In one instance the handle of a profilated bowl is drawn out into a flattened, knob-like protruberance.

All this pottery is well made and thoroughly fired. The aplastic material varies with the fineness of the paste and the thickness of the walls; sand grit is the predominant tempering medium. The outward color is mostly of grayish and reddish tones; the surfaces are either plainly finished by hand, or burnished to a lesser or greater degree with a tool. One sherd with a band of barbotine warts has faint traces of four streaks of black pigment (possibly crusting ?). The arrangement produced four heavy, parallel lines, of which the outside two meet with the positive relief, whereas the inner two fail to do so. All four of these lines now terminate at the broken edge of the sherd.

5) Figurines: one highly stylized torso, with a crest-like head, and stumpy, peaked arms, of which only the left one is completely preserved (Pl. V, B:18); a fragment of a steotopygous form, made of separately modelled halves which were subsequently joined and fused to produce the complete image (Pl. V, B:17); fragments of separate legs, in one of which steotopygy is again demonstrated (Pl. V, B:19).

6) Weights and whorls: one pyramidal weight with a horizontally drilled, round perforation (Pl. V, B:16); one plain, discoidal whorl, vertically pierced; one similarly shaped, complete specimen, with oblique grooves on its edge, and an orifice in its center; and a fragment of a like object, again with slanting furrows on its edge (Pl. V, B:20).

7) Wall plaster: Various fragments of wall plaster made of a mixture of loosely textured paste and chopped straw were found *in situ* during the soundings, as well as in secondary position on the surface. In all instances the firing is rather coarse, yet the product is firm and hard. In one section of the deposits there were indubitable traces of secondary firing and a slag-like condition was observed on a corner-piece fragment. Apparently, the original structure had a wall approximately 0.2 m. thick and the plaster seemed to have been applied over a withe spread between posts.

8) Stone work: slate celts of the shoe-last type (Pl. V, B:21); flint blades with secondary retouching, *i.e.* knives (Pl. V, B:22) and scrapers and small flakes; milling stones with a concave working surface, roughly rectangular in shape, made of sandstone; abrading and polishing stones of sandstone and limestone; utilized quartzitic pebbles.

All these classes of material are related to similar finds from "Vinča" and other Neolithic stations in our area. Their general typological character indicates an advanced period of time in comparison with the more northerly development. The site of "Gumnište" ("Barak")-"Čukar" marks the most southerly located Neolithic *settlement* in the Moravo-Danubian area thus far recorded.[485]

It now remains to consider the most recently obtained evidence of Neolithic occupation in our region. This consists of material and observations gathered at several sites in the process of reconnoitering pursued during the season of 1934 by the Niš Museum[486] and the American School of Prehistoric Research.[487] With the exception of the cave at Jelašnica, locally known as "Crkvine",[488] these sites are located in open terrain. Inasmuch as the nature of their deposits has not yet been investigated by excavation, I am merely listing the Neolithic material thus far obtained in these localities, all of which is deposited in the Museum at Niš. The sites are named in the order in which they were recorded.

"Kavolak" at Prokuplje.[489]

a) Barbotine ware, treated with the tip of a finger or a tool, without aplastic inclusions, well fired; the outer surface is mouse gray to hair brown; the color of the inner walls is pale mouse gray to pinkish cinnamon; the shapes are globular, with a flat, thickened bottom (Pl. V, C:1,2).

b) Painted ware, sepia on English red ground, with a design of parallel lines and bands. A rim fragment of an open vessel has vertically drawn broad bands interspaced with parallel lines (Pl. V, C:10). One base sherd of a pedestalled bowl, the foot of which broadens downwards, has a group of bands, unequal in width, running from the junction of the foot with the body upward on the outside wall (Pl. V, C:11).

[485] In 1934, during the reconnaissance of the American School of Prehistoric Research a collection of surface material (sherds and wall plaster) was obtained in the neighborhood of the village of Rečica (drainage of the Vardar), some 50 km. south of Pavlovce. The ceramic finds are analogous with the undecorated ware of the site at Pavlovce, and the wall plaster is virtually identical in both cases. However, the locality at Rečica is yet to be explored in order to show whether or not deposits *in situ* exist there. It is significant, however, to note the Moravo-Danubian affinities in the first material obtained at this place (cf. Fewkes, 3:13). The primary Neolithic movement along the Southern Morava advanced from north to south. While at Pavlovce we now record an outpost of this diffusion we must immediately allow for further territorial spread.

[486] I wish to express my sincere thanks to this institution for the kind permission to use its records and material in the present publication.

[487] Fewkes, 3:10 ff.

[488] Information supplied by the Museum at Niš, letter of June 11, 1935.

[489] Cf. Fewkes, *op. cit.*, pp. 11 ff.

c) Sherds of low, concave bowls, of rather crude fabric, with crushed pebble inclusions.

d) Crudely incised sherds of pale pinkish buff to mouse gray surface color, one suggestive of a vessel of a globular shape with an inverted rim (Pl. V, C:4), others of open bowls (Pl. V, C:5).

e) Sherds of burnished ware, maize yellow in color, representing either high, open bowls (Pl. V, C:3, 6-9), or jars of a conical shape.

f) One clay figurine, the cylindrical torso of which has a plastically raised nose and a wart-like protruberance on the head; the eyes are indicated by slanted incisions; the surface color is cinnamon-drab. The specimen, completely preserved, measures 0.055 m. in height, and 0.020 m. at the greatest diameter of the body (Pl. V, C:12).

g) A fragment of a whorl, bi-conical in cross section, with a vertical perforation.

h) One slate celt with a convex cutting edge and a rounded pole, the long cross section of which closely approaches the shoe-last type; the body of this specimen tapers from the bit towards the butt (Pl. V, D:a).

i) Approximately one half of a flat pebble, now semi-ellipsoidal in shape, notched at its apex (Pl. V, D:b), and other fragments of similar objects.

j) One fragment of a polishing stone of red sandstone.[439a]

"Kovanluk" at Malče, near Niš.

a) Barbotine ware, with applique, finger-nail pinching or cuts, and finger-tip dimpling; the surface color is of pinkish cinnamon to hair brown hues, and the inclusions consist of sand grit (Pl. VII, D:1-4).

b) Incised ware, having ribbons filled with indentations, executed on burnished surface which is of pinkish buff color (Pl. VII, D:5, 6).

c) Fluted ware, predominantly pale smoke gray to chestnut brown in color, decorated with straight line design (Pl. VII, D:7-13). Shouldered bowls, either with a short or a tall neck, and open jars are the main shapes. The characteristic thickening in the break of the shoulder is seen in several instances (Pl. VI, A:9, and Pl. VII, D:7, 9, and 10). There is one ribbon handle (Pl. VI, A:9).

d) Plain ware, fuscuous in color, either burnished or hand-smoothed, as a rule unembellished, among which is a fragment of a pedestalled vessel with indentations at its lower edge (Pl. VI, A:1), sherds of inverted jars (Pl. VI, A:2-7), and open bowls (Pl. VI, A:10-15). Knob-like lugs appear in this class of ware (Pls. VI, A:8, and VII, D:14).

[439a] With the exception of the figurine and the notched pebble fragments, this material is paralleled at "Grad", Starčevo.

e) A fragment of a clay weight, discoidal in form and elliptical in cross section, vertically perforated, and with a row of dimples on one side (Pl. VI, A:16).

f) The butt-end portion of a slate celt of the shoe-last type (Pl. VI, A:17).

g) Ellipsoidal flat pebbles, each with opposing notches on the long sides (Pl. VI, A:18).

h) Flakes of quartzite and flint.

i) The base portion of an antler stem, with a round perforation placed a short distance above the comb.

The cave of "Crkvine" at Jelašnica, near Niška Banja.

a) Incised ware with rectilinear design covering the entire surface, and producing rhomboid or herring bone patterns (Pl. V, D:c,d); the fabric is of fine texture, without aplastic inclusions, mouse gray to chestnut brown in color, with burnished surface, and well fired.

b) One sherd with a series of horizontally drawn lines which are executed by a combination of incising with intermittent punctation; the decoration starts immediately below the rim and reaches about half way down the wall of the spherical shape.

"Šetka" near Ražanj.

a) Incised ware, with globular forms, of maize yellow to mouse gray hues, medium in texture, and free of aplastic inclusions. The burnished surface has rectilinear and curvilinear designs arranged in ribbons filled with indentations (Pl. VII, A:1 and 5) or with parallel lines (Pl. VII, A:2). One sherd suggests a lid or a cover.

b) Fluted ware, of a similar fabric, in which shouldered bowls, either angular or rounded, with thickened breaks, are characteristic (Pl. V, D:1-13). The decoration is rather scanty.

c) Burnish-decorated ware, showing straight line and arc motifs, consisting of parallel bands (Pl. VII, A:3,4); the shapes are globular.

d) Undecorated ware, rather crude in texture, but otherwise similar in its technical nature to the fabrics already mentioned. The forms are: jars with a broad body, a constricted neck, and each with two handles which are placed either entirely upon the shoulder, or looped from the greatest width of the belly to the rim (Pl. VII, A:11); one small cup with a ribbon handle which starts from the rim upward, arches above it, and is then brought down to meet the body of the vessel at the level of its greatest diameter (Pl. VII,

:10). Among the sherds of indeterminate original shapes are roll-handle fragments (Pl. VII, A:6, 7), and pieces with prolonged, rounded lugs (Pl. 7, D:14, 15), and one instance of a double-knobbed lug (Pl. V, D:16).

e) Libation tables or altars of the tri-footed and quadri-footed varieties; heir decoration consists of straight line incising (Pl. VII, A:8, 9).

f) One fragment of a stone implement, originally possibly a celt of the shoe-last form (specimen insufficiently preserved for the purpose of accurate dentification).

"Strnjane" at Osmakovo. (Upper Timok drainage area.)

a) Incised ware, with rectilinear motifs, forming dimple-filled ribbons and triangles, and multiple lines arranged in groups of zig-zags (Pl. VI, B:2-5). The fabric is maize yellow to chestnut brown, medium in texture, with sand inclusions, burnished on the outer surface, and well fired. No definite forms have been deduced yet.

b) Barbotine ware, of hair brown color, with chopped straw inclusions, embellished by depressions scooped out by a finger nail (Pl. VI, B:1, and C:2, 3).

c) Fluted ware, of a similar quality as the incised class, represented by shouldered bowls, thickened in the break, decorated with bands of vertical lines, groups of intermittently slanted lines, and vertical, parallel zig-zags (Pl. VI, B:6, 7, 9).

d) Undecorated ware, maize yellow, mouse gray, and hair brown in color, of medium texture, with sand-grit inclusions, and well fired. The shapes are open, high and low jars and bowls of ovoid or globular shapes, with a flat bottom (Pl. VI, C:1, 4-10, and D:6). Lugs and lug-handles are either ledge shaped, or peaked and drawn out (Pl. VI, B:10-14, and C:10, 13, 15); there is one cylindrical, solid lug with finger-grip depressions on either of its side margins (Pl. VI, C:17). The roll handle, plain (Pl. VI, C:6), or knobbed at the apex (Pl. VI, C:11, 14), also appears. One sherd suggests a double handle (Pl. VI, D:5).

e) Fragments of tables or altars, with rectilinear, incised designs, either in meandric (?-Pl. VI, D:2, 3) or herring bone patterns (Pl. VI, D:7).

f) Weights of baked clay, either pyramidal (Pl. VI, D:9), or discoidal, sometimes with incised decoration (Pl. VI, C:16), all with perforations.

g) One slate celt; although symmetrical in its side-view cross section, the specimen is akin to the shoe-last form (Pl. VI, D:10).

h) One roughly discoidal piece of limestone with parallel, straight line abrasions on the edge, and similar additional marks on its body, suggestive of an artifact used in the preparation of sinew string (Pl. VI, D:8).

"Tumba"[440] *at Kalna, 37 km. northwest of Pirot.* (Upper Timok drainage area.)

a) Fluted ware, which, as yet, is rather poorly represented by sherds with vertically and horizontally drawn designs, upon fuscous, fine-textured, and well fired fabric, containing sand inclusions (Pl. VII, B:3, 4).

b) Burnished ware, likewise sparsely known thus far. The fine-textured, light colored pieces, all well fired, and free of temper, belong to an open bowl with a conical lug, and to the base portion of a flat-bottomed vessel (Pl. VII, B:9).

c) Plain ware, medium in texture, with sand grit inclusions, mouse gray in color, of plain-smoothed surface, well fired. Applied plastic bands with finger dimplings, placed close to the rim or immediately under it, and the similarly treated horizontal planes of rims, are the sole decoration (Pl. VII, B:1, 2). There is one large sherd of a flat, low dish, with plastic warts placed upon the raised ridge at the inner margin of the rim (Pl. VII, C:1). Ledge-like, and drawn-out, peaked lugs and lug-handles (Pl. VII, B:7, 8, and C:3-5), and true handles of the roll or ribbon types (Pl. VII, B:5, 6, 11, and C:2) are well represented.

Geographically, the sites of "Kavolak", "Kovanluk", "Crkvine", and "Šetka" fall within the main body of the valley of the Morava. "Strnjane" and "Tumba" (Kalna), on the other hand, are situated within an area which embraces the upper drainage of the Timok and, in part, also that of the Morava north of the Sičevo pass. Culturally, however, all these localities reflect the Moravo-Danubian Neolithic development. The character of the pertinent material thus far collected at the six sites just named is closely aligned with that of "Vinča".[441] In the vicinity of Niš, moreover, additional sites have been recorded and sample surface material obtained by the Niš Museum, which show that this similarity obtains in other instances as well,

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[440] This seems to be the northernmost instance in Yugoslavia of the application of the term *tumba* to an archaeological site. As used in the Bitolj Basin and in Macedonia in general, the name denotes a mound which may be either of a settlement or a sepulchral type. In the case at Kalna, however, the site in question is a plain settlement situated on a natural knoll (information supplied by the Niš Museum, letter of June 11, 1935). It is interesting to note that the several large mounds located within the Pirot Basin proper are invariably designated by the more commonly applied Slavic usage of *mogila* (cf. Fewkes, *2*:39 ff.); the origin and contests of these tumuli remain obscure (cf. Vasić, 18:271 ff., and Fewkes, *op. cit.*)

[441] It is quite likely that the lively reconnoitering now in progress in this area, stimulated by the Niš Museum and supported by the administration of the Moravska banovina, will soon furnish adequate records towards a more comprehensive understanding of regional differences. In the meantime it seems best to include a portion of the Timok drainage under the present treatment. This is done entirely provisionally, and, as already stressed, there are only surface collections with which to operate. Obviously, in a region in which new discoveries are extremely frequent now that a well organized campaign has been inaugurated, it seems needless to point out the necessity of an open mind with respect to future field work. I suppose that the number of sites with "probably" Neolithic remains thus far noted in the Moravo-Danubian area and its immediate periphery would compute to several hundred entries were a complete list to be made. Professor N. Vulić has recently completed a detailed plan for the preparation of sectional maps of archaeological sites throughout Yugoslavia. The first sheet has already been announced as nearing completion (letter from Professor Vulić to this writer, dated March 4, 1936), and others are expected to follow in the near future.

and notably so at the following localities: Bunar, Donja Glama, Kravlje, Soko Banja, Šanac, and Vrmdja.[442] From the same general section, particularly the valley of the Nišava westward of the Sičevo pass, a series of sites has just been reported by a local collector.[443] From the published data three of the nine sites can unquestionably be considered as having Neolithic remains.[444] These are:

"Čardak" at Donja Vrežina (communal affiliation Donji Matejevac). Oršić Slavetić reports: "Hundreds of sherds with various decoration, incrustation, and traces of painting with cinnabar. [?] . . . a small stone axe [celt?], a foot from a vessel of the Starčevo type and much quartzite. [Found westward of the monastery.] And eastward of the monastery, near the spring, sherds are to be found in the fields. The settlement existed from Neolithic times (Starčevo type) to the Late Bronze Age."[445] (The site is situated on the right bank of the Nišava, approximately 4.5 km. eastward of Niš.[446] Apparently no deposits in situ have been observed.)

"Kod Česma" at Vrtište. Oršić Slavetić reports: "In a fresh profile of a river terrace a culture niveau 2 m. thick is revealed within a length of 800 m. The greatest amount of sherds lies in a level about 1 m. below the surface. Profiles of culture pits are in view. At a depth of 1.5 m. were found: one complete Neolithic pot and one somewhat damaged beaker. In the vicinity of "Mala Česma" there are many pieces of wall plaster. Besides the crude barbotine ware there is a great deal of fine, painted ceramics of the Starčevo type. . . . At a depth of 0.3 m. from the surface there is a level with Bronze Age pottery, whereas the lower levels are Neolithic."[447] (The village of Vrtište is situated approximately 9.5 km. to the northwest of Niš.[448])

"Bubanj" at Novo Selo. Oršić Slavetić reports: "Upon a rise which reaches 10 m. to 12 m. above the surrounding terrain, on an old bank of the Nišava, there are traces of a fortified prehistoric site. Certain remains of a moat and embankment are to be seen on the western side of the rise. A culture level, as much as 3 m. in thickness, is revealed in the railroad cut. The surface is strewn with sherds, human and animal bones, and fragments of quartzite, all brought up in the process of ploughing. The sherds from the upper level are largely unornamented and belong to the La Tène phase. But

[442] Reconnaissance work of the Niš Museum, season 1934. (Material in the collections of that institution.)

[443] Oršić Slavetić, pp. 174 ff. (The author does not state the disposal of the material which, as far as I am aware, is not in the Niš Museum.)

[444] Without an examination of the various finds from the other six localities it is not possible to arrive at a conclusive identification of the phases or ages represented thereby. The account lacks in acceptable reasoning of the author's interpretations. For this reason I am here using only those portions of the report which lend themselves to unambiguous understanding either from the text or from the illustrations (sketches). The rest, I feel, requires a detailed study of the material itself as well as further investigation of the individual sites.

[445] *Ibid.*, pp. 177-178, Figs. 10 and 11. (Free translation.)

[446] Cf. *ibid.*, sketch map, Fig. 9.

[447] *Ibid.*, pp. 179-180, Fig. 12. (Free translation.)

[448] Cf. *ibid.*, sketch map, Fig. 1.

there are also Bronze Age and Neolithic ceramics, especially along the margins of the site and in the walls of the railroad cut. An idol was found in the bank of the railroad cut at a depth of 2.2 m. Other material consists of bone awls and one perforated antler prong."[449] (The village of Novo Selo is situated approximately 5.5 km. due west of Niš.[450])

Various stone artifacts, such as celts, axes, maces, all of slate, diorite, etc., as well as certain ceramics, all apparently of Neolithic provenience, are known from the vicinity of Požarevac,[451] Kragujevac,[452] and Valjevo.[453]

CONCLUSIONS

"Vinča" is the only Neolithic site in the Moravo-Danubian area in which a truly large scale excavation has been accomplished thus far. "Gradac", "Pločnik", "Dizaljka", and "Velika Humska Čuka" have only been sounded —and of these four settlements the largest areal extent was explored at "Velika Humska Čuka". The reconnoitering has been guided predominantly by surface indications, yet in numerous instances deposits were noted *in situ*. On the whole it may be said that aside from "Vinča" and the four partially investigated sites, a well directed and coordinated excavational program in Neolithic sites of the Moravo-Danubian area is now in its beginning. Certainly the starting efforts, in which particularly the young Niš Museum has been so instrumental, show a most encouraging promise. The Neolithic culture history of this extremely important area—not so much a "problem" as largely an unknown quantity—is but a single aspect and task facing the Danubian archaeologist. While the manifestations of later developments must command at least a proportionate attention, it cannot be doubted that a real advance will be made only upon a satisfactory understanding of the true role of the local Neolithic growth. Attempts to do this are now well under way, the chief needs are fairly obvious, and the premises of those actively participating in the huge task are indeed excellent.

That the sites here enumerated do not exhaust the field need not be particularly stressed. Not only are soundings desirable in many of the more recently recorded sites, but some of the partially explored settlements should be further investigated for stratigraphic data. It will be remembered that most of the material housed in the National Museum at Belgrade up to 1914 was damaged or totally destroyed by the bombardments of the city in the

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[449] *Ibid.*, p. 181, Fig. 14—of which No. 2 shows two views of a ceramic figurine, apparently the "idol" to which the text refers. (Free translation.)

[450] Cf. *ibid.*, sketch map, Fig. 1.

[451] Cf. Jovanović, 3:87 ff., Pl. XII. (There are also various lithic finds from the general vicinity of Niš; cf. pp. 81 ff., and Pl. XI.)

[452] *I. e.* at the village of Resnik Kragujevački; personal information from Dr. M. Grbić, season 1931.

[453] Cf. Jovanović, 2: especially pp. 43-45, and Pls. VI, VII, and Stanojević, Al., pp. 107 ff.

World War.[454] In view of all this the evidence now available is necessarily incomplete and must be dealt with only in a tentative manner. No publication can hope to keep pace with the constantly accumulating new discoveries. Despite these limitations, however, a collective presentation aiming at a general appreciation of the data thus far assembled may, perhaps, perform a service. As yet, it is not possible to formulate a system of chronologic order by which the various sites here mentioned might be correlated in a synchronized manner. That the bulk of the evidence now available represents a considerable span of time is shown by the very nature of the finds. Furthermore, the character and thickness of the deposits in the majority of the sites, and above all at "Vinča", strengthen this thought. Even if it were possible to accept the dual subdivision of "Vinča", with the proviso that the excavator has yet publicly to voice his observations on this point, it must be stressed that in the other sites of the Moravo-Danubian area stratigraphical distinctions remain entirely unsubstantiated. In the majority of these cases this aspect is yet to be tested by excavations. Nevertheless, the material thus far known, and especially that produced by soundings, tends to demonstrate a continuous "normal" culture growth and suggests homogeneous Neolithic contexts. These, broadly viewed, find comparisons in the deposits of the so-called "Vinča I" and "Vinča II" alike. We should, then, be at a loss should we attempt to apply throughout this area so arbitrary a classificatory scheme as that advanced for "Vinča" by either Childe or Menghin.

An examination of the material alone shows that the incised, fluted and ribbed, burnish-decorated, and plain-smoothed classes of ware are constantly recurring constituent elements in the majority of the sites with which we have dealt individually. The barbotine and painted wares, and above all, the crusted ware, on the other hand, have a more limited distribution, although they too are comparable to "Vinča". The figurines, tables or altars, anthropomorphic covers or lids, weights, whorls, and stone implements (excepting the isolated occurrences of the notched pebbles and the sinew [?] stone), wherever present, again recall "Vinča" examples. The structural features of the deposits, as much as has been ascertained by soundings or by examination of exposed sections, bespeak a uniformity in the types of dwellings which were either a semi-subterranean shelter (oval and round pits), or a surface house (with a distinct floor). The economy, judging from the arrangements of the settlements, the nature of tools, the chaff and straw inclusions in ceramics and wall plaster, the milling stones, and the animal bones, appears to have been based upon agriculture and stock raising. The nature of topography, and of the general physical environment, if the present day conditions

[454] Cf. Petković, pp. 205 ff., and Vasić, 26:p. IX.

are retrospectively applicable, should have been about the same throughout the region.

Collectively considered, the total of the physical evidence together with the significance of certain intangible data, and permissible practical reasoning, may be described briefly as follows:

1) The Neolithic expression of the Moravo-Danubian area represents a homogeneous development which reflects a uniform cultural basis and a common socio-economic bond. It appears that in remote antiquity, as well as today, the role of human geography was a very important factor in allocation of settlements, nature and degree of extraterritorial relationships, and general cultural dynamics.

2) The Neolithic complex was introduced into this area from outside from a direction (or directions) and source (or sources) yet unknown. Its initial appearance in the form of a rounded, complete entity so characteristically reflecting a florescence of the New Stone Age, is particularly significant inasmuch as it strengthens the negatively indicated *hiatus*. Thus far there is no acceptable proof of Palaeolithic survivals; indeed, the isolated case of supposedly Aurignacian finds from the vicinity of Belgrade, remains a questionable instance of local evidence of Upper Palaeolithic existence. Nor are there any traces of Mesolithic remains.

3) In geographic distribution the Neolithic sites of the Moravo-Danubian area are not separated by any considerable distances. The main trend follows a chain which runs from "Vinča" in the direction of Kragujevac and on to Niš, whence it branches along the Toplica, the Nišava, and the Southern Morava rivers. Perhaps the greatest separation is to be found between "Gradac" and "Gumnište" ("Barak")-"Čukar", and this amounts to less than 65 km. on a direct, aerial line. Excepting the barbotine class of ware, the majority of the remaining material appears to have a more and more peripheral character as one proceeds from "Vinča" towards the southeast. At "Čaršija", "Mali Drum", and "Kremenite Njive" this observation, as much as soundings have shown, does not seem to apply. However, at "Jablanica", at "Pločnik", in the general vicinity of Niš, and further at "Gradac" and at "Gumnište" ("Barak")-"Čukar", the case is well demonstrated. "Dizaljka", "Strnjane", and "Tumba" (Kalna), present somewhat of a compromise in this regard. Although certain chronological differentiations suggest themselves amid superficial signs, their substantiation depends upon future investigations.

Inasmuch as the Neolithic complex in this region reflects a new population and a new cultural realism, its individual implantation in those localities in which settlements eventually grew up should have been unequal in time

scale. However, it is yet to be established which of the various classes of ceramics and other objects are the earliest. Were the first settlers, ushered in by the primary wave of diffusion, already in a practical possession of, or at least traditionally familiar with, all the material traits which we now call Neolithic? Or is it perhaps to be assumed that the initial stage was one in which only a limited repertory of material culture traits was known, and that later waves disseminated additional, *i. e.* "higher" attainments? At "Vinča", this question is not clear. Certainly, the barbotine and incised classes of pottery are found there in the lowest levels, that is even before the rectangular huts or houses came into use. (If any class of "Vinča" ceramics may be said to be more or less characteristic of the bothros niveau alone, it may well be the barbotine ware—but this must yet be tested.) The position of the fluted and ribbed, and the burnish-decorated wares at "Vinča" has not been ascertained with precision. However, these two, as well as the incised class, figurines, tables or altars, anthropomorphic lids, the shoe-last and related forms of celt, and the chipped implements of hard stone, do belong to the lower strata of "Vinča". Furthermore, with the exception of the barbotine pottery, all this material continues into the upper levels. No sharp distinction between any two *horizons* has been observed and there are no sterile strata in the debris. On the contrary, everything seems to point to an undisrupted and unmolested progression along the lines of development which may first be traced in the bothros niveau. (Provisionally, the barbotine class of ceramics is perhaps to be considered an exception in this regard.) Yet it is not to be underestimated that additional extraterritorial impulses played an important role as well.

None of the several classes of material found at "Vinča" (and elsewhere) document any initial Neolithic incentives. Nor is there any acceptable evidence of an experimentary stage leading to such accomplishments. The "oldest" deposits differ from the "younger" chiefly in their marked dependence upon huts with bothroi rather than houses with a rectangular ground plan and a level floor. Presumably, the huts were originally semi-subterranean, whereas the houses did not penetrate below their adjacent ground level. In either case clay-paste wall plaster was an important feature of the superstructure. The debris of houses lend themselves to a more precise identification and interpretation than do those of the huts. To my knowledge the nature of the bothros type of dwelling has not been conclusively ascertained. Despite the predominant roundness of the pits it does not necessarily follow that their original superstructures had a conformingly shaped ground plan.[454a] Whether the two types of dwellings are genetically related remains

[454a] For an interesting brief discourse regarding non-structural pits in Greece (with superficially gathered extraterritorial comparisons) cf. Hutchinson, R. W., "Bothroi", *Jour. Hellenic Studies*, *LV*:I (1935), pp. 1-19.

an obscure question. Although significant tectonic and typological differences are apparent, no chronological distinctions between huts and houses have been reported.[454b] On the contrary, the deposits in which both occur are said to be more or less homogeneous[454c] and "as other remains prove, the change in the form of the ground plan took place gradually."[454d] Insofar as actual cultural material is concerned, no distinct categories can be safely assigned either to houses or huts. Even the barbotine ware, despite its seeming restriction to the bothros niveau, does not allow a conclusive interpretation in this respect. The task of disentangling chronological differences—which are often readily assumed or "felt"—is especially difficult in view of the concurrence and continuity of much of the pottery. Nor is it adequately possible to rely on stylistic differences, for what we may deem to be "archaic" may really be only a peripheral phenomenon, and conversely, some of the elements of a seemingly debased nature may well be quite old.

In full consciousness of the difficulties which we have briefly touched here, we must reiterate the point that at the present time only a provisional synchronism may be proposed for the Neolithic sites of the Moravo-Danubian area. The most potential data is to be sought at "Vinča", for it is here that the remaining settlements find closest analogies. Their own individual developments, moreover, demonstrate a continuation of intercourse with "Vinča". The farther we proceed in the direction of the southeast, the less direct seems to be this relationship, until we reach the vicinity of Rečica, on the Kumanovska Reka brook (a tributary of the Vardar) which, for the present, marks the terminal southern distribution of Moravo-Danubian Neolithic affinities.[455]

4) Even if it may still be questioned whether or not "Vinča" was the actual center from which other sites in the Moravo-Danubian area derived their impulses,[455a] it does seem that the trend was from that site, or at any rate, from the direction of the Danube, southward. The nature of the topography provides accessible means for penetration. While we have no reliable data on the original conditions which may have confronted the Neolithic pioneer, we can see from the evidence before us that an impressive progress was made in the settling of the area. The mountainous barriers were apparently circumvented, and once this was achieved, additional inviting valleys, conducive to agricultural economy, were again within reach. One may well

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[454b] The terms hut and house are used purely for the purpose of differentiation and in the same sense as in my 4:656 ff.

[454c] Vasić, 21:129 (from the lowest deposits up to 4.5 m.).

[454d] Vasić, 12:319.

[455] The Skoplje Basin, a part of the drainage area of the upper Vardar, is yet without any analogies with our region. The report of the finding of a "Neolithic" site in the aviation field at Skoplje, to which I referred in my report on the activities of the American School of Prehistoric Research, season 1934 (cf. Fewkes, 2:13, note 38), is yet to be substantiated. (Thus far there is only one stray find of a perforated stone axe.—Information from Dr. M. S. Filipović Skoplje.) For a general description of the archaeology in the Vardar Valley (within Yugoslavia) cf. Fewkes, 3:44 ff.

[455a] Cf. Fewkes, 4:670.

wonder what may have been the motivating power behind this territorial expansion. The valley of the Morava proper, and the bank of the Danube, should have provided ample agreeable ground for the Neolithic colonist. The sedentary mode of life which is so clearly shown by the nature and extent of the settlements does not seem compatible with a spirit of exploration or adventure. There are no indications of direct trading or other contacts between this area at large and regions to the south via the Morava-Vardar divide; it seems permissible to rationalize the Neolithic spread southward from the Danube as a process of a locally primary diffusion. That the process was gradual and reached the several districts at unequal time is well attested by the nature of the material evidence.

5) Apparently, the river valleys afforded the most convenient natural avenues for local movements. Yet, despite the short distances between individual sites, and the restrictions imposed by the configuration of relief in certain cases, it is not possible to speak of definite routes of diffusion or communication. In the northern sector of the area, and especially at "Vinča", a portion of the stream of the Danube, together with its local tributaries, probably played an important role. The Morava itself can be followed comfortably upstream as far as the divide, and if necessary the Grdelica and Džep gaps may be avoided by a detour through the valley of the Veternica, joining the Southern Morava again in the vicinity of Vranje. The Morava-Vardar divide presents no impediments to traffic. However, the nature of the ground to the south of it differs considerably; there the valley floors are quite swampy and the top soil less fertile. An access into Kosovo may be gained through the valleys of the Toplica, Veternica, or Binačka Morava.[456] The Sičevo gap, the most serious barrier to communication within the Moravo-Danubian area, may be circumvented by means of the nearby passes.

6) In relation to extra-territorial communication, the first question to confront us is how the initial Neolithic introduction may have reached this region. With respect to the postulate that the sources lay in the direction of the east, there is one natural trunk line—the Danube—which, on the map at any rate, appears to be the most likely "route". Not only has it been advanced as such,[457] but Neolithic settlers are assumed to have sailed up its stream.[458] This despite the hazards of the Iron Gate with its several defiles, swiftness of the current, whirlpools, rapids, and a most dangerous lack of landing or resting places in the wild stretch between the Sip canal and the town of Golubac. Definite sites with Neolithic material have not yet been adequately reported on either bank of the Danube between "Vinča" (south

[456] In the region of Kosovo only Roman and later antiquities have been recorded thus far.
[457] Cf. Childe, 2:79 ff., and 4:26 ff.
[458] Childe, 4:34.

side) and "Grad", Starčevo (north side) in the west, and Kladovo (Yugoslavia) and Turnu Severin (Roumania) in the east.[459] Furthermore, within the entire length of the Iron Gate proper no traces of remains antedating the Romans of the first century of our era have been found thus far.[460] The distribution of Late Bronze Age and Iron Age sites is likewise interrupted by this same inhospitable terrain.[461] Yet, eastward of Kladovo, and again westward of Golubac, such sites have been recorded.[462] Until the Sip canal passage was opened, the Iron Gate was not accessible to modern navigation.[463] Before this event, local fishermen did "shoot" the rapids in their rather frail looking, but in reality substantially constructed boats, as they sometimes do to this date. However, to proceed against the current calls for considerable power in addition to skill. At the present time the steamless craft is advanced upstream by towing, which necessitates two operators, that is one to walk on the bank and pull the lead line, the other to steer the course. Under the proper circumstances, of course, draft animals can be substituted for man power. In either case, nevertheless, the progress of the vehicle is necessarily quite slow, and is strictly limited by the natural conditions of the shore as well as the stream itself. No such method could be employed on the Yugoslav bank immediately above Djerdap were it not for the ledge of Trajan's famous road; however this artificial convenience is of no consequence in longer journeys, for its course is frequently interrupted and the natural bank provides no footing. On the Roumanian side the Széchenyi road affords a distinct aid in this regard. Rowing against the current is extremely difficult, for even at low water the resistance is considerable. The Neolithic man, provided that it is permissible to visualize him in possession of boats sturdy enough to withstand such exploratory ventures, could have employed either rowing, poling, or towing for his advance. Or, alas, may he have used the sail? The series of six cataracts between the Iron Gate and Stenka, the defile of the Kazan, the treacherous currents, and other hindrances to navigation, virtually preclude the possibility of tacking in Djerdap under aboriginal conditions. Whatever may be the assumed means of propelling the craft, the

[459] On the northern side, Neolithic occupation is documented by certain material in the Museum at Vršac, collected by its director, Mr. Milleker; cf. also his *Délmagyarország*, etc., pp. 15 ff., where Kovin (Yugoslavia), and Moldova and Dolnea Lupcova (Roumania), along the Danube, are specifically mentioned in addition to eight other likely localities situated farther to the north, yet all within either the Yugoslavian or the Roumanian portions of the Banat. (With respect to Kovin cf. also Bela, pp. 103 ff.)—On the southern bank of the Danube, as may be judged from the reconnaissance of Professor Vasić (cf. his 16:2 ff.), there are, as yet, no similar indications (cf. also Fewkes, 2:33 ff.) while "prehistoric" remains are reported from the Danubian island of Ada Kale (west of the Iron Gate, near the town of Orşovia) and other nearby islands (cf. Bărcăciiă, pp. 281 ff.), there is no specific designation of their age by the author.—Nevertheless, in all these instances it remains for future work to ascertain the true state of affairs insofar as Neolithic occupation is concerned.

[460] Cf. Fewkes, 2:33 ff.—The Greeks, as far as known, did not navigate the Iron Gate. It is significant to recall the erroneous concept of Greek geographers who considered the upper and lower courses of the Danube as two separate rivers (cf. Gilsdorf, p. 18.)

[461] Cf. Fewkes, 2:33, note 13.

[462] Cf. Vasić, 16:10 ff., and Fewkes, 2:35 ff.

[463] Cf. Gilsdorf, *op. cit.*, p. 19.

vehicle itself remains unsubstantiated.[464] Certainly, there are no traces or signs from which to deduce, or even reasonably presume, that the Djerdap was conquered via the waterway during the Neolithic Age. Moreover, its hinterland on either bank, that is to say the central sector of the Balkan-Carpathian range, is similarly devoid of Neolithic sites. Yet, closely related Neolithic developments are to be found in the adjacent areas to the east as well as to the west of this lacuna. As we search for a plausible explanation with which to reason out the cultural affinity between the Neolithic sites east of the Iron Gate[465] on the one hand, and the Moravo-Danubian and the Banat areas on the other, three possibilities present themselves: A) The valley of the Aluta, which offers egress into Siebenbürgen; the sites found along this river, and also along the Maros, seem to point to an early cultural traffic.[466] B) The valley of the Timok, which, through its several upper branches, and the nearby passes, affords access to the Moravo-Danubian area proper; within this territory the sites of "Strnjane", Osmakovo, and "Tumba", Kalna now identify the most southerly situated Neolithic settlements, and the nearest known comparable locality to the north has been recorded at Klenovac ("Glabarova Glavica").[467] (Surface indications in several localities farther down the Timok point to Neolithic movements between the region of Negotinska Krajina, *i. e.* the lower Danube and the Svrljiška Planina mountains.[468]) C) A subsidiary way is provided by the valleys of the upper Nišava and the Iskar.[469] These connect the main body of the Moravo-Danubian area (west of the Sičevo gap) with the Basin of Sofia (and eventually the lower Danube), and the headwaters of the Struma and the Marica.[470] The Lom and the Zibar (northwestern Bulgaria), each an independent tributary of the Danube, rise within a relatively short distance from the Timok drainage.[471] Moreover, the Ogosta, another Bulgarian affluent of the Danube, closely

[464] The remains of a dugout log boat were discovered at "Vinča" (personal information from Professor Vasić, October 1930); no details of its position, nor its description have yet been published.

[465] Cf. Fewkes, 2:35 ff., and Nestor, *l. c.*, pp. 34 ff. Nestor's reference to Bulgaria (p. 35) is misleading; cf. Mikov, 2:24 for spiral-meandric pottery in Bulgaria (Mikov's Middle Neolithic development) "related to that of Hungary, Yugoslavia, and, in part, Troy," which is found in the western half of the country both in open sites as well as in several caves. (Cf. Mikov's map.)

[466] Cf. the distributional map of Schroller, Pl. 17, Fig. 1 (Nadruvale, Tordos, Boian); "Das abgeschlossene Gebiet des Altflusses", this author holds, "ist eher verkehrhindernd und begünstigt die Entstehung von Sonderkulturen" (*l. c.*, p. 5). Yet, the Boian development could hardly have been diffused there in any other way except through the valley of the Aluta. Furthermore, is it not significant that along the upper course of this river the Neolithic sites contain heterogenous material reflecting Nadruvale and Tordos affinities as well as those of Boian?

[467] Cf. Bogdanović and Milenović, pp. 13 ff.—surface finds, reported by local amateurs; material in the Niš Museum (*l. c.*, p. 14).

[468] The Timok offers a fairly direct and short link between the two sectors. The Gramada pass then provides a means of entering the open plain of the Moravo-Danubian area, and from there, in turn, the fertile lands of the Banat are within comfortable reach. Conversely, the valley of the Morava can be approached from Walachia through the Banat by following the valleys of the Aluta and the Maros (or the Temeš).

[469] Cf. Mikov, *op. cit.*, pp. 32-48, for Neolithic settlements and stray finds from the Iskar area; also his map.

[470] The Roman road from Naissus to Constantinople followed this course; cf. Thallon, p. 195, and note 8, *supra*.

[471] Mikov's map, *op. cit.*, shows six caves with Neolithic deposits near the headwaters of the Lom (text pp. 27-32); however, only one locality with an open Neolithic settlement is reported (village of Valkova Slatina) from the upper drainage of the Zibar (*op. cit.*, p. 38).

approaches, through its headwaters net-work, both the upper reaches of the Nišava on the one hand, and those of the Iskar on the other.[472]

The celebrated Morava-Vardar "route", attractive as it may seem in view of its north-south trans-peninsular trend, provides no positive evidence with which to prove that it was actually used in Neolithic times between the divide, and, roughly, the Yugoslav-Greek border. At the present time, the hilltop sites of "Kufiluk" and "Djevdjelijski Krst", both near the frontier town of Djevdjelia,[473] mark at once the earliest and the most northerly cultural advance up the valley of the Vardar. These two instances, it must be stressed, document a culture stage of a considerably later date[474] than is the case farther in the north. As Childe has shown,[475] it is not possible to accept Frankfort's view on Danubian connections in the Aegean,[476] which, were this a genuine case, would bear upon the point now under discussion.[477] The topographic barriers, above all the difficult gap of Demir Kapija, impose serious difficulties along the course of the Vardar within Yugoslavia.[478] Definite sites of the Neolithic or Bronze Ages have not been ascertained in this territory up to date.[479] The stray finds from the village of Rudnik, near Veles,[480] and from the vicinity of the Monastery of Marko at Sušica (near Skoplje),[481] offer no conclusive evidence in themselves, although both instances call for investigation. (This material consists of celts, one fragment of a perforated axe, and atypical sherds, none of which have been precisely identified as to closer cultural affiliation.[482]) The Neolithic lacuna along the Vardar between Djevdjelia and the divide, therefore, still remains a reality.

[472] For Neolithic finds from the upper Ogosta area cf. Mikov, *ibid.*, pp. 29 (Zadna Dupka—deposits), and 38 (stray finds from Vraca, *i. e. Vratsa* on the map).

[473] Cf. Fewkes, 2:44 ff.

[474] Cf. *op. cit.* Locally, however, the core of the cultural make-up in both of these sites, as well as in the comparable instances thus far noted in the basins of Bitolj and Prilep (*l. c.*, pp. 50 ff.), is wholly Neolithic, although in the chronologic sense they are to be equated with the Early Bronze Age of Macedonia (cf. Heurtley, 1:19 ff., 2:1 ff., 3:195 ff., 4:318 ff., 5:235 ff., and 6:187). Apparently, we have here an example of a belated Neolithic continuity, perhaps similar to the case in Thessaly (cf. Wace and Thompson, p. 233).

[475] 5:258 ff. Cf. also Wace, pp. 123 ff.

[476] Frankfort, 1:42, even recognized "Danubian immigrants in Greece by their unmistakable classes of highly polished carboniferous ware". (For a criticism of this particular point cf. Childe, 5:260 ff.)

[477] Cf. Frankfort, *l. c.*, p. 35, for his cursory mention of "the road from south to north through the valleys of the Vardar and the Morava".—It seems unnecessary, in view of the pronounced absence of positive evidence, to review the various opinions which have been advanced on the Morava-Vardar (or vice versa) artery. Cf., however, Thallon, pp. 196 ff.; Casson, 1:170 ff., 2:73 ff., and 3:19 ff., Heurtley, 6:186 ff. (in contrast to his previous view in 2:49), Radovanović, p. 1041, and Childe, 4:70 ff. all of which apply to the Neolithic and Bronze Ages. Insofar as the Iron Age is concerned, cf. Myres, p. 448 ("a Morava-Vardar avenue provisionally supposed"), and Mahr, p. 19 ("one feels rather inclined to look for future finds in the Vardar and Morava valleys"). According to Carry and Warmington, p. 117, "the Roman Itineraries do not mention a road up the Vardar [note 49] . . . But the framework of the land and its chief lines of cross communication were definitely made known by the Roman soldier-explorer." Barth, p. 127, speaks of a Roman and perhaps an earlier road through Demir Kapija, much of which, apparently, had been done away with in the process of renovating the modern road in 1860. For other Roman finds from Demir Kapija and its immediate vicinity cf. Stanojević, A., p. 297, and Fewkes, 2:50.

[478] Cf. Fewkes, 2:44 ff. Childe's opinion that "once on the Vardar the road to the Aegean is open" (4:2), seems to disregard the physiography of the region.

[479] Cf. Fewkes, *op. cit.*

[480] Cf. Stanojević, A., *op. cit.*, pp. 297 ff., and Fewkes, *op. cit.*, pp. 47 ff.

[481] Cf. Saria, 1:302 ff., 2:162, and 3:95. Cf. also Fewkes, *ibid.*, pp. 44 ff.

[482] The axe fragment, and one polished celt are reported from Rudnik (cf. Stanojević, *ibid.*); polished celts, and unornamented, hand-made pottery, were collected in the fields near Sušica (cf. Saria, *ibid.*, and Fewkes, *ibid.*, p. 45, note 64).

Childe's view that "up the Morava . . . remains comparable to Vinča I are practically absent"[483] is refuted by the evidence obtained since the time of his writing. On the other hand, to point to "Gradac" as a possible indication of Aegean-Danubian Neolithic trends, as Nestor has done,[484] is equally untenable in view of distributional and general culture historical factors.

Material analogies with either the gross or the major elements of the Moravo-Danubian cultural capital may be found in the regions of Krajina and Ključ (*i. e.* along the bank of the Danube between the Iron Gate and the mouth of the Timok),[485] the Banat,[486] and Bosnia.[487] Outside of the territory of Yugoslavia, comparisons appear in Bulgaria,[488] Walachia,[489] western Roumania (Siebenbürgen, Banat),[490] and Hungary.[491] Farther to the south-

[483] 4:33.

[484] *Loc. cit.*, p. 35.

[485] Cf. Fewkes, 2:35 ff.—The two most representative Neolithic sites in these two regions, *i. e.* "Kusjak" near Negotin (Krajina), and "Obala" above Korbovo (Ključ), each with 3 m. to 4 m. of deposits, contain the following material: a) Barbotine ware, which appears to be the most abundant class of ceramics in both instances; b) incised ware with rectilinear (meandric) and curvilinear (hooked spirals) designs; c) fluted and ribbed ware (straight and curved line motifs); d) burnish-decorated ware (patterns form parallel bands); e) altars with incised decoration; f) human figurines with incised, meandric and spiral embellishment; g) anthropomorphic and zoomorphic figurines; h) celts of the shoe-last and trapezoidal forms; i) flint blades (knives and scrapers).

[486] Cf. Karapandžić, 1:151 ff., Figs. 7-17, and Pls. V, VI, and 2:157 ff.—Menghin, 2:17 ff. (and literature therein).—Childe, 4:27 ff.—Fewkes, Goldman, Ehrich, 2:33 ff.

[487] Cf. Radimský, Fiala, *Butmir*, I, II, *ibid.*—Vasić, 8: *passim.*, and 1: *passim.*—Fiala, 1:32 ff., 2:124 ff., and 3:129 ff., all of which deal with the site of "Debelo Brdo" above Sarajevo; to this are to be added the recent, hitherto unpublished finds from this hilltop (deposited in the Sarajevo Museum), among which Neolithic material is again represented.—Truhelka, pp. 28 ff. ("Donji Klakar").—Dragičević, pp. 3 ff. ("Kraljevina" near Novi Seher). Petrović, 2:137 ff. ("Donja Mahala"); and Mandić, pp. 1 ff. (Kraljevina", near Novi Seher).

[488] Cf. Seure, and Degrand, pp. 359 ff. (note especially the incised decoration from "Tell Metchkur", p. 417, Figs. 46, 47, 59 a, 59 b, and 60); the authors point out analogies with Bosnia (p. 432) and Anatolia and Central Europe (p. 360).—Popov, 1:148 ff., especially the shapes common to our fluted ware, which, however, are decorated either by incising or painting in the examples from Bulgaria: Figs. 137-142, pp. 170 ff.—Popov, 2:71 ff., especially Figs. 105 b, 129 a, b, and Pl. VI:3, 4 (showing similarities to our fluted ware), and Fig. 106 b and Pl. VI:1 (comparisons with our barbotine ware).—Čilingirov, pp. 146 ff., especially Fig. 8 (ceramic figurine from "Vidbol", with curvilinear, incised embellishment).—Mikov, 1:365 ff., Fig. 117, incised sherds from the cave of "Suhi Peč", near Donji Lom (Beogradčik).—Mikov, 2:22 ff., and map.

[489] Cf. Nestor, pp. 33 ff., and Bărcăcilă, *op. cit.*

[490] Cf. Nestor, *op. cit.*, and Schroller, pp. 6 ff.

[491] Cf. Tompa, *op. cit.*, pp. 47, 57, and 63, *i. e.* his "Theiss-Kultur" analogies with "Gradac", which are likewise applicable to other sites of the Moravo-Danubian area, above all to "Vinča" (cf. Vasić, 25:200, who, however, refers more specifically to certain comparisons with the Bükker material). Cf. also Banner, 1:32 ff., Pls. 1 ff., *i. e.* "die III. Periode der Theiss-Kultur" which shows several striking identities with the barbotine material from the bothros niveau at "Vinča", and above all with "Grad", Starčevo (practically a duplication, generally speaking, is apparent in this regard). Banner's original interpretations of the finds from Hódmezövásárhely-Kopáncs as Tisa III (*l. c.*) has recently been revised by him, 2:98, 122. While it is true that during the 1931 and 1932 excavations at "Grad", Starčevo, only limited stratigraphic data was obtained, it is to be remembered that the preliminary report did not exhaust the observations then made. In addition to the clearly stratified conditions noted in the largest dwelling complex discovered during our work (pit No. 5, cf. Fewkes, Goldman, Ehrich, 2:39 ff.) the two water wells (*l. c.* p. 42) likewise provide fully dependable proofs of stratigraphy. When Banner, 2:*ibid.*, states that "Man hat in Starčevo keine chronologischen Beobachtungen machen können," there is, evidently, a gross misunderstanding. The unquestionably proved relationship between "Grad", Starčevo and "Vinča" certainly alleviates much of the seeming stratigraphic deficiency at "Grad", Starčevo. It is signally important that the barbotine ware, indubitably the oldest ceramics at "Grad", Starčevo, finds exact analogies in the bothros niveau at "Vinča". This class of pottery belongs to the initial Neolithic phase in either of the two sites and unquestionably antedates "Tisza I" which, geographically, belongs to a more northerly locus. However, it does not follow that an identical time placement must necessarily be applicable in all peripheries. It is still a question as to where the Danubian barbotine ware may have originated. Indeed, its distribution is not fully known at the present—despite the circumstance that so well defined a category of pottery should lend itself to unambiguous identification. At "Grad", Starčevo, this class of ware is typical throughout the deposits, but certain typological changes are also recognizable. With the culminating stage of the Neolithic economy at this site, positive barbotine applique seems to have become less prominent. As far as the excavated sections of the site indicate, the aboriginal settlement was abandoned within the Neolithic Age. Perhaps some light on the relative date of that event is to be sought at "Vinča"?

east (in Anatolia[492]) as well as to the south (*i. e.* in Greece) certain comparisons also exist, but the relevant genetic relationships are by no means clearly understood. Evidently, mainland Greece comparisons with Danubian wares[493] have been overemphasized.[494] The similarities in certain material from the southern and the northern portions of the Balkan peninsula seem explicable on the ground that in each instance the primary impulses were derived from sources common to both. In regions lying further to the northwest of our area, that is in the rest of the middle and in the upper Danubian valleys, numerous analogies point to lively contacts with the north-central Balkans. This is true not only of Childe's Period II,[495] but likewise of the earlier development characterized by the incised ware and the shoe-last celt.[496] And to complete this cursory scanning of the horizon, we may quote with profit the significant observations of Kandyba: "... we see in the older [*i.e.* Neolithic] period a close relationship between the Black Earth and Danubian cultures and in the latter a differentiation and independent development, which does not, however, exclude mutual exchange of resulting forms. . . . The common base of these Neolithic cultures of southeast and middle Europe, lay, perhaps, outside of Europe, possibly, somewhere in the Near East, whence this population came. . . . If we wish to respect their territorial extention, we must define this region as Dniestro-Danubian."[497]

[492] Cf. note 52, *supra*, and Bittel, pp. 96 ff., and 107.

[493] Cf. Frankfort, 1:24 ff.—For other instances of such similarities cf.: Heurtley, 2:49, and 6:186 ff. Mylonas, p. 92. Among the Neolithic material from Olynthus striking analogies with "Grad", Starčevo, may be seen in the following illustrations of Mylonas: Pl. I (all), Figs. 66 a-f, and h, and 69 (painted ware, black on red, which is also paralleled at Eutresis, cf. Goldman, *infra*; Pl. II, Figs. 40 a, b, 60 a-e, 61, 62 a-e, and 63 (fragments of "legged vases", *i. e.* the altars of the north). General comparisons with the Moravo-Danubian area may be seen in Fig. 74 a, b (clay figurine), and Fig. 79 a-h (shoe-last celts with a high back).—Goldman, pp. 76 ff., and Fig. 91, Nos. 1, 2, 4, 5, 7, and 8, and Pl. I:8 (incised ware), Fig. 93, Nos. 1, 2 (matt-painted ware, black on red—identical with "Grad", Starčevo), Figs. 89, 91 (Nos. 3, 6, 9), and 92, and Pl. I:1-3 (burnish-decorated ware).—Other similar instances would carry us into the Pelopennesis, the Aegean archipelago, and Crete; cf. Frankfort, *op. cit.*, Childe, 4:34 ff., and Wace, *op. cit.*

[494] Especially by Frankfort, 1:33 ff.—Cf. Childe, 5:260 ff., and Wace, 123 ff. (With respect to the reasoning advanced by Wace, *l. c.*, it may well be pointed out that the exceptions thereto expressed by Matz, F., *Zeitschrift für Ethnologie*, XLVI:4/6, 1934 [1935], especially p. 425, reflect a mere assumption of a "Wanderung", and not a historically established case of acceptable evidence.)

[495] Childe, 4:260; cf. also his 3:45 ff.

[496] Cf. Stocký, 2:33-63, and Pls. VIII-XXIX (pottery), and XXII, XXIII (celts). This author did not consider "Vinča" old enough to have the parental stock with which to explain the Sudeten Lands counterpart of the Middle Danubian development (*l. c.*, p. 39). Rather, the probable common root of both regions he would seek in the Hungarian Plains. Yet, he derived Lengyel from Hither Asia (cf. 3:11), and considered the Central European "banded" ware related to the Aegean "with which it is undoubtedly connected through a common origin in the southeastern aboriginal culture" (*i. e.* "*Urkultur*", cf. 1:717). The material from "Karaš", near Sremski Karlovci (which he partially excavated himself), furthermore, he held to be older than "Vinča", and "less touched by southeastern influences" (2:39). In "Aradac" he saw an indication of a very ancient time relationship between "banded and canalated wares", and dated the site at least as old, if not older than "Butmir" (*op. cit.*, p. 40). While it must be admitted that the "seemingly archaic forms" in the incised ware of Bohemia (*ibid.*, p. 39) are not known in the Balkans, it is equally true that these are similarly absent in the Hungarian Plains (cf. Tompa, *l. c.*, p. 61, especially note 1). It is possible, of course, that the "Urformen" were soon outlived in the "southeast" under the pressure of additional influxes which followed in the wake of the primary diffusion (cf. Stocký, *ibid.*, p. 39). However that may be, we cannot agree that either "Karaš" or "Aradac" antedate "Vinča".—For Moravian (and Bohemian) material relevant to the point under discussion cf. Schránil, pp. 39-45, and Pls. I, II.—For Slovakia cf. Eisner, pp. 14-17, and Pls. III-VI.—For Hungary cf. Tompa, *l. c.*, pp. 25-27, Fig. 7 top row, and Pls. I, II:1-3, and XXXII:26. This author reverses the direction of the primary diffusion (*l. c.*, pp. 61 ff.), which deduction reflects the untenable theory of an autochthonous Neolithic development in the Sudeten Lands.

[497] Kandyba, pp. 214-215.

The distribution of Neolithic sites throughout the Danubian area certainly does not favor the recognition of any "routes" of diffusion. A network of "contacts", as it were, is quite apparent, but how far back this impression may be projected remains wholly conjectural. Cross-links, reflexes, stagnations, as well as widely separated recurrences, are supported by various signs. With the original center of derivation still totally unknown it is extremely difficult to visualize movements. The various attempts thus far made are wholly theoretical and entertain personal opinions without a factual foundation. Certainly, there is no uniformity of agreement among them—nor can this be very well expected in view of the hypothetical element involved. It would be much more in point to devote certain attention to such possibilities as secondary centers and sub-centers, local diversities affecting the process of acculturation, divergent and convergent factors, parallelism, independent invention, natural surroundings and limitations, and the like.

The total evidence thus far procured shows conclusively that the initial stage of Neolithic culture in the Moravo-Danubian area cannot be proved an autochthonous, local product. As Childe points out "it would be vain to seek to localize the original starting point of the first colonists.[498] Certain it is that our area is an integral part of the Danubian Neolithic complex. The parental stock is yet to be singled out, and it matters little where one may be inclined to seek it—there are, thus far at any rate, no dependable clues to follow.

7) Insofar as dating is concerned, approximately the same situation obtains in the Moravo-Danubian area as practically everywhere else on the continent. Dead reckoning is entirely out of the realm of feasibility. Only a necessarily inadequate, broadly applied, relative chronological placement can be mustered. And it must be stressed that no two authorities agree, that truly dependable means are not at hand, and that no direct contacts with areas in which, presumably, authenticated dates are commonplace, exist. It is only natural to look to the key site for determinants of a dating scheme. A system, at this time, is entirely out of the question. With respect to "Vinča", as is well known, the matter of chronological placements has been subjected to a most bizarre treatment on the part of the excavator. It may safely be said that Vasić's recent supposition that "Vinča" was founded as an Ionian colony around 600 B. C. finds no endorsement whatsoever. On the other hand, from the attempts of others only a rough compromise seems to merit consideration. Accordingly, the so-called "Vinča I" is to be synchronized with Thesallian I, Early Cycladic, Early Troy, Early Crete, and pre-dynastic Egypt. This is rather a wide range to choose from, and when it is considered how uncer-

[498] 4:34. (As has been pointed out, a "traffic up the Danube" does not find any supporting evidence whatsoever within the stretch of the Iron Gate.)

tain any Egyptian dates prior to the eighteenth dynasty are, the Danube seems quite a hopeless enigma—for its geographic position is decidedly peripheral. Since no agreement exists among the several datings and chronologies advanced for the developments just named, it is well-nigh impossible to arrive at a reconciliation with which to approach the Danubian phenomena. Perhaps a lower limit of the cultural stages which they individually reflect is to be placed around 3000-2800? If one were to correlate certain "early" Danubian material with its seeming analogies in the Aegean area, the beginning of the third millenium would certainly claim recognition. However, inasmuch as Greece on the one hand and the Danube valley on the other appear to have derived their impulses from common initial Neolithic sources, it certainly does not necessarily follow that the resulting ultimate manifestations must be put on the same time basis. I fail to understand Frankfort's view that Cucuteni should be placed within the fourth millenium.[499] Both "Vinča" and "Starčevo" certainly antedate the Moldavian site—yet there is no reason not to retain both within the third millenium limit. On the contrary, the general weight of culture historical events decidedly compels a restraint in this regard. The first quarter of the third millenium, conservatively, and purely tentatively speaking, seems to be the upper limit susceptible to a reasonable consideration of "early" Neolithic dating anywhere on the Danube. In other words, the so-called "Vinča I" is probably to be placed somewhere within the limits of approximately upward of 2500 and under 3000 B. C. Again, it must be reiterated that worthwhile proof is distinctly lacking. The so-called "Vinča II" is usually equated with Early Minoan III (about 2400-1800).[500] It would be most futile to attempt a determination of the *ante quem* and *post quem* termini. Insofar as the peripheries are concerned, any correlation and synchronism must take into cognizance an allowance for marginal differences in spatial and temporal factors.[501]

8) At the present time there is no published data on the nature of Neolithic racial type existing in the Moravo-Danubian area. The only skeletal remains from the entire region are those from "Vinča", and they have not received attention of a specialist. Amid the dozen skulls a considerable variance is discernible, and a similar observation obtains in the Banat (*e. g.* at "Grad", Starčevo—likewise without adequate elaboration). Insofar as I am aware skeletal remains of Neolithic man have not been found in Moravo-Danubian sites other than "Vinča". There are no indications whatsoever

[499] 2:169.
[500] Childe, 3:52; cf. also his 4:92, where Danubian II is equated with E. M. III at 2500—or even earlier—to 2100.
[501] Furthermore, the question of directly transmitted versus secondarily derived elements is especially important in the peripheries insofar as dating is concerned, for delays might conceivably be occasioned in the latter case. It is well to recall in this connection that in Central Europe the earliest possible date reasonably calculable is the eighteenth century, *i. e.* the beginning of the Únětice development of the Bronze Age.

with respect to linguistic or ethnic affiliations throughout the Moravo-Danubian area—nor, for that matter, elsewhere on the Danube. The sundry discourses devoted to speculations in these matters certainly cannot be given serious credence.

To sum up: The Moravo-Danubian area, a component part of the large Danubian culture area, presents a fairly compact unit for the study of Neolithic development. The region is rich in sites, the deposits are rather well preserved, and explorations can be carried on with a nominal effort. It may well be expected that the current archaeological researches in Yugloslavia and in the adjacent countries will soon bring forth additional light on many of the existing deficiencies. It is to be hoped that the pertinent needs of an accurate and dependable dating, as well as of general correlations, may be benefited thereby. Despite its physiographical unity the Moravo-Danubian area must not be isolated from contiguous territories such as the Banat, the lower Danube, etc. Above all, I think, one should look to "Vinča" as one of the most potential sources for additional data on some of the outstanding queries which confront the student of Danubian archaeology. The Danubian culture area does not stop with the Iron Gate, although this barrier, at the present time at any rate, reveals itself as a decided lacuna insofar as Neolithic remains are concerned. Not only is the incised Danubian ware quite prominently distributed far down the lower course of the river, but the barbotine class of pottery, so characteristic of many of the sites here dealt with, has even a greater eastward expansion. However, the time is not yet ripe to declare this ware the oldest within the area of its appearance at large. That it belongs to the earliest niveau at "Vinča" seems well established; that it is the oldest ceramical manifestation at "Grad", Starčvo, is fully proved. In this, perhaps, we may see a worth while starting point towards further endeavors.

SELECTED BIBLIOGRAPHY

Banner, J., "Die neolithische Ansiedlungen von Hódmezövásárhely-Kopáncs und Kotacpart und die III. Periode der Theiss-Kultur", *Dolgozatok-Arbeiten*, VIII (1932), pp. 32 ff. (Reprint.)

2: "Ausgrabungen zu Kotacpart bei Hódmezövásárhely", *Dolgozatok-Arbeiten*, XI: 1-2 (1935), pp. 121 ff. (Reprint.)

Bărcăcilă, A., "Antiquités pré- et proto-historiques des environs de Turnu-Severin", *Dacia*, I (1924), pp. 280 ff.

Barth, H., *Reise durch das Innere der Europäischen Türkei*, etc. (Berlin, 1864).

Bella, L., "Aldunai leletek", *Archaeologiai Ertesitō*, XVIII (1898), pp. 103 ff.

Bittel, K., "Prehistorische Forschung in Kleinasien", *Istanbuler Forschungen, D. A. I.*, VI (1934.)

Blegen, C., "Excavations at Troy, 1934", *Archäologischer Anzeiger*, 50 (1935), cols. 300 ff.

Bogdanović, A., Milenović, B., "Neolitsko naselje u opštini Klenovac", *Moravski Arheološki Glasnik*, No. 1 (January, 1936), pp. 13-14.

Breuil, H., "Notes de voyage paléolithique en Europe centrale", *L'Anthropologie*, XXXIII (1923), pp. 323 ff.

Brown, E., *A Brief Account of Some Travels*, etc. (London, 1673).

Carry, M. and Warmington, E. H., *Ancient Explorers* (London, 1929).

Casson, S., "Mycenaean Elements in the North Aegean", *Man*, XXIII (1923). pp. 170 ff.

2: "The Bronze Age in Macedonia", *Archaeologia*, LXXIV (1925), pp. 73 ff.

3: *Macedonia, Thrace and Illyria* (London, 1926).

Childe, V. G., "The East European Relations of the Dimini Culture", *Journal of Hellenic Studies*, XLII-XLIII (1922-1923), pp. 254 ff.

2: "The Danube Thoroughfare and the Beginnings of Civilization in Europe", *Antiquity*, I (1927), pp. 79 ff.

3: "O značaju Srbije za preistoriju Evrope", *Starinar*, 3rd ser., IV, for 1926 and 1927 (1928), pp. 44 ff.

4: *The Danube in Prehistory* (Oxford, 1929).

5: "New Views on the Relations of the Aegean and the North Balkans", *Jour. Hellenic Studies*, L (1930), pp. 256 ff.

6: *New Light on the Most Ancient East* (London, 1934).

7: "Changing Methods and Aims in Prehistory"—Presidential Address—*Proceedings of the Prehistoric Society* (for 1935), pp. 1 ff.

Čilingirov, A. D., "Predistorični nahodiša kraj Dunava od Timok do Vit", *Izvjestija na Blgarskoto Arheologičesko Družestvo*, II (1911), pp. 147 ff.

Cvijić, J., "Osnove za geografiju i geologiju Makedonije i Stare Srbije", *Srpska Kraljevska Akademia*, posebna izdanja knjiga 17 (1906).

2: *Balkansko poluostrvo i južnoslovenske zemlje* (Beograd, 1922).

Dimitrijević, M., "Hisar kod Leskovca", *Starinar*, 3rd ser., VIII-IX (1933-1934), pp. 311 ff.

Dragičević, T., "Neolithische Fundstätte auf den 'Kraljevine' bei Novi Seher", *Wissenschaftliche Mittheilungen aus Bosnien und der Herzegovina*, VI (1899), pp. 3 ff.

Eisner, J., *Slovensko v pravěku* (Bratislava, 1933).

Fewkes, V. J., "Report on the 1933 Summer Course of the American School of Prehistoric Research", *Bulletin American School of Prehistoric Research*, 10 (1934), pp. 21 ff.

2: "Archaeological Reconnaissance in Yugoslavia. American Expedition, Season 1933", *Bulletin A. S. P. R.*, 10 (1934), pp. 29 ff.

3: "Explorations in Yugoslavia and Czechoslovakia. A Report on the 1934 Summer Course of the American School of Prehistoric Research", *Bulletin A. S. P. R.*, 11 (1935), pp. 7 ff.

4: "On the Interpretation and Dating of the Site of 'Belo Brdo' at Vinča, Yugoslavia", *Proceedings of the American Philosophical Society*, LXXV, No. 7, pp. 651, ff.
Fewkes, V. J., Goldman, H., and Ehrich, R. W., "Preliminary Report on an Archaeological Reconnaissance in Yugoslavia, American Expedition, Season 1932", *Bulletin A. S. P. R.*, 9 (1933), pp. 17 ff.
2: "Excavations at Starčevo, Yugoslavia, Seasons 1931 and 1932. A Preliminary Report", *Bulletin A. S. P. R.*, 9 (1933), pp. 33 ff.
Fiala, F., "Die prähistorische Ausgrabungen auf dem Debelo brdo bei Sarajevo", *Wiss. Mitth. Bos. Herz.*, IV (1896), pp. 32 ff.
2: "Bericht über die Ausgrabungen am Debelo brdo bei Sarajevo im Jahre 1894", *Wiss. Mitth. Bos. Herz.*, V (1897), pp. 124 ff.
3: "Bericht über die Ausgrabungen am Debelo brdo bei Sarajevo im Jahre 1895", *Wiss. Mitth. Bos. Herz.*, VI (1899), pp. 129 ff.
4: *Die Neolithische Station von Butmir bei Sarajevo in Bosnien*, II (Wien, 1898). With foreword by Hoernes, M.
Frankfort, H., "Studies in Early Pottery of the Near East. II. Asia, Europe and the Aegean, and their Earliest Interrelations", *Royal Anthropological Institute of Great Britain and Ireland*, occasional papers, No. 8 (1927).
2: "Iranian and Anatolian strains in Pre-Sargonic Mesopotamia", *Proceedings First International Congress of Prehistoric and Protohistoric Sciences, London, 1932* (1934), pp. 167 ff.
Gilsdorf, H., *Die Beseitigung der Schiffahrtshindernisse in der Kataraktenstrecke der unteren Donau (Eisernes Tor), ihre Schwierigkeiten und ihre wirtschaftliche Bedeutung* (Ulm, 1928).
Goldman, H., *Excavations at Eutresis in Beœtia* (Cambridge, Mass., 1931).
Grbić, M., *Pločnik. Eine prähistorische Ansiedlung aus der Kupferzeit* (Beograd, 1929).
2: "Historičko-Umetnički Muzej u 1929 god.", *Godišnjak Srpske Kraljevske Akademije*, XXXIX (1930). pp. 194 ff. (Reprint.)
Heurtley, W. A., "Report on an Excavation at the Toumba of Vardino, Macedonia", *University of Liverpool, Annals of Archaeology and Anthropology*, XII (1925), pp. 15 ff.
2: "Report on an Excavation at the Toumba and Tables at Vardaroftsa, Macedonia, 1925, 1926. Part I. The Toumba", *Annual of the British School at Athens*, XXVII (1925-1926), pp. 1 ff.
3: "Report on Excavations at the Toumba and Tables of Vardaroftsa, Macedonia", *B. S. A.*, XXVIII (1926-1927), pp. 195 ff.
4: "Prehistoric Macedonia", *Antiquity*, III (1929), pp. 318 ff.
5: "Excavations at Sérvia in Western Macedonia", *Antiquaries Journal*, XII (1932), pp. 227 ff.
6: "Prehistoric Macedonia", *Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences; London, 1932* (1934), pp. 186 ff.
Hoernes, M., *Urgeschichte der bildenden Kunst in Europa*, 3. Auflage, durchgesehen und ergänzt von Meghin, O. (Wien, 1925).
Hofmann, R., "Prähistorische Funde aus dem Quecksilbergergen 'Avala' in Serbien", *Mittheilungen der Anthropologischen Gesellschaft in Wien*, XVI (1886), pp. [39] ff.
Jovanović, Dj. P., "Prilozi za paleoantropologiju srpskih zemalja", *Starinar*, IX:1 (1892), pp. 24 ff.
2: "Petnićka pećina i preistorisko selište", *Starinar* IX:2 (1892), pp. 41 ff.
3: "Kamena orudja iz preistoriskog doba u okolini Niša, Valjeva, i Požarevca", *Starinar*, IX:3 (1892), pp. 81 ff.
Kandyba, O., "The Dniestro-Danubian Neolithic Region", *Proc. First Int. Cong. Preh. and Protohist. Sciences; London, 1932* (1934), pp. 214 ff. (Reprint.)
Karapandžić, D. Dj., "Aradac. Jedan prilog preistoriji Vojvodine", *Starinar*, 3rd ser., I, for 1922 (1923), pp. 151 ff.
2: "Var-Hedj. Dva podatka za preistoriju Baranje", *Starinar*, 3rd ser., II, for 1923 (1925), pp. 157 ff.
Krasovski, A., "Starine leskovačke okoline", *Starinar*, 3rd ser., V (1930), pp. 202 ff.
Mahr, A., "Introduction", *Treasures of Carniola* (New York, 1934), pp. 1 ff.

Mandić, M., "Preistorijski nalazi", etc., *Glasnik Zemaljskoga Muzeja u Bosni i Hercegovini*, XLV, 2 (1933), pp. 1 ff. (Reprint.)
Menghin, O., "Review of Vasić, M. M., 'Gradac', etc., *Glas S. K. A.*, LXX", *Mitt. Anthr. Ges. Wien*, XLIII (1913), pp. 240 ff.
2: "Ka preistoriji vršačke oblasti", *Starinar*, 3rd ser., IV, for 1926 and 1927 (1928), pp. 15 ff.
3: *Weltgeschichte der Steinzeit* (Wien, 1931).
Mikov, V., "Materijali ot predistoričeskata epoha v Blgarija", *Izvestija Blg. Arh. Inst.*, VII (1932-1933), pp. 358 ff.
2: "Predistoričeski selišta i nahodiša na Blgarija", *Izdanja na Narodnija Arheologičeski Muzej*, No. 30, *Materiali za arheologičeska karta na Blgarija*, Knjiga VII (Sofija, 1933).
Milleker, B., *Délmagyarország foglalás ellöti időköböl*, I (Temesvar, 1897).
Mitić, M., "Askosi iz Vinče", *Starinar*, n. r. g. II (1908), pp. 185 ff.
Mylonas, G. E., *Excavations at Olynthus. Part I. The Neolithic Settlement* (Baltimore, 1929).
Myres, J. L., *Who Were the Greeks* (Berkeley, 1930).
Nestor, J., "Der Stand der Vorgeschichtsforschung in Rumänien", *22. Bericht, Römisch-Germanische Kommission, D. A. I.* (1932), pp. 11 ff.
Oršić Slavetić, A., "Preistorijska nalazišta u okolini Niša", *Starinar* (1935/26), pp. 174 ff. (Reprint.)
Petković, V. R., "Narodni Muzej u 1914., 1915., 1916., 1917., 1918. i 1919. god.", *Godišnjak S. K. A.*, XXVIII (1921), pp. 205 ff.
Petrović, J., "Najstariji spomenici o arheologiji Balkana u opće, a poimence u Srbiji", *Starinar*, 3rd ser., I, for 1922 (1923), pp. 185 ff.
2: "Izveštaj o neolitskom naselju u Donjoj Mahali kod Orašja na Savi", *Glasnik Zemaljskog Muzeja u Bosni i Hercegovini*, XXXVII (1925), pp. 137 ff. (Reprint.)
Popov, R., "Prjedistoričeskata Deneva mogila pri selo Salmanovo", *Izvestija Blg. Arh. Inst.*, IV (1914), pp. 148 ff.
2: "Kodža-Dermenskata mogila pri gr. Šumen", *Izvestija Blg. Arh. Inst.*, VI (1916-1918), pp. 71 ff.
Przeworski, S., review of "Bittel, K., Prehistorische Forschung in Kleinasien", *Orientalische Literaturzeitung*, 38:11 (1935), cols. 667 ff.
Radimský, W., *Die Neolithische Station von Butmir bei Sarajevo in Bosnien*, I (Wien, 1895). With foreword by Hoernes, M.
Radovanović, V. S., "Moravsko-Vardarski put", *Narodna Enciklopedija Srpsko-Hrvatsko-Slovenačka*, ed. St. Stanojević, II (Zagreb, 1929), pp. 1041 ff.
Saria, B., "Izveštaj", etc., *Godišnjak S. K. A.*, XXXII (1923), pp. 300 ff. (Reprint.)
2: "Arheološke beleške", *Starinar*, 3rd ser., III, for 1924-1925 (1925), pp. 159 ff. (Reprint.)
3: "Vor- und frühgeschichtliche Forschungen in Südserbien", 16. *Bericht, Röm.-Germ. Komm., D. A. I.* (1925/1926), pp. 86 ff. (Reprint.)
Seure, G.-Degrand, A., "Explorations de quelques tells de la Thrace", *Bulletin de Correspondence Hellénique*, XXX (1906), pp. 359 ff.
Schránil, J., *Vorgeschichte Böhmens und Mährens* (Berlin and Leipzig, 1927-1929).
Schroller, H., "Die Stein- und Kupferzeit Siebenbürgens", *Vorgeschichtliche Forschungen*, Heft 8 (1933).
Schuchhardt, C., "Neolithikum", *Reallexikon der Vorgeschichte*, VIII (1928), pp. 462 ff.
Stanojević, A., "Preistorijski i arheološki ostaci na srednjem Vardaru", *Starinar*, 3rd ser., I, for 1922 (1923), pp. 293 ff.
Stanojević, Al., "Bat iz Markovice", *Starinar*, VIII:4 (1890), pp. 107 ff.
Stocký, A., "Neolitická plastika v Čechách", *Strena Buliciana* (Zagreb, 1924), pp. 716 ff.
2: *Pravěk země české*, I (Praha, 1926).
3: "Styky Čech s jihovýchodem v pravěku", *Sborník věnovaný J. Bidlovi* (Praha, 1929), pp. 10 ff.
Thallon, I., "Some Balkan and Danubian Connexions of Troy", *Jour. Hellenic Studies*, XXXIX (1919), pp. 185 ff.
Tompa, F., "Die Bandkeramik in Ungarn", *Archaeologia Hungarica*, V-VI (1929).

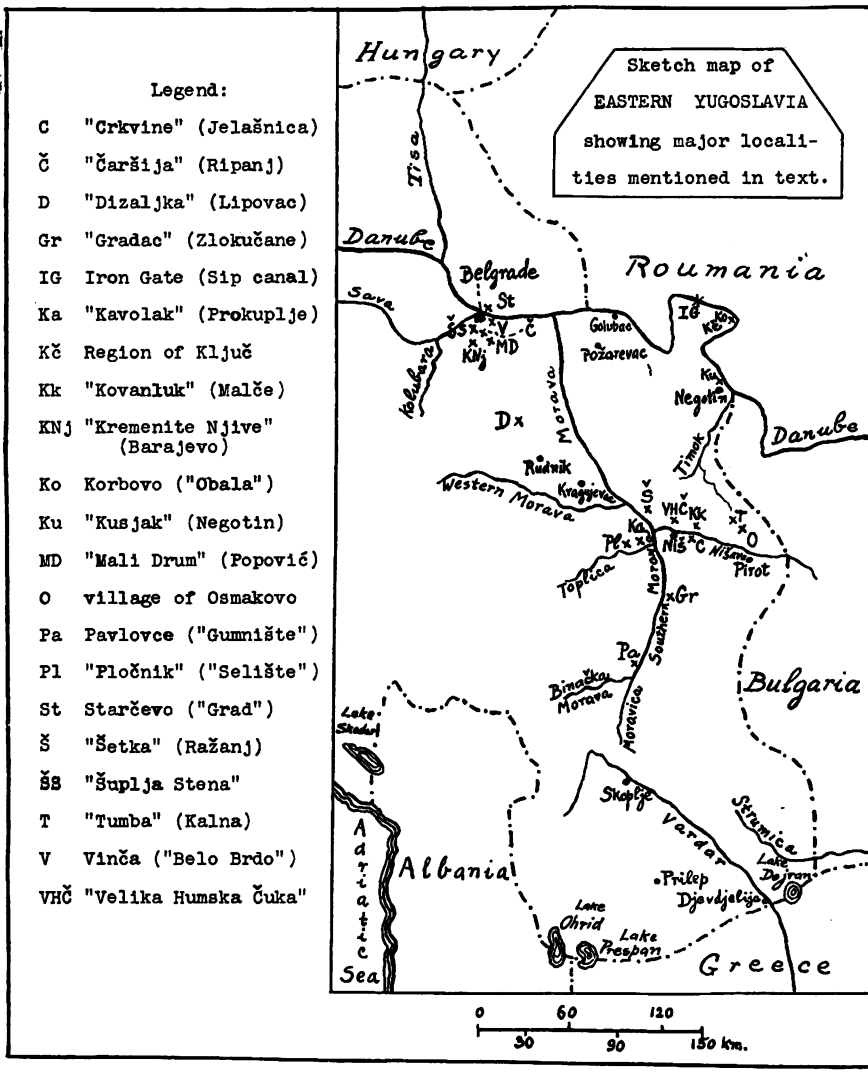


PLATE I.

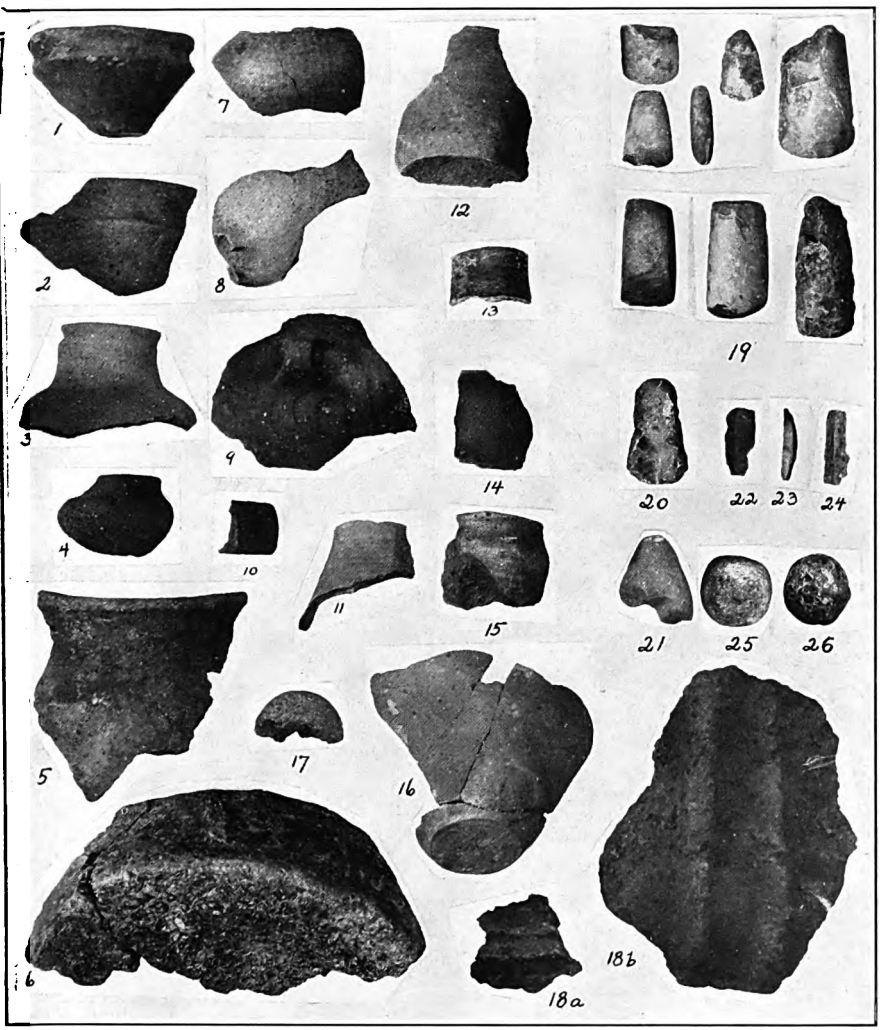


PLATE III. Material from "Dizaljka", Lipovac.

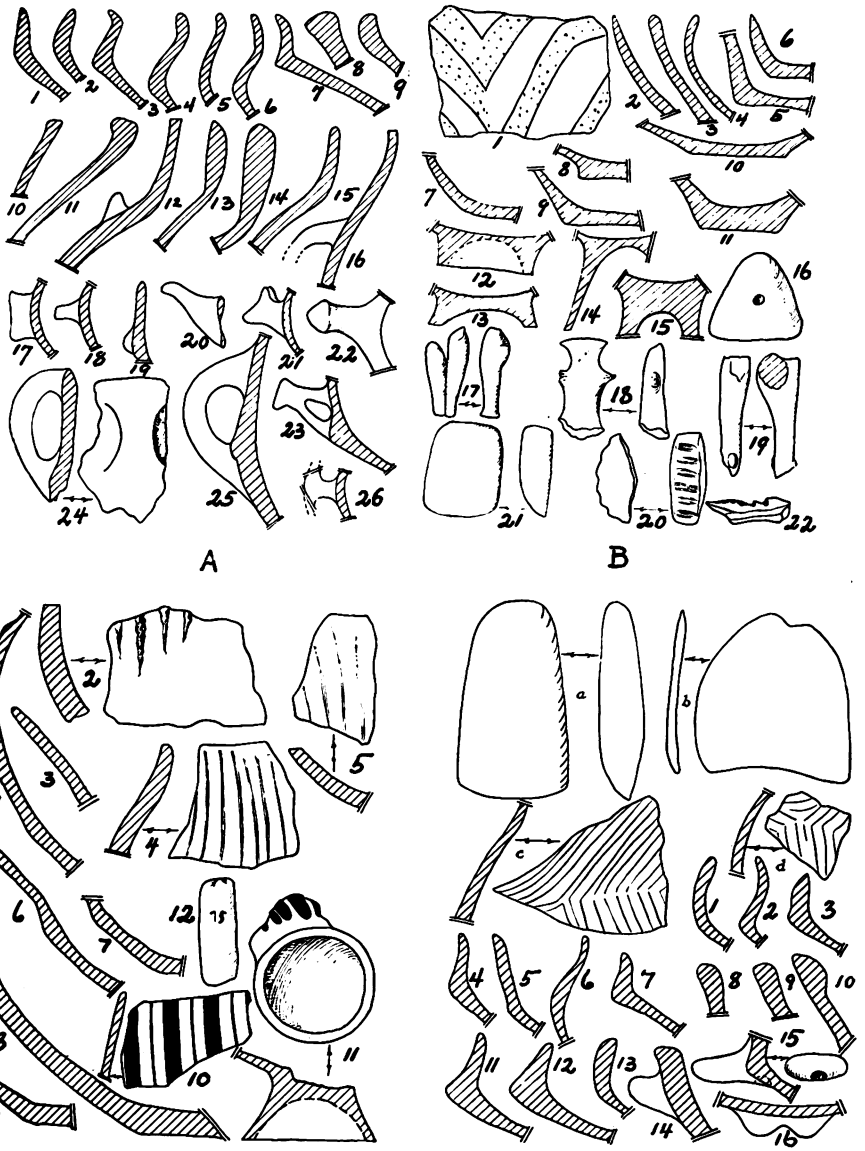
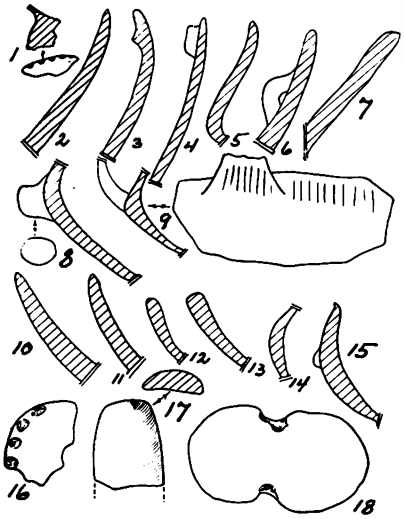


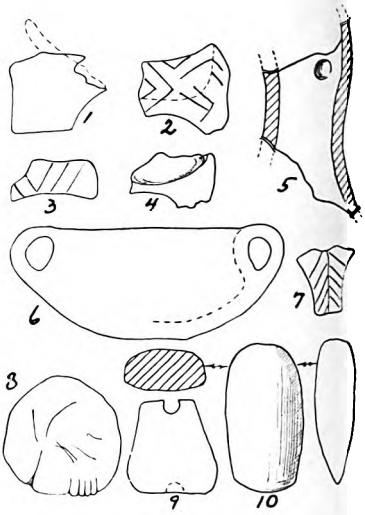
PLATE V. Material from "Gumnište" ("Barak")-"Čukar", Pavlovce (A and B); "Kavolak", Prokuplje (C and D:a, b); "Crkvine", Jelašnica (D:c, d); and "Šetka", Ražanj (D:1-16).



A

B

C



D

PLATE VI. Material from "Kovanluk", Malče (A), and "Strnjane", Osmakovo (B, C and D).

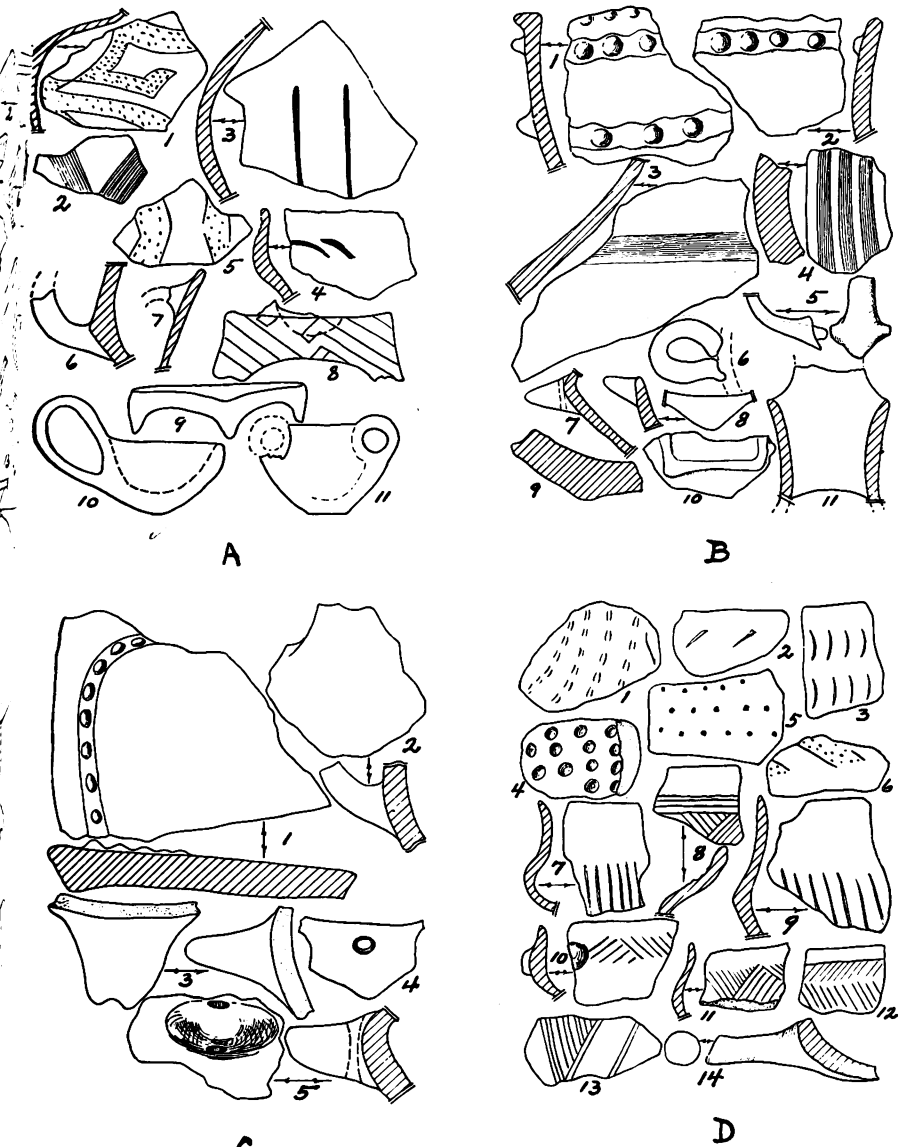


PLATE VII. Material from "Šetka", Ražanj (A); "Tumba", Kalna (B and C); and "Kovanluk", Malče (D).

Trojanović, S., "Preistorijske starine iz rudničkog okruga", *Starinar*, VII, 4 (1890), pp. 101 ff.
Truhelka, C., "Prähistorische Funde aus Bosnien", *Wiss. Mitth. Bos. Herz.*, VI (1889), pp. 28 ff.
Valtrović, M., "Ostaci preistorijske naseobine u Barajevu", *Starinar*, VI: 3 (1889), p. 96.
Vasić (sometimes Vassits), M. M., "Die neolithische Station Jablanica bei Medjulužje in Serbien", *Archiv für Anthropologie*, XXVII, 4 (1902), pp. 517 ff.
2: "La nécropole de Kličevac (Serbie)", *Revue Archéologique*, 3rd ser., XL (1902), pp. 172 ff.
3: "Izveštaj o iskopavanjima", etc., *Godišnjak S. K. A.*, XVIII (1904), pp. 236 ff.
4: "Izveštaj o radu", etc., *Godišnjak S. K. A.*, XIX (1905), pp. 241 ff.
5: "Narodni Muzej", etc., *Godišnjak S. K. A.*, XX (1906), pp. 201 ff.
6: "Preistorijska votivna grivna i uticaji mikenske kulture u Srbiji", *starinar*, novog reda godina I, 1 (1906), pp. 1 ff.
7: "Nekoliki preistorijski nalasci iz Vinče", *Starinar*, n. r. g. I, 2 (1906), pp. 89 ff.
8: "Prilozi ka reševanju trojanskih problema", *Glas Srpske Kraljevske Akademije*, LXX (1906), pp. 163 ff.
9: "Izveštaj o stanju i radu", etc., *Godišnjak S. K. A.*, XXI (1907), pp. 250 ff.
10: "Das prähistorische Fundort Vinča in Serbien", *Memnon*, I, 2 (1907), pp. 177 ff.
11: "Žuto Brdo. Prilozi za poznavanje gvozdenoga doba u dunavskoj dolini", *Starinar*, n. r. g. II, 1 (1907), pp. 1 ff.
12: "Southeastern Elements in the Prehistoric Civilization of Servia", *Annual of the British School at Athens*, XIV (1907-1908), pp. 318 ff.
13: "Narodni Muzej u 1908. god.", *Godišnjak S. K. A.*, XXII (1908), pp. 147 ff.
14: "Preistorijski obredni predmeti", etc., *Starinar*, III (1908), pp. 71 ff.
15: "Narodni Muzej u 1909. god.", *Godišnjak S. K. A.*, XIII (1909), pp. 160 ff.
16: "Žuto Brdo. Prilozi", etc., *Starinar*, n. r. g. V (1910), pp. 1 ff.
17: "Die Hauptergebnisse der Prähistorischen Ausgrabung in Vinča im Jahre 1908", *Prähistorische Zeitschrift*, II, 1 (1910), pp. 23 ff.
18: "Narodni Muzej u 1910. god.", *Godišnjak S. K. A.*, XIV (1910), pp. 258 ff.
19: "Gradac. Preistorijsko nalazište latenskoga doba", *Glas S. K. A.*, LXXXVI (1911), pp. 97 ff.
20: "Narodni Muzej u 1911. god.", *Godišnjak S. K. A.*, XXV (1911), pp. 246 ff.
21: "Die Datierung der Vinčaschicht", *Prähistorische Zeitschrift*, III, 1-2 (1911), pp. 126 ff.
22: "Žuto Brdo", *Starinar*, n. r. g. VI (1911), pp. 1 ff.
23: "Narodni Muzej u 1912. god.", *Godišnjak S. K. A.*, XXVI (1912), pp. 180 ff.
24: "Excavations on the Neolithic Site at Vinča, on the Danube, 1930", *Man*, XXX (1930), pp. 197 ff.
25: "A Great Discovery of a Prehistoric Culture", *The Illustrated London News* (October 18, 1930), pp. 664 ff., and (November 1, 1930), pp. 752 ff. (Translated by Wace, A. J. B.)
26: *Preistorijska Vinča I. Industrija cinabarita i kosmetika u Vinči. Uvod za proučavanje Vinče* (Beograd, 1932).
27: "Die Organisation der prähistorischen Forschung im unteren Donautale", *Proc. First Int. Cong. Prehist. and Protohist. Sciences; London 1932* (1934), pp. 206 ff.
28: "Colons grecs à Vinča", *Revue Internationale des Etudes Balkiniques*, I (1934), pp. 65 ff.
Vasić, M. M. and Jovanović, K. J., "Izveštaj s arheološke ekskurzije", etc., *Starinar*, n. r. g. IV (1910), Dodatak, cols. 1 ff.
Wace, A. J. B., "Thessaly and Tripolje", *Eurasia Septentrionalis Antiqua*, IX, Minns volume (1934), pp. 123 ff.
Wace, A. J. B., and Thompson, M. S., *Prehistoric Thessaly* (Cambridge, 1912).
Žujović, J. V. and Valtrović, M., "Staro selište u Barajevu", *Starinar*, VIII, 1-2 (1891), pp. 1 ff.
Županić, N., "Paleolitsko ljudstvo", *Narodna Enciklopedia S.-H.-S.*, III (Zagreb, 1928), pp. 331 ff.

PRE-ÚNĚTICE SKELETAL GRAVES AT "PÍSKOVNA", DOLNÍ POCERNICE

(DISTRICT PRAHA-VENKOV, CZECHOSLOVAKIA)

By Libuše Jansová-Horáková and Vladimir J Fewkes[1]

INTRODUCTION

THE COMMUNITY of Dolní Počernice lies in the urban district of Praha at a distance of 11.5 km. due east of the city. Although located within a territory known to be rich in archaeological remains, actual finds from the land belonging to Dolní Počernice were rarely reported prior to the explorations here described.[2] However, in 1933 an extensive site was revealed in the process of commercial sand exploitation. Accordingly, the name "Pískovna" (sand pit) now identifies it. The site is situated at the northern limits of the community, upon a gentle rise which drops gradually towards the Rokytka brook. (Fig. 1.) The country road from Dolní Počernice to Hostavice parallels the eastern edge of the area now exploited for sand. Cultivated fields spread in all directions from the reserved portion of the ground from which the raw material is obtained, as required, by the city of Praha. This work, employing appropriate machinery, necessitates first of all a removal of the top soil amounting in thickness from 0.5 m. to 0.7 m., whereupon the sand layer, several meters deep, is laid bare (Pl. X, a). The top soil consists partially of recent humus, *i.e.* its upper zone, and a layer of culture debris, ranging in thickness from 0.05 m. to 0.15 m., clearly distinguishable from the humus by its inferior position, darker color, and greater compactness. The upper margin of the sand layer seems to be affected by the superimposed debris and soil, being, as a rule, perceptibly darker in color, and mixed by artificial intrusions. Naturally, any "impurities" in the sand, such as the archaeological deposits here create, are of a distinct disadvantage to the sand exploiters. Instructions prevail, therefore, to remove not only the overlying soil stratum, but also, as much as practicable, the intrusive culture debris. As

[1] This account deals with certain results of one of the several joint explorations undertaken by the State Archaeological Institute of Czechoslovakia and the American School of Prehistoric Research. (Cf. *Bulletin A. S. P. R.*, No. 10, pp. 25-26, and No. 11, pp. 18 ff., and 31 ff.) Dr. L. Jansová-Horáková and Dr. V. J. Fewkes were either independently or jointly in charge of the field work at Dolní Počernice. The material was brought to the laboratories of the Institute at Praha, where its conservation, studies, etc., were done by the two authors with the aid of the Institute's technical staff.

[2] A bronze bracelet, stylistically of a La Tène type, is mentioned in *Sborník Historického Musea v Plzni*, XI (1927), p. 152, and is said to have been found at Počernice. Inasmuch as there are two villages of this name, *i. e.* Dolní (*Lower*) Počernice and Horní (*Upper*) Počernice, the specimen in question cannot be allocated with precision. Similarly, certain sherds of the Knovíz phase, presumably from a settlement site, noted in the records of the State Archaeological Institute, and as yet unpublished, remain without verification as to their provenience.

a consequence, the dredging machine scrapes the bulk of the humus and the culture level more or less simultaneously, proceeding in regular strips which run the width of the sand pit; and, unless deferred by special request, grave pits, dwelling pits, post molds, etc., are also either badly demolished or totally removed. In this manner, undoubtedly, much archaeological material was destroyed although, occasionally, ceramics and other artifacts found their way into recondite hands. A considerable portion of the site was thus hopelessly lost for exploration before news of the damage reached archaeological circles. In the meantime, as might only be expected, pot-hunting parasites looted the contents of several graves and culture pits.

HISTORY OF THE SITE

The archaeological deposits are readily distinguishable not only in profile, but equally so on a horizontal plane below the level reached in modern ploughing. Rational cultivation during recent years occasioned deep penetration into the humus layer and thus led to certain disturbances of the upper margin of the debris. This affected especially the culture pits which are of a considerably later date than the graves farther below them. Moreover, these pits were more readily within reach of the dredging machine, so that when they were found in an already scraped area, they represented merely remnants. Naturally, the depositional intrusions into the underlying sand were everywhere precisely traceable—that is to say insofar as the dredge happened to spare them. Plough blades seem never to have reached the sand proper.

The State Archaeological Institute of Czechoslovakia learned of the site in the spring of 1933, and Director K. Buchtela detailed Dr. L. Jansová-Horáková to investigate its nature. A brief exploratory operation ensued forthwith, and arrangements were made for further investigations. These were later realized on three additional occasions, and it was during the second exploration that the American School of Prehistoric Research through the kind invitation of the Institute, profited by active participation in this field work.[3] The total ground explored in 1933 falls within two sections, of which each originally embraced two consecutively worked areas (Fig. 2).

The site, as far as ascertained, represents two archaeological phases. The superficial deposition dates back to the so-called Provincial Roman expression, that is to say to the interim posterior to the local La Tène growth and anterior to the Migration Period. It corresponds roughly with the date of the Roman Empire, whereby its misnomer is explained.[4] The other remains,

[3] Cf. Fewkes, *Bulletin American School of Prehistoric Research*, 10 (1934), p. 26.
[4] For a concise description of this phase of Bohemian archaeology and its chronological placement and subdivisions cf. Schránil, J., *Vorgeschichte Böhmens und Mährens* (Berlin und Leipzig, 1928), pp. 249 ff.

exclusively skeletal graves, belong to the so-called Pre-Únětice phase. The connotation implies a bronzeless forerunner of the classical Central European Bronze Age I, designated as Únětice (in German Aunjetitz). The modern school of Czech archaeologists, founded by Buchtela and based upon the system first promulgated by him,[5] interprets the Pre-Únětice manifestations, to quote from Schránil,[6] as follows: "Die Voraunjetitzer Kultur, die die Steinkupferperiode in den böhmischen Landen abschliesst, ist eine Übergangsgebilde im wahren Sinne des Wortes, das eine Brücke zwischen dem Ausklang der sog. Steinkupferzeit und die ältesten Bronzezeit herstellt. Est ist eine Kultur, in der mehrere Grundbestandteile miteinander zu verschmelzen beginnen und die einzelne keramischen Gruppen ihre individuellen Züge verlieren." The individual ceramic groups involved are the so-called "Nordic"[7] or "Danordic"[8] variant, the Corded ware, and the Bell Beaker pottery.[9]

With respect to geographic conditions it may be noted that the site of "Pískovna", Dolní Počernice, is situated in a fertile region which is rich in agricultural soil. Aside from changes in the nature of the top soils, it seems permissible to state that no outstanding geological changes have occurred there within the period posterior to the Pre-Únětice graves. The depositional accumulations occurring during that time do not appear to reflect any readily noticeable climatological mutations. The Provincial Roman settlement was founded upon a thin layer of aboriginal humus overlying the older deposits which, in turn, penetrated a nominal zone of darker sand mixed with small pebbles and gravel. Ample water supply is provided by the stream of the nearby Rokytka which, in recent times at any rate, maintains an adequate volume in all seasons. In relation to its immediate surroundings, the site enjoys a nominal, yet advantageous, elevation. This, together with the underlying sands, and the texture of the top soils, promotes drainage. The locality is at a convenient distance from the Praha basin within the area and surroundings of which not only the Pre-Únětice, but perhaps even more the classical Únětice growth seems to have been particularly concentrated.

FIELD PROCEDURE

The excavations were conducted under favorable weather conditions and it was possible to follow the ground with precision. In all cases the necessary field equipment was provided by the Institute. A preparator was always

[5] "Vorgeschichte Böhmens", *Véstník Slovanských Starožitností*, III (Praha, 1889).
[6] *Op. cit.*, p. 86.
[7] Originally so named by Buchtela.
[8] This term was proposed by Childe, V. G., *The Danube in Prehistory* (Oxford, 1929), p. 116. —Neither of these two names are properly expressive or justified. It remains for future considerations to designate an appropriate substitute. In the meantime, in view of the firmly established Bohemian usage, the appellation "Nordic" furnishes a standard and it seems best to retain it for the present purpose.
[9] Named in the order of their initially chronological appearance.

present, and the student members of the 1933 Summer Course of the School proved a distinctly valuable asset in the work. Both writers employed essentially the same manner of excavational operations. Each feature received individual attention in accordance with its specific needs so that the actual procedure differed from case to case. During his visits to the site Director Buchtela aided the task of the excavators by valuable counsel for which sincere thanks are hereby offered. Certain experimentary steps were indulged in for the benefit of the students who participated in all phases of the exploration. The complexity of the deposits presented splendid opportunities for practical training which were promptly capitalized. Under the sponsorship of the Institute the exploration enjoyed many advantages which greatly facilitated our endeavors. Skeletal identifications, insofar as the remains permitted, were contributed by Mr. Robert W. Ehrich, a fellow of the School, to whom due acknowledgments are hereby offered.

The allocation of all finds has been recorded in relation to two permanently established bench marks identified by points which are embedded, in both instances, in a block of concrete. In the field records these are known respectively as Cardinal Points B (east) and A (west). A line drawn between the two constituted the Main Base Line with which all measurements of location were coordinated. Subsidiaries and auxiliaries were established in accordance with current needs, and although their directions necessarily varied, their individual termini were always determined at right angles to the Main Base Line. To simplify the records, a modification of the polar method has been adopted, whereby the direction of the Main Base Line is arbitrarily called WEST. Accordingly, all points situated northward of this line are designated NORTH, and, conversely, all points to the south of it are here called SOUTH. It thus becomes possible to identify the sundry relevant points of a given subsidiary or auxiliary solely by reference to Cardinal Point B, using merely two measurements for each. The master chart of the total operations, drawn on the scale of 1:100, is not reproduced in the present report. However, the positions of all graves are indicated in the plan showing the location of the two sections thus far explored. Inasmuch as this plan (Fig 2) represents a copy of the parcellation map of Dolní Počernice, its scale is 1:2880, this relation being customary in all older records of field divisions. The position of each grave indicated therein corresponds to a given point of an auxiliary line upon which a detailed plan, prepared for the corresponding grave, is dependent. In certain instances a common auxiliary was used for two or more graves, and additional subsidiaries were laid as well. The aim in the present report is to simplify the unavoidably complicated mass of records of measurements, and to identify individual locations of each grave, or a group of adjacent

graves, in relation to only one auxiliary. Otherwise it would be quite cumbersome to attempt a precise placement in the plan here shown (Fig. 2), especially in view of the odd scale. Under the descriptive data for each grave the location is always specified first. It should be explained at this point that grave 1 is only approximately allocated in view of the accidental circumstances responsible for its destruction.

THE PROVINCIAL ROMAN SETTLEMENT

The present report is concerned primarily with the Pre-Únětice graves, leaving the "Roman" remains to a separate treatment. A brief word, nevertheless, is hereby devoted to the nature of this settlement. In the first place it is to be noted that its deposits were more readily within reach of plough and dredge, and, consequently, suffered a far greater damage than the graves. A large portion of the settlement was totally destroyed in the process of sand exploitation. The explored sections had been scraped of the culture level, and, in several instances, contents of individual pits were considerably reduced by shovelling which followed the removal of the superficial coating. Consequently, only remnants of pits, post molds, etc., were available to exploration which followed the surface stripping.

In certain cases a thin culture level was discernible. While the culture pits and posts were in all instances embedded in the sand layer, the settlement originally rested upon a firm soil foundation the thickness of which, judging by profiles of fresh cuts, may have been as much as 0.3 m. deep. Over this the recent humus zone of 0.2 m. to 0.4 m. was, of course, a completely mixed zone, of which, undoubtedly, a certain portion had originally belonged to the "Roman" settlement. The average thickness of the surface soil coating over that portion of the site which has been explored thus far amounted to 0.5 m. on the western side, and 0.7 m. on the eastern side. This computes to a general mean of 0.6 m., of which, evidently, approximately the lower 0.3 m. antedates the erection of the settlement. How much of an accumulation may have been created during the "Roman" occupation is, insofar as observations warrant, entirely indeterminable.

In relation to the excavated portion of "Pískovna", the distribution of the Late Iron Age occupational remains indicates a concentration falling within a roughly rectangular area, the longer sides of which have a pronounced north to south trend. Approximately in the central portion of the explored area two complexes of pits and post molds were in evidence, but the artificial damage had effaced the margins so that a precise identification of their original extent could not be ascertained. The irregular distribution of post molds suggests that the superstructures were occasionally altered or

perhaps rebuilt. In only two instances definite alignments of posts were clearly visible (a portion of one of these, *i.e.* the more northerly located of the two rows, is to be seen on Pl. X:a). Measured between their respective opposite edges, these post molds were spaced at intervals varying from 0.1 m. to 0.75 m. The northerly located row had 27 post molds, and the southerly correlate but 16. Moreover, each of these series had adjacently located post molds somewhat out of alignment with the main trend. The distance between the two rows averaged 15.5 m. Approximately at the center of each of the two fairly straight lines there was an interruption of 1.14 m. (measured, in both instances, from center to center of the internally marginal post molds). These probably marked two separate, more or less opposite, entrances.

The pits were either remnants of dwelling foundations or refuse repositories. In all cases the pits were of a roughly circular, oval, or rectangular ground plan, with inclined or perpendicular walls, and filled with debris containing ceramic material, animal bones, antler and bone implements, slag, fired wall plaster, etc. Traces of fire hearths were noted within several pits. Owing to sundry recent disturbances the horizontal planes of these pits were nowhere intact, so that the observations made during the explorations represent merely the records of their remaining portions. A total of twenty-two pits and one smelting oven, all incomplete, were charted. The largest of the pits, a rectangular structure with rounded corners, had a maximum length of 3.2 m., and a maximum width of 3.1 m. The smaller pits, usually of a circular upper plane, had an average diameter of 1.5 m. Their depths, in relation to the scraped surface, varied from 0.1 m. to 0.55 m.

The remnant of a smelting oven consisted of a pit having a pyriform plan with a maximum length of 2.8 m., a maximum width of 1.34 m., and an average depth of 0.22 m. The bottom was smeared with well fired, clay-paste plaster coating, heavily crackled, and the depression was filled with charcoal, ashes, and ferric slag. At the southwestern extremity of the pit, that is to say in its neck-like portion, there was a tubular penetration, inclined on an acute angle, reaching a depth of 0.55 m. from its horizontal edge. The entire cavity had an excessively fired, plaster-smeared wall, and terminated in a rounded bottom. It was fairly packed with charcoal and ferric slag. Originally, insofar as the remaining evidence indicated, this cavity may have served either as a flue (?), or its purpose may have been to collect molten iron. No remains of the ore itself were found. There was no opening either on the sides or the bottom of this cavity, and the plaster coating conclusively proved that, as abandoned, the contrivance had no subterranean air passage. This observation diminishes the probability that the original function of the cavity may have been that of a flue unless it be presumable that air was introduced by some kind of tubing. It seems more reasonable to suppose that

within the depression was originally collected the reduced liquid iron, and this probability finds support in the correspondingly inclined bottom of the pit. The chief fire bed, it seems, was located in the northeastern sector of the pit where the greatest concentration of ashes was found.

The individual post molds ranged from 0.2 m. to 0.8 m. in diameter, and their depths below the scraped level reached as much as 0.5 m. The maximum depth of the bottom of the deepest post mold, projecting the plane of the former surface level immediately above it, aggregated, upon an arbitrary computation, approximately 1.5 m. Inasmuch as the settlement appears to have been erected upon a surficial soil coat about 0.3 m. thick, it would follow that at least some of the posts had originally been embedded as much as 0.8 m. (plus or minus) below the surface level existing before the settlement was established.

In view of the deplorable state in which the vestiges of the settlement were found it is not possible to venture on any definite interpretations. Perhaps future discoveries will elicit some of the existing needs with which to interpret the site in a conclusive manner. A complete understanding can no longer be expected, for the destroyed portion of the deposits is wholly beyond apprehension. For these reasons it seems best to defer an exhaustive account of the finds thus far recorded. This is done in a firm belief that additional exploration will be forthcoming. In the meantime we may conclude our concern with the "Provincial Roman" deposits of "Pískovna", Dolní Počernice, by recording here an important find which, although recovered from the sand pit workmen, sheds light on the date of the settlement. This is a silver *denarius* of Vespasian who, as *Titus Flavius Sabinus Vespasianus,* was Roman emperor from 69 to 79 A.D. The coin in itself does not, obviously, establish a dependable *terminus* for the dating of the settlement. However, its innate date has a significant relationship in this regard. In view of the fact that none but Pre-Únětice and Provincial Roman remains—either *in situ* or secondarily placed—were recorded at the site, the *denarius* may, with reasonable certainty, be assigned to the vestiges of the settlement. It could not have been brought to the site before 69-79 A.D.; its local *terminus ante quem* is to be correlated accordingly. During the Provincial Roman phase of Bohemian culture history, contacts with Roman provinces were indirect at best. It should follow that the coin in question represents a secondary derivation. Therefore, its appearance at the site should be placed at an indeterminably later date, perhaps well in the second century. It is the nature of the indigenous ceramics that offers a more dependable aid in this relation, although, admittedly, its chronological placement can be expressed only in relative values. The majority of the pottery is quite homogeneous, and it *differs* from the "Roman" repertory of other Bohemian

sites, datable as of the 1st century, in the following significant aspect: It completely lacks in meandric decoration which is so constantly characteristic of a series of settlements in Central Bohemia, placeable, through composite evidence, into the first century. On the other hand, our site is equally devoid of any ceramical analogies with the fluted or positive applique types of decoration, both of which are among the leading criteria of the Late Provincial Roman phase in Bohemia, and chronologically within the third and later centuries. Accordingly, an approximate date for the Provincial Roman settlement of "Pískovna", Dolní Počernice, may be correlated with an interim defined, respectively, by the latter half of the second century and the early years of the third century. This calculation, however, is conditional to further finds. Even without the *denarius,* a relative time placement can be deduced from the nature of the pottery, strictly on the basis of typological comparisons. Naturally, the coin offers a distinct aid supporting the estimate so reached, and, indeed, fully corroborates it. Until other finds disprove the contention here reasoned out, the tentative date of the settlement, that is to say roughly the second century A.D., merits acceptance.

THE PRE-ÚNĚTICE GRAVES

Eight graves were systematically excavated and one vessel was salvaged from an additional burial, here designated as number one. Grave two was excavated by the Institute, grave three by the Institute and the School, and graves four to nine by the School alone. There can be no doubt that yet other archaeological deposits are present in the unexposed section of the land condemned for sand exploitation. Superficial signs are noticeable in the cultivated portion of the ground either by discoloration of the soil, or by differences in the vegetation growth in those spots which benefit by the fertilizing qualities of certain culture debris. Further direct proof of additional graves exists in the fact that several of these were revealed shortly after the last excavations as a new section of the sand pit was prepared for exploitation. Before competent action could be taken to excavate them, these burials attracted certain unscrupulous pot-hunters, and were deplorably vandalized forthwith. From descriptions obtained from reliable sources it seems certain that the graves in question were of a similar nature to those found during the excavations.

A) Descriptive Data

Grave 1

Location:

There is no auxiliary line for grave 1, for the position of which only one point (G/1/a) has been ascertained at W-80.2 m., S-15.6 m. Its equivalent is marked in the plan showing the explored sections of the site (Fig. 2).

Interment and furniture:

The entire grave collapsed with the undermining of a section of sand deposits, so that no details are available as to the nature of the funerary arrangement. It was possible to procure only one vessel from its original contents. This is a conoid jar with two lug-handles which are attached at diametrically opposed places at a distance of approximately 0.014 m. from the plane of the rim. Measurements: height 0.066 m., rim diameter 0.06 m., bottom diameter 0.045 m. (Pl. IX:2.) The color ranges from gray to brown;[10] the texture is of a medium fine quality; and the aplastic inclusions consist of fine particles of sand grit. (The specimen has been partially restored.)

Grave 2

Location:

Auxiliary line G/2/*a-b*, length 2.65 m. Point *a*:W-67.2 m., S-11.6 m.; point *b*:W-67.2 m., S-14.25. The location of point *a* is identified in the plan showing the positions of the excavated areas. (Fig. 2.)

Nature of pit:

The grave pit, because of recent disturbances occasioned in part probably by ploughing, and more so by the dredge, was distinguishable with precision only in the lower margin. There it was well defined by a roughly rectangular depression with fairly straight sides and rounded corners. The maximum length was 1.97 m., and the maximum width 0.71 m.; the depth averaged 0.44 m. The maximum vertical measurement taken from the lowest point of the grave floor to the bottom and to the edge of the intrusive culture pit amounted to 0.94 m., and 1.5 m., respectively. Overall horizontal distances, read over the total area embraced by the position of the five interments, were 2.55 m. (length) and 1.33 m. (width). It would appear then that in the process of digging the grave pit which eventually accommodated the central burial, that is to say the one coinciding with the sharply defined lowest depression, the surface area initially opened covered approximately 3.4 square meters. (Pls. X:b; XI:a, b.) The vertical distance from the overlying modern surface level to the deepest point of the grave aggregated 2.48 m. The fill of the grave pit consisted of well packed dark soil and contained a small amount of sand and gravel admixture. A Provincial Roman culture-pit, in the field designated as No. VII, and two post molds (Nos. 25 and 45), partially intruded into the fill of this grave (Fig. 3). Its contents, however, were not disturbed by this circumstance, because of the depth intervening between the horizontal plane of the grave pit and its lower portion which contained the interments (Fig. 4).

[10] All colors are here given without reference to a standard scale. They reflect means rather than absolute values.

Interments:

There were osteological remains of five individuals, all more or less in a fragmentary state of preservation. Of these, two were in a primary position (Fig. 3:A, B) and three in a secondary placement, disturbed in the process of depositing the latest interment (Fig. 3:A). Around this centrally situated burial, represented by a mildly contracted skeleton, placed on the right side, oriented SSW-NNE, with the arms flexed and hands resting upon the chest, were found three groups of sundry human bones (Fig. 3:C, D, E). These were all secondarily placed in the process of preparing the grave for the latest burial, as clearly evidenced by their disorder and position. The depression marking the lowest portion of the intrusive burial penetrated well below the level of the plane upon which the three disturbed groups were found. This suggests that their primary placement was very likely approximately on the same level as their secondary deposition. In other words, the intrusion probably occasioned their removal sideways, and proceeded to deepen the grave pit by cutting a new depression further down into the sand layer. There is, then, a distinct stratigraphic and chronologic difference between the four burials thus far mentioned. The fifth interment, situated at the northern limit of the grave, is difficult to interpret with respect to chronology and stratigraphy. It was found at a level of 0.2 m. to 0.3 m. above the central burial, clearly detached therefrom, and situated upon a layer of dark soil which originally may have been adjacent to the fill of the primary grave, if, indeed, not a part of that sepulcher itself. It was, therefore, in a stratigraphically higher position than the central burial (A), but its time placement relation therewith could not be determined with precision. The northern side of the depression within which the latest interment was deposited terminated just off the area upon which burial B was found. This circumstance suggests that here too a disturbance is to be considered, although the possibility is not to be excluded that skeletons A and B may represent the remains of approximately contemporary depositions. It is significant to note, however, that while in burial A the skeleton was recorded in a SSW-NNE orientation and with two vessels placed immediately back of the occiput, interment B was found to be oriented W-E, and without any furniture. Moreover, the position of the two skeletons differed considerably, for A was found to rest on its right side, mildly flexed, whereas B, in addition to the transverse situation—as related to A—suggested a collapsed condition. Either its corpse was originally deposited in a seated position and the bones probably collapsed subsequent to the decay of the soft tissues, or a secondary factor entered into play while certain firmness still prevailed. In view of the totality of the circumstances the first named probability—collapsing—seems more in keeping with the observances made during the excavation. The three scattered groups of skeletal remains, how-

ver, unquestionably proved secondary arrangements due solely to artificial intrusions, that is to say to interment of burial A. While the majority of the sundry portions of these three groups were found along the margin of the bottom depression, two skulls, both considerably damaged, and a large portion of a bowl, were found within the depression proper, all situated near the feet of the interment (Fig. 3). Fragments of a third skull, clearly secondarily located, were found below the level of groups D and E. The disturbed osteological remains represented three individuals. Whether they originally belonged to a single sepulcher or not remains unanswered. The disturbance may well have occurred at a time preceding complete decay of all soft tissues, for it was plainly seen that some of the long bones were left in their proper articular relationship. At the same time, however, complete disorder dominated in certain other cases, especially with the small bones. The three disturbed osteological groups represented, respectively, one adult each. Similarly, burials A and B were adults. It was not possible in any of the five instances to establish the sex with precision, or to estimate individual ages beyond the data here given.

Furniture:

Definitely associated with burial A, placed upon the floor of the grave pit, immediately back of the skull, were two vessels (Fig. 3, Pl. X:a, b).

1) A jug with a tall, bi-concave neck which is slightly recessed at the shoulder, with a narrow handle attached respectively about half way down the neck and at the juncture of the neck with the shoulder. Under the somewhat everted rim there are two horizontal, parallel incised lines, both describing a complete circumference, and upon these depends a vertically drawn, similarly incised fringe, composed of four lines, and terminating with the neck-shoulder recess. The lip is thinned and rounded; the basal part is biconical; and the bottom is flat. Originally burnished, but now quite rough, the surfaces are of grayish-brown to grayish-black colors. Measurements: height 0.085 m.; rim diameter 0.06 m.; bottom diameter 0.035 m.; maximum body diameter 0.075 m. (Pl. VIII:1.)

2) A bowl with a severe constriction immediately below the rim. The body is conical in shape, and curves toward the flat bottom through a gentle profilation. The rim is slightly everted, and the lip rounded. There are two handles, each spanning the rim and the shoulder, but these are not located at diametrically opposite places. They rather indicate that the potter may originally have had three handles in mind, for a small wart exists on the rim at a point equidistant from either handle. The vessel is well burnished; the fabric contains mica (probably a constituent of the natural clay utilized in the manufacture of this piece), and the texture is of fine quality; the color

ranges from gray to black, and the outside surface has brownish spots. Measurements: height 0.05 m.; rim diameter 0.125 m.; bottom diameter 0.053 m. (Pl. VIII:2.) The specimen has been mended in the laboratory; no plaster restoration was necessary.

The third vessel, found within the fill of the grave pit but above rather than upon its floor, cannot be assigned to any particular interment. Certain it is that it did not belong to either of the two undisturbed skeletons (A, B), and its secondary placement precludes explanation of its original association. This specimen is a bowl of a roughly bi-convex profile, with a lipless rim, below which are two parallel grooves describing a complete circumference of the body. Originally, the bowl was tetra-footed, but the protrusions were broken off apparently before the specimen found its way into the grave. The surfaces are quite rough; the colors range from orange to brown, and there are several irregularly disturbed spots of darker tones of these two hues. Measurements: height 0.102 m.; rim diameter 0.223 m.; bottom diameter 0.085 m. (Pl. VIII:3.) The specimen has been partially restored with plaster.

Grave 3[11]

Location:

Auxiliary G/3/*a-b*, length 1.60 m. Point *a*:W-78.7 m., N-4.4 m.; point *b*:W-79.9 m., N-3.25 m. The position of point *a* is identified in the plan showing the locations of the excavated areas (Fig. 2).

Nature of pit:

Roughly oval in ground plan (Fig. 5), and with perpendicular walls on all but the northwestern edge, the grave pit had the following dimensions: maximum length 1.6 m.; maximum width 1.06 m.; maximum depth 0.54 m.; minimum depth 0.33 m. The humus coating immediately above it averaged 0.85 m., and the total maximum depth from the modern surface to the lowest point of the grave amounted to 1.39 m. The pit penetrated partially into the sand layer, and its northeastern portion overlay certain displaced parts of older burials, contained, in a wholly secondary arrangement, within a shallow pocket with a maximum depth of 0.2 m., upper horizontal length of 0.6 m., and upper horizontal width of 0.43 m. (Figs. 6, 7). Within this pocket were found haphazardly thrown remnants of two skeletons, consisting of two crushed skulls, three vertebræ, and one femur, all decomposed. In association with these was a collapsed vessel (Pl. IX:1). The total contents of the pocket were originally a part of grave 8, through which grave 3 partially penetrated. The intrusion occasioned their removal and the secondary deposi-

[11] Owing to a misunderstanding in directions, the graves excavated by the School were numbered in the field consecutively as No. 4 to No. 10. To alleviate the error, grave field number ten is now given the number three. Originally located by the School party, this burial was not excavated until several days after the School closed its work at Dolní Počernice, and then by the Institute.

tion. This explains the disturbance so clearly visible in the immediately adjacent grave 8. It was necessary to designate the secondary deposition in grave 3 by a separate number, for its history was conclusively established by ample evidence. The sundry skeletal remains from grave 8, located in the pocket depression of grave 3, represented two adults. Stratigraphically as well as chronologically, therefore, the relationship between the two sepulchers is given by the facts just described. As in the case of grave 2, so again in the present instance there is a typological difference between the jug belonging to grave 3 (Pl. IX:3) and the pouch-shaped pot displaced from grave 8. The latter (Pl. IX:6) definitely belongs to a deposition preceding the preparation of grave 3. That a greater time elapsed between the two events than was the case in the comparable occurrence in grave 2 is suggested by the nature of the bones. In all instances, whether within their original confinement (in grave 8) or in the secondary placement (pocket of grave 3), the individual bones were unquestionably disturbed at a time wholly subsequent to the decay of the soft tissues. It would be idle to speculate on the interim involved. Suffice it to say that the pouch-shaped pot has its handle placed quite high, whereas the jug's handle is attached fully on its neck. In the Únětice period proper, the position of the handle in relation to the rim—indeed, rather to the bottom—affords one of the chief criteria of chronological classification of its pottery.

The pit of grave 3 was situated partially within the disturbed fill of grave 8, and penetrated, elsewhere, into the sand layer. Its floor, insofar as it covered the aforementioned pocket, was strewn with small pebbles which reflected a conscious attempt to even the level of this portion of the grave. The fill consisted of well packed, dark soil, mixed with sand.

Interment:

The grave proper contained a single burial. The skeleton, probably a young female (?), was placed on the right side, oriented SW-NE, facing SE (Fig. 5). The bones were found to be quite fragmentary and in a rather poor state of preservation; yet it was possible to extricate practically all of the remaining pieces. These lend themselves to a fair reconstruction of the skeleton.

Furniture:

Originally there may have been two or three (?) vessels, placed before the face, and resting upon the floor of the grave. Of these only one was found to be intact, one was represented by a group of sherds which do not allow reconstruction, while the third is merely suggested by two atypical sherds. (Fig. 5.)

1) The intact vessel is a jug reminiscent of the pouch-shaped type, with a sharply demarcated break delineating the basal semi-globular part from the

upper portion of the body which curves gradually to form a constricted neck. The rim is mildly everted; the bottom is flat. A ribbon-handle is attached about half-way down the neck. Under the handle is an incised band consisting of two groups of triple lines, interspaced with a triple zigzag motif. The design is well executed, and the ornament is carefully drawn and clearly visible. Originally, the entire surface was burnished, but now certain portions are bruised. The burnished areas are of grayish and blackish colors, whereas the damaged spots are grayish-brown. Measurements: height 0.11 m.; rim diameter 0.088 m.; greatest body diameter 0.15 m.; maximum bottom diameter 0.039 m. (Pl. IX:6).

Sherds:

a) Several small pieces of a burnished vessel, originally either a cup or a pot, the precise shape of which cannot be determined from the remains; their dimensions and wall thickness suggest a small vessel.

b) Two atypical, rather crude pieces, wholly inadequate for an estimate of the original shape of the vessel which they represent. It is entirely conceivable that these two sherds were not strictly a part of the original furniture. However that may be, any speculation in this regard would be quite futile. The two pieces certainly cannot be explained as being due to a secondary intrusion, for they were found *in situ* directly upon the sandy floor of the grave, and fully beneath the fill of the grave pit.

The pouch-shaped pot, a component part of grave 8, is described in its proper relationship. *(Vide infra.)*

Grave 4

Location:

Of the several subsidiaries devised for the purpose of recording graves 4, 5, 6, auxiliary G/6-4-5/*e-f-g*, 1.92 m. in length, was transversely common to the three graves. Point *e*:W-66.85 m., S-4 m.; point *f*:W-65.77 m., S-4.37 m.; point *g*:W-65.13 m., S-4.8 m. Point *f*, marking the center of that portion of the auxiliary which passed through grave 4, is identified in the plan showing the excavated areas (Fig. 2).

Nature of pit:

Owing to the artificially reduced shallowness of the ground accommodating this grave, and the aboriginal disturbances occasioned by the respective depositions of grave 4 and grave 5, the pit of grave 4 could not be followed. In relation to the immediately adjacent, scraped area, this grave was merely 0.15 m. deep, and its maximum length, as far as actual traces were visible, amounted to 1 m., while the maximum width, measured between the edges of grave 4 and grave 5, was restricted to an average of 0.46 m. (Fig. 8.)

Interment:

The grave contained one burial, considerably disturbed by the two aforementioned neighboring graves. The skeleton, male, middle aged, was flexed and placed on the right side, and oriented NE-SW. From this arrangement it should follow that originally the skull probably faced the northwest. However, its secondary position precludes a satisfactory explanation. The skull was found to rest in an upright position and entirely separated from the long bones. Its lower jaw, as well as the left scapula and left femur were recovered in the pit of grave 6. (Fig. 8, Pl. XII :a, b.)

There were no traces of furniture within grave 5, nor was any intrusive pottery recorded either in grave 5 or in grave 6. While it obviously cannot be concluded that grave 4 was, in view of the foregoing, wholly without furniture, it is equally necessary to stress that all search for possible matrix signs met with complete failure. The disturbances, whether assignable to aboriginal times or to recent activities, were indeed too serious to have left much of grave 4 intact.

Grave 5

Location:

Auxiliary G/6-4-5/*e-f-g; vide supra,* grave 4, location. Point *g*, marking the southeastern terminal of this auxiliary (situated at the corresponding edge of the grave), is identified in the plan showing the excavated areas (Fig. 2).

Nature of pit:

The grave pit intruded into the northwestern side of grave 4. Roughly oval in plan, and with fairly perpendicular walls, the pit had a maximum length of 2.29 m., a maximum width of 0.84 m., and its depth extremes averaged 0.24 m. The entire body of the pit penetrated into the sand, and its floor was fairly even. (Fig. 8.) The lower fill consisted of well packed soil, fairly free of sand, while a mixture of soil and sand was especially prominent at the upper horizontal plane of the grave. As the grave was being excavated the compactness of its fill was found to increase. (Pl. XII :a.)

Interment:

The grave contained one burial. The skeleton, a young adult female, was flexed, placed on its right side, and oriented SW-NE, facing SE. The bones, with minor exceptions, were found in a fair state of preservation.

Furniture:

Four vessels comprised the funerary furniture. Two of these (No. 1, incomplete—No. 4, in sherds) were found close to the cranium, and the other two (No. 2, incomplete—No. 3, intact) at the toes. (Fig. 8, Pl. XII :a, b.)

1) A bowl, slightly constricted under the flaring rim, with a rounded lip; the body is conical and the bottom flat. At the lower margin of the constriction there are three wart-like lugs, and certain traces suggest that originally the vessel may have had as many as six such protruberances. The surface is roughly smoothed; the colors range from brown to reddish hues; and the aplastic inclusions consist of sand grit. Measurements: height 0.06 m.; rim diameter 0.2 m.; bottom diameter 0.092 m. (Pl. VIII:5.) The specimen has been restored with plaster.

2) A shallow bowl, roughly ovoid in profile, rather badly damaged, burnished on the inside, exfoliated on the outside; the color ranges from gray to almost black. The texture is quite fine, and there are no aplastic inclusions. Measurements: height 0.053 m.; rim diameter 0.19 m. The bottom is rounded and not demarcated from the body proper. (Pl. VIII:7.) The specimen has been restored with plaster.

3) A pouch-shaped, open pot, with one ribbon handle which is attached well below the rim. Two parallel, more or less horizontal lines, executed by incising, run off the handle and terminate, after describing an almost complete circumference, on the opposite side of the handle. Accordingly, they do not form a completely closed band. The outside surface is well burnished, and its colors range from brown to practically black. The inside is exfoliated in spots, and has unequal shades of brown. The bottom is flat. The texture is fine; aplastic inclusions consist solely of mica (perhaps a constituent element in the clay of the vessel). Measurements: height 0.095 m.; rim diameter 0.142 m.; bottom diameter 0.075 m. (Pl. VIII:6.)

4) A pouch-shaped pot, slightly constricted under the mouth, with a mildly flaring rim, and a rounded lip. A ribbon handle is attached approximately half-way between the rim and the greatest width of the belly. The bottom is flat. The surfaces are burnished, but considerably bruised. The texture is fine, and the paste contains minute particles of mica (probably a constituent of the clay). The colors range from grayish brown to approximately black. Measurements: height 0.105 m.; rim diameter 0.095 m.; bottom diameter 0.06 m. (Pl. VIII:4.) The specimen has been reconstructed.

Grave 6

Location:

Auxiliary G/6-4-5/*e-f-g; vide supra,* grave 4, location. Point *f,* marking the northwestern terminal of this auxiliary (situated at the corresponding edge of the grave pit), is identified in the plan showing the excavated area (Fig. 2).

Nature of pit:

The grave pit intruded into the southeastern side of grave 4. In ground plan, depth, and allocation, the pit was very similar to that of grave 5. The roughly oval depression had a maximum length of 1.72 m., a maximum width of 0.68 m., and its depth below the level of the dredge-scraped ground averaged 0.22 m. (With an arbitrary projection of an estimated thickness of the former humus coating it would seem that the floor of the grave was probably always within a depth of less than 1 m. from the surface. This calculation applies equally well to graves 4 and 5.) The pit was well defined on all sides and had inclined walls. (Fig. 8.) The fill was composed largely of sand in its upper margin, whereas its lower portion was predominantly soil, with certain admixtures of sand. The compactness increased towards the bottom of the grave. The general arrangement of grave 6 closely approximated that of grave 5. The chief difference existed in the length of the pits of the two graves.

Interment:

The grave contained a single burial. The skeleton, a young female, was placed on the right side, and was oriented SW-NE, facing SE. The leg bones were more pronouncedly crouched than was the case with grave 5, and the skeletal remains were in a better state of preservation than those of grave 5.

Furniture:

Three vessels, of which two were found to be intact and one in sherds (yet fully reconstructible), accompanied the burial. Two of these (Nos. 1, 2) were placed near the skull, and the third (No. 3) at the toes. (Fig. 8, Pl. XII:a, b.)

1) A pouch-shaped jug-cup, which has a sharply demarcated break at the greatest expansion of its body, a gently constricted neck, a slightly flaring rim, a rounded lip, and a flat bottom. A ribbon handle is attached approximately half-way between the lip and the angular break. The texture is quite fine, and the fabric contains minute particles of mica (perhaps a natural constituent of the original clay). The surface color range varies from gray to blackish hues. The other surface is burnished and has spots of a lighter discoloration than the basic tones. On the bottom there are faint traces of an incised, rather engraved, cross. Measurements: height 0.067 m.; rim diameter 0.063 m.; diameter at the break of the body 0.09 m.; bottom diameter 0.041 m. (Pl. IX:3.)

2) A pouched pot, with a well defined, angular break at the widest portion of the body. The profile is fairly bi-conical, and the proportion of the upper part (above the break) to the lower part (below the break) is approx-

imately two to three. The rim is everted, and the lip rounded. The bottom is flat. A ribbon handle is attached approximately half-way between the lip and the break, but closer to the latter. From the upper juncture of the handle an incised band, consisting of two parallel, horizontal lines, filled with a zigzag motif, runs around the body and terminates on the opposite side of the handle. A series of seven vertical, incised fringes, composed of four to six lines each, depend upon the horizontal band. The surface is burnished, partially bruised, and the colors range from gray to brown. The texture is fine, and there are sand grit inclusions as well as natural (?) particles of mica. Measurements: height 0.134 m.; rim diameter 0.11 m.; greatest body diameter 0.132 m. (Pl. IX:5.)

3) A pot of a roughly globular body which tapers both towards the flat bottom as well as upward to form a low, not well demarcated, neck. The rim is slightly everted, and the lip is rounded. The handle, attached approximately half-way between the lip and the greatest bulge of the body, is of the ribbon type with a marked fluting executed upon its upper horizontal plane. The surface is hand smoothed, rather rough in places, and the colors on the outside range from orange-brown to grayish-black, while the interior is yellowish-brown. Measurements: height 0.14 m.; rim diameter 0.144 m.; bottom diameter 0.085 m. (Pl. IX:4.)

Grave 7

Location:

Auxiliary line G/7-8/*e-f*, length 1.42 m. Point *e*:W-79.9, N-4.35; point *f*:W-80.95 m., N-4.8 m. The position of point *a* is identified in the plan showing the location of the excavated areas (Fig. 2).

Nature of pit:

Roughly rectangular in ground plan, and with well rounded corners (Fig. 5), the pit was fully defined by a raised floor consisting of dark soil, as well as by its perpendicular wall on the eastern side which was cut into the sand. In the opposite direction the grave had disturbed the pit of grave 8, without, however, affecting its burial, for no traces of any intrusive material were in evidence. The raised floor (Fig. 6) was composed of weathered, well compacted soil, the texture and composition of which—as determined purely by a megascopic examination—were identical with the fill of grave 8. The maximum depth of the grave pit within the sand layer was 0.36 m., the maximum thickness of the raised floor 0.09 m.; and the top soil over the grave pit level was 0.86 m. deep. Thus the total measurement from the modern surface to the deepest point of the grave aggregated 1.22 m. Inasmuch as grave 8 was also disturbed by grave 3, as previously described, the extent

of the total damage was fairly clearly assignable to one or the other of the two occasions. However, it was not possible to ascertain with dependable accuracy and strictly unimpeachable evidence, whether the deposition of grave 7 had preceded or followed, or perhaps been concurrent with that of grave 3. The suggestive circumstances, and these may not necessarily be conclusive, favor the deduction that grave 7 was the latest of the three adjacent sepulchers. This opinion is supported by an observation which, although quite meager in itself, nevertheless does command consideration. Grave 7 revealed no traces whatsoever of any material, skeletal or ceramic which could be attributed to grave 8. The determined search in ascertaining this observation was particularly carefully executed, for previous experience at the site provided a guiding precedent. It was clearly seen that in the preparation of the pit of grave 7 a certain portion of the fill of grave 8 was scraped on a horizontal plane. The limits of the vertically directed slicing were almost everywhere sharp. It was only in a single instance that the horizontal procedure left marks of its start over the margin of the perpendicular cuts on the side facing grave 3. However, inasmuch as this peculiarity was ascertainable only in one spot, it is felt that the criterion is not sufficient for an absolute determination of the relative age of graves 3 and 7. In a sense strictly conditional to the circumstances this observation tends to suggest that the preparation of the two later graves was simultaneous. Yet it speaks rather in favor of a disturbance subsequent to that which is assignable to the penetration of grave 3 into grave 8. It would appear then that of the three interments No. 7 may be regarded as the latest, albeit with the important stipulation that this interpretation is not fully supported by facts. The furniture of grave 7 is only partially of a later type than that of the other two graves, for it also contains a pedestaled chalice-bowl and a low, open bowl with three broad feet, the two being, respectively, survivals of a Jordansmühl-"Nordic" form, and of a Bell Beaker shape. The presence of three large pieces of limestone is in itself indicative of a later date for grave 7 as compared with grave 3.

Interment:

The grave contained a single burial. The skeleton was very poorly preserved, and neither the sex nor age could be ascertained. Its placement was on the right side, in a contracted position, oriented SW-NE, facing SE. Three large pieces of limestone were placed partially over the burial and partially beside it. (Fig. 5.) The two stones situated over the skull and shoulders were found in an upright position, whereas the third was at an acute angle. The presence of these stones is probably to be considered as an indication of a somewhat advanced date. While certainly not a cist comparable to those of

the Únětice phase, the example strengthens the interpretation of the relative age of the grave with respect to grave 3. Again, the nature of the furniture must be cited as a caution against unwarranted conclusions.

Furniture:

Grave 7 contained the richest ceramic furniture yet recorded at the site. There were six vessels, all except one (crushed by one of the stones) in a very good state of preservation. Five of these were aligned more or less in front of the skeleton, the first in the row being opposite the skull, the third partially within the fourth, and the fifth opposite the knees (Pl. XIII:a). In all instances the vessels rested upon the raised floor of the grave.

1) A semi-spherical bowl with three legs. The legs are rectangular in cross section, flattened at the base, and their sides, after an initial equilateral rise, broaden towards the bottom of the bowl and spread to meet it. The bowl is shallow, and its lip is rounded. Below the lip are four wart-like lugs, attached at equidistant intervals. Between the lugs are parallel, horizontally placed incisions, either in a double or a triple line arrangement. Their execution is rather hasty and the resulting design quite crude. The texture is fine; the clay presents an illusion of levigation; and the aplastic inclusions consist of fine-grained sand grit. The minute particles of mica were probably a natural component of the clay. The surface is unevenly burnished and gives the appearance of unequal planes. The surface color ranges from gray to practically black, and has lighter spots resulting, apparently, from uneven oxidation during the process of firing. The burnished film of the outer surface is clearly distinguishable by increased hardness and also by its color. The interior color is brownish-gray. Measurements: height 0.066 m.; mouth diameter 0.145 m.; height of the legs 0.01 m. to 0.012 m.; width of the legs 0.03 m. (average). (Pl. VIII:9.)

2) A pouched jug-cup, with a slightly recessed neck, gently constricted under a mildly everted rim, bi-conoid in body shape. A ribbon handle is attached approximately half-way between the rim and the greatest width of the belly. The lip is rounded; and the bottom is flat. The outer surface is lightly burnished, bruised in spots, and its color ranges from grayish to approximately black. Measurements: height 0.097 m.; rim diameter 0.084 m.; maximum body diameter 0.112 m.; bottom diameter 0.044 m. (Pl. VIII:8.)

3) A pouched jug-cup (similar in shape and size to the vessel just described), with a recess between the shoulder and the lower margin of the neck which is demarcated by grooving. The neck is gently constricted under the slightly everted rim. The body is roughly bi-conical and has a pronounced, fairly angular break at the level of its greatest expansion. The lip is rounded; and the bottom is flat. The ribbon handle is attached somewhat

closer to the rim than is the case with vessel 2. The outer surface is lightly burnished and bruised in spots. The texture is fine, no inclusions are superficially visible; and the color ranges from gray to brown. Measurements: height 0.095 m.; rim diameter 0.08 m.; greatest body diameter 0.115 m.; bottom diameter 0.04 m. (Pl. VIII:10.)

4) A chalice-bowl, pedestaled with a hollow cylindrical foot which flares in the direction of its base. The bowl is semi-globular and has a horizontally smoothed, somewhat rounded lip. The base of the foot is likewise smoothed and flattened. The colors inside and outside range from grayish to brownish hues. Measurements: height 0.13 m.; mouth diameter 0.173 m.; diameter of the base of the foot 0.107 m. (Pl. VIII:12.)

5) An open cup, mildly profilated, with a ribbon handle attached about half-way between the rim and the vessel's greatest expansion at its upper juncture, and upon the bulge itself at its lower juncture. The cup is lightly constricted under the rim which is defined by a slight eversion; the lip is rounded, and the bottom is flat. The outer surface is burnished, and its color ranges from gray to almost black, with brownish spots. Measurements: height 0.116 m.; rim diameter 0.158 m.; bottom diameter 0.082 m. (Pl. VIII:11.) The specimen has been partially reconstructed.

6) A cup-shaped, wide-mouthed vessel of an open pouch form, burnished on the outer surface, and of grayish color. The rim is very lightly everted, the lip rounded, and the bottom is flattened. There is a faint constriction under the rim, and the curvatures of the body are soft and gradual. There are certain rather indistinct traces of horizontal incisions under the rim. Measurements: height 0.086 m.; mouth diameter 0.128 m.; bottom diameter 0.043 m. (Pl. VIII:13.) The specimen has been partially reconstructed and partially restored with plaster.

Grave 8

Location:

Auxiliary G/ 7, 8/ *a-b*, length 1.17 m. Point *a* :W-80.3 m., N-5.35 m.; point *b* :W-81.3 m., N-4.35 m. The location of point *b* is identified in the plan showing the positions of the excavated areas (Fig. 2).

Nature of pit:

Only a remnant of the grave was found, owing, as already stated, to the disturbances for which the depositions of burial No. 3 and No. 7, respectively, were responsible. The grave was identified by its partial fill (Pl. XIII:a) rather than by a visible pit. The dimensions of this remnant, in reality but a

portion of the lower foundation of the grave, were: length 1.26 m.; maximum width 0.4 m.; maximum depth 0.1 m. Its ground plan was roughly rectangular in shape, and all the walls were inclined. The foundation consisted of well compacted dark soil with irregular thin layers of sand. It was evident that originally the grave pit was carried into the sand layer, and that the 0.1 m. of dark soil was artificially placed upon the primary bottom. The intermittently appearing thin layers of sand suggest that no strict effort was made to retain purity in the soil foundation. Inasmuch as the bottoms of the pits of grave 7 and grave 3 penetrated below the level of the maximum depth of grave 8 (Fig. 6), attempts at an identification of the probable original extent of the present grave led to no satisfactory ends. The slight rise noticeable on the side facing the position of grave 7 (Fig. 6) was found to have been affected by activities leading to the construction of that grave's pit. The faint dark discoloration there noted suggested that grave 8 originally extended in this direction, for the soil foundation in grave 7 was separated from it by an area of sharply distinguishable lighter discoloration. Yet, as already mentioned, grave 8 appears originally to have at least two burials, of which positive evidence was located, in a secondary position, under the floor of grave 3. Obviously, the area occupied by two burials should have required a much greater extent than the remaining portion revealed. It must be reiterated that no traces of any intrusive material whatsoever were located within grave 7. Moreover, it is imperative to recall the important observation that the intrusive vertical slicing incidental to the preparation of grave 7 terminated before the skeleton in grave 8 could be affected thereby. Finally the intentional placement of the three pieces of limestone, as well as the nature of the furniture in grave 7 must be respected. In view of all this, and with due reserve, it seems reasonable to consider the relative ages of the three graves as follows: grave 8 was absolutely the oldest; grave 3 was unquestionably later than grave 8, and probably somewhat older than grave 7; grave 7 appeared to have been the latest deposition, as suggested by its nature, furniture, and, qualifiedly, also stratigraphy.

Interment:

Originally, as deduced from the secondarily placed skeletal remains recovered under the floor of grave 3, there should have been two burials. The remnants *in situ* (burial 8 A) contained, *inter alia*, three more or less fully recognizable femurs. Otherwise the bones were not identifiable to an adequate degree to permit a fully conclusive calculation of the number of skeletons which they represented. Yet it is significant to note that, as previously stated, the secondary deposition under the floor of grave 3, unquestionably displaced from grave 8 (burial 8 B), supplied, at least in part, some of the

bones originally belonging to the burials of this grave. These were two crushed skulls, one femur, and three vertebræ. The odd (right) femur of this group corresponded, in size, with the left counter-member found *in situ* upon the soil foundation of grave 8. With such conclusive evidence it is entirely within reason to maintain that grave 8 originally accommodated two distinct burials. At least one of these, as documented by the remaining bones *in situ,* was oriented NE-SW, and was placed probably (?) on the right side. There are no dependable signs suggestive of the original placement of the other burial. All the skeletal remains recorded *in situ* within grave 8 were considerably decayed.

Furniture:

Together with the secondary deposition of the two skulls, one femur, and the three vertebræ under the floor of grave 3 was found one vessel which, by virtue of its association, is to be assigned to grave 8. Although this interpretation is admittedly vulnerable, the reasoning finds support in the following considerations: typologically, the vessel reflects an antecedent of those which formed a proper part of grave 3; it is the only specimen of its type thus far found at this site; technologically, it differs in several details from the furniture of grave 3. These circumstances and the weight of the observed depositional conditions justify its rationalization as a component part of grave 8.

The vessel is an open, pouch-shaped pot. The bottom is flat; the body has the form of an ablated sphere; the neck is well demarcated from the shoulder by a lightly drawn groove; and the rim is mildly everted. The profile of the neck breaks the curvature of the body immediately above the shoulder so that a hyberboloid effect results. The lip is slightly thickened and rounded in an irregular manner. A ribbon handle is attached immediately below the lip at its upper juncture and immediately below the shoulder recess at its lower juncture. It is important to stress the profile of this handle which curves downward immediately from its start at the rim terminal and describes a roughly circular course. The outer surface of the basal part of the vessel is burnished to a medium degree, while the burnish of the neck is more pronounced. The color ranges from brownish to orange hues and there are several spots in various shades of gray. The differentiated color effect appears to be due to carbonization and unequal oxidation during the firing process. The texture is of a medium fine quality; aplastic inclusion consists of sand grit; and the firing is thorough. The surface appears to have been worn off to some extent in aboriginal times. Measurements: height 0.143 m.; rim diameter 0.145 m.; greatest body diameter 0.16 m.; bottom diameter 0.067 m. (Pl. IX:1.) The specimen has been reconstructed from sherds; a minor plaster restoration is to be seen on the neck.

Grave 9

Location:

Auxiliary G/9/*e-f*, length 1.6 m. Point *e*:W-86 m., N-1.4 m., point *f* :W-87.4 m., N-2.1 m. The position of point *e* is identified in the plan here reproduced (Fig. 2).

Nature of pit:

The shape of the pit was a fairly regular rectangle with rounded corners, and situated entirely within the sand layer. Dimensions: maximum length 2.3 m.; maximum width 1.61 m.; average depth 0.57 m. The bottom had a fairly constant even plane. (Figs. 9, 10.) Over the horizontal plane of the pit was a stratum of sand mixed with small pebbles and containing a small percentage of dark soil. This coating was distinguishable from its immediate surroundings by its looser texture and compactness. The layer of the superficial mantle (0.85 m. thick) was of the same composition and hardness as the general humus in the vicinity of the grave. The fill of the grave pit consisted of well packed sand mixed with dark soil. There were two burials, each resting upon a foundation composed of humus, and considerably weathered. In both instances this foundation was roughly rectangular and covered an areal extent sufficient to accommodate a crouched corpse. In thickness each of the two beds attained a maximum of 0.11 m. That both were artificially erected upon the previously prepared floor of the grave pit was well demonstrated by the nature of their composition, by their position, and also by the scraping of the sandy bottom of the grave. The walls of the grave pit were perpendicular and quite evenly scraped. It was evident that the grave received careful attention by its constructors.

Interments:

There were two individual, concurrently deposited burials. These are now known respectively as G/9/A—*i. e.* the smaller of the two skeletons, accompanied by two vessels—and G/9/B—*i. e* the larger skeleton, with three vessels. (Pl. XIII:b.) Their long axes were not parallel, and the shortest distance between the proximal margins of the two skeletons, read from the pelvis of A and the knees of B, amounted to 0.2 m.

Burial A

The skeleton:

Although its sex and age were not definitely determinable, the skeleton was one of a child perhaps under ten (?) years of age (as judged by the teeth). It was placed on the right side, and oriented SW-NE, facing E. Its arms were folded upon the chest. The osteological remains were in a poor state of preservation.

Furniture:

Two vessels were placed a short distance from the cranium, and in the immediate vicinity of the skull were found a few scattered sherds, embedded in the soil foundation upon which the burial rested. (Fig. 9, Pl. XIII:b.)

1) A pouched jug-cup of a globular body, broad, flattened bottom, a slightly constricted neck, a mild rim eversion, and a rounded lip, was situated close to the cranium. (Pl. XIII:b.) The surface of this vessel is burnished, and the color ranges from grayish to brownish hues. A ribbon handle is attached about half-way between the rim and the greatest expansion of the belly. Measurements: height 0.12 m.; rim diameter 0.11 m.; bottom diameter 0.078 m. (Pl. IX:7.) The specimen has been reconstructed and partially restored.

2) An open, pouch-shaped cup, pyriform in profile, with a gentle constriction below the mouth, a mildly flaring rim, a rounded lip, and a flat bottom, was situated immediately to the northwest of the jug-cup. (Pl. XIII:b.) The surface is burnished quite unevenly so that it gives an effect of differentiated minute planes. The burnishing tool, apparently, had a narrow working edge, and the pressure exerted by the operator was of unequal strength. The color ranges from grayish to brownish hues both inside and out, and the exterior has several spots of a blackish tone which are probably due to a pyrogenetic peculiarity. The texture is quite fine, and the fabric is free of intentional inclusions, for the minute particles of mica were probably a natural element in the clay. The ribbon handle is attached more distally from the rim than from the zone of the greatest expansion of the belly. Measurements: height 0.11 m.; rim diameter 0.098 m.; bottom diameter 0.005 m. (Pl. IX:10.) The specimen has been mended at the mouth.

3) The scattered sherds suggest a conoid shape of a worn vessel with a slightly everted rim; one pointed, wart-like lug was preserved under the rounded lip. An estimate of the probable original dimensions reveals that the diameter of the rim should have been approximately 0.076 m.

Burial B

The skeleton:

This was the skeleton of an adult male, placed on the right side, oriented SW-NE, and facing SE. The bones of the left arm formed approximately a right angle, while those of the right arm were extended along the body. Originally, the fingers of the right arm may have rested against the knees. The skull was crushed on the temples; the long bones were in a fair state of preservation and the rest quite fragmentary.

Furniture:

Three vessels were aligned back of the cranium, and within the limits of the dark soil foundation. In addition, a scapula of a bovine and a horn-core of a cow (?), were found upon the same foundation, both near the distal termini of the left forearm.[12]

The vessels:

1) A pouch-shaped jug-cup, with an inverted rim, a thinned, rounded lip, and a flat bottom, rested in the southeastern corner of the soil foundation. Its body is softly profilated, a narrow zone below the rim is slightly constricted, and a ribbon handle is attached approximately half-way between the lip and the greatest expansion of the belly. The surface is burnished, and the color ranges from grayish to brownish hues. Measurements: height 0.13 m.; rim diameter 0.125 m.; bottom diameter 0.067 m. (Pl. IX:8.)

2) An open, conoid pot, with a mild constriction under the slightly flaring rim, occupied the central location amid the group. It has a cut-smoothed lip, a flat bottom, and is burnished on the outer surface, and bruised in spots. The exterior and interior color ranges from grayish to brownish hues. A ribbon handle, *horizontally* placed, is attached approximately 0.02 m. below the rim. (This represents the *only* instance of its appearance at the site thus far.) Measurements: Height 0.115 m.; rim diameter 0.115 m.; bottom diameter 0.08 m. (Pl. IX:11.)

3) An open, conoid bowl, with a cut-smoothed lip, and a flat bottom, was found just back of the occiput, likewise still on the soil foundation. The wall and bottom are considerably thicker than those of the majority of the vessels from this site. The upper portion of the body is quasi-globular, and its basal portion tapers gradually towards the bottom. There are three, equidistant protuberances added to the lip, and shaped in a tab-like manner to continue the angle of the wall. The surface is burnished, but bruised, and the color ranges from grayish to brownish hues, with occasional spots of various shades of orange. Measurements: height 0.055 m.; rim diameter 0.155 m.; bottom diameter 0.08. (Pl. IX:9.)

Pottery salvaged from destroyed graves.

From certain graves completely obliterated during the commercial operations at the site before systematic exploration was initiated, the Institute was able to obtain two vessels. Both of these are unquestionably of the same technological nature as the ceramics from the excavated graves. It seems appropriate to describe these two specimens now.

[12] Specific identification by a specialist was not available at the time of this writing. It seems reasonable, however, that both specimens indicate domestic cattle.

1) One is a pouch-shaped jug, found by workmen in a collapsed section of the sand pit. The vessel has a well demarcated neck, a slightly everted rim, and a flat bottom. The lip is rounded, and the remnant of a handle suggests that the original appurtenance was of a ribbon type. Below the shoulder recess, on a location diametrically opposite to the handle, there is a plastically applied low ridge, shaped in the form of a horse-shoe. The surface is burnished, exfoliated in several spots, and the color ranges from gray practically to black, with occasional shades of orange and brown. Measurement: height 0.135 m.; rim diameter 0.113 m.; bottom diameter 0.078 m. (Pl. IX:12.) The specimen has been reconstructed and restored.

2) The other vessel, an open cup, very softly profilated, with an oblong, partially flattened bottom, was likewise found upon the removal of a block of sand. This specimen has a mild constriction below the mouth, an everted rim, and its lip is rounded. The surface is burnished, and somewhat bruised. The exposed texture reveals a difference in the color and hardness of the burnished surface, and gives an appearance—entirely false—of a slip.[18] (Pl. XIII:13.)

B) Collective Interpretation.

Eight of the nine graves here described lend themselves, in a greater or lesser degree, to certain objective deductions. It would be indeed a simple matter to present a series of statistical compilations and to construct a composite tabulation of the total finds and observations. In either case, the writers feel, no truly serviceable ends would thereby be achieved, for the explorations thus far pursued at "Pískovna", Dolní Počernice, have revealed but a fraction of a large cemetery. By way of a recapitulation, and with the specific view toward a comprehensive and categorical seriation, the following summation, dealing solely with graves 2 to 9, is proffered.

1) A total of fourteen burials has been recorded. Of these seven represented individual interments (graves Nos. 2-A, 2-B, 3, 4, 5, 6, and 7). With the single exception of the composite instance noted in No. 2, the rest of the individuals were deposited each in a separate grave pit. Graves 8 and 9 contained two burials each. It could not be ascertained with precision whether grave No. 2 (considering its burials A and B as intrusive in a collective sense) originally disturbed a double and a single interment, or perhaps a triple burial. It must be stressed that thus far there is no record of a triple burial of the Pre-Únětice phase anywhere in Bohemia. With the equivocal exception regarding

[18] The phenomenon is explainable strictly on the grounds that the potter exerted considerable pressure upon the burnishing tool, thereby promoting a greater compactness of the paste affected by the process, and that the resulting difference in the texture of the burnished "film" retarded the firing of the inner portion of the wall.

the mutual relationship of graves No. 3 and No. 7, the chronology of aboriginal intrusions, as revealed in graves groups 2 A-D, 4-5-6, and 7-8-3, was established with reasonable certainty. It is entirely conceivable that in the highly complicated case of grave No. 2 a disturbance may have preceded the deposition of its burials A and B. Assuming a possibility of such an event—wholly hypothetically, for, as detailed, no positive evidence in its support was noted—it seems entirely plausible that its traces may have been obliterated by the subsequent intrusions, or, perhaps, hopelessly confused therewith. It must be recalled that only the pit of burial A, and a portion of that of B could, because of modern damages, be followed with precision. The disorder in grave No. 2 was indeed a very perplexing entanglement, and although the major portion of the havoc appeared to be attributable to the deposition of burial A, it is equally necessary to consider a likelihood of still earlier intrusions.

2) The fully determinable orientation of the skeletal remains were predominantly directed southwest (skull) to northeast (feet). This was true in seven instances, Nos. 2-A, 3, 5, 6, 7, 9-A, 9-B, while the reversed order was noted in only two different graves, Nos. 4, 8, and a west-east placement in only one case, No. 2-B. In the other four occurrences of skeletal remains, owing to aboriginal disturbances, primary orientations were not calculable whatsoever. This observation may perhaps be somewhat modified insofar as it pertains to grave No. 8 in which one of its two skeletons was partially preserved *in situ*, being orientated northeast to southwest. On the basis of this it might possibly follow that the second interment was similarly placed. However, the only positive evidence of its former presence was supplied by a femur which itself had been affected by the damaging intrusions for which grave 3 was largely responsible. On the other hand, it seems in point to recall that the two burials in grave No. 9 were orientated along axes which, although not strictly parallel, nevertheless did conform to approximately the same direction. Without exception, the indubitably recognizable placements—nine examples—were on the right side (Nos. 2, 3, 4, 5, 6, 7, 8, 9-A, 9-B). Only in one case (No. 8) was there some uncertainty in this regard, yet the circumstances suggested the right side again. With the wholly secondarily deposited osteological remains no dependable signs of original orientation or side placement were noted.

3) In ground plan the grave pits varied rather slightly, for the shapes conformed to two chief types: roughly rectangular, or roughly oval. Without exception, all penetrated into the sand layer. There was further uniformity in the nature of the fill, depths of the pits, and their floor levels. Separate soil foundations, large enough to accommodate a crouched corpse

and its furniture, were recognized in three graves (Nos. 7, 8, 9). Stone packing was recorded in only one instance (No. 7). The minimum total depth from the lowest level of the grave to the surface of the most recent humus was less than 1 m. (Nos. 4, 5, 6—estimated), and conversely, the greatest, correspondingly measured depth was 2.48 m. (No. 2-A). Elsewhere this distance varied from 1.22 m. (No. 7) to 1.42 m. (No. 9).

4) Ten burials were found in a primary position (Nos. 2-A, 2-B, 3, 4 [partially], 5, 6, 7, 8-A [partially], 9-A, 9-B), and four in secondary placements (Nos. 2-C, 2-D, 2-E, 8-B). In all cases of intrusions (Nos. 2, 3, 5-6, and 3-7) the disturbances had taken place during the utilization of the burial ground by the people of the Pre-Únětice phase. Sometimes, as in grave No. 2, the intrusions were affected before complete decay of the previous interments had run its course. Insofar as could be ascertained, the graves were never superficially distinguished by a raised surface covering. Taken on a straight line, the nearest edge to edge distance between two separate (not adjacent) graves was 6.2 m. (between Nos. 2 and 5). This expresses a measurement from the most northerly situated points on the horizontal edge of No. 2 and the most southerly located point on the edge of No. 5. Conversely, a similarly ascertained distance between the two nearest points of the edges of Nos. 6 and 3, respectively, equals 12.3 m. It seems, then, that ample room should have been available for additional burials without disturbing previous interments. It would be wholly idle to speculate as to whether or not the intrusive depositions were consciously directed to utilize older graves. It does not seem likely that grave robberies may have been committed, for in all cases of intrusions at least some furniture was purposely left behind, and additional interments achieved. The several cases of aboriginal disturbances serve a useful purpose in stratigraphic and typological considerations. However, insofar as the motivations which occasioned them are concerned, no surmise can claim recognition.

5) With respect to the furniture, great caution must be exercised lest unwarranted deductions be made. Obviously, with only eight graves no conclusive reconstruction of the element of time sequence can dependably be proposed. The writers feel that graves No. 2 C-D, No. 4 and No. 8 are individually absolutely older than their adjacent intrusive neighbors. And, furthermore, that grave No. 7, by virtue of its stone packing, as well as the furniture, may well be regarded as the "youngest" of the entire series thus far explored. Inasmuch as further finds may reasonably be anticipated, and in view of the existing plans on the part of the Institute to continue excavations at this site, it is deemed advisable to abstain from untimely deduction in this regard. Certainly, the evidence thus far obtained is not

sufficient to offer a typo-chronological sequence of the ceramics. All told there are now twenty-six vessels, of which but two cannot be assigned to any definite graves, although it is reasonably certain that they originally constituted funerary (Pre-Únětice) furniture. In addition to this material there are three groups of sherds, representing as many specimens—in all three cases of an indeterminable shape. The greatest number of vessels in a single intact grave was six (No. 7), and the minimum was two vessels. In the majority of the primary burials the furniture was placed in the vicinity of the skull. It was only in grave No. 9 that animal bones constituted a part of the funerary offerings.[14]

CONCLUSIONS

"Pískovna", Dolní Počernice, is an extremely valuable site. Despite previous destruction a large portion of the ground revealing signs of ancient usage is still available for exploration. As much as reasonably practicable, the Institute intends to continue field operations in advance of the inevitable commercial exploitations. The chief aim is to obtain all available evidence and to save the material. The unusual stratigraphic features presented by the cross-cutting of the grave pits, as well as the instructive nature of the settlement mark the site as one of extreme significance. Much can be gained by further excavation, and it is to be hoped that additional data may be forthcoming with which to follow the leads thus far obtained. Especially promising are two aspects: 1) The typo-chronology of the Pre-Únětice ceramics, based strictly on stratigraphic evidence; 2) the arrangement of the structural features of the Provincial Roman settlement. It remains for future investigation at this site to establish more conclusively than has hitherto been possible the relative dating of the settlement, and, by a reconstruction of the time sequence of the graves, to advance the general understanding of the extremely important phase of Pre-Únětice. This, at the present time, is only roughly datable as a direct antecedent of Central European Bronze Age I, that is to say, Únětice. The relative time position of the initial Únětice phase belongs to the eighteenth century B.C. The date of Únětice, the same as all "prehistoric" dates in Europe (and many of the so-called "historic" dates as well[15]) cannot be given unconditional endorsement. The date from which it is deduced—that is to say, largely the weight of associational material evidence—is indeed a rather insecure, meager, and fragmentary "proof". Nevertheless, a convenient

[14] Samples of the decomposed organic matter found within several vessels in a primary deposition have been preserved for chemical analysis. No reports on the findings are available as this report goes to press.

[15] Cf. Burn, A. R., "Dates in Early Greek History", *Journal of Hellenic Studies*, LV, part II (1935), pp. 130 ff.

milestone is to be found therein, although with the proviso that absolute substantiations are yet to be provided. Insofar as the site at Dolní Počernice is concerned, the Únětice phase marks its *terminus ad quem* with respect to the burial ground. While the stone packing in grave No. 7 might conceivably be interpreted as an *"Únětice influence"*, or, conversely, as a *"sign of Proto-Únětice tendencies"*, either case would be wholly conjectural. The writers prefer to retain a reserved attitude with respect to this extremely interesting phenomenon. While perhaps not necessarily an accidental case, it does, thus far, represent the sole occurrence of funereal usage of stone at this site. Questions pertaining to its origin—borrowing (?)—and possible bearing on chronology involve aspects of vital importance. They must be deferred to future investigations of the site because one single example of stone packing, despite its potential significance, must be regarded with due caution. As stated, we consider grave No. 7 as very likely the "youngest" of the entire series here treated. However, this view is subject to additional field work which may or may not uphold it. It is signally important that no traces of copper or bronze objects have been noted at the site up to date. Whether the site was used for burying consecutively or intermittently—either case being actually suggested by the respective intrusions—its funerary utilization reflects a single ethnic unit. While heterogeneous in physiognomy, the people of the Pre-Únětice phase, with whose traces at Dolní Počernice we are here concerned, appear to have had fairly homogeneous pottery and fairly uniform burying customs. Their *culture*, however, cannot be adequately deduced from the one-sided, restricted evidence. Presumably, a settlement was originally situated within a reasonable distance from the burial ground, but at the present time there are no recognized signs of its probable allocation.

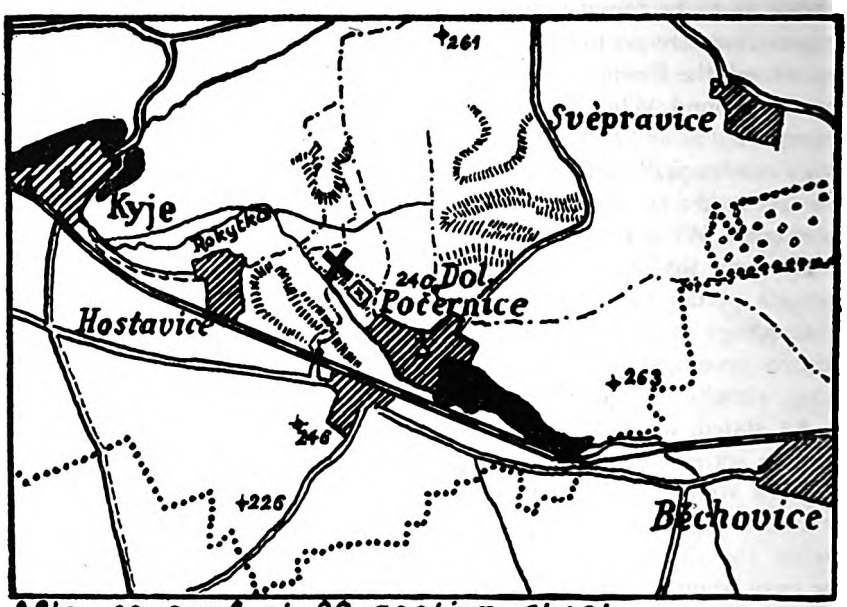


Figure 1. Location of "Pískovna", Dolní Počernice (X).

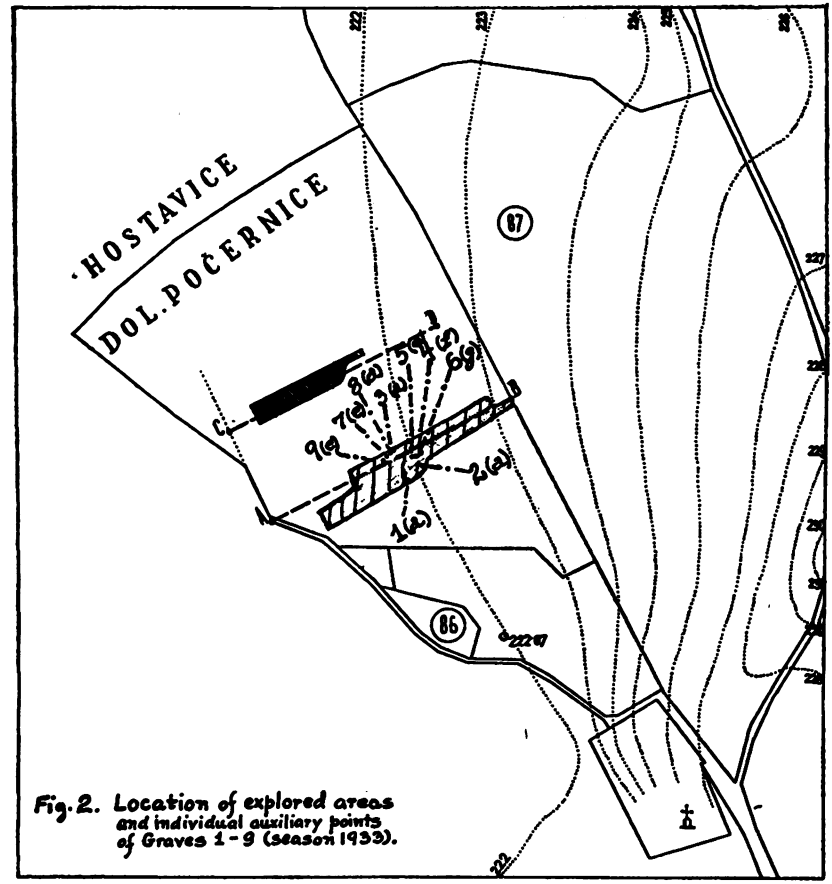


Fig. 2. Location of explored areas and individual auxiliary points of Graves 1 - 9 (season 1933).

Fig. 3. Grave 2.

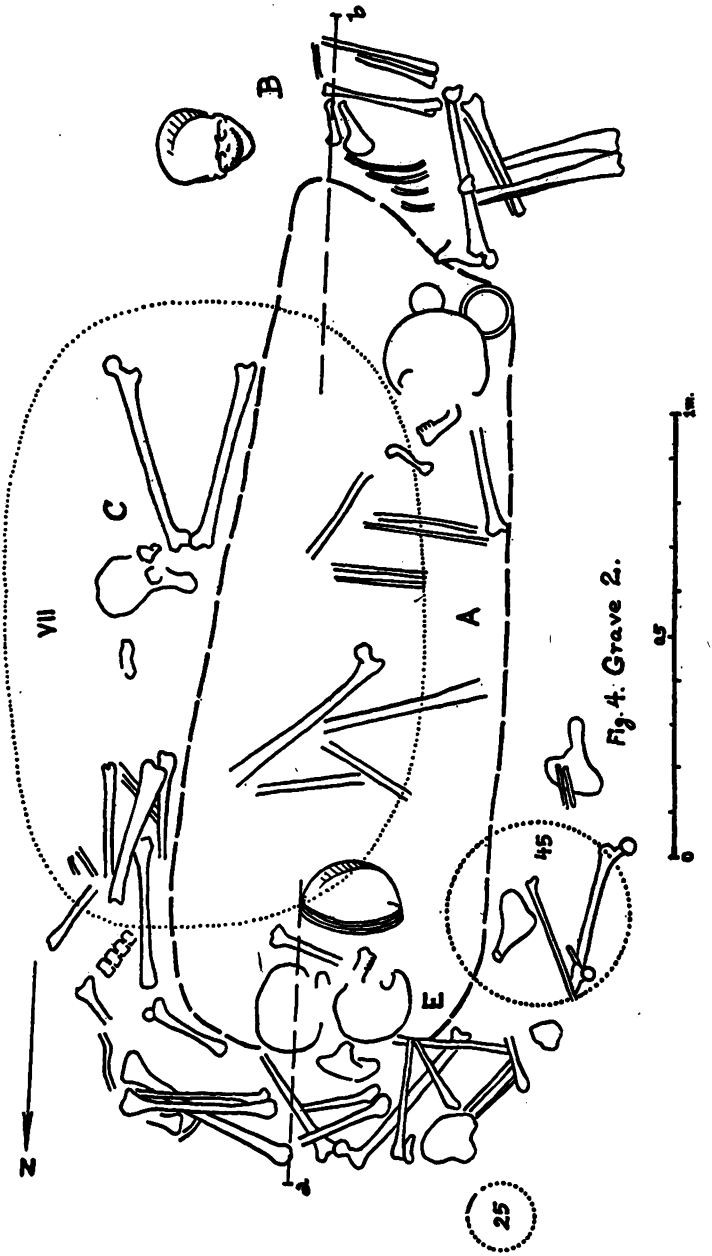


Fig. 4. Grave 2.

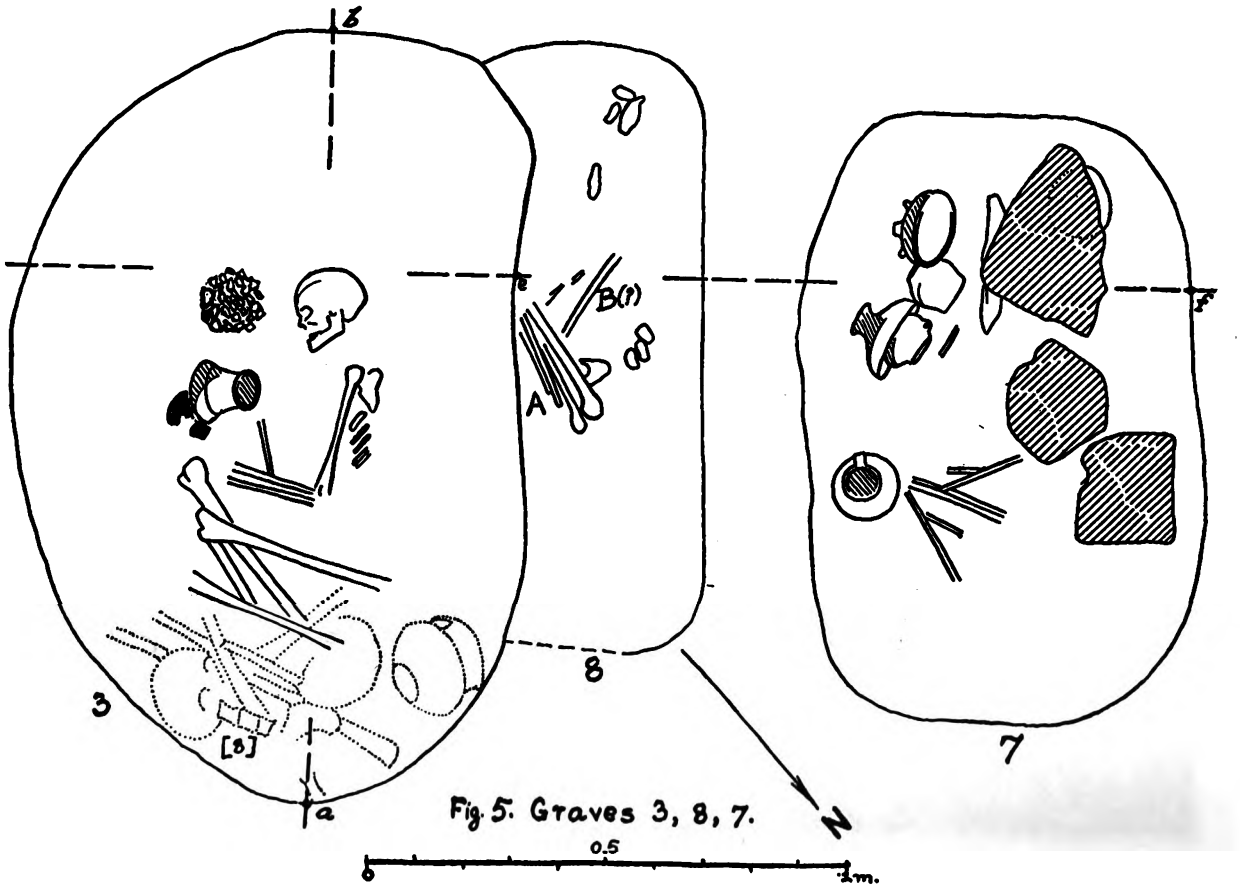


Fig. 5. Graves 3, 8, 7.

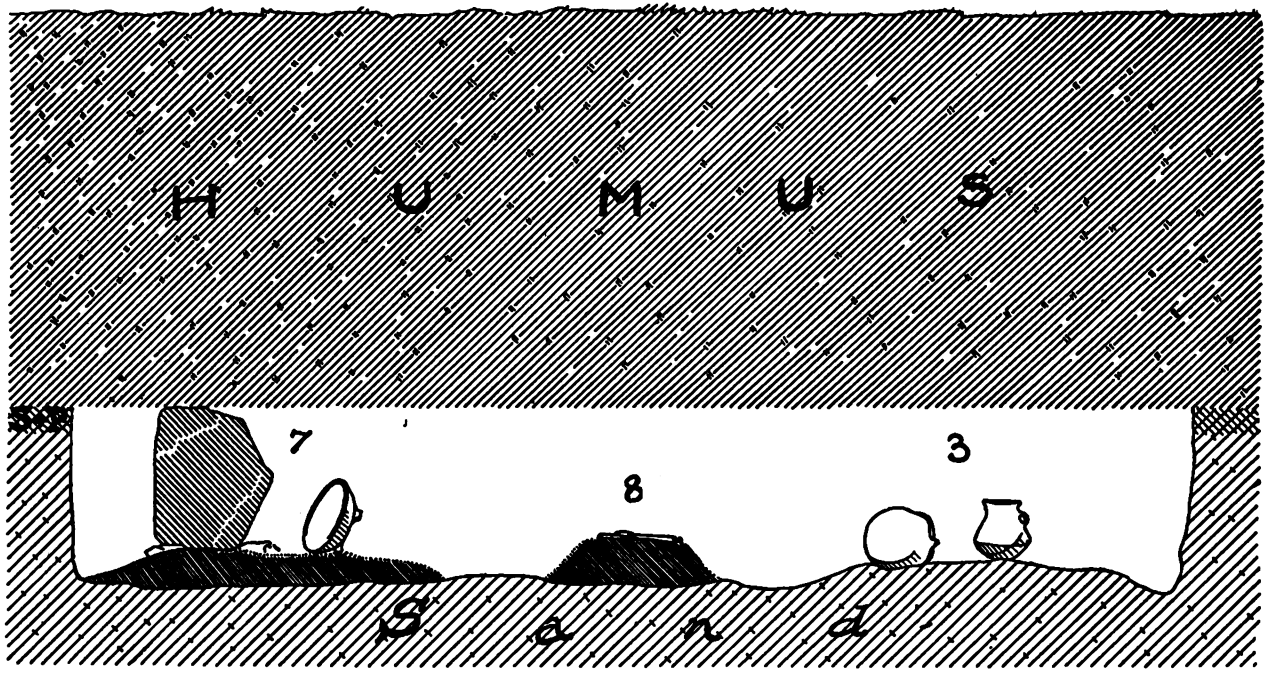


Fig. 6. Graves 7, 8, 3.

0 1m.

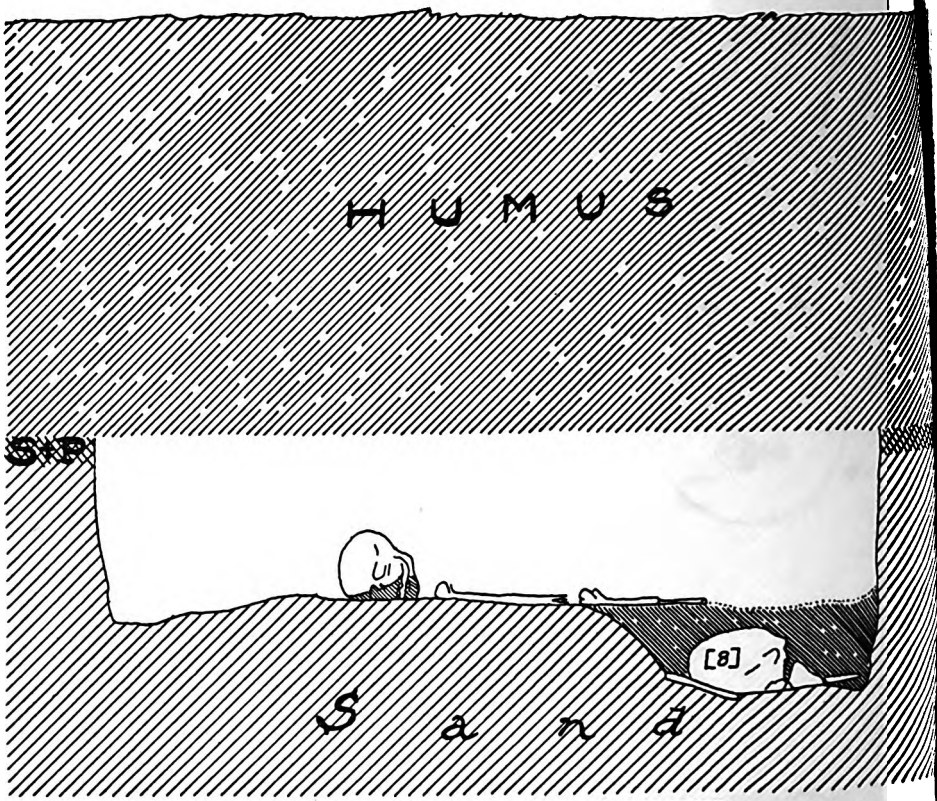


Fig. 7. Grave 3.

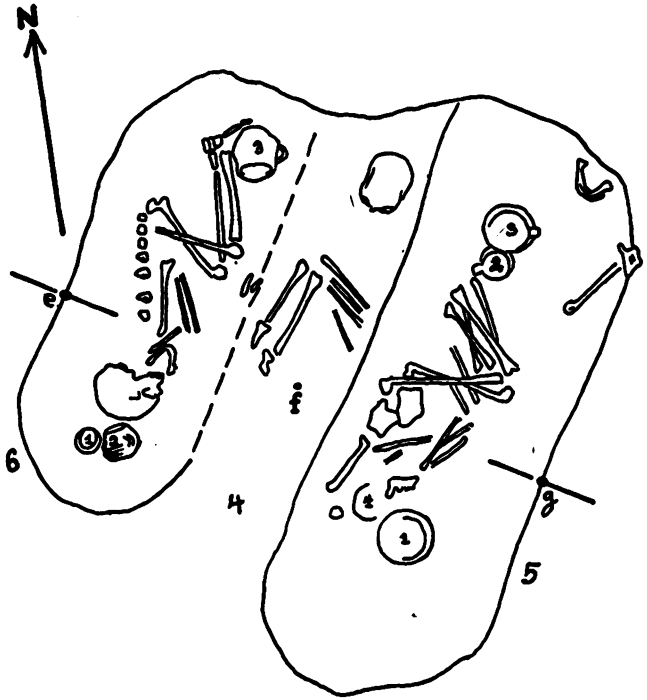


Fig. 6. Graves 6, 4, 5.

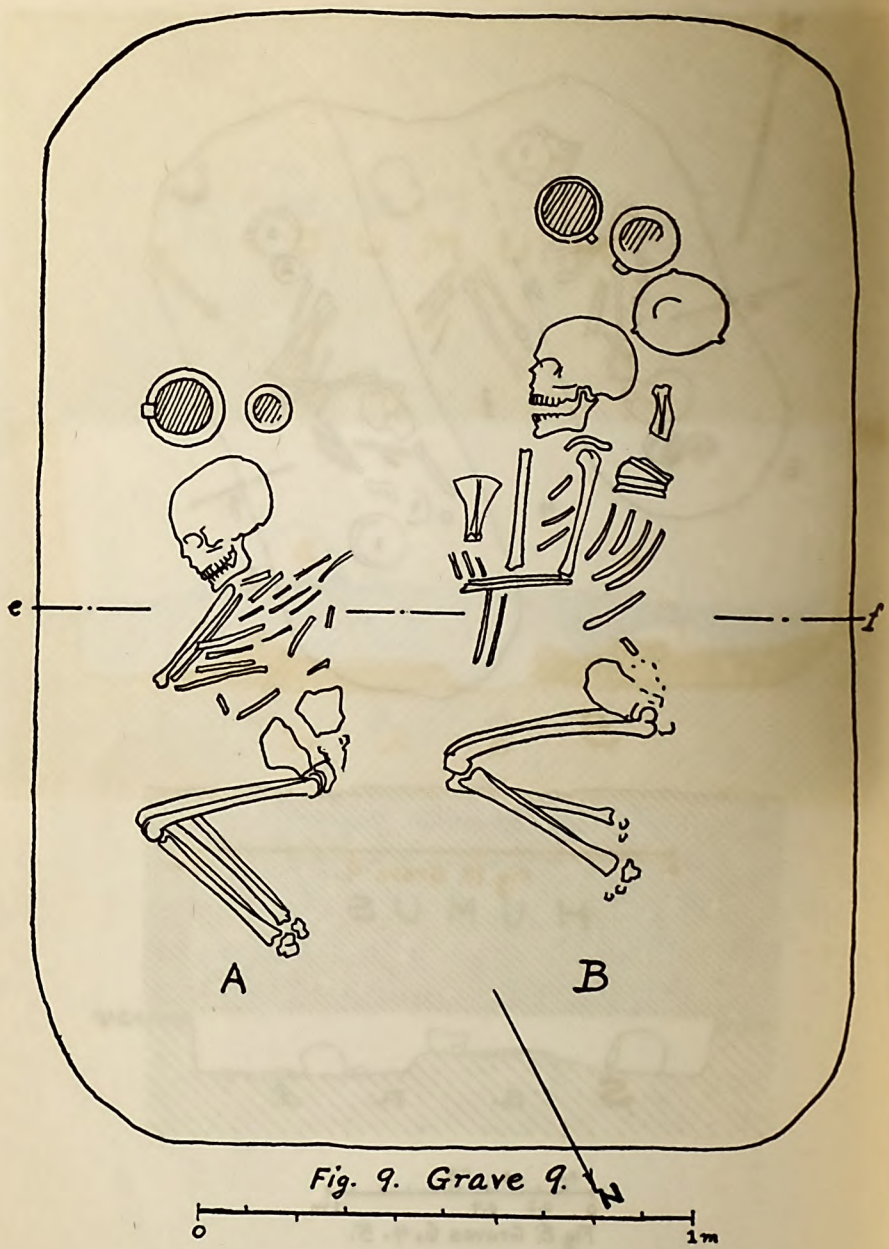


Fig. 9. Grave 9.

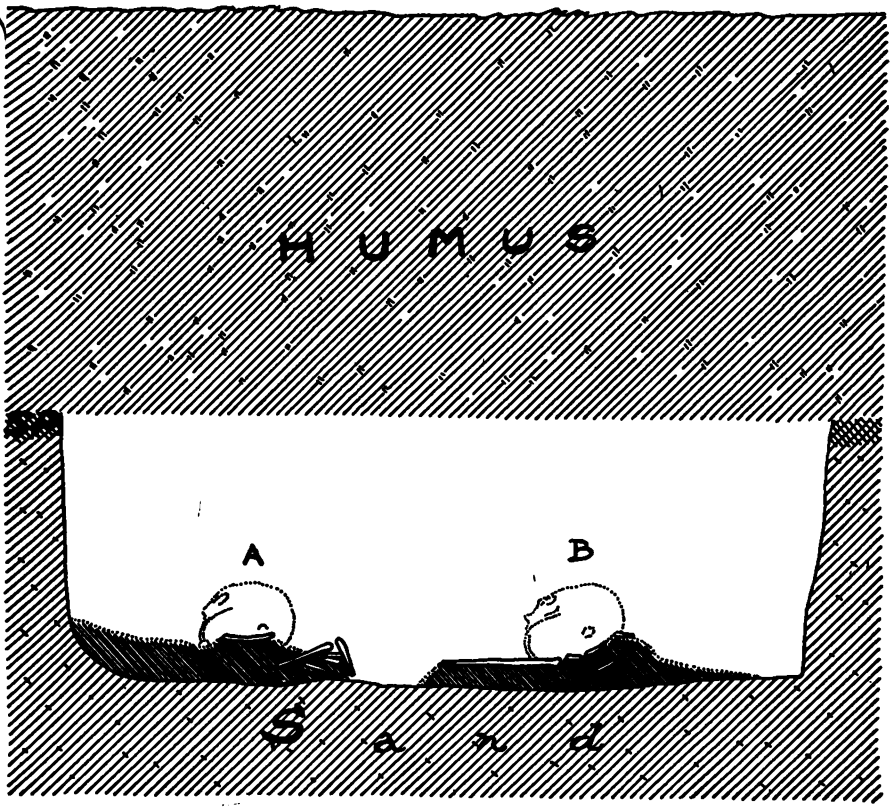


Fig. 10. Grave 9.

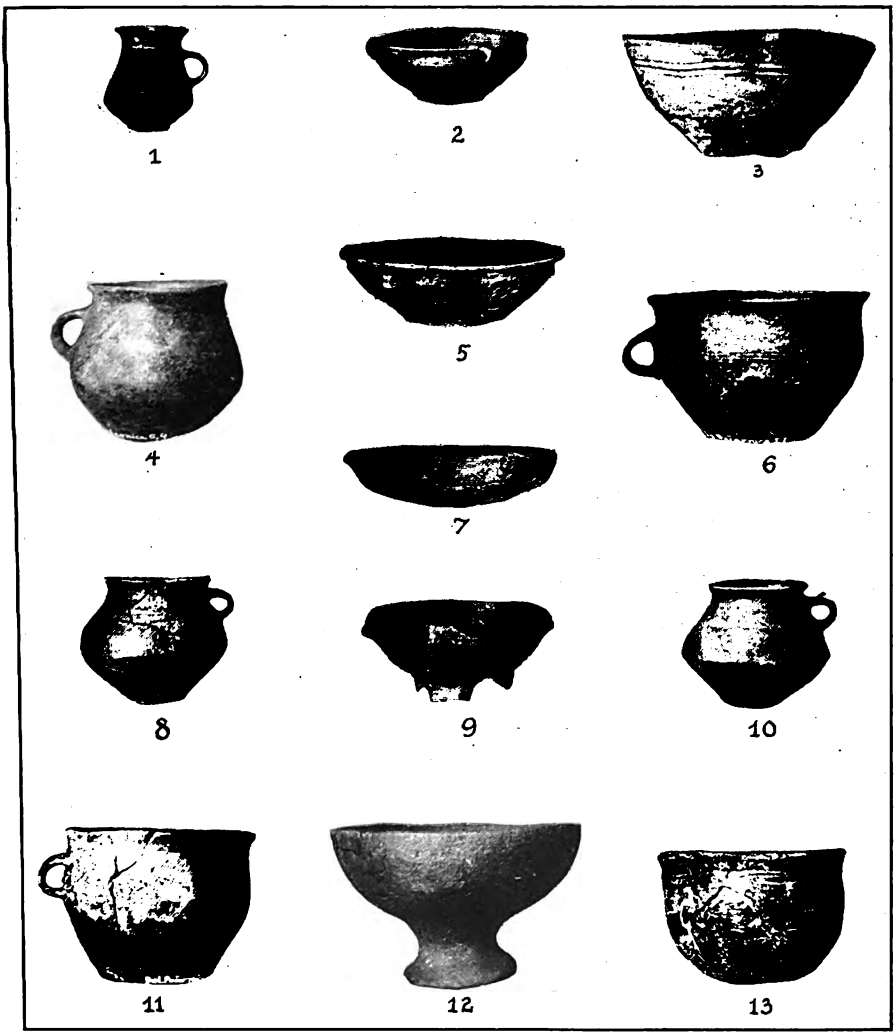


PLATE VIII. Pre-Únětice pottery from "Pískovna", Dolní Počernice. 1, 2: Grave 2 (A); 3: Grave 2 (E?); 4-7: Grave 5; 8-13: Grave 7.

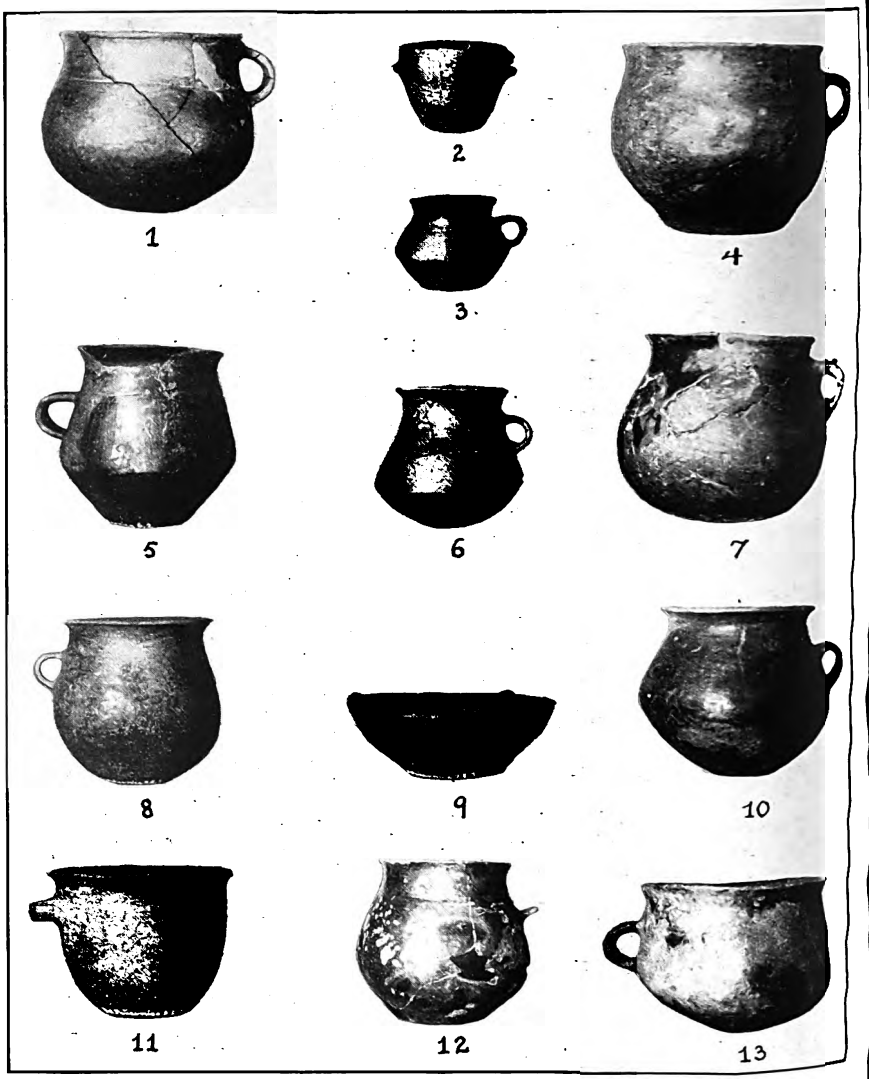
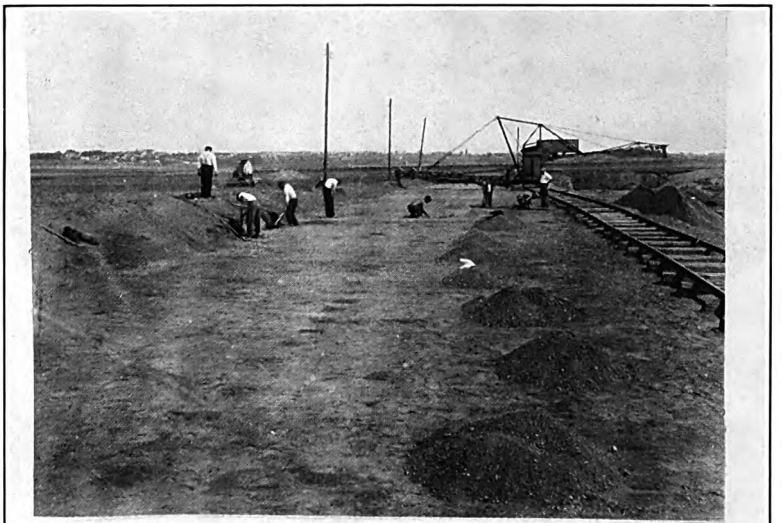
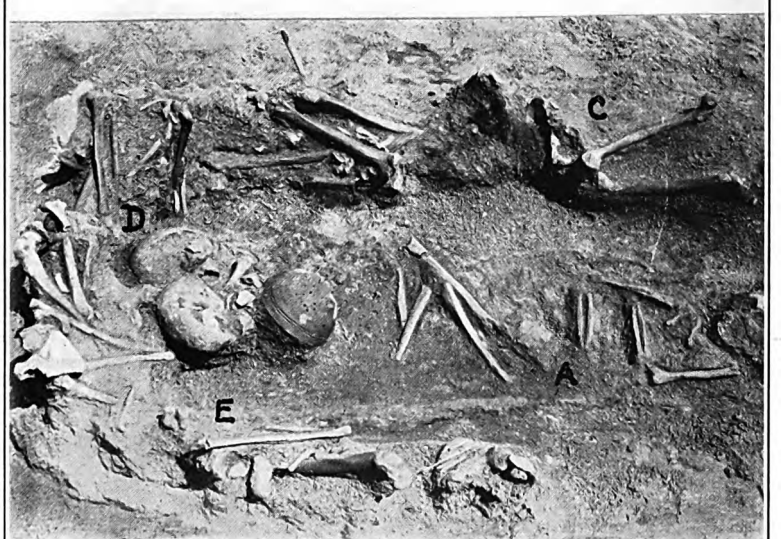


PLATE IX. Pre-Únětice pottery from "Pískovna", Dolní Počernice. 1: Grave 3 (originally from Grave 8); 2: Grave 1; 3-5: Grave 6; 6: Grave 3 (primary); 7, 10: Grave 9 (burial A); 8, 9, 11: Grave 9 (burial B); 12, 13: salvaged from destroyed graves.



a



b

PLATE X. "Pískovna", Dolní Počernice. a: View of Section a-c, facing east, taken at the beginning of the School's excavations; b: Grave 2, Southern portion.

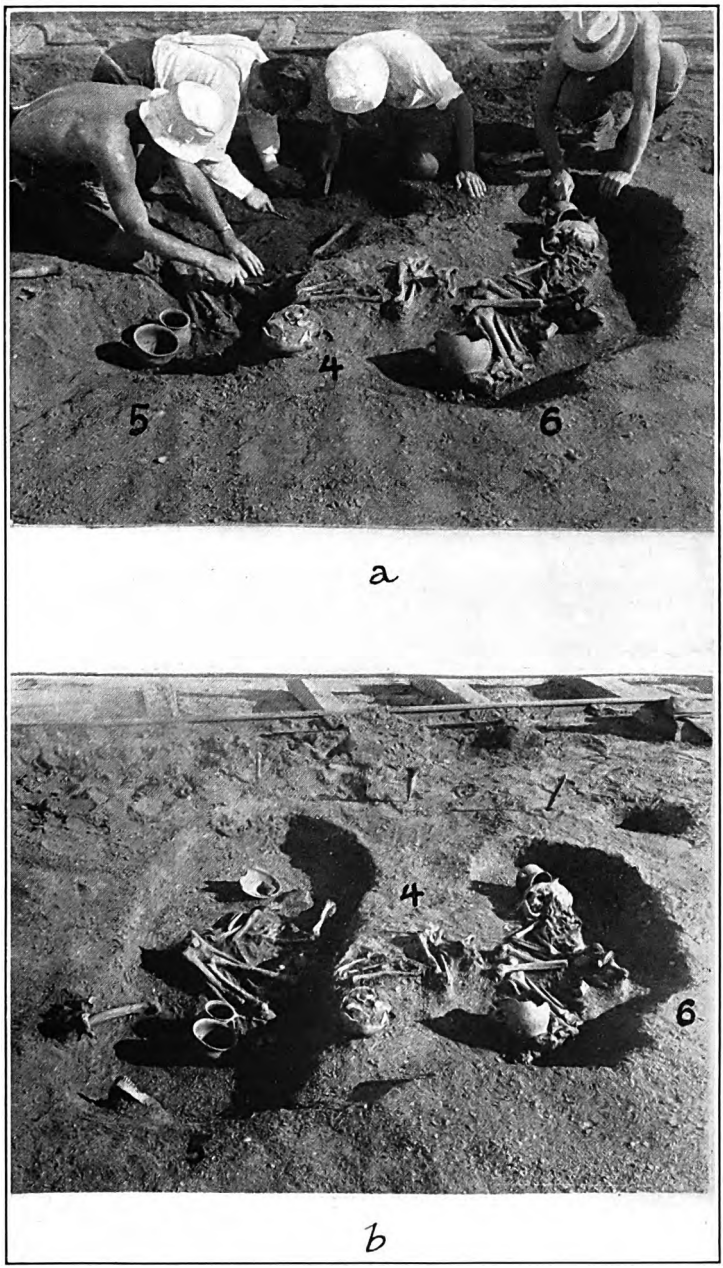


PLATE XII. "Pískovna", Dolní Počernice. a: Graves 5, 4, 6 in process of excavation; b: Graves 5, 4, 6 fully exposed. Facing south.

A SUMMARY OF SEVEN SEASONS' WORK AT THE WADY EL-MUGHARA

By D. A. E. Garrod

THE RESULTS of our seven seasons' work at the Wady el-Mughara have been published in this Bulletin year by year as digging progressed. Now, on the eve of definitive publication, the time has come to give a general survey of the work, and to outline the conclusions which have resulted from a detailed study of the material. This has led, among other things, to a modification of some of my earlier ideas, and to a partial change of nomenclature, with which I will deal as each point arises.

The caves of the Wady el-Mughara (Plate XIV) have proved more fruitful than we could possibly have hoped, even in our most optimistic moments, when excavation began. I need not insist on the finds of fossil human material, which have already been described in outline by Mr. T. D. McCown in this Bulletin. A less spectacular, but no less solid result has been the discovery of a nearly complete succession of archaeological deposits covering the long period of time from the Ṭayacian to the end of the Natufian; this establishes on a firm foundation a large part of the Stone Age sequence for this area of the Near East, and it has already been tested by excavations made in other Palestinian caves by M. René Neuville and Dr. Moshe Stekelis, working on behalf of the Institut de Paléontologie Humaine in Paris.

Plate XV combines in a single diagrammatic section the sequence of deposits in the three caves of the Wady el-Mughara.[1] It will be seen that the overlap between the Mugharet el-Wad and the Tabūn enables us to build up this section with as much confidence as though the complete sequence had actually been present in a single cave.

The Tayacian layer (Tabūn G), which lies immediately on the bedrock is the oldest archaeological level so far found in any Palestinian cave. It exists also at the Mugharet Umm Qatafa,[2] in the Judaean desert, where it was found by Neuville in 1932, a year before we first reached Layer G in the Tabūn. We owe to the Abbé Breuil the identification of this Palestinian industry with the Tayacian of La Micoque.[3] It is characterised by an abundance of small utilised flakes, the majority with plain striking-platforms, and by a great scarcity of true implements with secondary working.

[1] This is a slightly modified version of the diagram which appeared in No. 10 of this Bulletin.
[2] R. Neuville. Le préhistorique Palestinien. Revue Biblique. 1934. XLIII. pp. 237 ff.
[3] D. Peyrony. La Micoque et ses diverses industries Ve Session de l'Institut International d'Anthropologie. Paris, 1933.

The Lower Acheulean of Layer F is above all an industry of hand-axes, flake-tools being absent at its base, but appearing in relatively small numbers towards the top. This level appears to correspond to the Upper Acheulean layers E and D2 of Umm Qatafa,[4] where hand-axes predominate.

The succeeding horizon (Tabūn E) I originally labelled Acheulean-Mousterian, but I have now abandoned this in favour of Upper Acheulean. Thanks to Professor Breuil and Mr. Harper Kelley I have lately been able to examine a large collection of Acheulean material from the river deposits of Northern France, and I find that the thick racloirs with resolved flaking which are so abundant in Tabūn E (Plate XVII) do in fact occur as a typical component of the Acheulean culture in Western Europe. The hand-axes of Layer E include a good number of true Micoquian forms, especially at the horizon Ec (Plate XVI), and this stage can therefore be equated roughly with the top layer of La Micoque itself. During a visit to Les Eyzies last summer I was able, by courtesy of M. Peyrony, to make a study of the La Micoque material, and I was very much struck with the relatively close correspondence of that site with our lowest layers at the Wady el-Mughara, and with Umm Qatafa.

Layers C and D of the Tabūn I originally classified as Lower Mousterian, and Layer B (including the Chimney deposit) with Wad G as Upper Mousterian. Later Tabūn C and D, with the Skhūl industry (Plate XVIII), were dubbed Levalloisian, the overlying levels remaining as Upper Mousterian. This was done partly in order to conform with Neuville's nomenclature, but it suggested a more marked difference between the upper and lower levels than in fact existed, and I have now, in consultation with Professor Breuil, adopted the term Levalloiso-Mousterian for the whole cycle, the change from Lower to Upper, which occurs between Tabūn C and B (Plate XIX), being marked by the disappearance from the fauna of *Rhinoceros merckii* and hippopotamus. The different stages of the Levalloiso-Mousterian have been found by Neuville in a number of Palestinian sites, but notably in the cave of Jebel Qafseh, near Nazareth, where human skeletons corresponding roughly in age with those of the Mugharet es-Skhūl have been discovered.[5]

The Levalloiso-Mousterian of Palestine has affinities with the Middle Palaeolithic of Egypt, in which the Levallois flake predominates to the exclusion of classic Mousterian forms, and differs from that of Europe, in which industries of Levalloisian tradition alternate with those of true Mousterian type.

[4] R.Neuville. L'Acheuléen Supérieur d' Umm Qatafa. Anthropologie. 1931. XLI, pp. 13 ff.
[5] Unpublished.

With the arrival of the Upper Palaeolithic contact with Egypt and North Africa apparently ceases, and Palestine is assimilated to Europe. The Lower Aurignacian (Wad F) is better represented in other sites (e.g. Jebel Qafseh[6]) than at the Wady el-Mughara, where it occurred in a layer of erosion which also contained residual material from the Upper Levalloiso-Mousterian. It is an industry more or less in the Châtelperron tradition, but more delicate and less primitive than that of the Châtelperron level of the West, and with certain original features. It is distinguished in particular by the presence of a special type of triangular flint point with thinning at the base, which occurs also, but very occasionally in the Aterian of North Africa. I have named this the Emireh point,[7] from the Galilean cave el-Emirch, excavated by Turville-Petre, in which it was first found *in situ*.

The oldest horizon of the Middle Aurignacian (Wad E) is characterised by the presence of a special type of small spiky flint point with fine retouch which is known also from the European sites of Krems[8] and Font-Yves,[9] both referred by their excavators to a fairly early stage of the Aurignacian (Plate XX). The industry of the following layer (Wad D) with its keeled scrapers and nose-scrapers, is a well-developed classic Middle Aurignacian, though it cannot be referred exactly to any one of the subdivisions of this stage which have been worked out for Western Europe, and which probably have only a local significance (Plates XXI and XXII). Layers corresponding to Wad E and D were found by Turville-Petre in excavations carried out for our expedition in the Mugharet el-Kebarah near Zichron Jacob,[10] and by Neuville[11] in various sites, of which the most important is Erq el-Ahmar in the Judaean desert.

If we look at a distribution map of the Middle Aurignacian we see it lying as a broad band across Central and Western Europe, the whole southern shore of the Mediterranean being left on one side. In the absence of any evidence for a European origin it seemed probable, even nine years ago, that we should have to look to Asia for its centre of diffusion. The evidence we now possess of the presence in the Near East of a highly developed, unmixed industry of this type throughout the greater part of the Upper Palaeolithic (covering, that is, roughly the period of the Middle and Upper Aurignacian and the Solutrean in the West), brings strong support to this view—in fact promotes it from probability to practical certainty.

[6] See R. Neuville. Le préhistorique Palestinien. Revue Biblique 1934. XLIII, pp. 237 ff.
[7] My original name was Tabelbala point, but I abandoned this when it became clear that it was in fact very rare at Tabelbala.
[8] J. Strobl & H. Obermaier. Die Aurignacienstation von Krems. Jahrbuch für Altertumskunde. 1909. III. pp. 129 ff.
[9] L. Bardon, A. & J. Bouyssonie. Stations préhistoriques du Château de Bassaler. II. Brive, 1920.
[10] Unpublished.
[11] See Neuville. Le préhistorique Palestinien. Revue Biblique. 1934. XLIII, pp. 237 ff.

The Upper Aurignacian of Wad C (Plate XXIII) which presumably takes the place occupied by the Magdalenian in the Western sequence, I originally described as Capsian, but a closer comparison soon showed that this identification was not valid. This very rough and peculiar industry, with its abundant polyhedric burins, cannot be compared exactly with any other Upper Palaeolithic facies yet known. In some ways it has the aspect of a degenerate survival of the Middle Aurignacian, but the reappearance of the Châtelperron point, absent since the base of the Upper Palaeolithic, suggests the arrival of outside influences.

The Natufian[12] (Wad B1 and B2), in spite of certain general features common to the great majority of microlithic industries, is definitely original, as indeed might be expected, since by this time local differentiation all over the world is much more marked than in earlier periods. Natufian art shows no Predynastic affinities, nor, in spite of certain superficial resemblances, can it be linked with that of the Magdalenian, to which it is inferior. In the matter of Natufian origins we have everything to learn, but it is a fairly safe guess that excavation in Anatolia would throw light on this problem.

Neuville[13] has recently attempted a fourfold division of the Natufian, based on his soundings in various sites. According to this scheme, the industry of Wad B2 (Plate XXIV) would correspond with Natufian I, and that of B1 divided between Natufian II and Natufian IV (the latter being characterised by notched arrow-heads). In the main Neuville's classification appears to be valid, but it needs to be confirmed, especially as regards the middle stages, by further excavation.

It is not yet possible to establish a clear correlation between the various archaeological layers found in the Wady el-Mughara and elsewhere, and geological deposits outside the caves. The most recent work on the Jordan valley is that of Picard,[14] who distinguishes in the Pleistocene two main Pluvials (A and B), separated by an Interpluvial marked by volcanic activity, and followed by a period of increasing desiccation (Jungdiluvium), with a possible slight pluvial episode before the beginning of the Bronze Age. Picard's Jungdiluvium can be identified with fair certainty in the Mugharet el-Wad, where the gradual replacement of deer by gazelle[15] in the Upper Palaeolithic layers suggests increasingly dry conditions from the Lower Aurignacian onward. The evidence of the underlying layers is not so easy

[12] D. A. E. Garrod. A new Mesolithic industry; the Natufian of Palestine. Journal of the Anthropological Institute. 1932. LXII. pp. 257 ff.
F. Turville-Petre. Excavations in the Mugharet el-Kebarah. Journal of the Anthropological Institute. 1932. LXII, pp. 271 ff.
[13] R. Neuville. Le préhistorique Palestinien. Revue Biblique. 1934. XLIII. pp. 237 ff.
[14] L. Picard. Zur Geologie des mittleren Jordantales. Zeitschrift des Deutschen Pallstina-Vereins 1932. LV, pp. 169 ff.
[15] The animal remains from the Wady el-Mughara are being studied by Miss D. M. Bate, to whom I am indebted for the information incorporated in this paragraph.

to interpret. Tabūn G yielded no animal bones, and those from Tabūn F are rather scanty, and give no clear climatic indications. At Umm Qatafa, however, the lower layers, which correspond to Tabūn F, yielded neither rhinoceros nor hippopotamus, and the fauna was a holarctic one which did not suggest particularly damp conditions.[16] Tabūn E on the other hand contained an abundant fauna which included *Rhinoceros merckii* and hippopotamus, and points to a rather warm, wet climate. The same conditions persist throughout Tabūn D and C, but in B rhinoceros and hippopotamus disappear, and two species of deer (*Cervus elaphus* and *Dama Mesopotamica*) are extremely abundant—a fact which suggests continued high precipitation but a lower temperature. We therefore have evidence of fairly dry conditions in the early part of the Upper Acheulean, followed by a long rainy period throughout the Micoquian and the Lower and Upper Levalloiso-Mousterian, and at first sight this seems to correspond fairly well with Picard's Interpluvial and Pluvial B. The evidence of fauna alone, however, is not very satisfactory as an indication of climate, and the problem of correlation must remain in suspense until it is settled by the discovery of implements *in situ* in the Pleistocene deposits of the Jordan Valley.

The study of the coastal deposits of Syria and Palestine offers a promising field, since these are now known to contain archaeological horizons. Pére Bergy S. J.[17] has already done interesting work in this line in the Beirut region, but we are still too much at the beginning of things for conclusions to be permissible. Still less is it possible at present to attempt correlations with glacial periods in Europe, but I am hopeful that within the next decade prehistoric studies in Palestine, moving step by step with geology, will have made a further advance at least as great as that achieved in the period from 1926 to the present day.

[16] R. Vaufrey L'Acheuléen Supérieur d'Umm Qatafa-Paléontologie. Anthropologie. 1931. XLI, pp. 253 ff.
[17] A. Bergy. Le Paléolithique ancien stratifié à Ras Beyrouth. Mélanges de l'Université S. Joseph, 1932. XVI, pp. 169 ff. See also D. A. E. Garrod and E. W. Gardner. Letter in Nature, June 1, 1931.

PLATE XIV. Wady el-Mughara. General view at close of excavations.

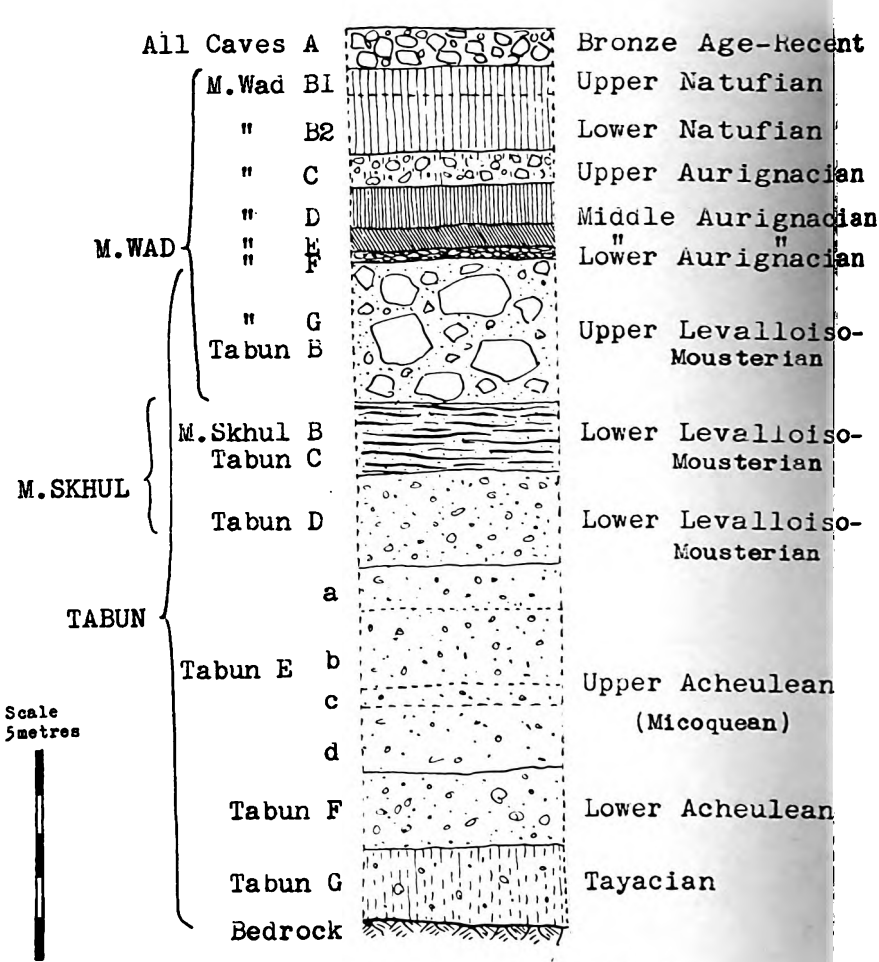


PLATE XV. Composite section of the layers in the three caves of Wady el-Mughara.

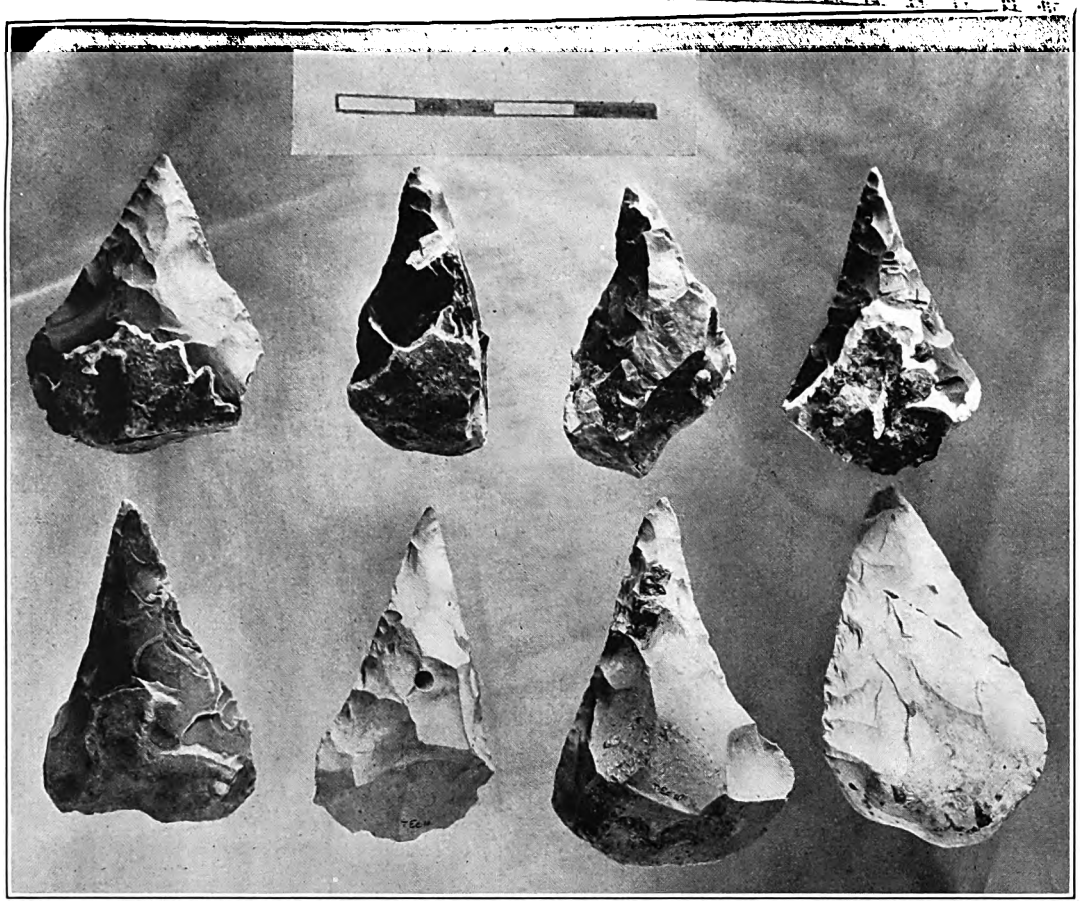


PLATE XVI. Hand-axes of La Micoque type from Layer Ec of Tabūn cave. Upper Acheulean epoch. Scale in cm.

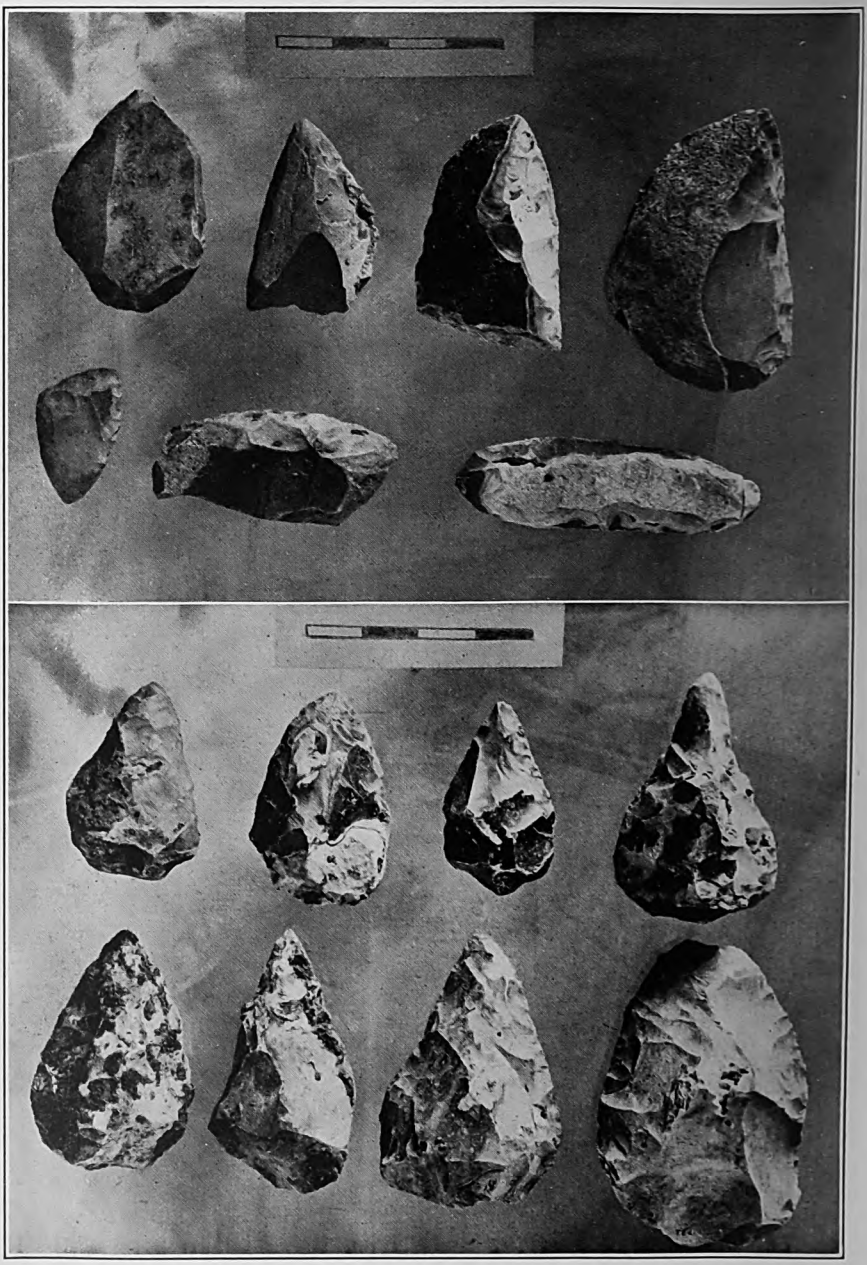


PLATE XVII. Scrapers (at top) and hand-axes (at bottom) from Layer Eb of Tabūn cave. Upper Acheulean epoch. Scale in cm.

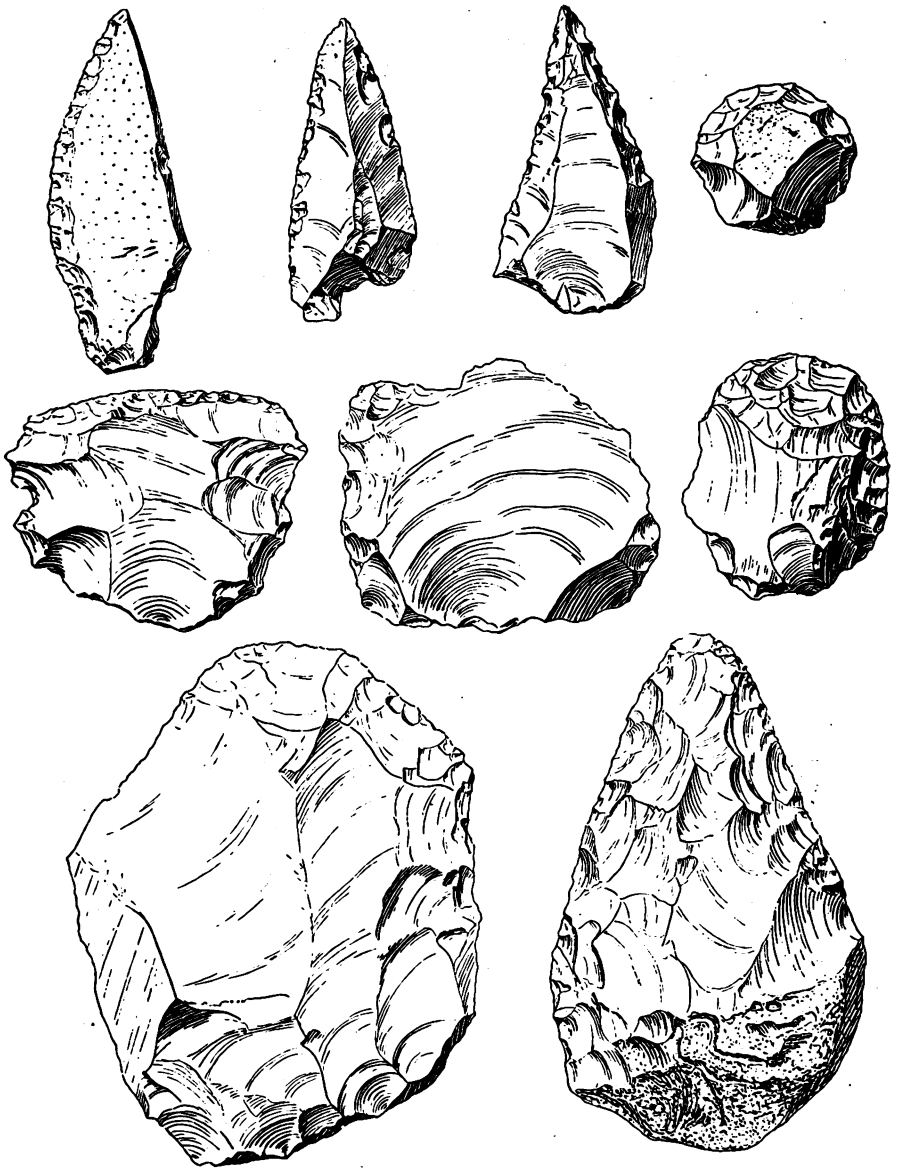


PLATE XVIII. Flint implements from Layer B of Skhūl cave. Lower Levalloiso-Mousterian epoch.

PLATE XIX. Flint implements from Layer B of Tabūn cave. Upper Levalloiso-Mousterian epoch.

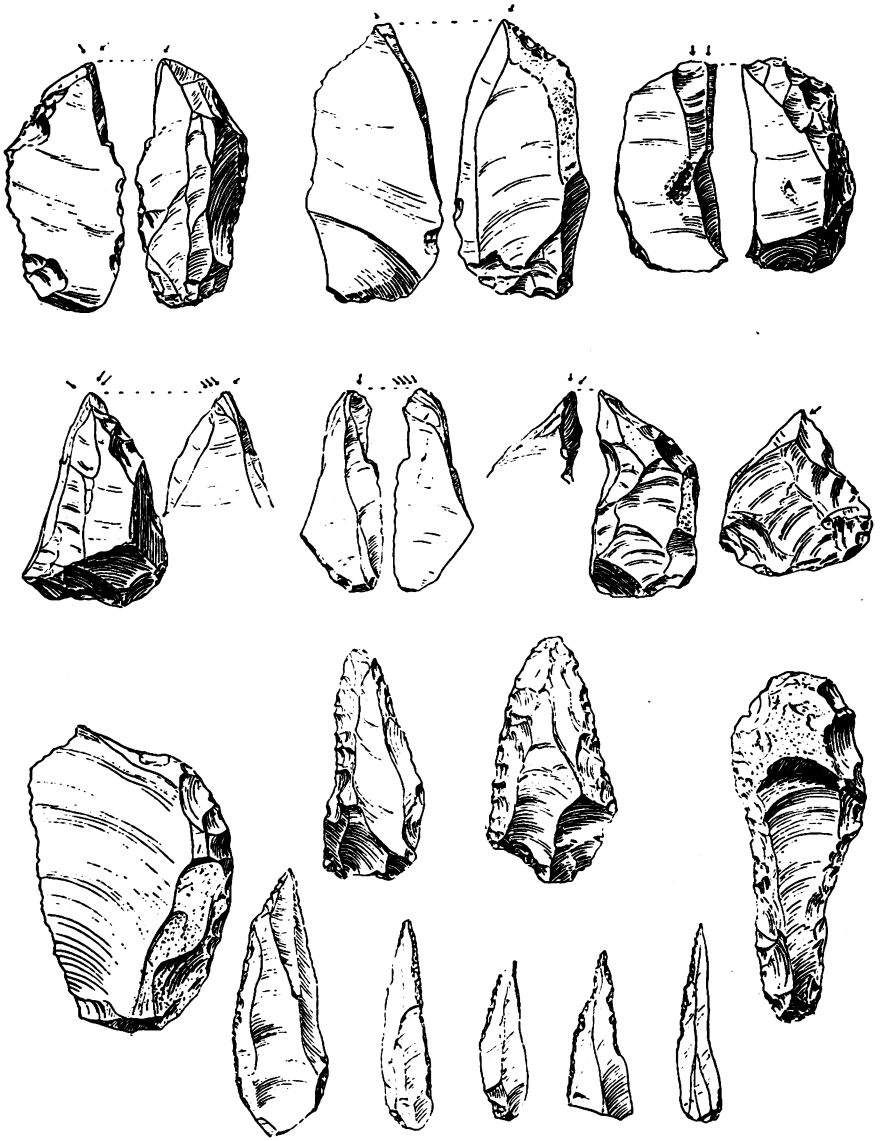


PLATE XX. Flint implements from Layer E of Mugharet el-Wad. Middle Aurignacian epoch.

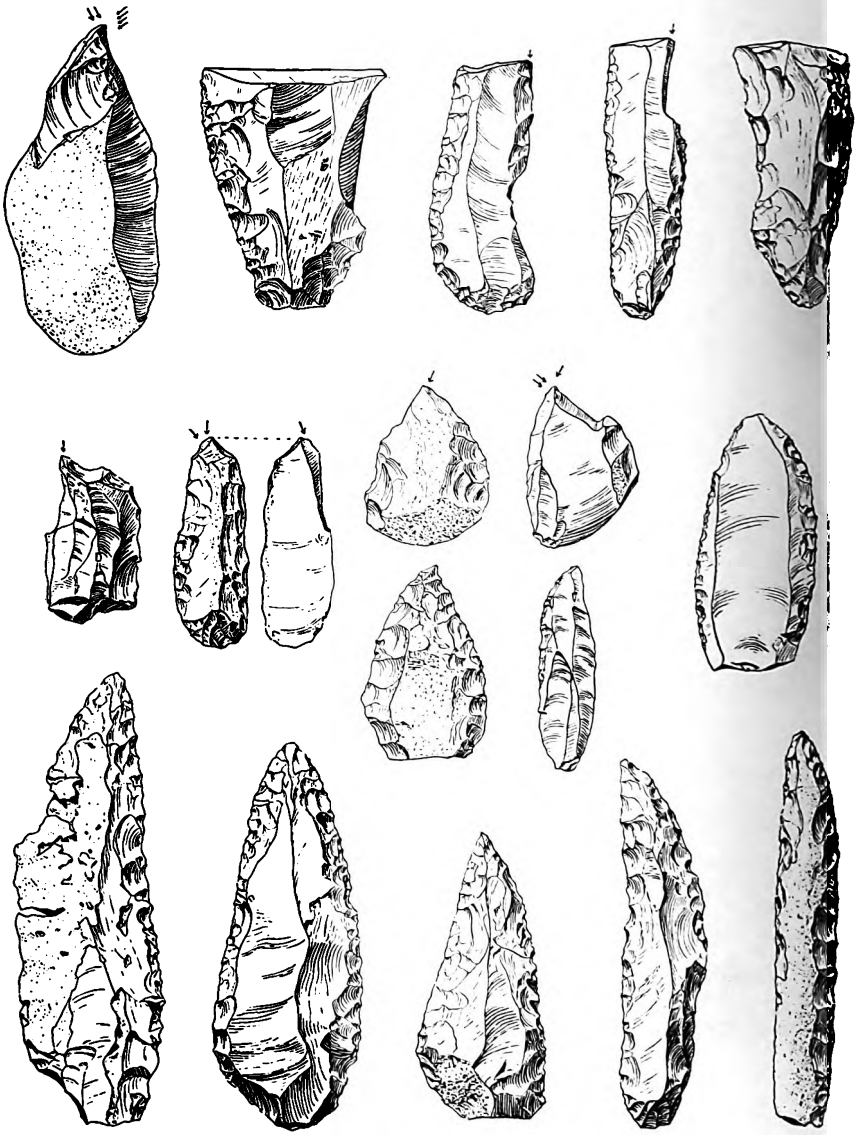


PLATE XXI. **Flint** implements from Layer D of Mugharet **el-Wad.** Middle Aurignacian epoch.

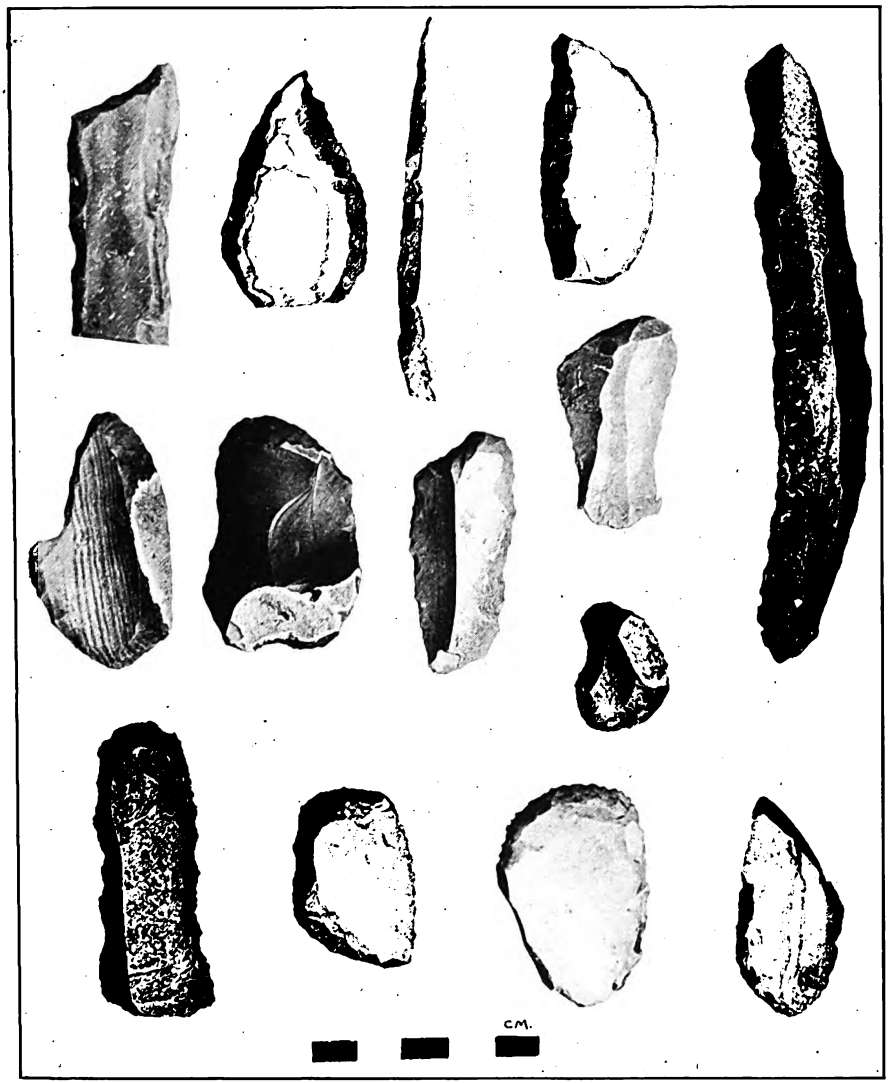


PLATE XXII. Flint implements from Layer D of Mugharet el-Wad. Middle Aurignacian epoch. Scale in cm.

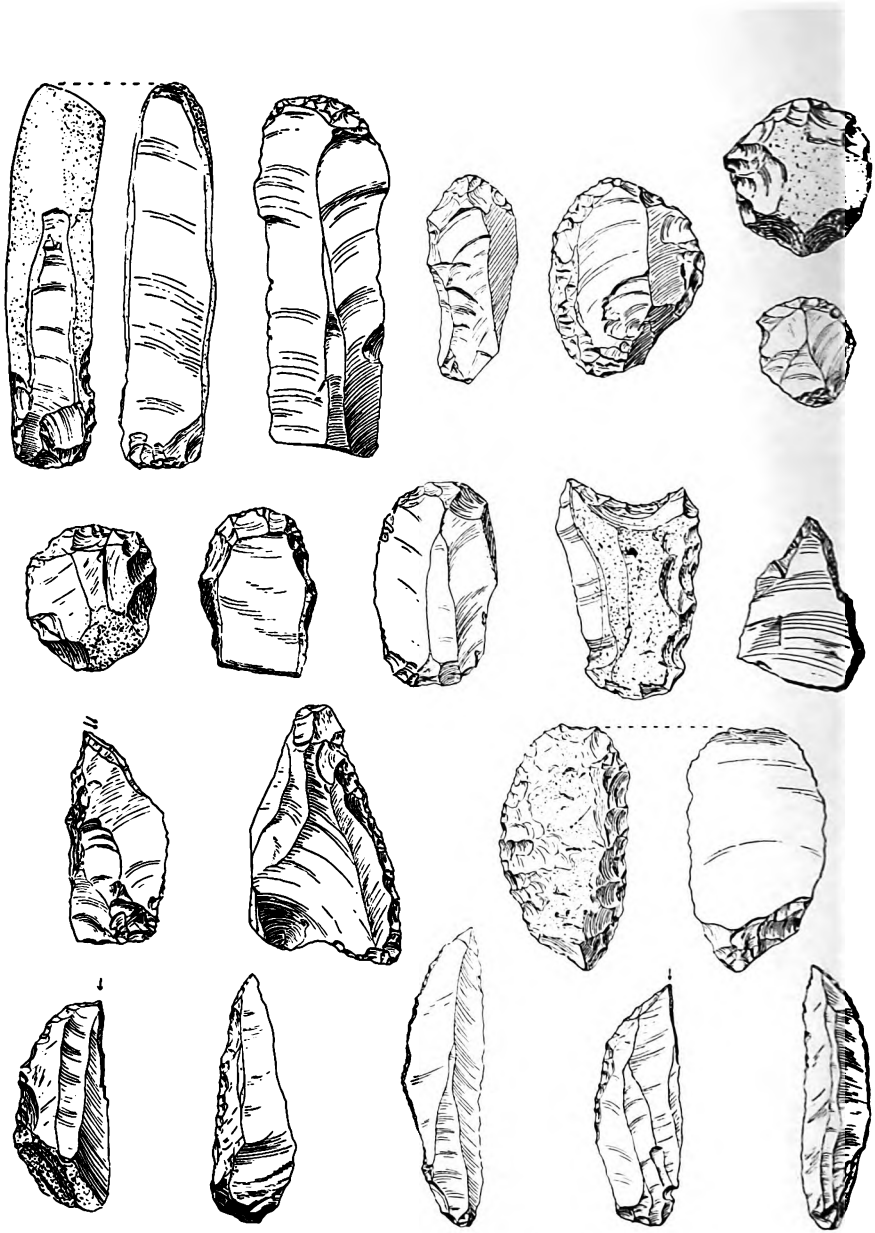


PLATE XXIII. **Flint implements** from Layer C of Mugharet **el-Wad. Upper** Aurignacian epoch.

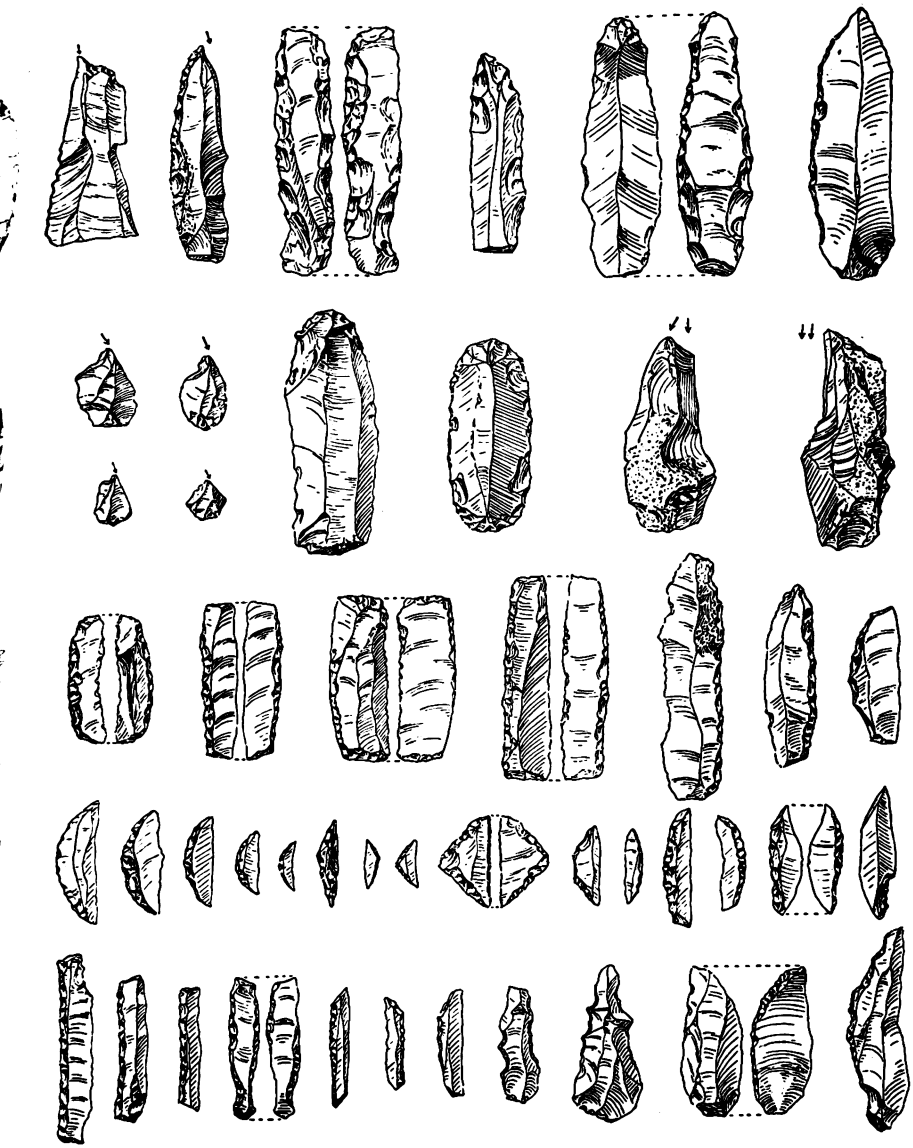


PLATE XXIV. Flint implements from Layer B2 of Mugharet el-Wad. Lower Natufian epoch.

MOUNT CARMEL MAN

By Theodore D. McCown

THE PREPARATION and study of the human material from the Palaeolithic caves of Mount Carmel has progressed steadily since the last report (May, 1934) was published in Bulletin No. 10 of the School. The task has been longer and more difficult than any one of us who are concerned with it had anticipated originally, but certainly the results thus far have exceeded our expectations and have justified the time and money expended. The writer, with Sir Arthur Keith's constant collaboration, has been devoting all his time to this work. He is deeply indebted to the University of California (Amy Bowles Johnson Travelling Fellow, 1934-35), and to the Director and the Trustees of the School (Research Fellow, 1935-1936) for their assistance in making possible his continued participation in this research. Miss Collett, Miss Parbury and Mr. Willmott have been constantly and fully occupied with the preparation of the material and the records upon which will be based the published description.

At the present time it may be of some interest to list in detail the human remains recovered from the Lower Levalloiso-Mousterian layers of the Mugharet es-Skhūl and et-Tabūn. The 1931 season of excavation at the Skhūl brought to light the remains of a human infant, aged about three and one-half years. This discovery has been reported previously in Bulletin No. 8 of the School. The greater part of the cleaning and technical preparation of this specimen was accomplished in the early part of 1932, and at that time it was planned to published the account of this discovery as a separate monograph. With that purpose in view, Sir Arthur Keith and the writer wrote the greater part of a minute description concerning the skull, mandible and what could be ascertained from the other skeletal remains. The body had been buried in a squatting position, leaning forward and to the left, despite a certain amount of disturbance of the superficial portions of the burial, the greater part of the bony remains of the trunk and the lower limbs were intact, forming a small bundle by reason of the extreme contraction of the lower limbs. It appeared wise for a variety of reasons, in 1932, to clean this mass of bone as far as possible but not to attempt to disarticulate the individual bones. A year later, in consequence of certain refinements of the technique of cleaning and preparation of the material, it became practicable to dismember this mass and thus to have the separate bones to study and describe.

The infant's skull consists of three parts: the parietals, the occipital and the right temporal form the largest; the frontal bone forms the second part and a small portion of the petrous bone of the left ear forms the third. (Plate XXV.) The mandible consists of the greater part of the corpus with the anterior part of the left ascending ramus. No fragments of the face or upper jaw were found, but from the maxilla there are a few teeth of the milk dentition and the crowns of the unerupted permanent first molars, a permanent canine, a lateral incisor and a medial one. The upper limbs are represented by one radius and portions of both humeri, each one of the latter containing parts absent in the other. The vertebral column and the ribs are incomplete; the pelvis is represented by portions only of the innominate bones, and by the uppermost segment of the sacrum. The left leg is nearly complete but only the shafts remain of the bones of the right leg. The left ankle and foot consist of a part of the talus, part of the calcaneum and a complete set of the metatarsal bones.

The discovery of the human remains during the 1932 season at the Mugharet es-Skhūl has been recounted in Bulletin No. 9 of the School. A description was given of the positions and the circumstances of burial of the different individuals, and also notes regarding their completeness, as far as could be ascertained at that time. Now it is possible to amplify that account, in-as-much as all of the material has been extracted from the matrix blocks in which it was removed from the deposit.

The different individuals were numbered in the sequence in which they were discovered. Skhūl II was an adult, probably a woman, whose few and scanty remains were recovered from the hardened earth immediately above the hard breccia at the northwestern margin of the terrace of the cave. The principal part of the skull consists of a fragment of the frontal bone, preserving the root of the nose and about two-thirds of the upper border of the right orbit. This has the prominent and characteristic torus of the Neanderthal form of man. The Symphysial part of the mandible is preserved and the chin elevation is definitely pronounced and unmistakable. The bone, as a whole, is slight in build. Of other parts of this individual we have the proximal ends of both ulnae, the head and neck of one radius, and the diaphyses of both humeri. All of these fragments had been broken anciently, and their position when uncovered left no doubt but that they were the remains of a disturbed burial, the parts as found having been moved from their original position.

The circumstances in which No. III was discovered, were as perplexing as those connected with Skhūl II. The distal half of the shaft of an adult left femur was found lying parallel with and close to the proximal parts

of the shafts of its corresponding tibia and fibula. We have the remains of a flexed left leg, buried in an alcove in the rock wall at the southeast corner of the terrace. From the position of this left leg it was evident that the body originally must have been placed partly in the alcove, but more largely on the terrace proper. No traces of this individual, other than these fragments of the left leg, were found anywhere in the site. The bones are robust, the femur having a well developed linea aspera.

Skhūl IV is the most complete of all the adult individuals recovered from this site. (Pl. XXVI.) The skull and mandible lay close to the rock floor and the weight of the deposit above them has resulted in considerable crushing. The face, however, seems to have escaped; the upper jaw is markedly prognathous and the nasal aperture is broad, with no sharply defined sill. The left arm and forearm are the more complete of the two; the right humerus lacks the head and upper part of the shaft. The greater part of both hands and wrists are preserved, the right one lying palm uppermost, the left one lying immediately in front of and partly underneath the chin. The left scapula is reasonably complete, but the right one originally lay upon the rock itself and has been destroyed. The vertebral column is fragmentary, but the greater number of the ribs of both the left and the right series are preserved. The clavicles are unfortunately fragmentary; the manubrium has disappeared, but the remainder of the sternum is nearly intact. The two innominate bones are virtually complete but the sacrum is represented by only a small piece of the dorsal surface of the bone containing the inferior opening of the sacral canal. The lower limbs are remarkably well preserved and the tarsus and metatarsals of the ankles and feet are very nearly represented in their entirety. In strict truth, these bones are probably the finest in existence.

Number V is another remarkably well preserved adult individual. The skull is exceptionally complete. The post-mortem damage to the left side of the frontal and the left border of the orbit have been effectively repaired. (Pl. XXVII.) The base of the skull has suffered only slight damage, is, in fact, as nearly perfect as one might hope for. The face, on the other hand, is almost entirely missing but the alveolar margin of the maxilla containing all the teeth is complete, and the bony floor of the palate, although cracked and fissured, retains approximately its normal position. The mandible is complete.

The two humeri are nearly intact, but as for the forearm, the articular ends of the bones have decayed. The two clavicles are represented; of these the right one is the more complete. The ribs and the vertebral column are in a fragmentary condition; of the vertebral column the best preserved mem-

bers are the seven cervical elements. The iliac portion of the right pelvis is all that remains of this part of the skeleton. Cemented into the acetabulum by breccia, is the head and neck and the upper half of the shaft of the right femur. The left leg is somewhat better preserved, in that the femur consists of nearly the whole of the shaft with part of the distal articular end, while the left tibia extends from the damaged condylar surfaces to a point just short of the distal end. The fibula of this leg is represented by several crushed parts of the shaft. The ankles and toes are represented by one talus and one first metatarsal.

Number VI from the Skhūl was found in very hard breccia in the center of the terrace, the parts recovered having been found in a scattered condition over an area of about a square meter. The skull is both fragmentary and crushed, the principal parts that remain being the left temporal, the occipital and parts of the adjacent left parietal. The mandible is represented by most of the left ramus and by a small part of the adjacent corpus containing the third molar. Of the other parts of the skeleton, the principal portions consist of the left femur, which is nearly complete, the shaft of the right femur, and two-thirds of the shaft and the distal end of the left tibia with its corresponding talus, calcaneum, navicular and cuboid. The arms are represented by two fragments of the respective shafts of the left ulna and radius. There are a number of other fragments, which at the present time have not been certainly identified.

Skhūl VII was only partially uncovered in the field and the subsequent excavation and cleaning of the bones from the block of matrix in which they were transported to London, showed that this was a crouched burial on the right side. The hands were placed in front of the face in a manner similar to those of Number IV, but the lower limbs had been tightly flexed with the knees drawn upwards and pressed against the body. The skull lay on its right side and had been compressed laterally to such a degree, that any reconstruction of the remaining parts will be impossible. Portions of the frontal bone, the parietals and the left temporal remain, enough at any rate to give us data for comparative purposes with the other less damaged crania.

The skeleton as a whole has been severely damaged by pressure and decay. The two humeri are represented, but are incomplete, and the same is true of the right ulna and radius. The left forearm, however, is relatively little damaged. The pelvis and the lower limbs, the latter represented by parts of the right femur and tibia, are badly crushed and incomplete. The length and slenderness of all these bones are strikingly like those which characterized the bones of the little woman from the Tabūn.

The eighth individual (Skhūl VIII) is also fragmentary. The parts found belong to a child of eight to ten years of age. They consist of the tibia and

fibula, with the tarsus and metatarsals of the left leg and foot. The right leg is less complete, the portions preserved comprising the shaft of the femur and the distal two-thirds of the shaft of the tibia, with the distal epiphysis and the talus still in position.

Number IX is an old adult, which was found in extremely hard breccia just above the rock floor of the terrace. It was the last of the discoveries to be made at the Skhūl in 1932, and largely because of this, there was insufficient time to investigate closely the remains. It was ascertained then that we had to do with the skull and part of the pelvis; there was every indication that the large block of matrix contained at least a partially complete human skeleton.

The removal of the surrounding matrix in the laboratory during 1934 and 1935 revealed the larger part of a human cranium, a few ribs, the spine of the left scapula and part of the left pelvis with the head and upper part of the shaft of the left femur still lying socketed in the hip-joint. Occupying the space which should have contained the larger part of the remainder of the skeleton, was the nearly complete, much crushed skull of a large bovine animal. It would seem that at some time subsequent to the human interment, this ox-skull was buried, and the excavation made to receive it destroyed the greater portion of the human burial. None of the missing human parts were found at any place in the deposit.

Previous reports concerning the human remains from the Skhūl have listed nine individuals. A tenth must be added to these—represented by a small part of the mandible of an infant aged about four and one-half years. This fragment was found in the block containing the adult, Number VII, in the course of technical preparation during 1935. It lay in front of and below the adult's skull, and near it was the distal end of an immature right humerus which belongs to the same child. The mandible consists of the symphysial part of the corpus. The milk dentition is still functional, but a fracture obliquely across the specimen shows that the crowns of the permanent teeth are already well formed and somewhat in advance of those of Skhūl I. Four crowns of the upper permanent dentition were found lying near the mandible.

The Oven Cave (et-Tabūn) yielded two fine specimens, the nearly complete skeleton, skull and mandible of a woman, and a massive isolated lower jaw, which is probably male. A brief account of these two individuals was given in Bulletin 10. Some of the outstanding differences and resemblances were noted, both as between themselves, and with regard to the individuals from the Skhūl.

The Tabūn woman is perhaps thirty years of age. The vault and the right side of the skull have been reconstructed from about fifty pieces. The left

temporal, with part of the occipital including the basilar portion, forms a separate section which has not been joined to the remainder of the cranium in order to facilitate casting of the specimen. The face is partially preserved, the maxillary arch being complete except for the left M-3, and the ascending process of the maxilla on the right side articulates with the frontal. (Pl. XXVIII.) The mandible is nearly complete, the principal defect being the loss of both condyles.

The remainder of the skeleton is quite well preserved. The existing vertebrae are all fragmentary but the ribs on the left side are well represented. The right scapula is missing but the left one preserves the intact axillary border with the glenoid articulation, part of the coracoid and the complete acromion with the root of the spine. The two clavicles are incomplete, as is the sternum. The left arm, forearm, wrist and metacarpals are very nearly perfect. The carpus lacks the os multangulum minus and several of the metacarpals have been damaged a little. The right humerus lacks the distal end, the radius on the right side has been destroyed and only a small fragment of the shaft of the ulna remains. The right wrist and hand are missing.

The pelvis consists principally of the anterior half of the left *ilium*. The right femur is complete, but unfortunately the distal end has been crushed. The left bone is so shattered that reconstruction is impossible. The two tibiae are moderately well preserved, while the right fibula is complete except for the proximal end. The left is represented by six inches of the shaft. The right tarsus is excellently preserved, as are the corresponding metatarsals. (Pl. XXIX.) The left tarsus is less complete but the talus is intact; so too is the first metatarsal.

There were a variety of fragments and isolated teeth, representing perhaps half a dozen individuals from the Levalloiso-Mousterian layers of the Tabūn. The chief specimens of this series are: 1) a fragment of an adolescent maxilla and six teeth of the right side belonging to it; 2) the distal end of a right radius similar in size to that of the female skeleton; 3) a fragment of a femur shaft.

The Acheulean layers provide us with two interesting specimens. The first is a heavily mineralized, mid-portion of the shaft of a left femur and the second is a single, very worn molar tooth. It is obvious that these remains are too scanty to allow of any inferences with regard to the physical characters of the Acheulean peoples of Palestine. They do not present any striking non-Neanthropic characters.

The provisional statements made by the writer and Sir Arthur Keith which were published in Bulletin No. 10, regarding the general morphology and the systematic position of these fossil skeletons from Palestine, need no

essential revision. The work of the past eighteen months has, however, emphasized the fact that among themselves the variation, both in kind and degree of development, is very great. It is no exaggeration to say that if the various individuals, from the Skhūl necropolis alone, had been found in different sites over a wide area, at different times, anthropologists would almost certainly have assigned them to several varieties of a common extinct form of mankind.

The female skeleton from the Tabūn is the most Neanderthal of all of the specimens with which we have to deal. The others bear undoubted marks of the Neanderthal breed of man, but they show at the same time a large number of cranial and skeletal characters which have hitherto been most commonly met with in modern types of man. Morphologically the various individuals from the Skhūl stand in an intermediate position between the European forms of Mousterian man and those of the modern type. The balance of the evidence, as we assess it now, is that these people are closer in a morphological sense to Neanthropic man than most of the contemporary or slightly later European specimens. Krapina is probably a possible exception to this generalization. At the same time it appears unlikely that these ancient Palestinians have given rise to any human forms ancestral to ourselves. That these people represent a hybrid form of Neanderthal, a cross-breed with *Homo sapiens,* is an hypothesis for which we lack any conclusive proof. There has not yet been produced certain evidence of the presence of Neanthropic man in periods anterior to the end of the Pleistocene.

A brief account of the technique employed in excavating the remains and preparing them for transport was given in Bulletin No. 9 of the School. The blocks as received in London required first of all to have the cement and plaster of paris covering removed from the bones. For this work, and for the subsequent removal of the breccia, a light pneumatic chisel was obtained and with this instrument the plaster was cut away. The silver-foil paper, which had been used to cover the bones, served as an indicator and prevented any damage to the specimen during this preliminary excavation. A large part of the removal of the breccia has been accomplished by using the air-drill. The detailed work of removing the last thin layer of matrix from the bone itself had been done partly by hammer and chisel, more largely by hand. For this work, dental implements cut down to form fine chisels and gouges have been most useful. In most instances the matrix adhering directly to the bone will flake away under pressure, leaving the surface of the bone clean. Extreme care has to be taken to prevent the brittle bone from flaking and cracking. Certain of the specimens, Number V for instance, were slightly softer than the matrix in which they were buried, and the technical difficul-

ties of cleaning such material have been successfully overcome, principally because of the skill and patience of Miss Collett and Mr. Willmott.

The long months of patient work which have been devoted to the cleaning and removal of the skeletons have been fully justified, in that all of the specimens have been extracted without suffering any considerable damage. There remains a certain amount of final cleaning of some of the specimens before the work of repair can be undertaken. Many of the bones and the skulls have suffered post-mortem crushing and fracture. The cracks and fractured surfaces have, in many cases, been filled or covered by thin layers of nearly pure calcite. This makes the repair of the bones a matter of the greatest difficulty. It has been possible, however, with most of the specimens, to clean away these calcite accumulations and rejoin the fractured parts. Liquid celluloid has been used to make fast these joins, and in certain instances defective areas have been reconstituted and strengthened with plaster.

A full and detailed photographic record has been made of all of the specimens, both during the course of removal from the matrix and during the process of reconstruction. In addition to this photographic record, scale drawings have been made of the burials to supplement those done in the field. An additional feature of this work, due to the enterprise of Miss Parbury, has been the construction of scale models of burials Number IV and V. These reproduce, in half size, the burial positions and features of these two remarkable individuals. The cave in which the burials were found has been modelled and a cast taken of it. The clay model was constructed from plans and sections of the site made in the field, and the detail of the surface features copied from photographs. The scale of this specimen is about 1 in 33. A complete set of these models was shipped to the School at the end of last year.

The desirability of having a full-size cast of the exceptionally complete skeleton, Number IV, was obvious. Many of our visitors, both scientific and lay, remarked to this effect. The writer's reluctance to attempt this very considerable task was dictated partly by the time which would be required, but mainly by the difficulty of making moulds on such a large scale and the danger to the specimen in so doing. The work was begun last spring, and thanks to the ingenuity and unremitting efforts of the staff under Miss Parbury's able direction, the task was carried out with great success. The skull was first removed and the remainder of the skeleton moulded in two parts, using gelatine molds. These were joined and a single cast taken from them. The skull was cast separately and fitted in its proper position. The three hundred pounds of plaster took several months to dry out and was then painted, the original serving as the "model". This replica reproduces the original with great faithfulness.

One further item of interest concerns the preparation and partial completion of a cinema record of the varied technical processes used in this work. This supplements a similar record made in the field during the excavation and removal of the burials.

The detailed scientific record of the individual bones involves photographing, drawing and casting each specimen. A considerable number of photographs and drawings, of the specimens which have been cleaned and repaired, have been prepared and that work is being carried out at the present time. The reproduction of the specimens is now under consideration, and it is hoped to effect arrangements so that plaster casts of the skulls, jaws, and the more complete skeletal parts will be available by the time the descriptive study is off the press.

The stage reached in the preparation and study of each individual is as follows:

Skhūl I: technical preparation completed; record partially complete; description complete except for that of the endo-cranial cast.
" II: technical preparation completed; photographic record completed; full descriptive notes and measurements.
" III: technical preparation completed.
" IV: technical preparation about half complete, the principal task being the cleaning and reconstruction of the skull and mandible.
" V: technical preparation virtually finished.
" VI: technical preparation virtually complete.
" VII: technical preparation in hand at the present time.
" VIII: technical preparation half complete.
" IX: technical preparation two-thirds complete.
" X: technical preparation completed.

Fragmentary human remains: technical preparation completed; full descriptive notes and measurements.

Tabūn I: technical preparation completed; photographic record half complete; full descriptive notes and nearly all measurements on all parts of the skeleton except the skull.
" II: technical preparation completed; photographic record completed; full descriptive notes.

Interest in this aspect of the work of the American School of Prehistoric Research has been well maintained, both here and on the Continent. In July of 1934 and again in July of the following year, exhibitions of the Mount Carmel human material were held in connection with the annual evening

reception of the Royal College of Surgeons. The International Congress of Anthropological and Ethnological Sciences met in London in July-August, 1934, and at that time an exhibition of the human material, the flints from the Levalloiso-Mousterian, as well as a selected series of faunal specimens, was held at the Royal College of Surgeons. A short pamphlet containing an account of the specimens and this aspect of the work of the School was provided for visitors. We were fortunate in having present at this time, the Director of the School, Dr. George Grant MacCurdy, who represented the United States at the Congress.

A comprehensive display of the material was made by invitation of the Royal Society at a reception in June, 1935, and later in the same month the Geological Society invited us to show the specimens in connection with a Soiree given in honor of the delegates attending the opening of the new Geological Museum of the Geological Survey of Great Britain.

The writer and Sir Arthur Keith presented a paper containing some observations and provisional conclusions before Section H of the British Association for the Advancement of Science at its Norwich meeting last year. It is hoped by Sir Arthur and the writer to have the manuscript embodying the descriptive account, and their conclusions with regard to the anatomy and the systematic position of these people, ready by the latter part of this summer. Publication should follow some time in the Spring of 1937.

PLATE XXVI. Skeleton of an adult (Skhūl IV). The lower part of the right leg and right foot has been removed to show the left ankle and foot. Neandertal race.

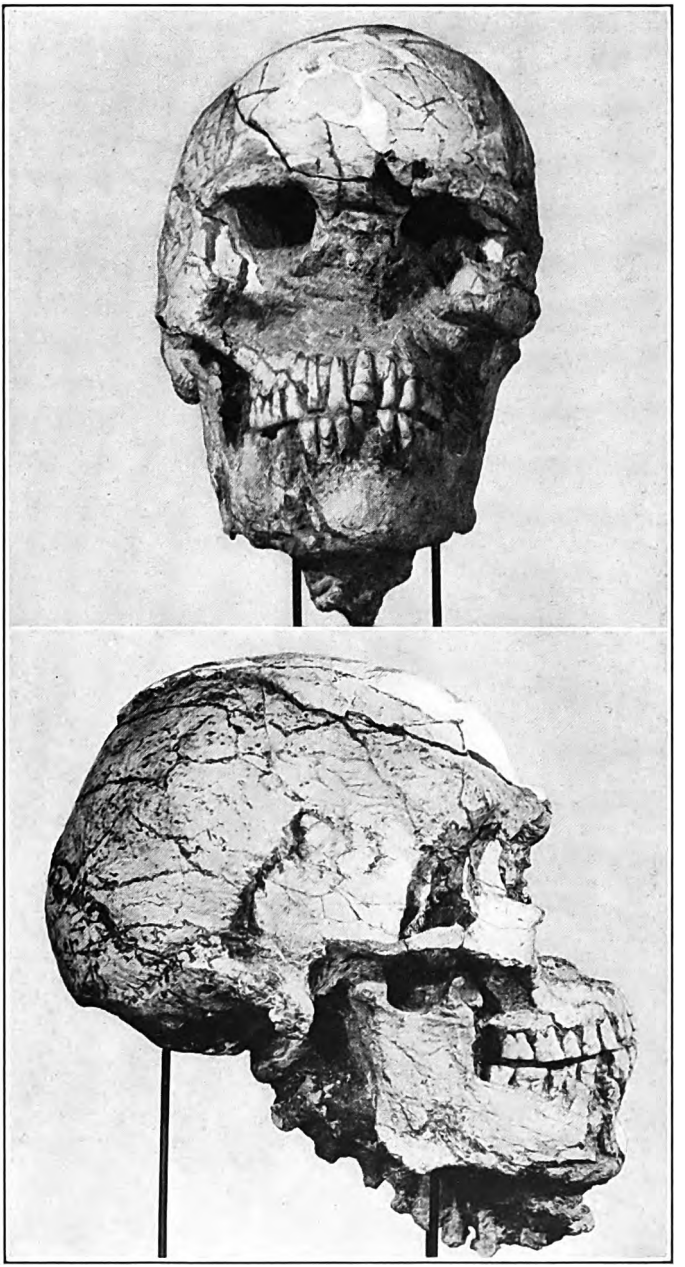


PLATE XXVII. The skull of Skhūl V, front and side view. The latter shows the non-bifid spines of the neck vertebrae. Neandertal race.

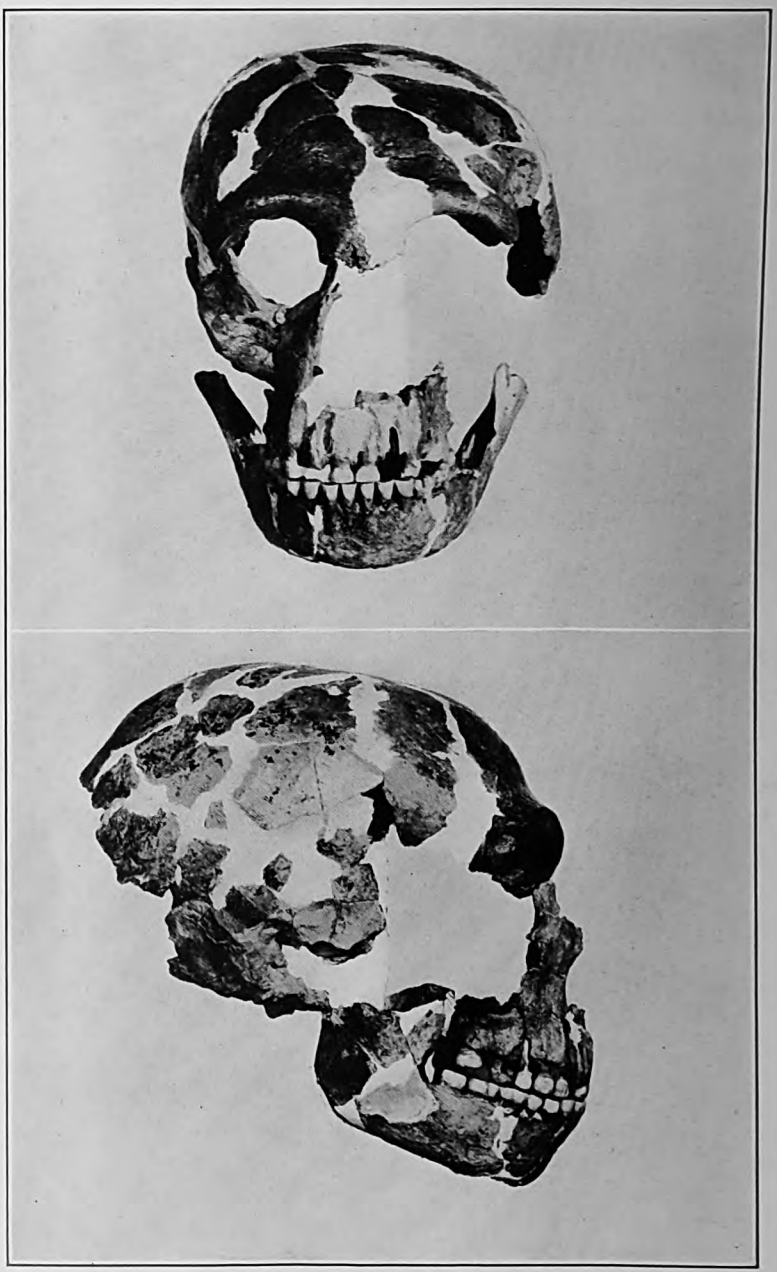


PLATE XXVIII. Front and side view of a young adult female skull (Tabūn I). Note the lack of chin. Neandertal race.

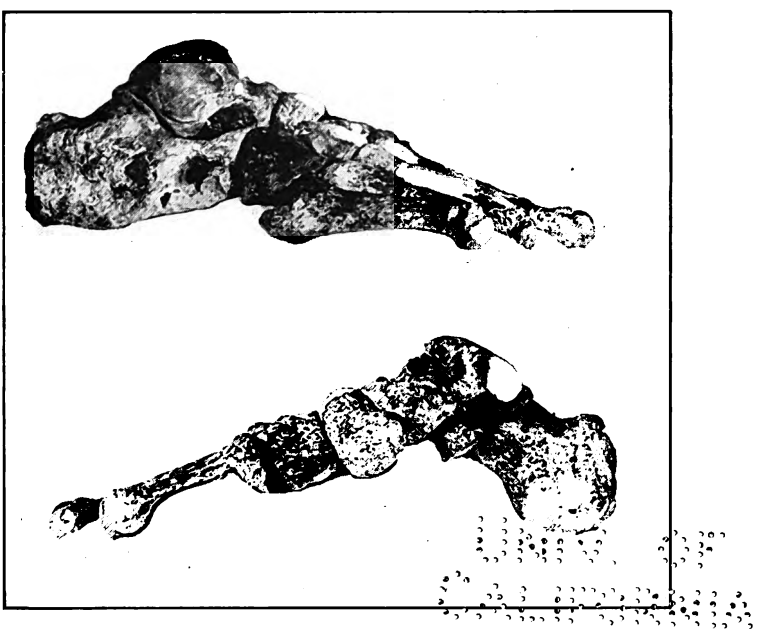


PLATE XXIX. Outer and inner view of the right foot of Tabūn I. Neandertal race.

THE CROMER FOREST BED AND ITS FLINT IMPLEMENTS

By J. Reid Moir

FOLLOWING upon the submergence of East Anglia beneath the waters of the Red Crag Sea of Early Pleistocene times, this part of England must, for a prolonged period, have remained uninhabited by man. As the sea advanced over the counties of Essex, Suffolk, and Norfolk, it laid down immense deposits of sand and shells upon the submerged land on which various races of people had lived from a very remote, and at present, unknown epoch. When East Anglia once more rose above sea level, the area again became occupied by animals and men, and the deposits in which their remains are found are known as the Cromer Forest Bed. The flint implements made by these people, and the animals with which they were associated, differ in many fundamental ways from those found beneath the Red Crag. Two of these differences may be stressed. In the Bone Bed beneath the Crag hand-axes are of an extreme rarity while the rostro-carinate is present as the dominant implement. In the Forest Bed, on the other hand, the rostro-carinate, though present, is replaced by numerous primitive hand-axes, which, however, show by their forms that they were derived from the earlier type of artifact. Again, beneath the Red Crag, the remains of true elephants are so few as to be almost negligible, while in the Forest Bed, *E-meridionalis* and *E-antiquus* are common. It is in fact clear, that, in the latter deposit, we are confronted with the earliest representative of the accumulations laid down during the greatly extended palaeolithic period. The Cromer Forest Bed occurs chiefly upon the northeast coast of Norfolk, and is composed of probably four divisions. These in ascending order are:

(1) A basement Stone Bed, containing occasional remains of mammals, and the flint implements described in this paper.

(2) The Lower Fresh Water Bed, rarely preserved, and seldom visible.

(3) Extensive beds of stratified gravel, at the base of which most of the mammalian remains have been found.

(4) An Upper Fresh Water Bed comprised of peat and containing mammalian remains, and fresh water shells. (Pl. XXX.)

In divisions 3 and 4 some humanly-flaked flints of a primitive type have been found, but these are very rare and not susceptible of cultural classification. The Cromer Forest Bed deposits are without much question to be asso-

ciated with the ancient northerly extension of the River Rhine which, in early Pleistocene times, occupied a wide shallow valley where the North Sea now is. It is somewhat difficult to picture the appearance of the north-east of Norfolk in those days because, the Forest Bed is now buried deep beneath glacial deposits sometimes upwards of 200 ft. in thickness. They represent at least three major glaciations, with the intervening inter-glacial beds, and their examinations cannot fail to impress the observer, and cause him to realize the immense antiquity of the Forest Bed which lies beneath them. But, if in imagination, these overlying deposits are swept away, and the North Sea replaced by a wide northward-flowing river, with low sandy banks, we are introduced to a scene very probably closely approximating to that existing when the Forest Bed was being laid down. And to make the picture complete we must provide this ancient valley of the Rhine with herds of animals and parties of primitive men bent upon their destruction. The Norfolk of those days must have been an ideal place for Stone Age man, as the climate was warm, animals abundant, and great quantities of first class flint available for making into implements.

It is now many years since the first artifacts were found in the Cromer Forest Bed[1] but, since those days, prolonged researches have been carried out, and there has now been recovered a very fine series of implements from the lowermost of these deposits. The Forest Bed is not only exposed, in places, at the base of the cliffs, but is also occasionally found *in situ* upon the chalk foreshore, and exposed at low tide. Moreover, in close association with these foreshore sites, are wide spreads of flints eroded from the basement bed by the sea. The specimens in this deposit are so distinctive in colour, flaking and condition, and are now so well known, that implements found upon the spreads of flints, can with confidence be referred to the basement bed, especially as is often the case, they contain in their interstices remains of the ferruginous sand forming the matrix of this bed. Its examination is clearly of considerable scientific importance, and it gave me much pleasure to undertake further work in the Forest Bed on behalf of the American School of Prehistoric Research. This work, which has been carried out at Weybourne, Sheringham, Beeston, East and West Runton, and Cromer, has resulted in getting together an extensive, and impressive series of implements which enables us to form a reliable opinion of the type of culture existent in Early Pleistocene time. Those who make a study of these matters are struck by the great length of time during which a certain form of implement "held the field" and how, even when it had been replaced by another, and more advanced type, the ancient forms continued, on occasion, to be

[1] The Great Flint Implements of Cromer, Norfolk, The Museum, Ipswich.

made. There is no doubt that the primitive edge trimmed Eolith of Harrisonian type, developed gradually into the rostro-carinate, and this into the first hand-axes.[2] Yet, throughout the period of dominance of the rostro-carinate and well into the Palaeolithic period, typical Harrisonian implements were produced. In fact they were made up to the very end of the Stone Age. It is not surprising therefore, to find that what may be termed the "Eolithic tradition", is strongly marked in the Cromer Forest Bed industry. It is seen in the steep edge-flaking of many of the specimens (Fig. 11), and, more clearly, in various implements which, though massive, are definitely of Harrisonian, Eolithic forms. Though this is the case, it is to be remembered that the gap of time separating the days when Harrisonian Eoliths were man's highest achievement in implement making, from those when Forest Bed man existed was certainly immense. On the other hand, the period separating the pre-crag epoch, when the rostro-carinate was in its heyday, from that of the Forest Bed was small in comparison. So it is not a matter for surprise to find that, in the latter period, pre-crag implemental forms are more numerous than those of the Harrisonian types. That is to say, associated with the primitive hand-axes of the Forest Bed, are to be found examples, many of them of excellent workmanship, of rostro-carinates (Fig. 12). Such an association is not, however, recognized only in the Cromer Forest Bed. In Africa, India, Palestine, and England wherever the earliest hand-axes have been discovered they have been accompanied by rostro-carinates. Moreover, when these hand-axes are critically examined, it is seen that, as has already been mentioned, they are derived from the beak-shaped implements. The exact method of this evolution has been described in great detail and need not be dealt with here, but, in many instances, the primitive hand-axes show the clearest relationship to the rostro-carinates. Sometimes remains of one, or both of the dorsal and ventral planes of this type are preserved in the hand-axes, which, moreover, frequently exhibit a rostro-carinate profile (Fig. 13). To such specimens I have given the name "rostrate hand axes", and, in many of them, the struggle for mastery, as it were, of the two types of implements is plainly visible. It is difficult sometimes to say whether any given specimen is to be described as a rostro-carinate or a hand axe, and they are to be regarded as true transitional implements. Though the descriptive term "rostrate", as applied to these hand-axes, enables us to visualize their form, it does not help us to place them in their proper position in the prehistoric cultural sequence. At one time they would have had applied to them that unsatisfactory term "pre-chellean", but in my opinion it is advisable to apply the term "Early chellean", or more correctly "Abbevil-

[2] *Phil. Trans. Roy. Soc.* Series B. Vol. 209.

lean", or "Cromerian", to a culture of Early Pleistocene date, and in which a primitive type of hand-axe is the dominant implement. Thus, the Cromer Forest Bed, in its lowermost stratum, contains Early Chellean hand-axes, and there is good reason to believe that the whole of the Chellean industry is to be located in the series of Forest Bed deposits. The mammalian remains found in them do not contradict this, and it is thus reasonable to regard the Forest Bed as the true Chellean horizon.

From the geological standpoint, the lowermost stratum of the Forest Bed which lies upon the chalk, presents many interesting features. This stratum which averages about 2 ft. in thickness is not stratified, nor does the material of which it is composed exhibit any signs of having been sorted. We can therefore put aside ordinary water-action as having been responsible for the formation of this bed. When, however, it is seen that, in addition to its lack of stratification and sorting, many of the flints in it are striated while occasional far-travelled, erratic rocks are found in association with them, it is inevitable that some form of glacial action, using that term in its widest significance, should be considered as having had a hand in the formation of the deposit in question. I have given very close consideration to this matter and conclude that it is possible that this bed represents a kind of "Coombe Rock", or sludge which, upon the passing away of a period of low temperature, the partly melted surface soil moves slowly down slopes, and accumulates at their foot. Thus, if this reasoning is correct, we are introduced to a hitherto unrecognized climatic change in Cromer Forest Bed times, when a phase of low temperature in the otherwise genial climate of those times, gave rise to the production of the implementiferous deposit under consideration. It would appear that the implements, and mammalian remains now found in this bed, were lying either scattered upon, or buried superficially in a land surface, and that these specimens, in the manner described, were incorporated with the sludge then in process of formation. It evidently flowed down the slopes of the ancient Rhine Valley, and was afterwards somewhat rearranged by the waters of this estuary as shells are sometimes found mixed in with the other constituents of the deposit.

From what is now known regarding the great extent in time of the pre-Palaeolithic period—an epoch certainly longer than that from the beginning of the Pleistocene, to the present day—it is recognized that, by the days of the Cromer Forest Bed, man had made marked progress upon the path of industrial evolution. Thus, in the lowermost stratum of the Forest Bed, we find implements of various kinds, pointing to the enjoyment of a comparatively full and varied life on the part of their makers. The hand-axes (Fig. 14) were no doubt used for aggressive purposes, as may have been the rostro-

carinates, but the side-scrapers (Fig. 11), flake-implements (Fig. 15), ordinary scrapers (Fig. 16), borers and planes were utilized, it would appear, for what we may term domestic purposes. It is important to note that, in the case of these latter specimens—as with most others of similar types in Stone Age industries—the materials, skins, wood, bone, and ivory, upon which the implements were used, have, during the great lapse of time since the Early Pleistocene period—disappeared. Certain rare specimens of bone have been found, some years ago, which show evidence of human shaping, but these can give us but a feeble idea of the cultural development of Forest Bed man. It is even more unsound to estimate this development by regarding the flint implements as representative of it. These are merely the indestructible elements of the Forest Bed industry which, because of their hard resistant nature, have successfully survived the destructive effects of time. But, when we examine these specimens, we see that they were made by people who had attained to a remarkable proficiency in the control of their raw material. The Forest Bed industry represents the high water mark of skill in free flaking, in which large flakes of flint were detached in the making of the desired implement, with such accuracy that very little secondary trimming was required. Few of those familiar with flint flaking will disagree with the opinion that, to make implements by means of free flaking, requires as much, and perhaps more skill, than is required in the production of artifacts by the "controlled" method in vogue, for instance, in later Acheulian times. Though the massiveness of many of the Forest Bed hand-axes might lead to the conclusion that they represent typical examples of what are known as core implements, yet, in the majority of cases, such a conclusion would be erroneous. A true core implement is one not made from a chunk, or flake of flint, but from the actual flint nodule, and in which the flakes struck off in manufacture are largely waste products. An examination of the Forest Bed hand-axes will show that most of them are made from great flakes of flint removed from a nodule of considerable size. Not only is this the case with the Forest Bed specimens, but also with most other hand-axes from whatever locality. True core implements are, in reality, in a very small minority as compared with those made from flakes. This fact, which I have spent much time in establishing, and have made public,[8] does not, however, deter some archaeologists from classing as core hand-axes, specimens which are clearly nothing of the kind.

It will be seen that the researches carried out in the Cromer Forest Bed have provided us with important scientific data regarding the earliest palaeolithic artifacts. It is greatly to be hoped that, one of these days, some portion

[8] *Journ. Roy. Anthr. Inst.* Vol. LV. 1925. July to December. p. 321.

of the human skeleton may be found in this deposit, which will enable us to know the type of man inhabiting East Anglia some 500,000 years ago.

Description of the sites examined in this research.

Weybourne.

From Sheringham, northwestward to Weybourne the chalk rises above the level of the beach. The basal deposit of the Cromer Forest Bed can be seen for considerable distances, resting upon the surface of the chalk, and covered by glacial, and other accumulations.

Sheringham and Beeston.

At these places there are spreads of Forest Bed flints upon the foreshore, while, running out from the base of the cliff—some 200 ft. in height—the basal bed can be seen *in situ* on the chalk.

West Runton.

Here there is a very large spread of flints upon the foreshore and in places, the basal bed remains *in situ.*

East Runton.

At this place there exists the usual spread of flints upon the foreshore, while the basal bed can be examined in the cliff where it forms part of a huge erratic of the Contorted Drift Glaciation.

Cromer.

It was upon the foreshore site at Cromer that the first specimens from the basal layer of the Forest Bed were found. The site has been so much visited by collectors that it is not now easy to find implements upon it.

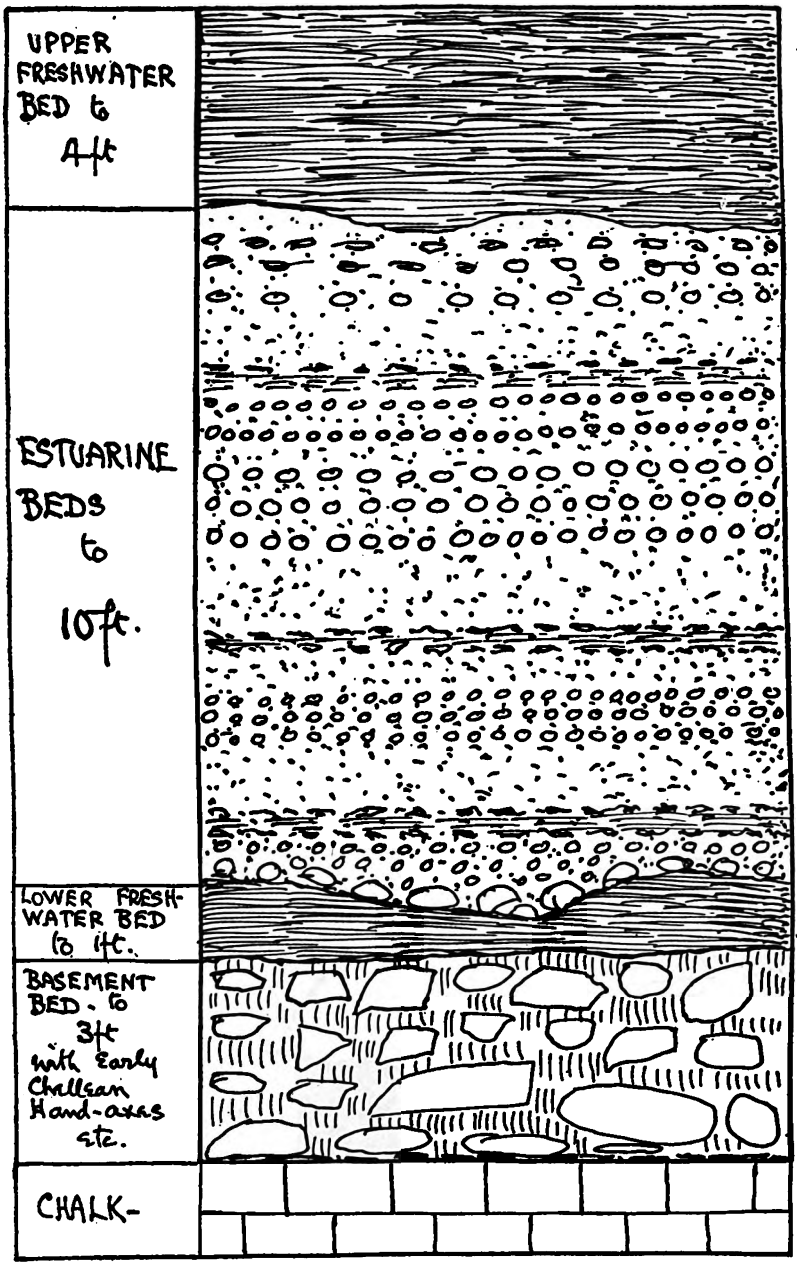


PLATE XXX. Diagrammatic section of the various members of the Cromer Forest Bed series of deposits.

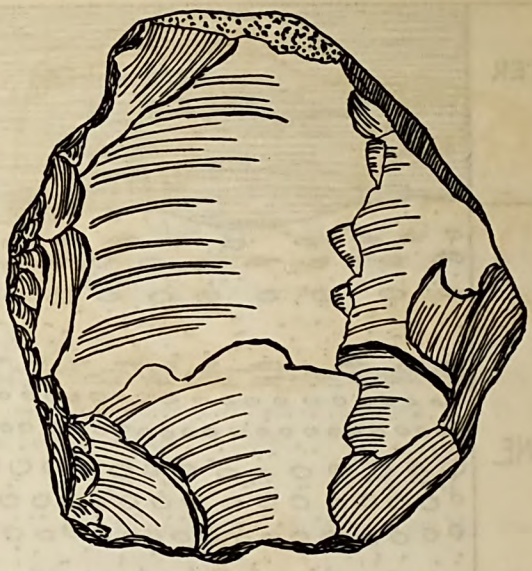


FIGURE 11. Flint scraper with steep edge-flaking, from the base of the Cromer Forest Bed.
Actual size.

FIGURE 12. Rostro-Carinate from the base of the Cromer Forest Bed.
Two-thirds actual size.

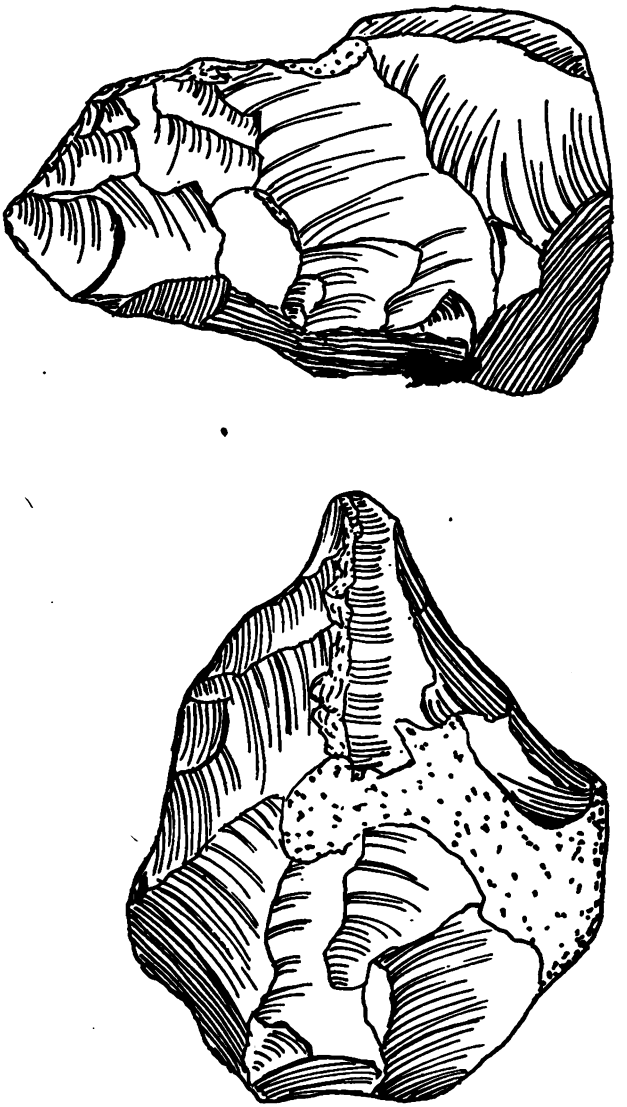


FIGURE 13. Two views of a rostrate hand-axe from the base of the Cromer Forest Bed. Actual size.

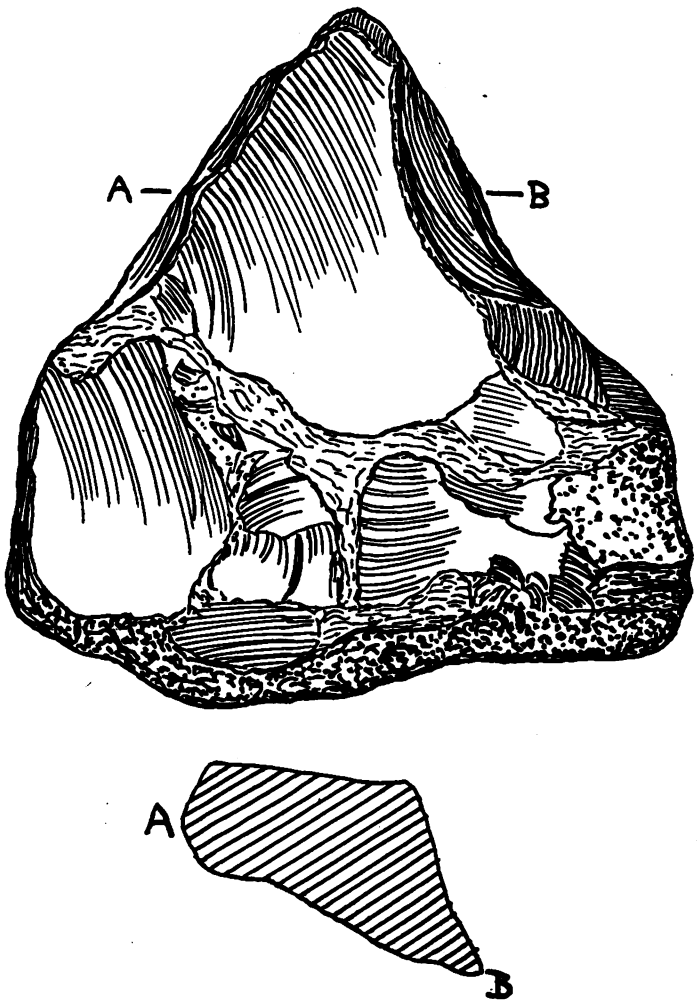


FIGURE 14. Primitive hand-axe from the base of the Cromer Forest Bed. Actual size.

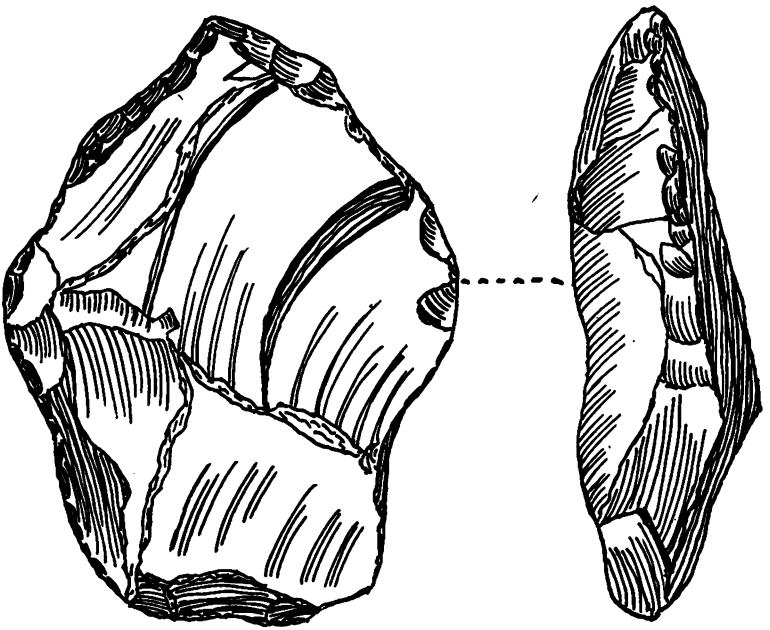


FIGURE 15. Flake implement from the base of the Cromer Forest Bed. Actual size.

FIGURE 16. Scraper from the base of the Cromer Forest Bed. Actual size.