

# AMERICAN SCHOOL OF PREHISTORIC RESEARCH

*Founded, 1921 -:- Incorporated, 1926*

Edited by  
GEORGE GRANT MAC CURDY, Director

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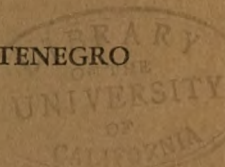
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TRUSTEES AND OFFICERS  
REPORT OF THE DIRECTOR

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OFFICE OF THE SCHOOL  
OLD LYME, CONN. U. S. A.





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## REPORT BY THE DIRECTOR ON FIELD WORK AND ON THE TWELFTH ANNUAL SUMMER SESSION

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

### FIELD WORK

- A. Expedition in Palestine jointly with the British School of Archæology in Jerusalem. (For detailed account, see report by Mr. McCown p. 9.)

The 1932 joint expedition in Palestine was divided into a spring season (April-June) and an autumn season (October-December). The spring campaign was directed by Theodore D. McCown of the American School, the autumn campaign by Miss Dorothy A. E. Garrod of the British School. During the spring campaign McCown, assisted by Hallam L. Movius, Jr., of Harvard University (for the American School) and T. P. O'Brien (for the British School), was able to complete the excavation of Mugharet es-Sukhūl (Cave of the Kids), where he had found the skeleton of a Neandertal child in 1931. The results of the 1932 campaign have been phenomenal. The cave has yielded eight more Neandertal skeletons as well as thousands of stone implements left by this race and belonging to the Mousterian Epoch.

All nine skeletons have been shipped to the Royal College of Surgeons, London, for study. The enveloping breccia and the solid rock beneath had to be removed with each skeleton in order that they might be shipped safely. In London each skeleton will be laboriously and deftly chipped from its stony matrix before the study of the bones can be made. This study and the preparation of the manuscripts for publication will be made by McCown with the assistance of Sir Arthur Keith and Dr. A. Hrdlicka, a Trustee of our School.

The autumn campaign, in charge of Miss Garrod, has been confined to Mugharet el-Wad (Cave of the Valley) and Mugharet et-Tabūn (Cave of the Oven). This was the fourth season at the Cave of the Valley and the work here has just been completed; it was confined to the Mesolithic (Natu-fian of Palestine) deposits of the Cave, which has the most comprehensive sequence of cultures of any prehistoric site thus far discovered in Palestine. The present season's yield from it include thousands of artifacts and a number of burials. A group of three skeletons were in a circle, head to feet,

with a limestone mortar in their midst. Most of the skeletons were lying on the side (right or left) with legs flexed. In some cases the body must have been bound before *rigor mortis* set in. Ornaments of dentalia shells, perforated animal teeth, and bone pendants—about the forehead, neck or ankles—were found on some of the skeletons.

This was Miss Garrod's second season at the Cave of the Oven. The deposits have proved to be remarkably thick with at least five undisturbed Mousterian layers, and the bottom has not yet been reached. Another season will be required to finish the excavation of this cave. The sixth or topmost layer is a mixture of Mousterian and Recent. The third from the top has already yielded an adult skeleton, a massive lower jaw, a femur, all of adults, and the teeth of a child. These all resemble the nine individuals found by McCown in the Cave of the Kids. This layer is also rich in fossil fauna including rhinoceros and hippopotamus. Below this three more levels have been tapped. The lowest of these is described by Miss Garrod as a "prehistorian's paradise": containing an abundance of flint implements of a very old type, many superb hand axes and great scrapers, a human femur, the tooth of an elephant, etc. There may be other levels below this one. Miss Garrod will complete the excavation of the Oven Cave in April-June, 1933, with the help of Miss Dyott of the British School and Miss Ruth Sears and Miss Anne H. Fuller, both of the American School. The School's half the cost of the 1932 excavations was met almost wholly through a generous Grant from the American Council of Learned Societies.

B. Expedition in Yugoslavia Sponsored by the American School of Prehistoric Research, the Fogg Art Museum of Harvard University and the Peabody Museum of Harvard. The School's participation was made possible through a generous gift from Mrs. Julius H. Haass, a Trustee of the School.

The staff consisted of Dr. V. J. Fewkes (in charge), Dr. Hetty Goldman, Robert W. Ehrich and several foreign specialists. The purpose of the Expedition was threefold: 1) To make a general reconnaissance trip throughout southern Yugoslavia; 2) To conduct the summer session of the American School of Prehistoric Research; 3) To excavate in the Neolithic site at Starčevo, near Belgrade—this in connection with the summer session of the School, giving the students experience in field work.

1. The Reconnaissance. (For details, see reports by Fewkes, Goldman, and Ehrich, pp. 17 and 55.)

The reconnaissance trip started May 1st and lasted practically two months. Almost two-thirds of the sites were classical, either Greek, Mace-

donian, Roman, or Byzantine, among them cities, villas, castra, and hill-top fortresses.

Prehistoric sites recorded during the trip ranged from the Neolithic age to the La Tène period of the Iron Age. The mapping and plotting of their distribution promises to give new light on the cultural movements in the region. Our results necessitate certain revisions of existing theories of diffusion. In addition to archæology, the reconnaissance trip covered geographical, general anthropological, and economic aspects. Its value may be briefly summed up as follows :

- a. Securing first hand observations on many previously unknown sites and recording them for general use to anyone interested.
- b. The finding of new suggestions on ancient avenues of cultural movements and on trade routes.
- c. The realization of the importance of Yugoslavia as the archeological key region of the Balkans.

## 2. Twelfth Annual Summer Session of the School.

The twelfth annual summer session was in charge of Dr. Vladimir J. Fewkes of Harvard University, Associate Director of the School and Director of the Expedition to Yugoslavia. The student body was composed of Curtice M. C. Aldridge, Cornell University; Josephine G. Graton, Bryn Mawr College; Gertrude Howe, Mount Holyoke College; Dwight W. Morrow, Jr., Amherst College; Stephen Phillips and Frederick R. L. Richardson, both of Harvard University; Ruth Sears, Radcliffe College; and Dr. Oleh Kandyba, National Museum, Prague.

The School opened at the Museum für Völkerkunde, Berlin, on July 1, and closed on August 20 at the Starčevo excavations near Belgrade, Yugoslavia. However, all the students remained for a while after the latter date, some to continue excavations at Starčevo, others to see additional museums in Yugoslavia and Bulgaria. The work accomplished during the course may be divided into two categories :

- a. Museum studies including examination of material and lectures by Dr. Fewkes and others.
- b. Experience in field work by excavating at Starčevo and by class work.

Studies were made at the following museums : Museum für Völkerkunde and Asiatic Museum, Berlin ; National Museum and Hanaspaulka Museum, Prague ; Zemské Museum and Anthropos Museum, Brno ; Naturhistorisches Museum, Vienna ; National Museum and Acquincum Museum, Budapest ; National Museum and University Museum, Belgrade. Special

thanks are due to certain curators in some of the museums visited. Dr. W. Unverzagt of the Völkerkunde Museum, Berlin, lectured with lantern slides on modern excavation methods in Germany; Dr. Marton of the National Museum, Budapest, on the Bronze Age of Hungary; and Dr. M. Grbić of the National Museum, Belgrade, on the collections in the Sarajevo Museum. The museum studies were supplemented by field excursions to the important stations of Römerschanze near Potsdam; Hradčany in Prague; Acquincum in Budapest, and Supljastena near Belgrade.

Actual experience in excavating was confined to the site, known as Grad, in Starčevo, on the left bank of the Danube near Belgrade, Yugoslavia. Starčevo is noted for its Neolithic settlement with painted pottery and certain intrusive Bronze and Iron Age traits. The School moved to this site on July 14. All the students remained here until August 16 and some of them remained longer. They were trained in all phases of the work and received special instruction in surveying (with theodolite and tachimeter) and in photography. In addition, students made seminar reports, each selecting a topic of his or her immediate interest and presenting an hour's talk upon it. Furthermore, the students had the rare privilege of hearing a two-hour lecture on their respective fields by each of three authorities: Dr. Hetty Goldman of the Fogg Art Museum (Harvard), a specialist in Ægean archeology; Dr. Oleh Kandyba, specialist in the Neolithic painted pottery of central and eastern Europe; and Robert W. Ehrich of Harvard, physical anthropologist as well as prehistorian. From Starčevo excursions were made to the prehistoric sites of Vinča, Vrsać, Pančevo and Zemun.

At the close of the session, part of the student body, led by Drs. Fewkes and Goldman, visited four museums in Bulgaria: Sofia, Varna, Madera, and Sumen. On their return to Yugoslavia they visited the Sarajevo Museum.

While the course covered the whole of Prehistory in its broad outlines, special attention was given to central Europe. The Neolithic Period received the greatest attention. However, the students gained an understanding knowledge of general European archeology and a special grasp of the Danubian region from the Paleolithic to the end of the Iron Age. The ground covered and information gained emphasizes the importance of central Europe as a field for archeological research.

### 3. Starčevo.

Starčevo is a small town located 19 km. due east of Belgrade on the Banat side of the Danube. The Neolithic settlement site is situated just south of the town on an ancient bank of the river, the present course of which runs 4 km. further southward. The site was discovered accidentally in digging



for brick clay, some years ago, and reported to the National Museum in Belgrade. The Expedition ran a brief sounding here in 1931 and found sufficient indications of a promising site to warrant the large scale exploration undertaken this season. Altogether 10 weeks were devoted to the Starčevo dig, the deposits of which averaged 3.66 m. in thickness. The site disclosed an extensive Neolithic village, dating back to about 2500 B. C. Foundations of semi-subterranean dwellings arranged in irregular groups were discovered. The archeological material recovered represents beautiful monochrome and polychrome vases and bowls; crude appearing, but well made vessels for general domestic use; bone artifacts, namely awls, needles, spatulas; stone celts and knife blades; miscellaneous objects such as small libation tables of baked clay, baked wall plaster, various utilized shells, a quantity of animal bones representing domestic cattle, sheep and dog, as well as wild varieties, fish bones, and a few human skeletons. The excavated ground features, together with the material found therein furnish additional valuable light on the mode of life of the New Stone Age man in the Middle Danube Valley. His economy was one of simple hoe culture with breeding of domestic animals, to which hunting and fishing added food supply. The ceramic art was highly developed; such industrial endeavors as basket making and crude weaving were known. Organized social life is suggested by the very layout of the ancient community.

The site of Starčevo gives important clues for the linking up of several sites with painted Neolithic pottery in southeastern Europe. It is older, for example, than Vinča, located just across the Danube from it and up to now considered to be the oldest site on the Danube. Traits similar to those of Cucuteni, Tripolje, Erösd, and Dimini, were found at Starčevo. According to Dr. Fewkes, who furnished the above data on Starčevo, a final study of the site must await a careful and extensive analysis of all the known European painted Neolithic material in order to do justice to the important finds made at Starčevo.

*Respectfully submitted,*

GEORGE GRANT MACCURDY.



**FOSSIL MEN OF THE MUGHARET ES-SUKHŪL, NEAR  
ATHLIT, PALESTINE, SEASON OF 1932**

*By Theodore D. McCown*

**A** YEAR ago in the Bulletin of the American School of Prehistoric Research I described briefly the work of the 1931 Season at the Mugharet es-Sukhūl (Cave of the Kids). The discovery of the calvarium and skeleton of an infant embedded in the breccia that very largely composed the site indicated that not withstanding the relatively small size of this cave-rock shelter, the remains of fossil man in addition to a plentiful and beautiful flint industry would reward continued effort. This promise has been abundantly fulfilled in the three months between the eleventh of April and the eleventh of July, 1932. The remains of eight different Mousterian individuals were uncovered during this period, among them being two that are as complete as any now existing from this period of the Paleolithic. Preliminary notices of these important and interesting finds of the Joint Expedition of the American School of Prehistoric Research and the British School of Archæology in Jerusalem have appeared in the New York Times, the London Times and The Illustrated London News (July 9, 1932). I presented a short paper before the International Congress of Prehistoric and Protohistoric Sciences in London in August and Dr. George Grant MacCurdy described and discussed the same material before the American Anthropological Association at Atlantic City in December of 1932.

Owing to circumstances beyond her control, Miss Dorothy Garrod, director of the Joint Expedition, was unable to return to Palestine in the Spring. In consequence I was delegated Field Director of Excavation and proceeded to Palestine to be joined by Mr. Hallam L. Movius, Jr., of the Department of Anthropology, Harvard University and Field Representative of the American School of Prehistoric Research. Mr. T. P. O'Brien, a member of Sir Flinders Petrie's staff during the 1931-1932 campaign at Tell el Ajjul, joined the Joint Expedition on May third and represented the British School of Archæology in Jerusalem. Excavation was resumed on the eleventh of April and continued without interruption until July eleventh.

The close of excavation in 1931 left the cave about half emptied of breccia; a large area in front of the mouth of the cave cut down to a depth of two meters or slightly more, while to the right and left of this the level was somewhat higher. It was apparent at once that the remainder of the rock debris

left from the Public Works Department blasting operations of five years ago would have to be cleared away completely. A fair part of this had been effected in 1931 but the largest pieces weighing a good many tons required blasting. Mr. J. P. Struthers, Manager of the Atlit Quarry of the Haifa Harbour Works, responded to my request for assistance and advice and superintended the blasting. His never-failing willingness to give assistance, advice and his time receive my most sincere thanks.

The whole area of excavation was extended northwards and down-hill from the 1931 limit of excavation. This was accomplished in two stages, one section being dug to bedrock before the other was begun. This work was carried on during and after the process of rock removal. The yield of flints and fauna was satisfactory but no human remains were discovered in this general area. It lies on the downward sloping face of the original rock terrace and consists of increasingly sterile midden refuse with no visible hearths.

The abundance of flint and bone and the discovery of the infant's skeleton (in 1931) on the level area enclosed by the curving walls of the shelter, indicated clearly that the intensive occupation of the site had been on the terrace lying in front (north) of the cave. The areas to the east and west of the deep excavation of 1931 were attacked and the breccia slowly removed with picks, mauls and wedges.

At the end of three weeks, the first of the new human skeletons came to light. The finds were numbered, the initial figure being allotted to the 1931 child. II, III, and IV were found on April 30th, V on May 2nd, VI on the day following, VII and VIII ten days later and IX on the nineteenth of May.

Number I is the nearly complete calvarium and skeleton of an infant aged two and one-half to three years. It was buried in a tightly flexed, crouching position facing south and into the mouth of the cave. It will be considered below in more detail.

Number II consists of the fragments of an adult individual. The arms, brain case and mandible are represented. The teeth, about eight in number, come from both the mandible and maxilla. Of the lower limbs there were no traces and it seems apparent that the portions found are all that remain of an anciently disturbed burial. It is the only one of the Carmel individuals to come from the softer portions of the deposit, but lay immediately above the hard breccia at this point.

Number III represents the tightly flexed femora, tibiae and fibulae of an adult. They lay in a recess in the east wall of the shelter, partly covered by rocks. This latter fact may well be the explanation for their preservation. No other traces of the skeleton were discovered although an exhaustive search was made.





PLATE II. Sukhūl V.

Number IV is a complete adult, hands, feet, pelvis, ribs, and scapulæ being preserved in addition to the cranium, mandible, and long bones. The bones lay in a shallow bay on the east side of the shelter, partly against the lower portion of the overhanging rock wall. The body was placed on its right side, hands before the face and partly under the chin. The right foot lay against the buttocks while the similarly contracted left leg was placed with the foot somewhat higher and nearly on a level with the skull. The remainder of the body lies in the intervening concavity. The skull has been twisted on to the left side and assumes an upright position, facing northeast and up the Wady.

Number V is another, nearly complete adult. The skull is excellently preserved with a complete mandible and faces northeast and also up the Wady but lies to the west with respect to the trunk and limbs. This burial lay in the center of the terrace almost directly on the rock floor. The body lies on its back with the pelvis twisted on to its side, so that the tightly flexed legs place the feet against the pelvis. The left arm lies across the thorax while the right arm is flexed and lies parallel with the torso. In the angle formed by the right humerus and the left forearm was found the mandible of a large wild pig. The right tusk is missing, the left tusk broken away, and both the ascending rami are absent. The left ulna and radius of Number V lie across the hinder part of this jaw and its presence with the body can scarcely be regarded as fortuitous.

Number VI consists of the fragmentary remains of an adult, the skull and limb bones being incomplete. This was only partially cleared and at this time only the general fact of contraction of the limbs can be given.

Number VII is clearly another burial, probably that of a young adult. The skull is badly crushed and shattered with the interstices filled solidly with hard gray breccia. The body lies on the right side, knees drawn towards the face, while the left arm was half flexed with the hand by the face and the elbow forming a right angle near the knees.

Number VIII is represented by the fragments of the legs and one foot (?) of a child. These bits lay in a depression in the rock floor of the terrace on its western half.

Number IX was incompletely cleared. The investigation made in the time at our disposal yielded every indication of its being another burial. The skull is tremendously thick, more so than any of the others. A femur socketed in the acetabulum was partly uncovered and from other pieces of evidence it appears probable that we are dealing with another burial on the side with the head towards the east as in Numbers IV and VII.

Some description of the technique employed in uncovering and extracting these burials may be of interest. The limestone breccia varies in hardness from that of wall plaster to that of good street-paving. Consequently fine chisels were employed and the matrix sculptured away bit by bit. In most instances the bone was quite hard but the outer surface tended to flake slightly, so chip shellac dissolved in alcohol was applied as a coating. Each bone was exposed as completely as possible but was left attached to the breccia on its lower surface. Numbers III, IV, V, VII and VIII were uncovered as completely as conditions permitted.

The removal of these presented a considerable problem. In every case they lay upon or so close to the rock floor that lifting them in a block of breccia alone was impossible. The obvious alternatives were to remove them piece by piece or to lift them completely by cutting out a slab of limestone rock under each one and with this as support, prepare them for transport. This latter method was adopted for obvious reasons but not without misgivings.

Number V was the most accessible and the first attempt was made on it. The breccia and rock were quarried away on three sides with stone-cutting hammers; a series of drill holes was sunk vertically along the fourth side and another series run in horizontally about fifty centimeters below the skeleton. The narrow partitions between the drill holes were broken away and the block thus left adhering at a few points only. Wedges were inserted and the entire mass successfully loosened. Variations of this method were used with the other burials, the bones in each case being greased, covered with silver foil paper and encased in a thick layer of plaster of paris before the final removal was attempted. All this labor was done by hand, power machinery being both unusable and unobtainable.

The blocks of rock, breccia, and plaster were levered on to a sledge and skidded the five hundred yards into camp where they were boxed. The small space between block and box was filled with concrete. The increased weight was a very real drawback in handling but it was felt that every precaution should be taken to counteract the hazards of lorry and marine shipment.

There can be no question that these finds represent a true Paleolithic cemetery laid out on the terrace under the overhanging walls of the shelter. Numbers I, IV, V, VII and IX are indubitably burials and to these may be added, provisionally, Numbers III and VI. As noted in the more detailed description of the individual burials given above, I, IV, V, VII and IX have the limbs flexed quite tightly. Neither the position nor the type of limb contraction in any one burial finds an exact counterpart in any other from this site but the general similarities are significant. All the human remains





PLATE III. Detail of the skull of Sukhül V showing prognathism and the chin.



except Number II were found in the breccia and all lie a meter or more below the surface of the deposit as it was when excavation was initiated in 1931. In the accompanying Section (cf., Pl. V), the burials have been projected where possible on to the main north-south axis of the cave and terrace to show their mutual depth relationships. The general conformity in depth argues strongly for their assignment to the same period.

While their contemporaneity with the deposit cannot be questioned, it was impossible to determine from what depth the burials were made. No visible stratification was apparent in connection with the human remains and there is therefore no direct evidence of the approximate dates of the individual interments relative to the history of the site. That the interments were made when the deposit was dirt and were subsequently "cemented" in to their present positions is obvious. Unfortunately the rate of breccia formation is not readily ascertainable but the very genuine rock-like consistency of much of it indicates a reasonably long period of formation.

The antiquity of these individuals and that of the industry must remain an open question for the present. In 1931 I suggested the presence of two phases of the Mousterian, the second phase based on observations made on a few hundred flints. The 1932 Season again provided us with abundant cultural material in the form of flakes, cores and artifacts. This industry is best described as an evolved or highly developed form of Levalloisian. The round or oval Levallois flake with faceted striking platform and its parent, the tortoise core, are not only numerous but the characteristic forms. The emphasis on flake tools is pronounced, handaxes being so rare as to be of no quantitative significance whatsoever.

These general observations are the result of sorting and field classification done on the site. Due to delays in shipment, the artifacts finally have been sent to London and there has been no opportunity to examine them in detail. Morphologically, with the exception of patination, the differences between the upper and the lower phases distinguished a year ago are not pronounced. There is, however, a decided difference in patination between the mainly unpatinated flints from the hard black breccia lying closest to the rock and the white, gray or brown patinated implements from the reddish, brown or yellow breccia lying above the black matrix. On the other hand, patination is a notoriously unsafe guide in determining absolute age differences.

At present there is no direct geological evidence to assist in dating the deposit. The fauna seems to be that of a temperate climate. The increased amount of the latter material from this year's excavation plus subsidiary evidence from the analysis of samples of the different varieties of breccia may aid in clarifying the situation. Above all, Miss Garrod's important dis-

coveries in the Mugharet et-Tabūn in December, 1932, may provide the key to the problem. In general one cannot suggest more than that this evolved form of Levalloisian with burins seems equatable with, but not completely typical of the late Mousterian of Europe. Its affinities to the south, with Africa, seem slight, although there are some startling similarities between the Sukhūl Levallois types and those Miss Caton-Thompson has found at Kharga. Two possibilities must be born in mind: that this Palestinian variant of the Mousterian represents a late survival or that it is definitely earlier than comparable periods in Europe. Locally, that is for Palestine, it seems to represent the culminating phase of the Middle Paleolithic.

At this time the precise nature of the physical characteristics of the new Carmel people cannot be clearly demonstrated. Preliminary observations made in the field during the process of cleaning and removal indicate that the skulls are large, thick, with very prominent supraorbital ridges. The frontal rises quite markedly and combining as it does with the well defined parietal eminences suggests a fairly capacious skull content. The temporals have a marked ridge running towards, but not connecting with a pronounced occipital torus. The general impression of the head form is one of roundness with flat sides to the vault.

Such inadequate and preliminary measurements as it was possible to take on the skull of Number V gave an approximate length (glabella-lambda) of 187 mm.; width, 142 mm.; lambda-oprhryon length, 176 mm.; maximum width of the external angular processes, 124 mm.; minimum frontal, 106 mm. The width of the ascending ramus of the mandible at the level of the third molar is 44 mm.; maximum bicanine width of mandible, 45 mm.

Marked facial prognathism in conjunction with equally marked alveolar prognathism exaggerate this region of the head, yet the massive, squarish mandible with a broad, upright ascending ramus has a well defined Neanthropic chin. The teeth are large and such individual examples as were examined seemed taurodont.

The two adults most fully cleared have massive limbs of great length and indications of a heavy musculature. A well defined forward convexity of the femora and retroversion of the tibial head suggest a stooping posture. No direct measurements were possible but the most fully exposed femur of Number IV measured in the neighborhood of 50 cm. The lower limbs are relatively long below the knee. Sex, height and age, in more than general terms, were indeterminable.

In this connection it may be of interest to add a few of the conclusions reached by Sir Arthur Keith and the writer after studying the infant's skele-

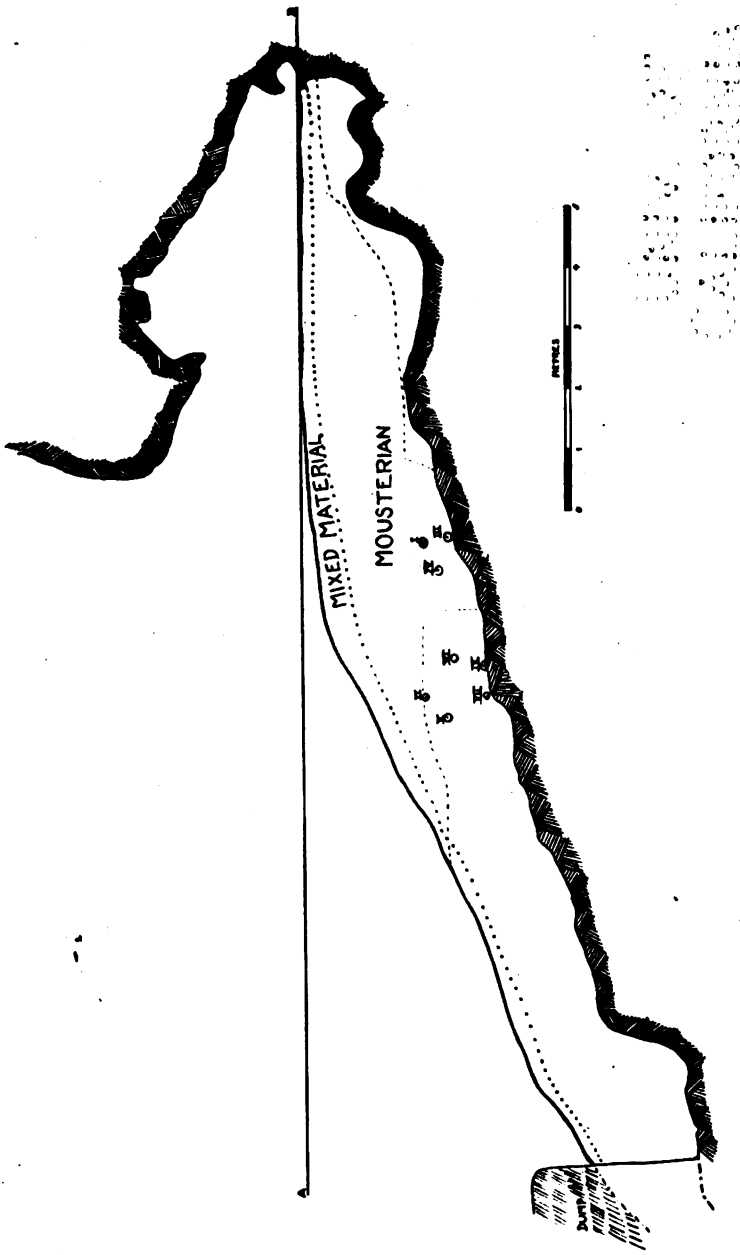


PLATE V. Main north-south section of cave and terrace with burials projected on to it to show depth relationships.

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ton discovered in 1931. These studies were made during January, February and March of 1932 before the discovery of the other eight individuals.

The skull of the child consists of the major portion of the frontal, both parietals, the right temporal and the occipital with a part of the left temporal and the petrous pyramid of the latter bone in a separate piece. The skull length is 165 mm.; width, 119 mm.; auricular height 100 mm.; capacity about 1,000 c. c. Certain peculiar features of the hinder portion of the skull combine with modern or Neanthropic characters. The parietal eminences are pronounced while the conceptacula for the cerebellar lobes are prominent and widely set apart. The sides of the vault rise flatly. The tympanic plate differs from those of the La Quina and Gibraltar Neandertal children but has resemblances to that of a modern child.

The massive little mandible is broken at the anterior portion of the symphysis and in consequence no suggestions regarding the form of the chin can be made. The teeth, resembling in their cusp pattern Neandertal man, are not markedly taurodont.

The absolute dimensions as well as the relative proportions of the limb bones are long, particularly the tibia-femur length ratio. The resemblance to modern Australians is interesting.

This combination of Neandertal and Neanthropic characters in Sukhül I is paralleled in the other individuals found in 1932. The summation of existing evidence points to a genuine specific difference between these Palestinian Mousterians and the Neandertalers of Europe. Hence it is proposed to designate them, and with them the Galilee skull, as *Palæanthropus palestinus*, emphasizing both their similarity to and their difference from the European *Palæanthropi* (Heidelberg and Neandertal).

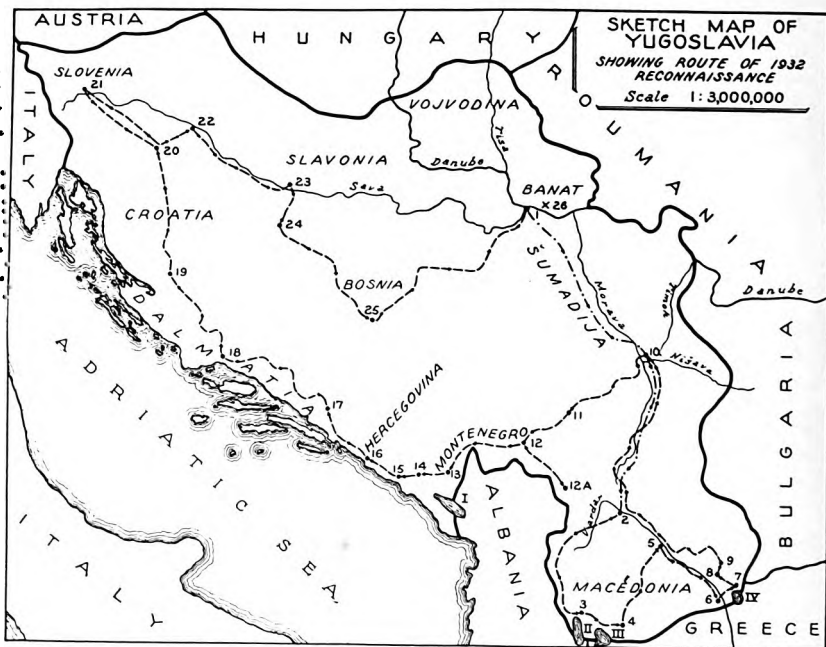
The preparation, study and description of this skeletal material is to be carried out at the Royal College of Surgeons in London by Sir Arthur Keith, the writer and Dr. Aleš Hrdlička. The not inconsiderable cost of this work is being met jointly by the American School of Prehistoric Research and the British School of Archæology in Jerusalem.

In conclusion it may be added that the site was cleared to bedrock excepting a portion of increasingly sterile material at the extreme north limit of excavation. The area excavated this season measures roughly 95 x 30 feet (29 x 9.15 m.) and was carried to an average depth of six and one-half feet (1.98 m). Of the total cubic amount, two-thirds was breccia from which the flints and animal bones were extracted from the matrix by breaking it up with small hammers. Archeologically the site is exhausted as far as further excavation is concerned. The subsequent studies are being pushed forward as rapidly as possible.





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|---------------|------------------------|-------------------|
| 1. Belgrade   | 11. Kosovska Mitrovica | 20. Karlovac      |
| 2. Skoplje    | 12. Peć                | 21. Ljubljana     |
| 3. Ohrid      | 12A Prizren            | 23. Gradiška      |
| 4. Bitolj     | 13. Podgorica          | 24. Banja Luka    |
| 5. Gradsko    | 14. Cetinje            | 25. Sarajevo      |
| 6. Djevdjelia | 15. Kotor              | 26. Starčevo      |
| 7. Dojran     | 16. Herceg Novi        | I. Lake Skutari   |
| 8. Valandovo  | 17. Dubrovnik          | II. Lake Ohrid    |
| 9. Strumica   | 18. Split              | III. Lake Prespan |
| 10. Niš       | 19. Lapac              | IV. Lake Dojran   |

**PRELIMINARY REPORT ON AN ARCHAEOLOGICAL  
RECONNAISSANCE IN YUGOSLAVIA, AMERICAN  
EXPEDITION, SEASON 1932**

*By Vladimir J. Fewkes, Hetty Goldman, and Robert W. Ehrich*

**T**HE American Archæological Expedition to Yugoslavia<sup>1</sup> was sponsored by three institutions:

American School of Prehistoric Research.  
Fogg Art Museum of Harvard University.  
Peabody Museum of Harvard University.

The staff consisted of Dr. Vladimir J. Fewkes, in charge; Dr. Hetty Goldman, representing the Fogg Art Museum; and Mr. Robert W. Ehrich, from the Peabody Museum.

In addition to the reconnaissance work, the Expedition excavated in the Neolithic site at Starčevo,<sup>2</sup> near Belgrade,<sup>3</sup> and also conducted the summer course of the American School of Prehistoric Research.

The Expedition had official permission of the Yugoslav government and worked in close coöperation with the National Museum in Belgrade. Professor V. R. Petković, Director of this museum, was personally responsible for the arrangement of permits and delegated Dr. M. Grbić to join the party throughout the season. During the reconnoitering in the vicinity of Skoplje, Professor R. M. Grujić, Director of the South Serbian Museum, greatly facilitated the work of the Expedition and assigned Dr. F. Mesesnel of the local university to accompany the staff during its stay in the region. The Expedition wishes to express its appreciation to Professor Petković, Professor Grujić, Dr. Grbić, and Dr. Mesesnel for their unflinching helpfulness and coöperation.

The trip itself was somewhat in the nature of an experiment to test the value of conducting a general survey and to ascertain the possibilities of such work. In general two forms of procedure were used: 1) a thorough investigation of a locality or area; 2) a general informative trip, collecting all available data, but eliminating as far as possible the chances of wasting time by fruitless excursions. The former was employed in regions or localities which seemed sufficiently compact and distinct to allow for some degree of complete exploration in the time allotted; the latter in large areas which,

<sup>1</sup> and <sup>2</sup> Established English spelling adopted for these two only. In all other cases the local usages are employed.

<sup>3</sup> See "Excavations at Starčevo, etc.," in this *Bulletin*.

in view of the time at our disposal, could not be studied in detail, but of which it was advisable to gain an impression as a preliminary to possible future work.

Actual fieldwork started in Skoplje on May 6th. Three days were devoted to reconnaissance in the immediate vicinity. Thereafter, Ohrid, Bitolj, Gradsko, Djevdjelia, Valandovo, Strumica, Skoplje (once more), Niš, Kosovska Mitrovice, Peć, Cetinje, Split, Zagreb and Sarajevo became bases of operation in the order named.

In the vicinity of Skoplje, ten sites were visited. The region offers unusually rich opportunities to the archæologist interested in the provincial art of Rome with its admixture of barbarian elements, and in monuments of the Byzantine and early Serbian periods. The local lapidarium gives a good idea of what may be expected in the region.

There are several important unexplored sites. Scupi, lying on the bank of the Vardar river, and protected by earthworks, of which traces can still be seen, from the depredations of that devouring stream, was a Roman town of considerable extent which was destroyed by earthquake in the sixth century A. D. Part of a bath with mosaic floors has been excavated, but unfortunately fell a victim to the vandalism of the peasants. The ruins are buried under a shallow layer of earth and would repay excavation. Some interest would also attach to an investigation of the walls on the citadel of Skoplje itself, where some masonry of an early style gives the only indication, which fell under our notice, of possible pre-Roman occupation. Among the most interesting monuments of the later period are the small churches built by the noble families of Skoplje in the immediate vicinity of the city in the twelfth, thirteenth and fourteenth centuries.

✓ The apparent lack of pre-classical sites is significant. Was the Vardar Valley really such an important avenue of early cultural movements from the Ægean to the Morava Valley and hence to the Danube as many authorities maintain? The vicinity of Skoplje forms that part of the Vardar Valley running northwest to southeast, which is sandwiched between the Šara Planina and Skopska Crna Gora ranges. This is shut off on the north by the divide which turns the headwaters of the Vardar southward. The geographic situation suggests that the theory of the Vardar-Morava culture route is invalid. Later, when both banks of the Vardar Valley were surveyed southward to the Greek border, confirmatory observations were added. A more detailed discussion will follow in the description of the work at Djevdjelia and Valandovo.

From Skoplje the party proceeded to Ohrid, situated on the lake of the same name. The basin around Ohrid is surrounded by mountain ranges.

Into it river valleys enter from several directions. The reconnoitering was naturally directed towards the more accessible of these valleys. Hilltop strongholds, it was soon found, were the sites for which to search. The gendarmes proved the most useful sources of information and guidance, for in their daily rounds they cover many regions difficult of access and observe much of value to the archæologist. Altogether six days were spent at Ohrid and fourteen sites were dealt with. Preëminent among them was the so-called "cemetery of Trebenište" actually located at Gorenci, from under whose stone cairns the finest of archaic Greek bronze and gold work still continues to appear.<sup>4</sup> They demonstrate not only the wealth of the Illyrian princes but also the early existence of trade routes inland from the Greek colonies of Appollonia and Epidamnos on the Adriatic coast.

There seem to be no signs of a Neolithic occupation in the Ohrid region. The country is mountainous and the valleys swampy. The earliest settlement apparently took place during the Bronze Age. Several of the "Grad-ištes" (hilltop strongholds) surveyed by the Expedition showed indications of Bronze Age deposits under classical levels. The Gradište of Donje Lakočeri appears to be the only purely Bronze Age site known in the region.

The line of hilltop forts and fortified settlements, which may be followed northward from Ohrid lake in the direction of Kičevo as well as along the road which leads east from Ohrid to the plain of Bitolj—the road which was to be known as the Via Egnatia—doubtless were constructed for the most part by the Macedonians in their wars against their Illyrian and Dardanian neighbors and against Rome. The change of construction from a dry wall to one filled with mortar, which could be noted at a number of these forts, indicates that, as the Macedonians were forced to retreat, the same strongholds were taken over in turn by the Romans; and the great castrum at Dolenci, between Resan and Bitolj, is a reminder of their final control of the whole region. It would be interesting to know whether it dates back to the campaigns of Sulpicius around Lyncestis in the early years of the second century B.C. A single one of the forts, Sveti Erasmo near Ohrid, is now being excavated by a German expedition, but a study of the whole series would constitute an interesting task and one likely to be of help to the historians of the wars.

The work in the vicinity of Bitolj started May 17th and continued for five days. Bitolj lies in a large valley which broadens southward as it forms the swampy lowlands of Macedonia. Our efforts to cover the large territory

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<sup>4</sup> Filof, B. and Škorpil K., *Die archaische Nekropole von Trebenishte am Ochrida-See* (Berlin-Leipzig, 1927); Vulić, N., "Das neue Grab von Trebenishte," *Arch. Ans.* 1930, pp. 276 ff. For latest finds see, *American Journal of Archaeology*, XXXVII (Concord, N. H., 1933), pp. 4 ff. (šga. 7-12).

at hand were greatly facilitated by the generous help of Mr. Budimir Borisavljević, a lawyer and enthusiastic archæologist.

✓ The lowlands around Bitolj, together with the Prilepsko Polje basin, which is situated further to the north, form the periphery of the Macedonian plains and, except to the south, are surrounded by high mountain ranges. One might expect that owing to its strategic position and easy accessibility from the south, this region figured in early occupation, from the Neolithic period on. Certain traces of the Neolithic, probably peripheral and, as such, somewhat indistinct, were found.

✓ The "Tumbas" (habitation mounds), scattered throughout the valley and the foothill zones, appear to be of the Bronze Age, closely akin to similar mounds in Greek Macedonia.<sup>5</sup> In numbers, these mounds run into the hundreds. No indications of the Iron Age, either the so-called "Hallstatt" or La Tène phases, were found. However, late Greek, Roman, and Byzantine remains, especially the last two, are common. Bitolj and its vicinity are extremely rich in archæological material, as one would expect of a region through which ran the Via Egnatia, following probably, the course of a much older route.

Heraclea Lyncestis, covering a truly astonishing area, as yet untouched by the spade, and the extensive ruins at Suvodol,<sup>6</sup> which the Serbian archæologists have identified as Ceramiae,<sup>7</sup> point to great prosperity under Roman rule. If we compare the chance finds from this region<sup>8</sup> with those from around Skoplje,<sup>9</sup> we see how pronounced are the provincial-barbarian elements in the area lying outside the main arteries of trade and travel.

On May 22nd, the party motored from Bitolj to Gradsko, stopping on the way at Prilep, where two sites were visited. Professor Petković with two curators from the National Museum of Belgrade, who were then completing their season at Stobi,<sup>10</sup> a rich Romano-Byzantine city near Gradsko, kindly invited the Expedition to stay in their headquarters and visit the Stobi excavations. The site is unusually well preserved and has yielded architectural remains and works of art of excellent quality, and of many periods beginning with Hellenistic Greek. The excavations are of very great importance.

<sup>5</sup> Wace, A. J. B., "Mounds of Macedonia," *B. S. A.*, XX (Athens, 1913-1914); Rey, L., "Observations, etc.," *B. C. H.*, XLI-XLIII (Paris, 1917-1919); Heurtley, W. A., "Prehistoric Macedonia," *Ant.*, III (Gloucester, 1929).

<sup>6</sup> Mesesnel, F., "Iskopavanja u Mariovskom Suvodolu," *Glasnik S. N. D.*, XI (Skoplje, 1932), pp. 202 ff. (Reprint).

<sup>7</sup> Saria, B., "Ceramiae-Deuriopos," *Mitt. des Ver. Glass. Phil. in Wien*, II (Wien, 1925).

<sup>8</sup> A charming copy of the Athena Parthenos was found in the ruins of Heraclea and has been published, *Arch. Ans.* (Berlin, 1932) p. 94, Ab. 1-3.

<sup>9</sup> *Glasnik Skopskog Naučnog Društva* from 1924 on (Skoplje—Director R. M. Grujić).

<sup>10</sup> Hald, D., *Auf den Trümmern Stobis* (Stuttgart, 1917); Saria, B., "Arheološka ispitivanja u Južnoj Srbiji," *Starinar*, III s. 3 knj. (Beograd, 1924 and 1925), pp. 101 ff., and "Stobi," *Glasnik S. N. D.*, VI (Skoplje, 1929), pp. 445 ff.; Petrović J., "Iskopavanje u Stobima 1931," *Starinar* (Dodatak) III, Ser., kn VII (Beograd, 1932), pp. 81 ff.

In view of the practically complete lack of excavated sites in South Serbia it is difficult to generalize, but judging by what we saw in the Skoplje Museum and en route, it seems that no Greek remains, even of the late Hellenistic period, should be looked for further north than Stobi or at most among the ruins in the immediate vicinity of Veles. Stobi was reached by Philip II of Macedon in his campaign against the Paeonians, but it did not become an integral part of the Macedonian kingdom until a later date. It owed its importance to its situation on the confluence of two rivers, the Vardar and the Crna, known as the Axios and the Erigon in ancient times. Both these streams lead to fertile plains and connect with routes to the Ægean and the Adriatic.

Leaving Gradsko on May 24th, the party proceeded southward, following the Vardar river. A stop was made at Negotin, some 25 km. north of the Demir Kapija Gap, to visit a Hellenistic and Roman fortress. From there southward, inquiries along the road were quite fruitless, the only site reported in the region being that of Gradec, 18 km. south of the Gap, which was later visited from Valandovo. Near Djevdjelia itself, we found six sites, one with Bronze Age deposits, the others Hellenistic and Roman. In addition to these, information was secured from peasants on two possible sites near Djavoto, both too difficult of access to visit.

Two days were spent at Valandovo and four sites were visited. The definite impression that there are no Neolithic and Bronze Age sites along the Vardar from Gradsko to the Greek border except near Djevdjelia was strengthened by the results obtained in this vicinity. Nothing earlier than Hellenistic and Roman deposits was found. This is rather astonishing in view of the fact that many prominent European archæologists have long maintained that the Vardar-Morava river valleys form the route by which Neolithic and Bronze Age cultures spread from the Ægean to the Danube or in the opposite direction. This theory was advanced although there had been no archæological exploration along the Yugoslav portion of the Vardar or even along the headwaters of the Morava.<sup>11</sup> The Demir Kapija Gap, apparently, was not taken into consideration by the advocates of this theory, which was accepted *a priori* as an attractive explanation for some of the resemblances in the Neolithic, and to a less extent in the Bronze Age, between the Ægean region on the one hand and the valley of the Danube with some of its tributaries on the other. Although the observations along the Vardar are far from detailed or complete, some very definite indications of the invalidity of this hypothetical Vardar-Morava route were obtained.

<sup>11</sup> The single exception is the site of Gradac. See Vasić, M. M., "Gradac," *Glas S. K. A.*, LXXXVI (Beograd, 1911), pp. 97 ff.

The vicinity of Skoplje and the headwaters of the Vardar which are shut off to the north from the upper reaches of the Morava by a sturdy range of mountains, seem barren of Neolithic or Bronze Age sites. This is also true of the region around Gradsko. The Demir Kapija Gap, located further down the river, which blocks the approach from the south, helps to explain this situation. Along the greater part of the Vardar course from the Gap to Djevdjelia, natural conditions are decidedly adverse to communication and offer no inducement to anything like a Neolithic pattern of life. At Djevdjelia the Vardar enters the lowlands of Greek Macedonia, and it is at this point that the rugged conditions end. The site of Kufiluk, with Bronze Age deposits, is situated here, apparently marking the northern limit of distribution of such sites along the Vardar below the Gap. The Yugoslav portion of the valley seems to be uniformly devoid of Neolithic sites. This statement, however, can be considered only as tentative, for the Vardar, between its headwaters and the Demir Kapija, must be covered in greater detail.

From Valandovo the party proceeded to Strumica where ten sites were visited. The town of Strumica lies in an isolated, swampy valley formed by the Strumica river, an affluent of the Struma. Only Roman and Byzantine sites, apparently of small extent or importance, were found here.

On May 30th we returned to Skoplje to make a brief test in the site of Orlovičina, seen during the first visit. The soundings disclosed an interesting Iron Age (?) cemetery which ought to be excavated in a systematic manner.

No archæological sites were noted on the journey northward to Niš. The Skoplje and Belgrade museums have only negative information regarding the district from Skoplje north to Vranjska Banja. Geographic conditions in this region seem to render Neolithic or Bronze Age occupation improbable.

The region around Niš, a part of the Morava system, is rich in Roman and Byzantine remains; six sites were recorded. The remnants of Naissus are largely under a mediæval and Turkish fort now in use as a garrison. The other five sites suggest connections with Naissus. Their distribution follows the valley of the Jelašnica, an eastern tributary of the Nišava, to its head, as far as the narrow gorge which leads towards Pirot. Two fortresses, those of Kulina and Gradjenica, guard the end of this valley. As far as pre-classical occupation is concerned, the region is little known. The sites of Gradac,<sup>12</sup> Jablanica,<sup>13</sup> and Pločnik<sup>14</sup> are located in the Morava drain-

<sup>12</sup> Vasić, M. M., *ibid.*

<sup>13</sup> Vasić, M. M. "Die neolithische Station Jablanica, etc." *A. f. A.*, XXVII, No. 4 (Braunschweig, 1902), pp. 517 ff.

<sup>14</sup> Grbić, M., *Pločnik Aeneolithische Ansiedlung* (Beograd, 1929).



age system, but at a considerable distance to the south and west of Niš. Local Neolithic and Bronze Age sites were suggested by a small collection seen in the city. Natural conditions and cultural distribution factors strengthen the expectation of their occurrence. Unfortunately the time at our disposal was not sufficient for a more extended survey of this region which is important because of its connection with the Danube.

At present, the Danube itself is held to be even more of an "avenue" for early cultural movements than the Vardar-Morava route. The natural conditions, it seems, are again disregarded by the exponents of this theory. Furthermore, the several regional blanks in historic evidence are ignored. Yet, it is assumed that the first Neolithic settlers reached Yugoslavia by sailing up the Danube in search of new tilling soil and metals.<sup>16</sup> Upon closer inquiry, however, it appears that this river was, and still is, a serious barrier to cultural distribution and ethnic movements. There are marked differences between the two banks, not only in antiquity, but also at the present day. In early times, when this part of Europe was being populated by a new folk bearing the Neolithic culture, the stream of the Danube was, it seems, a decisive regional factor in drawing, dispersing, or blocking the process of diffusion. This rôle was the consequence of purely geographic conditions: 1) the several affluents draining into it from the north and south; 2) the various barriers to communication such as the swift current, marshlands, the Iron Gate, and rugged mountains.

The valley of the Timok river should yield some evidence bearing upon this point. Lying between two ranges of the Balkan system, it affords access to the Danube and eastward, while its headwaters reach the Nišava-Jelašnica-Morava system, suggesting a possible route. This, investigated closely, should help to determine the ancient cultural relationships between the valley of the Iskar (in Bulgaria) and the Morava area.

The vicinity of Niš tested the change from thorough regional investigation to a general informative inquiry which was followed during the remaining part of the trip. Leaving Niš on June 6th, the party turned southwestward to Kosovska Mitrovica, by way of Kurvin Grad and Pločnik. These two sites were observed en route. The Morava was followed as far as the juncture of the Toplica river. There the valley begins with a widely branching dendritic pattern, resulting from the penetration of several tongues of mountain ranges. The Toplica river, traced upstream, runs through one branch, which narrows abruptly some 15 km. southwest of Pločnik where the divide between Malo Kosovo and the Morava system begins. The extensive settlement site at Pločnik may well mark the marginal distribution of Neolithic

<sup>16</sup> Childe, V. Gordon, "The Danube Thoroughfare, etc.," *Antiquity*, I (Gloucester, 1927), pp. 79 ff.

occupation in the Upper Morava valley. Located on a natural knoll, it was discovered during the construction of the railroad at which time the National Museum, under Dr. Grbić's<sup>16</sup> supervision, excavated in the cut of the road-bed and obtained some very important material. In addition to Neolithic pits, there are Bronze and Iron Age deposits and also Roman tile graves.

One day was spent at Kosovska Mitrovice in inspection of the alleged "megalithic structures" which proved to be natural formations, some, apparently, with mediæval traditions. Peć was reached the evening of June 7th. The following day an excursion was made to Prizren at the southeastern end of the Metohija valley which starts at Istok, just off Peć, where it connects with the small basin in which Peć itself is located. The Metohija is a flat, fertile valley, some 80 km. in length and 15 to 25 km. wide. Our inquiries along the Istok-Prizren road failed to disclose any knowledge of archæological sites. At first sight it seems almost incredible that such an inviting region should have remained uninhabited in antiquity. The geographic situation, however, furnishes the most probable explanation. The valley is completely shut off by high mountains. Natural outlets from it are restricted to the direction of Kosovo by way of the Peć Basin. In early times these were almost impassable and only connected with a region of adverse environment. Thus sites of the Neolithic and Bronze Ages cannot be expected in spite of the favorable conditions in the valley itself. However, judging by the peripheral distribution of tumuli, "Hallstatt" may be present.

From Peć the party journeyed to Cetinje, stopping at Podgorica en route, to visit the ruins of the Roman city of Doclea or Dioclea. The site is fairly large and should prove profitable and relatively inexpensive to excavate. Some structures are still above ground, and the position of streets and buildings can be seen. The remains are nowhere deeply buried, and their exact extent is plainly traced by the fortification wall.

While our work in Montenegro was restricted to the regions immediately along the Peć-Cetinje-Risan road, Mr. Ehrich added a considerable amount of information for the entire province gathered later during his anthropological survey<sup>17</sup> in the outlying parts. In general, it seems that Montenegro presents a too inhospitable front for early occupation. By far the greater part is inaccessible, presenting nothing which might invite penetration for any conceivable purpose. It is along the only two geographically possible routes: 1) the Zeta valley leading northward from Lake Skutari, and, 2) the Northern border extending eastward from the Boka Kotorska to beyond Nikšić, that relatively late Iron Age to Roman deposits are found.

<sup>16</sup> Grbić, M., *Pločnik*, *ibid.*

<sup>17</sup> Reported upon separately in this *Bulletin*.

On June 10th the party reached the Dalmatian coast under Lovčen and followed the shore as far as Split, with brief stops at Kotor, Risan, Cavtat, Herceg Novi, and Dubrovnik. Kotor, at the base of Lovčen, has an excellent harbor and is the site of the Roman city of Decaterum. Across the bay is another Roman site, that of Risinium, under the modern town of Risan. Somewhat farther up the coast, under present-day Cavtat, lies the site of Epidaurus, originally a Greek colony, located on a small but well protected harbor.

The entire coastal region stretching from Boka Kotorska to Dubrovnik is shut off from the interior by the high wall of the mountain mass which offers no inland passes. Geographic conditions preclude the possibility of extensive pre-classical occupation. Thus far, only a few sporadic cases of rather ill-defined but seemingly Late Neolithic material are known. Inquiries on the mainland, along the route followed, revealed the presence of classical sites only, concentrated around natural harbors. It is possible that the Roman ruins at Čapljina point to a road leading into the interior.

There is no shore road from Dubrovnik to Split. The protected, green, coastal strip ends just north of Dubrovnik, where the mountains plunge into the sea and a chain of small, rocky islands lines the coast. After Split, where the important Roman site of Salona was visited, the next stops were Lapac, Ljubljana, and Zagreb. A great deal of general geographic information was gathered during this trip, and the museum in Ljubljana was visited.

From Zagreb the party motored to Sarajevo by way of Bosenska Gradiška and Banja Luka. At Sarajevo, six sites were visited. The five in the immediate vicinity of the city ranged from Neolithic to Mediæval.

The region of Glasinac, well known for its huge number of Late Bronze Age and Iron Age tumuli, proved to be of great interest. It is estimated that more than 20,000 burial mounds are scattered through the valley. Additional thousands of similar tumuli exist in southern Bosnia, in Herzegovina, Sandžak, Montenegro, and Macedonia, the total estimate for the vast region being some 100,000 or more. The very fine collections in the Sarajevo Museum contain quantities of excellent tumuli material. Of special interest at Glasinac are the so-called "Gradinjes" or elevated areas enclosed by concentric embankments, apparently of the same age as the majority of the tumuli. With our return from Glasinac to Sarajevo on June 19th, the reconnaissance ended.

The trip lasted 47 days. Some 6,500 km. (approximately 4,000 miles) were covered by car. Without exception absolute safety for auto travel was encountered throughout the journey. A cordial reception was extended to us over the entire country. Especially helpful were the gendarmes, who perform the duty of state police, as well as the local school teachers.

The value of our trip may be briefly summed up as follows :

- 1) A total of 144 sites were recorded. Of this number 115 were visited by the staff and 29 merely noted upon specific information received. With the exception of the Palaeolithic, although one Mousterian site was included, the sites visited represent practically the entire cultural range of European history from Neolithic to Modern times.
- 2) Geographic observations were made along the route. These are important in relation to general and regional archæological interpretation of:
  - a) the historic appearance of and the subsequent sequence in human occupation.
  - b) the origin, diffusion, and distribution of a given culture phase.
  - c) the routes of cultural penetration.
- 3) Sufficient general data were obtained to aid in:
  - a) the revision of certain existing theories of diffusion and especially the routes thereof.
  - b) the blocking out of a rough scheme of archæological systems in certain geographically well defined areas.

Further general fieldwork and a certain amount of specific rechecking are necessary before final publication. In the meantime, complete records and field notes of the 1932 season are on file in the Fogg Art Museum, Harvard University, Cambridge, Massachusetts, and will be made available to anyone interested in the archæology of Yugoslavia.

The data for each site, grouped by regions and localities, includes: 1) traditional or local name and exact position; 2) cultural material as identified on the site or ascertained in known collections; 3) nature of site (settlement, fortress, city, villa, cemetery, tumulus, etc., with rough measurements or estimates); 4) work done, (a) by others, (b) by the Expedition, i.e., observations only, site scouted for material, surveyed, sounded, or examined for ruins; 5) conditions (availability of land, costs, labor supply, living quarters, seasonal limitations, etc.); 6) general remarks (relative importance of site, strategic position, relationship to known or supposed routes and general geographic distribution, possible light on diffusion); 7) description of photographs taken.

Topography, climatic conditions, and native economy were observed all along the route. Notations of such aspects as contemporary material culture, social traits, ethnic composition, hygiene, etc., however, were made only in specific instances. In addition to field cards a journal was kept in which events of each day and sundry information were entered.

## NOTE ON THE GENERAL ARCHAEOLOGICAL SETTING

The interpretation of the general archaeological situation in Yugoslavia as suggested by the findings of the reconnaissance, depends rather heavily upon a consideration of the geographic factors involved. The great physiographic diversity produces a series of topographically distinct regions which show important differentiation in the various periods of archaeological history. Cultural dynamics, movements, and affiliations can, therefore, be more clearly interpreted on the basis of geographic distribution. We believe that much light upon the general archaeological setting can be procured through site reconnoitering combined with physiographic observations, and that the trip under discussion has demonstrated the practicability of such procedure. The task is of great importance and requires considerable labor. This is only a first effort in that direction, but the promise of fruitful results is most encouraging. Yugoslavia forms the meeting ground for diffusions from the various cultural centers in Southeastern<sup>18</sup> and Central Europe,<sup>19</sup> and, indirectly at least, from Asia.<sup>20</sup> To indicate the significance of this region, which may be the key to the understanding of the earlier phases of the archaeology of Danubean Europe, we are including a brief sketch of the major cultural phases represented there. Since a discussion of the classical period would involve problems of history which lie outside the field of inquiry, it is not included in the following generalizations which are limited to the scope of a preliminary paper.

The present evidences of Palæolithic occupation are very restricted. In the northwest at the site of Krapina near Zagreb, Mousterian cultural remains and associated Neanderthal skeletal fragments were recovered in the extensive excavations of Professor Gorjanović-Kramberger.<sup>21</sup> The Vršac Museum contains a few flint pieces from the loess stretches of the northeastern Banat. These represent chance finds and suggest the possible presence of an Aurignacian phase. No definite sites, however, have yet been recorded. From the vicinity of Belgrade, apparently Aurignacian material is cited by Breuil,<sup>22</sup> but here, too, stations with occupational levels are unknown. The alleged cleaver from the neighborhood of Bitolj has

<sup>18</sup> Regions along the Aegean and the Black Seas.

<sup>19</sup> The territory of Yugoslavia comprises portions of both Southeastern and Central Europe.

<sup>20</sup> Especially Anatolia.

<sup>21</sup> Gorjanović-Kramberger K., *Der diluviale Mensch von Krapina in Kroatien* (Wiesbaden, 1906); "Der paläolithische Mensch und seine Zeitgenossen aus dem Diluvium von Krapina in Kroatien," *M. A. G. W.*, Bd. XXXI (Wien, 1911); "Nachtrag" (to the preceding article), *M. A. G. W.*, Bd. XXXII (Wien, 1912). Material in Zagreb. Visited 1932.

<sup>22</sup> Breuil, H., "Notes de voyage paléolithique en Europe Centrale," *L'Anthropologie*, XXXIII (Paris, 1923), p. 333.

been interpreted as Chellean, Acheulean, or Mousterian,<sup>23</sup> but it does not, by itself, bear sufficient evidence to establish the presence of any of these phases in southern Yugoslavia. In the northeastern section of the country, especially along the Nišava, Jelašnica and upper Timok rivers, are a number of caves some of which have been described as showing possible traces of a Palaeolithic occupation.<sup>24</sup> To date, however, definite proof is still lacking.

In general then, the analysis and distribution of Old Stone Age cultures in Yugoslavia must depend upon future systematic fieldwork.

The early Neolithic material from the Banat differs from that found in Šumadija<sup>25</sup> and can be fairly considered to represent a different ethnic group.<sup>26</sup> The same is true of the later phase as seen at Čoka,<sup>27</sup> Srpski Krstur,<sup>28</sup> and elsewhere.<sup>29</sup> This is analogous partially with the Tisza<sup>30</sup> and partially also with the Pusztaištáhnáza or Bodrogkeresztúr<sup>31</sup> of Hungary. It is important to note that while Tisza traits are recognizable as far as the Upper Morava Valley<sup>32</sup> the Čoka (Pusztaištáhnáza) development seems to stop with the Danube. In the Morava drainage system, the sites of Gradac,<sup>33</sup> Pločnik,<sup>34</sup> Jablanica,<sup>35</sup> and Lipovac,<sup>36</sup> have a Neolithic development akin to that of the south bank of the Danube, but seem, on the whole, rather peripheral in character and less diversified in ceramic types. The site of Vinča<sup>37</sup> is unique in the fusion of cultural elements which it represents.

On geographic grounds the northeastern section of the country, namely, the valley of the Timok and the adjacent basin around Kladovo, can be expected to have affinities with the Neolithic of western Bulgaria. This region, however, is only vaguely known archæologically.<sup>38</sup> Nevertheless,

<sup>23</sup> Patte, E., "Coup-de-poing, en quartzite, des environs de Monastir Serbie," *Bull. de la Soc. Préh. Franç.*, XV (Paris 1918). (The author speaks also of a quartzite scraper which is an equally doubtful specimen.)

<sup>24</sup> Kanitz, F., "Die ersten prähistorischen Funde im Königreiche Serbien," *M. A. G. W.*, XVI (Wien, 1886); "Die prähistorischen Funde im Serbien bis 1889," *M. A. G. W.*, XIX (Wien, 1899). (The inference as to possible Palaeolithic remains is based upon palæontological grounds only.)

<sup>25</sup> See "Excavations at Starčevo," in this *Bulletin*.

<sup>26</sup> Although not necessarily a different race.

<sup>27</sup> Grbić, M., "Kerámika iz nalezišta kod Čoke," *Glas. Istor. Dr. u N. S.*, III, 2 (Novi Sad, 1930), pp. 198 ff.

<sup>28</sup> Dr. Grbić's reconnoitering work. Material in National Museum, Belgrade. Also personal and written information and photographs from Mr. L. Nadlački of Srpski Krstur.

<sup>29</sup> I.e., material in museums at Vršac, Pančevo; also various private collections.

<sup>30</sup> Tompa, F. v., "Die Bandkeramik," *Arch. Hung.*, V-VI (Budapest, 1929).

<sup>31</sup> Hillebrand, Jenő, "Das Frühkupferzeitliche Gräberfeld von Pusztaištáhnáza," *Arch. Hung.*, IV (Budapest, 1928).

<sup>32</sup> Grbić, M., *Pločnik* *ibid.*

<sup>33</sup> Vasić, M. M., "Gradac," *ibid.*

<sup>34</sup> Grbić, M., *ibid.*

<sup>35</sup> Vasić, M. M., "Jablanica," *ibid.*

<sup>36</sup> Sounded briefly by the Pennsylvania-Harvard Expedition in 1931. Material partially in Belgrade and partially in Cambridge, Mass., to be published.

<sup>37</sup> Excavated by Professor Miloje M. Vasić and reported upon in "Die Hauptergebnisse der Præhistorischen Ausgrabung in Vinča im Jahre 1908," *P. Z.*, Band 2, Heft 1 (Berlin, 1910), pp. 23-38; "Die Datierung der Vinčeschicht," *P. Z.*, Band 3, Heft 1-2 (Leipzig, 1911), pp. 126-132; "Excavations on the Neolithic Site at Vinča, on the Danube, 1930," *Man*, XXX (London, 1930), pp. 197-200; *Illustrated London News*, October 18, 1930, pp. 664-667, 22 illustrations; November 1, 1930, pp. 752-753, 17 illustrations; *Preistorijska Vinča I. Industrija cinabarita i kosmetika u Vinči* (Beograd, 1932).

<sup>38</sup> The National Museum in Belgrade has a small collection of Neolithic material from Kladovo. (Personal information from Dr. Grbić.)

it is of interest to note that the Timok, which empties into the Danube east of the Iron Gate, rises close enough to the Nišava, a tributary of the Morava, to afford a route into the Morava Valley itself, whereby not only the Iron Gate but also the inaccessible stretch of the Danube upstream as far as Golubac, can be avoided.

The Middle Vardar valley is set off from Šumadija by the long barrier of the divide, the Demir Kapija Gap, and the rugged country between the two. Below the Gap, the Macedonian Neolithic,<sup>39</sup> focussing at the lower waters of the Vardar, seems to spread as far north as the vicinity of Djevdjelia. Further to the west, in the Bitoljsko Polje district, the northernmost extension of the same development, yet known, is to be found.

In the west central section of Yugoslavia, the region of the Bosna and lower Sava valleys (old Bosnia), another subdivision can be recognized. Butmir,<sup>40</sup> perhaps the best known station from this district, and a number of other sites,<sup>41</sup> have yielded material related to that of the Middle Danubian Valley, although showing marked local deviations.

Further to the northwest, we find another significant family, that of the Ljubljanska Blata (Laibach Moors),<sup>42</sup> which shows affinities with the eastern Alpine Lake Dwellings<sup>43</sup> and also with the Middle Danube.<sup>44</sup> This group is located on the headwaters of the Sava and Drava rivers and extends along and between them as far as the Danube, where it is represented by the site of Vučedol,<sup>45</sup> which seems to mark the termination of its southeastward distribution. This development also diffused to the west and south, penetrating, sporadically at least, through Croatia and Dalmatia as far as Split,<sup>46</sup> and even reaching some of the coastal islands.<sup>47</sup> On the basis of certain Bohemian finds,<sup>48</sup> the Ljubljanska Blata Neolithic material may be considered to be contemporary with the so-called "Nordic"<sup>49</sup> or "Danordic"<sup>50</sup> phase in Central Europe.

The transition into Bronze Age, usually referred to as the Chalcolithic or Eneolithic period, cannot be documented. Local metallurgy prior to the fully developed Bronze Age has not yet been proven. Metal objects found

<sup>39</sup> Wace, A. J. B., *ibid*; Rey, L. *ibid*; Heurtley, W. A., *ibid*.

<sup>40</sup> Radimský, W., *Die neolithische Station von Butmir, etc.*, I and II (Wien, 1895 and 1897).

<sup>41</sup> i.e., Donja Mahala, Klakar, Novi Seher, Debelo Brdo, Varvara, etc.; Dr. M. Mandić, curator in the Sarajevo Museum, is now completing a detailed map of site distribution throughout this region.

<sup>42</sup> Hoernes, M., "Die neolithische Keramik, etc.," *Jahrbuch der K. K. Z. K.*, III (Wien, 1905);

Hoernes, M. and Menghin, O., *Urgeschichte der Bildenden Kunst in Europa, etc.* (Wien, 1925).

<sup>43</sup> *Ibid*; also Menghin, O., *Urgeschichte der Ostalpenländer, etc.* (Wien, 1928).

<sup>44</sup> Wosinsky, M., *Die inkrustierte Keramik, etc.* (Berlin, 1904).

<sup>45</sup> Hoernes, Menghin, *ibid*. Material in Zagreb and Vienna.

<sup>46</sup> Material in the archaeological museum in Split, called to our attention by Professor M. Abramčić.

<sup>47</sup> Juraschek F. v., "Eine Höhle auf Curzola," *W. P. Z.*, III, Nos. 1-4 (Wien, 1916).

<sup>48</sup> Stocký, A., *Pravěk země české, I* (Praha, 1926), p. 120.

<sup>49</sup> Originally named by Buchtela, K., *Vorgeschichte Böhmens* (Prag, 1899), pp. 19 ff., and Buchtela, K. and Niederle, L., *Rukověť české archaeologie* (Praha, 1910), p. 16; adopted by Stocký, *ibid.*, pp. 93 ff.

<sup>50</sup> Term given by Childe V. Gordon, in *The Danube in Prehistory* (Oxford, 1929), p. 116.

in Neolithic contexts represent imports which did not modify the basic character of the culture.

The Bronze Age in Yugoslavia is less well known than the Neolithic. Along the Danube the most definitely established Bronze Age phase is that known as Vatin.<sup>51</sup> This shows a northern relationship and corresponds to the advanced Bronze Age in Central Europe.<sup>52</sup> Its closest affiliations are with the so-called "Pannonian" wares of Hungary.<sup>53</sup> The sites in which this material appears all lie close to the Middle Danube and its affluents. The Bronze Age sites of the Morava Valley<sup>54</sup> are related to the Vatin development on the one hand and to the Macedonian wares on the other.<sup>55</sup> South of the Morava drainage we again find a more pronounced connection with Macedonia, especially in the regions of Djevdjelia, Bitolj, and possibly also Ohrid. In the Bosna and Lower Sava Valleys the Bronze Age material bears the stamp of the Terramare development as well as that of the "Pannonian."<sup>56</sup> In the Ljubljanska Blata region the Terramare character predominates,<sup>57</sup> but there also seems to be a significant survival of the local Neolithic tradition.

The Late Bronze Age presents a rather confusing picture. In general it might be said that in those regions which have an earlier phase, the Late Bronze Age represents partly a continued development from the older stage and partly a new influx, eventually to be recognized as "Hallstatt." This is particularly true of the Middle Danube Valley where the so-called Dubovac phase<sup>58</sup> represents a development from Vatin. In the south the evidence is as yet scanty and is further complicated by the presence of the so-called Illyrian "Hallstatt."<sup>59</sup>

As is true of all the latest Bronze Age phases in Central Europe, there is a combination of similar traits in all the local sub-groups, their distinction being based primarily upon the surviving elements of the preceding stage. Also, as in Central Europe, the latest Bronze Age shows a very strong foreshadowing of the so-called "Hallstatt" or early Iron Age in the uniformity of these characters. In Yugoslavia, for the most part, the Late Bronze

<sup>51</sup> Milleker, F., *A Vattinai őstelep* (Temesvar, 1905).

<sup>52</sup> Dr. Grbić is now preparing a corpus of the ceramic material of this region, in which he will subdivide the Bronze Age material on the basis of typological and chronological factors.

<sup>53</sup> Miske, K. v., "Versuch, etc.," *A. f. A.*, XLIII (Braunschweig, 1917); Hoernes, Menghin, *ibid.*, pp. 402 ff.

<sup>54</sup> i.e., Kličevac-Vasić, M. M., in *Rev. arch.*, I (Paris 1902), pp. 172 ff.; Žuto Brdo-Vasić, M. M., in *Starinar*, V (Beograd, 1907); Ljuljaci—a hilltop settlement near Kragujevac, sounded by Dr. Grbić. Material in Belgrade. Unpublished.

<sup>55</sup> Especially noticeable in the Bronze Age pottery from Gradac (Vasić, M. M., "Gradac," *Ibid.*; material in Belgrade).

<sup>56</sup> Material in Sarajevo and Vienna. (See *Wis. Mit. B. H.*, I, III, VI, IX, XI; and Hoernes, Menghin, *Ibid.*)

<sup>57</sup> Material in Ljubljana, Zagreb, and Vienna. (See Hoernes Menghin, *Ibid.*)

<sup>58</sup> Material in Vršac and Belgrade. (See Milleker, *Ibid.*)

<sup>59</sup> *Wis. Mit. B. H.*, I, III, IV, V, VI, IX; Hoernes, Menghin, *Ibid.*



development is almost inextricably bound up with the dawn of the Iron Age, and it is very difficult to draw the line between the two.

In the Early Iron Age in Yugoslavia there seem to have been two main groups of "Hallstatt." The first, comprising the Middle Danube section, again appears to have northern affiliations although its main characters are largely local. Cinerary urn burials are typical and have about the same distribution as those of the Vatin phase.<sup>60</sup> Settlements have not as yet been excavated on a large scale.<sup>61</sup> The western group, on the other hand, known as the "Illyrian Hallstatt" and extending from the coast to the valleys of the Morava and Vardar, has much in common with the Danubean region, but seems more definitely related to the Alpine area. In many of the more inaccessible places, the tumuli of this period represent the oldest traces of occupation. From Glinac<sup>62</sup> southward into Herzegovina and Montenegro they are recorded in large numbers. Their builders seem to have survived well down into Roman times. Among settlement places, the best known is the pile dwelling site at Donja Dolina<sup>63</sup> on the Sava, which dates from Late Bronze Age to La Tène, and also contains burials. Some "Hallstatt" material is reported from the vicinity of Kladovo, on the Danube, near the Bulgarian border.<sup>64</sup>

The Late Iron Age is represented by widely distributed but, on the whole, rather fragmentary and heterogeneous material. In the Banat, for example, Roman influences are often quite pronounced in the La Tène remains, and date it, therefore, as fairly late.<sup>65</sup> Thus far, only graves and chance finds have been recovered there.<sup>66</sup> In the Morava Valley, La Tène material is known from Gradac<sup>67</sup> and from certain stray finds.<sup>68</sup> The site at Šupljastena, near Belgrade, contains pottery<sup>69</sup> comparable to the La Tène material from Vinča.<sup>70</sup> The west central and northwestern regions of the country show La Tène remains in many sites in which "Hallstatt" is also represented.<sup>71</sup>

For the interval between the La Tène and Slavic periods in Yugoslavia, there is as yet very little archaeological evidence. Scythian material is

<sup>60</sup> i.e., Vatin, Dubovac, Žuto Brdo, Pančevo, Starčevo.

<sup>61</sup> Professor Milleker, however, has found some dwelling pits.

<sup>62</sup> Fiala, Franz "Die Ergebnisse der Untersuchung prähistorischer Grabhügel auf dem Glinac" (Years 1892-1896), *Wis. Mit. B. H.*, I, III, IV, V, VI (Wien, 1893, 1895, 1896, 1897, 1899).

<sup>63</sup> Truhelka, C., "Der vorgeschichtliche Pfahlbau im Savebette bei Donja Dolina," *Wis. Mit. B. H.*, IX (Wien, 1904).

<sup>64</sup> Personal information from Dr. Grbić. Material in the National Museum Belgrade.

<sup>65</sup> Material in the Vršač Museum. Also our finds at Starčevo.

<sup>66</sup> Personal information from Professor Milleker.

<sup>67</sup> Vasić, M. M., "Gradac," *Ibid.*

<sup>68</sup> Material in the National Museum, Belgrade; also our field observations at Niš (1932) and Jagodina (1931).

<sup>69</sup> Found by Dr. Grbić and Dr. Fewkes during their joint visit in 1931, at which time a building foundation was being cut through a considerable archaeological deposit.

<sup>70</sup> Vinča material in the National Museum, Belgrade.

<sup>71</sup> *Wis. Mit. B. H.*, especially Glinac in Vols. I, III-VI; Donja Dolina in Vols. IX, XI; Jezerine (Bihac) in Vols. I, III; Majdan in Vol. I; Mahrevići in Vol. XII.

scanty. An iron dagger, now in Vršac, is described by Milleker,<sup>72</sup> and Fettich<sup>73</sup> lists two bronze spiral rings<sup>74</sup> and a fragment of a bronze bell<sup>75</sup> from Batina (Kisköszeg).<sup>76</sup> The latter, on his map,<sup>77</sup> includes 23 places of finds in Siebenbürgen and Transylvania. These regions are adjacent to the Banat, in which more Scythian relics may yet be found.

From the so-called Migration period, some Avaric material is in the Pančevo and Vršac Museums.<sup>78</sup> The vicinity of Pančevo seems especially important in this respect. Although, on the whole, the evidence is very slight, the distribution of Avaric and Germanic remains in the Hungarian Plains<sup>79</sup> may also prove to extend into the neighboring sections of Yugoslavia.

Of Slavic antiquities, dating from before the 8th and 9th centuries, very little is known. Niederle,<sup>80</sup> basing his conclusions on the writings of Priskos, places the arrival of the Slavs in the Middle Danube region as early as 448.<sup>81</sup> By the end of the 6th century, they were present along the upper Drava (Istria).<sup>82</sup> These dates as well as those of the 7th and 8th centuries, however, are still without archæological documentation,<sup>83</sup> for the earliest Slavic graves definitely known are from the 9th century.<sup>84</sup> Inasmuch as the Slavs who traversed the Carpathians had a poor material culture,<sup>85</sup> Niederle holds<sup>86</sup> that their earlier, simple-cremation graves may have remained unnoticed. From the 9th century on the archæological material recovered from the rows of skeletal graves<sup>87</sup> is similar to that of the rest of Slavized Europe. This is especially marked by the typical "S"-type ear-ring and the characteristic pottery vessels with incised, undulating lines.<sup>88</sup> The Serbs and Croats settled in their present domain sometime between the 5th and 7th centuries, having come originally from the Transcarpathian region.<sup>89</sup> Their history lies outside of the scope of these studies.

<sup>72</sup> Milleker, B., "A verseci múzeum régiségeiről," *Arch. Ért.* (Budapest, 1898). Cited by Fettich, N., "Bestand der skythischen Altertümer Ungarns," *Skythien und der Bosphorus* (M. Rostowzew), Bd. I, Teil II, 4, Kap. II, J 2 (Berlin 1931), p. 514.

<sup>73</sup> *Ibid.*, p. 524.

<sup>74</sup> In Naturhistorisches Museum, Wien.

<sup>75</sup> In Nemzeti Muzeum, Budapest.

<sup>76</sup> On the right bank of the Danube just south of the boundary line.

<sup>77</sup> Fettich, *Ibid.*, p. 495.

<sup>78</sup> Visited in 1931 and 1932.

<sup>79</sup> See Fettich, N., "Das Kunstgewerbe der Avarenzeit in Ungarn I," *Arch. Hung.*, I (Budapest, 1926); and Fettich, N., "Beiträge zum Entstehungsproblem des altgermanischen II Stiles," *Arch. Ért.* (Budapest, 1929).

<sup>80</sup> Niederle, L., *Slovanské Starožitnosti II* (Praha, 1905).

<sup>81</sup> *Ibid.* p. 135 (note 1).

<sup>82</sup> *Ibid.*, p. 339.

<sup>83</sup> *Ibid.*, pp. 23 ff.

<sup>84</sup> *Ibid.*, p. 512. (Some possibly even in the 8th century.)

<sup>85</sup> *Ibid.*, p. 506.

<sup>86</sup> *Ibid.*, p. 512.

<sup>87</sup> Vasić, M. M., "Starosrpska nalazišta u Srbiji," *Starinar*, IV (Beograd, 1906), pp. 39 ff.

<sup>88</sup> Niederle, L., *Ibid.*, Chapter IX. Material in Belgrade, Vršac, Pančevo, Sarajevo, Zagreb, Ljubljana. Slavic sherds were recovered at Starčevo.

<sup>89</sup> *Ibid.*, pp. 244-280.

# EXCAVATIONS AT STARCEVO, YUGOSLAVIA, SEASONS 1931 AND 1932

## A PRELIMINARY REPORT

By *Vladimir J. Fewkes, Hetty Goldman, and Robert W. Ehrich*

### ACKNOWLEDGMENTS

The recent archæological fieldwork of American institutions<sup>1</sup> in Yugoslavia<sup>2</sup> has been carried on with the close coöperation of the National Museum of Belgrade,<sup>2</sup> whose director, Professor V. R. Petković, arranged for the permits and attended personally to numerous details. The first contacts were established in 1929. During the following season informative field excursions were made and, on the basis of these, plans were formulated for a systematic campaign of research. In 1931 a short reconnoitering expedition was organized, and, finally, in 1932, the work developed into large scale proportions. To Professor Petković we wish to express our great sense of indebtedness for his interest and many kindnesses which afforded the Expedition such very profitable and enjoyable seasons in Yugoslavia. Sincere thanks and recognition as a collaborator are also due to Dr. M. Grbić, curator in the same museum, who was delegated to accompany the Expedition in all its work.

### SPONSORING INSTITUTIONS

In the season of 1931, the University Museum, Philadelphia, Pennsylvania, and the Peabody Museum of Harvard University, Cambridge Massachusetts, sent their Third Joint Archæological Expedition to Central Europe, under the direction of Dr. Fewkes and Mr. Ehrich. While the chief objective was to complete the excavations at Homolka<sup>3</sup> in Czechoslovakia, one month was devoted to general reconnoitering in Central Yugoslavia, in order to select a site for future exploration. In the course of these activities Starčevo was visited and a test dig, which lasted ten days, was carried on. The results were sufficiently encouraging to recommend a systematic exploration.

<sup>1</sup> University Museum, Philadelphia, Pa., Peabody Museum and Fogg Art Museum, both of Harvard University, Cambridge, Mass., American School of Prehistoric Research.

<sup>2</sup> Established English spelling employed for these two names only. In all other cases the local usages are adopted.

<sup>3</sup> Fewkes, V. J., "Excavations in the Late Neolithic Fortress of Homolka in Bohemia. A Preliminary Report," in *Proc. Am. Phil. Soc.*, Vol. LXXI, No. 6 (Philadelphia, Pa., 1932).

In 1932 three institutions, the Fogg Art Museum, the Peabody Museum, both of Harvard University, and the American School of Prehistoric Research, sponsored jointly the American Archæological Expedition to Yugoslavia. The staff for the entire season consisted of Dr. V. J. Fewkes, Director; Dr. Hetty Goldman, representing the Fogg Art Museum; Mr. Robert W. Ehrich, Peabody Museum; and Dr. Miodrag Grbić, on behalf of the National Museum, Belgrade. In addition, the following joined the staff in Starčevo; Mrs. Gwyneth Harrington<sup>4</sup> of Boston, artist; Dr. Oleh Kandyba, authority on Neolithic painted pottery of Central and Eastern Europe; and Mr. Adolf Fiker, surveying engineer, both the latter of Prague.

Besides excavating at Starčevo, the 1932 Expedition made an extensive reconnaissance in Yugoslavia<sup>5</sup> and also conducted the twelfth annual summer term of the American School of Prehistoric Research.<sup>6</sup> The six students of the School, Misses Josephine Graton, Bryn Mawr; Gertrude Howe, Mount Holyoke; Ruth Sears, Radcliffe; and Messrs. Curtice M. C. Aldridge, Cornell; Dwight W. Morrow, Jr., Amherst; and Frederick A. L. Richardson, Harvard, proved valuable assistants on the dig.

### THE SITE

Starčevo is situated 8 km. southeast of Pančevo which, in turn, is 12 km. northwest of Belgrade, on the northern (or Banat) side of the Danube. The archæological site is located just west of Starčevo on an ancient bank of the river, the present bed of which lies some 3.5 km. further to the west and south. Practically opposite, and across the stream, is the well known site of Vinča.<sup>7</sup> The old terrace begins at the junction of the Temeš river at Pančevo, and runs more or less parallel with the Danubean course for a considerable distance. In height it varies from 2 m. to 5 m., and its distance from the modern, normal limits of the stream ranges irregularly from the present shore itself to several kilometers inland. Traces of ancient human occupation are to be found almost everywhere along it, either as sporadic occurrences or as concentrated settlements or burial grounds. The natural creation of the bank is to be interpreted as the result of the stream having cut into the loess formation which here lies superimposed upon a considerable thickness of fine sand. Sedentary occupation in aboriginal times

<sup>4</sup> Mrs. Harrington made watercolors of the painted ceramics, typical examples of which, copied in ink, are figured.

<sup>5</sup> and <sup>6</sup> Reports on these are published in this *Bulletin*.

<sup>7</sup> Excavated by Professor Miloje M. Vasić and reported upon in "Die Hauptergebnisse der Præhistorischen Ausgrabung in Vinča im Jahre 1908," *P. Z.*, Band 2, Heft 1 (Berlin, 1910), pp. 23-38; "Die Datierung der Vinčeschicht," *P. Z.*, Band 3, Heft 1-2 (Leipzig, 1911) pp. 126-132; "Excavations on the Neolithic Site at Vinča, on the Danube, 1930," *Man* (London, 1930), XXX, pp. 197-200; *Illustrated London News*, October 18, 1930, pp. 664-667; 22 illustrations; November 1, 1930, pp. 752-753, 17 illustrations; *Preistorijska Vinča I. Industrija cinabarita i kosmetika u Vinči* (Beograd, 1932).

appears to have been restricted to the bank proper and to the open land which stretches back of it. While the Srpska Planina (Serbian Plain) on the right bank of the Danube is hilly, the Banat side is flat and consists of rich alluvial land. Some 25 km. from Starčevo in the direction of Vršac there begins an abrupt rise, which appears to be another former river bank, marking, perhaps, the oldest limit of the Danube in this region.

It does not seem improbable that even in Neolithic times the channel of the Danube, near Starčevo at least, was more or less the same as today. With the aid of modern dykes, seasonal floods, which formerly brought water to the very edge of the village, have been checked and controlled except for the rare occurrence of breaks. A portion of the land between the main dyke and the old bank at Starčevo is now utilized for truck gardening. It would be difficult to imagine that this flat, low stretch, which was originally unavoidably subjected to inundations, could have been settled in antiquity. Even today, without protection, it would be an inhospitable marshland such as still exists in many places. Thus far no positive traces, nor any suggestions whatsoever, of even temporary camps have come to light. It is of interest to note that the lowest archæological deposits at Starčevo, and at Vinča, are approximately of the same level.

The site at Starčevo is locally known as Grad which in the Serbo-Croatian language means town or fortified place. The name appears to be a traditional survival in the memory of an outpost which existed there perhaps some centuries ago, having originally served as a guard against the Turkish advance. The undated Hungarian catastration map on file in the local administrative office designates the site as parcellation No. 283. The property belongs to the community and is reserved for pasture land except for one restricted area which is exploited for clay. As is usual under such conditions, the presence of archæological deposits was first revealed by chance. It seems that brick-making activities which began here in 1912 have become increasingly important since 1919. No organized effort was made to save the archæological material thus uncovered, although the Pančevo Museum did manage to secure a small collection. The site apparently escaped professional notice until the National Museum in Belgrade obtained some of its material. In 1928 Dr. M. Grbić of that museum made a brief sounding at Starčevo,<sup>8</sup> after which clay was mined more extensively than ever before. When we first visited the site in May, 1931, the damage was of such proportions that it was impossible to find even traces of Dr. Grbić's soundings. Since the time of his work there, a large section of the bank had been cut

<sup>8</sup> Grbić M., "Bemalte Keramik aus Starčevo im Banater Donaugelände-Jugoslavien." Reprint from *Księga Pamiatkowa ku czci Prof. Dr. Włodzimierza Demetrykiewicza*, Biblioteka prehistoryczna Poznan, 1930.

away down to the sand stratum. In the freshly cut walls, archæological deposits were plainly visible. The brickmakers were then enjoying another active season. The ground was strewn with sherds, among them some significant material. Not only had a large cut been made into what appeared to be a rich part of Grad, but brick kilns had also been built into it, causing irreparable damage. Closer examination indicated that a test dig was necessary to ascertain the true nature of the badly damaged site. A permit was readily granted by the community authorities, to whom sincere appreciation is hereby expressed.

## EXCAVATIONS

The 1931 soundings were concentrated along the edge of the cut made by the brickmakers. Three sections were opened. Two of these afforded merely a partial checkup in badly damaged deposits which proved to be fractions of culture pits.<sup>9</sup> The third section was an irregular rectangle 18.75 m. long and 6.50 m. wide. Horizontal stripping procedure was followed throughout and was determined strictly by the nature of the deposits.

Experimentation during these soundings eventually resulted in a comprehensive understanding of the ground. With the horizontal cutting carried over a fairly large area, it became possible to step off the various levels and have, at the same time, a fresh profile directly at hand. The deposits were found to be very rich in important material. Portions of two pits were excavated and two isolated graves were recovered. There was unmistakable evidence that the site continued for some distance along the bank and inland as well. Although only incomplete pits, that is, those partially destroyed by brickmakers, were dealt with, it seemed highly probable that untouched foundations of dwellings could be found by further exploration. A close examination of the profile revealed interesting features. The brickmakers, it seemed, had carried their cutting into the richest part of the site, and were expecting to go even further. A permit to excavate on a large scale was tentatively applied for, and the Belgrade Museum supporting the request, restricted the clay cutting activities to a relatively sterile spot. The recovered material was divided in Belgrade and the American share was shipped to the Peabody Museum in Cambridge.

In 1932 the Expedition began its work at Starčevo on July 15th and ended on September 20th. Digging was concentrated in an irregular section 45 m. long and 26.50 m. wide at the base. In addition to this two sounding trenches (measuring 13.75 m. by 7.60 m. and 10 m. by 2.50 respectively) were sunk some 275 m. north of and inland from the section; and a con-

<sup>9</sup> Cellar-like foundations for dwellings cut into virgin soil (in this case, loess) by the first settlers.

firmatory cut was made just south of the section in the area tapped by the preceding year's work. While the removal of humus was in progress, surface and disturbed material was collected upon and below the bank. The large quantity of sherds thus secured afforded the staff an opportunity to familiarize themselves with the nature of the pottery to be expected. At this same time the terrain was surveyed and a tacheometric plan with intervals of 25 cm. was prepared. A base line was established just east of the main section and, on the plan, subsequent developments were mapped in relation either to the line itself or to one of its coördinates. The ground was stripped horizontally and eventually the entire section was laid bare to the loess foundation. In the two trenches 14 levels were arbitrarily established as a general test. These resolved into four major levels of deposit. The cut south of the section was made for the sole purpose of tracing the exact extent of a late intrusion. In all, twelve dwellings (represented by seventeen major pits and associated subpits) and four additional isolated graves were excavated.

A field laboratory established close to the dig facilitated an immediate handling and preliminary classification of the material. Most of the recovered pottery, kept in units according to its original deposition, was divided into three main groups. The most significant painted ware, some 30% of the total, was recorded in watercolor. At the end of the season the material was packed and is now in Belgrade, while arrangements are being made for its ultimate detailed study. Although further excavations at Starčevo could be carried on for many years to come, the 1932 campaign may well be considered as a finished project, for it is very doubtful whether by this means much additional light could be thrown on the data secured. Such work would, in all probability, merely duplicate what has already been done.

## GROUND FEATURES AND STRUCTURE OF DEPOSITS

In the wide cut carried into the bank by brickmakers, the nature of deposition was readily ascertainable. Outlines of several pits, filled with culture dirt<sup>10</sup> and general debris,<sup>11</sup> were plainly visible in the face of the cut in so far as they penetrated the loess. Higher up in the deposits, however, there were no marked distinctions except when revealed by ashes, burned patches, and intrusive disturbances. In order to intensify possible existing differences in coloration, composition, compactness, or perhaps stratigraphy, the wall was scraped. In the freshened profile a sharp demarcation in color was noticeable between the virgin loess and the borders of the intruding pits.

<sup>10</sup> Deposition caused primarily by original settlers, i.e., refuse, ashes, cultural material, also collapsed superstructures, and infiltrations, occurring during or after occupation.

<sup>11</sup> Accumulated largely after abandonment.

Within the pits and above the level of the loess there were no distinctions unless a hearth, some burnt earth, or an ash pocket was present. Such ash pockets were noted, for example, over pits Nos. 1 and 2, where they lay upon the occupational niveau (called pit level). The superstructures of the dwellings had apparently been destroyed by fire, recognizable by an additional stratum which formed a part of the culture level. Above it to the base of the vascular top zone or humus (cultivated within recent times and forming, therefore, a vegetation layer quite sharply differentiated from the rest of the deposits) another level—called subhumus—was isolated. While all of the humus appeared to have been turned by cultivation during recent times, only the upper third of it represented the living earth which supports the present vegetation. In one case, a sharply defined “pit,” starting below the humus and penetrating the deeper deposits, was noted; this subsequently proved to be a modern intrusion.

The composition of the deposits was found to be correlated with their color. The loess seemed to be entirely æolian and free of foreign matter. The culture dirt was made up of musty earth with admixtures of ashes, refuse, and cultural material, as well as a graded proportion of the original loess which lessened steadily toward the base of the humus where it disappeared entirely. This suggests that the land has been under continued cultivation from the end of the actual house occupation. The lack of loess content in the humus is explicable by the supposition of a period of lying fallow, perhaps during the original “Grad” days, in which enough deposit was laid down to keep the plough from disturbing the loess-containing soil below. The humus itself contained a high proportion of decayed vegetation and other organic matter.

Differences in compactness paralleled to a high degree those in color and composition and yet showed considerable variability within individual levels. The loess itself seemed most closely packed in its upper strata as a result of drainage from the deposits above. The earth content of the culture pits showed a uniform consistency, except when ash predominated. Ash pockets were either relatively pure and of light texture or more or less mixed with earth, and were, therefore, irregular in their degree of compactness.

Although stratigraphic differentiations were facilitated by these distinctions, the fact that the total thickness of deposits from the culture level to the bottom of the pits represented a single period of uninterrupted occupation (with no visible traces of rebuilding or other change), rendered such observations of little significance. This is emphasized by certain pottery, which, although recovered from various depths, not only retained its uniformity in type, but in certain cases even represented parts of the same vessel. The humus level was completely disturbed by cultivation and con-



tained material ranging from Neolithic to modern. The subhumus formed a transitional zone between it and the culture level which was predominantly Neolithic with intrusions caused by later burials. The culture pits were purely Neolithic in structure and in content. Within the ashy culture level and within the pits were certain stratigraphic differences, but these represented individual cases and were spacially restricted. For example, a floor with a hearth seemed to exist in the profile of one of the fragmentary pits. When opened from the top, however, it proved to be the remnant of a shelf with a portion of what appeared to be either a hearth or a batch of well-burned clay. The ash layer demarking the culture level eventually broke up into a group of pockets, limited in distribution to the area immediately overlying pits No. 1 and 2. Detailed observation within the pits depended to a great extent upon the material, since there were no marked differences in their fill.

The notable exception was pit No. 5 which was a complex dwelling foundation with two super-imposed and separated floors. Taking a profile of pit No. 5 to obtain the most complete section possible, we have the following:

A. Above the pit:

- |   | <i>Thickness</i> |
|---|------------------|
| 1. <i>Humus</i> ; the top layer supporting present vegetation; recent cultivation and soil removal have completely disturbed it, resulting in a chaotic mixture.  | 0.60 m.          |
| 2. <i>Subhumus</i> ; originally served the same purpose as the humus proper, but had ceased, to a large degree, to be the active nurturing zone for flora. It also appeared to have been under cultivation at some time in the recent past, as evidenced again by its composition. The degree of mixture was somewhat less than in the humus, and at its base its condition approached closely that of the culture level. | 0.80 m.          |

Although considerable pottery was recovered in both of these strata, the greater part was necessarily of secondary deposition and represented everything from the oldest to the most recent wares found in the site. Illustrative of this is pit 5B, located in the center of 5A. This was a circular fire pit, purely modern and intrusive. It was almost entirely within the subhumus.

3. *Culture level*; representing that accumulation of debris which took place after the abandonment of the area as a

dwelling site. The irregularly distributed burnt layer within it identified fire destruction of the superstructure, which was further evidenced by ashes. It may have been partly built up by cultivation subsequent to the period of occupation.

0.65 m.

4. *Pit level*; the original niveau into which pits were dug by the first settlers. This level was not represented above the pit proper but was traceable in the deposit at its edges, and, in reality, represented the primary humus or top soil upon which the settlement eventually grew up. Since, however, the loess thrown out of the pits not only failed to create a separate layer upon it but fused with it completely into a solid mass, and, since sherds were found within it to its lowest limit, this stratum was not sharply distinguishable from the one above. Eventually, differences in color and compactness of the soil gave the key to the situation, but only after the horizontal peeling was carried down close to the loess foundation. Over the pit proper the lower limits of the culture level, when followed to the edge, naturally allowed a more precise identification of the pit level.

0.35 m.

B. The pit proper contained:

1. Accumulation above and upon floor II, marking the latest occupation. 0.40 m.
2. The body of floor II, artificially prepared of loess. 0.15 m.
3. Accumulation above and upon floor I, marking an earlier occupation. 0.25 m.
4. Body of floor I, artificially prepared of loess. 0.20 m.
5. Fill of pit under floor I. 0.64 m.
6. Bottom of pit, indicating the oldest artificial deposition, resting upon a thin layer of
7. Virgin loess, and in spots, reaching even to the
8. Sand foundation further below. (See plate VI, b.)

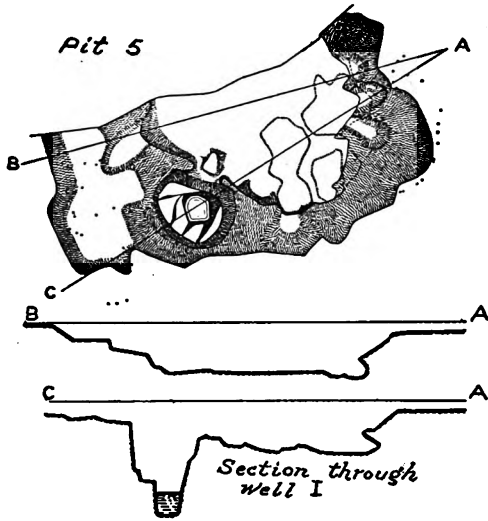


PLATE VI. a) General view of the main section of the Starčevo site, taken during the second week of excavations. b) Profile view of pit No. 5 as seen in the bank (humus level removed).

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Outside of the unusual case of pit No. 5, the site was distinguished stratigraphically only in a broad sense. In the two test trenches, for example, no marked differentiations, caused by or in consequence of human activity, could be determined. Only the humus with subhumus and a fairly well-defined culture level were noticeable. In material contents, the trenches and their arbitrary levels proved a disappointment, for a confusion in pottery was found to exist. Modern brick, for example, was recovered from level 10 in trench B, a matter of 1.60 m. from the surface. In the main section between the pits, the isolation and recognition of strata was particularly difficult. The considerable thickness of the humus (1.40 m.) disturbed and mixed throughout, in which occurred anything from a modern shoe to a Neolithic pot, necessitated careful (and largely fruitless) observations. By stepping off parts of the section and retaining control blocks in the middle and on the margins of the cut, it was possible to recognize a less mixed layer under the humus, averaging 0.60 m. in thickness. This contained sporadic intrusions of Bronze and Iron Age burials and also modern grain pits. In undisturbed parts, however, it was purely Neolithic. It consisted of rather lightly packed, ashy dirt which marked the destruction and decay of the settlement after it was deserted. Below this were darker deposits, more compact and fairly uniformly distributed over the entire area of the section, which were designated as the pit level. Here, intrusions and disturbances rapidly decreased in frequency and, when they did appear, were easily recognized. In thickness the pit level averaged 0.30 m. Pits proper began within it and were distinguishable on the horizontal plane by the darker color and lesser loess content of their fill. They were oval and seem originally to have served as dwelling foundations and, in isolated cases, as refuse pits. In depth they ranged from 0.15 m. to 1.85 m. The original structures appear to have been oval and perhaps irregularly circular in plan, but it is possible that some were rectangular. Although the presence of numerous animal burrows rendered difficult the definite identification of post-holes and confused the evidence in certain instances, traces of posts were distinctly recognizable. These were, whenever isolated, associated with groups of pits which were interpreted as houses, and formed a fairly regular chain around their borders, sometimes, in the interiors, following their subdivisions. The superstructure probably consisted of posts and beams to which suspended wicker mats were attached and smeared over with plaster. Fragments of burnt plaster with twig and pole impressions were found in the culture level and below it, and bear evidence on this point. Their preservation is perhaps to be interpreted as the result of accidental rather than

intentional firing, thus explaining their fragmentary nature. Unfired plaster, even though sun-dried, could be expected to have disintegrated.

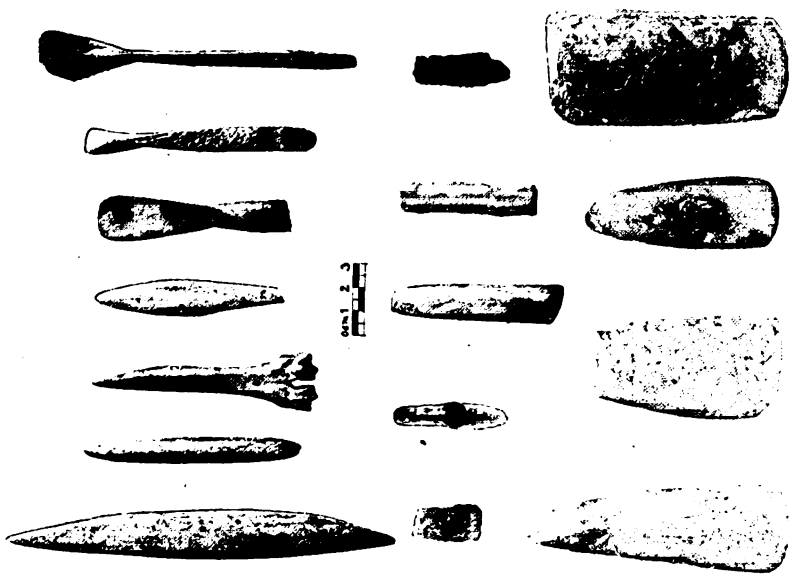


TEXT FIGURE I. Plan and sections of pit No. 5 after complete excavation.

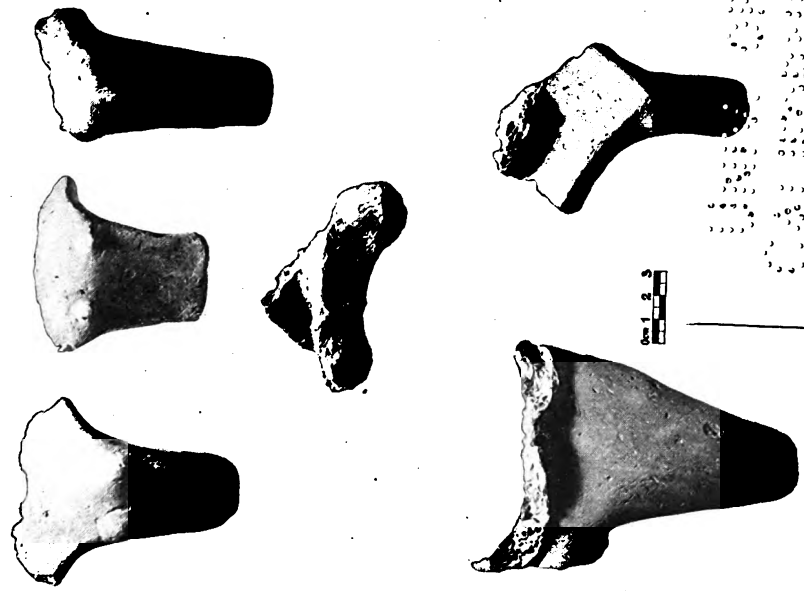
Very unusual features were two wells, each inside of a hut complex: one within pit No. 5; the other in pit 6 North Extension.<sup>12</sup> Their diameters were 0.98 m. and 1.40 m. and their total depths, measured from pit level, 3.30 m. and 4.20 m. respectively. That within pit No. 5 had a path worn through the hut floors to its edge, a barrier with two entrances from inside the hut, and a series of steps, two on each side, leading to a platform just above water level. Archæological material found in these wells was purely Neolithic and contained painted sherds. There were no indications of intrusion, nor was sagging visible in the deposits above. The wells were not recognized as such until the steps appeared nor until the clearing had been carried to a considerable depth. The present water level was found to be 2.70 m. below the pit level. The occurrence of these wells suggests very strongly that the bed of the Danube, during aboriginal times, as well as at present, lay some distance away.

The six graves occurred sporadically. Three were of the Neolithic age, with contracted skeletons and no furniture; one was a Late Bronze Age cremation in a large urn with four small attendant vessels, all of the so-called Vatin type; one a "Hallstatt" cremation in an urn of the so-called Dubovac

<sup>12</sup> Field terminology developed in accordance with the progress of the dig. Not yet converted into a final system.



a) Top row: bone implements. Middle row: two obsidian blades, slate adze, two flint blades. Bottom row: slate celts.



b) Feet of tables or bowls (?).

PLATE VII.

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type, containing a bronze razor; and an extended La Tène skeletal burial with three vessels, a bronze bracelet, and an iron knife blade. Two of the Neolithic graves lay within the pit level, the third was in the culture level. There may then be some difference between their cultural ages, but the lack of furniture and the absence of clearly defined grave pits make a definite distinction impossible. All the other interments lay either within or upon the culture level. The Vatin burial barely intruded while the Dubovac urn rested practically upon its upper limits. The La Tène grave was cut almost down to pit level, but it was located well away from any of the pits.

The deposits above the culture level, the subhumus, and the humus, seem to represent accumulations which were cultivated rather intensively, perhaps from Roman to modern times. The degree of mixture in their soil affords no other satisfactory explanation. Seasonal Danube floods apparently contributed in the building up of the whole deposit. It is interesting to note that the protective moat of the Grad outpost, which existed perhaps some 150 years ago, penetrated deeply the virgin loess and that its upper limits disappeared some 1.20 m. below the surface when viewed in profile. Apparently this zone of 1.20 m. has been laid down since the construction of the moat. The probable former existence of vineyards, which even now are present just off the bank, and the turning of the soil, which is usually carried to a considerable depth during this type of cultivation, however, may have caused the unusual thickness and thorough mixture of the comparatively recent humus and may also have sheared off the upper limits of the moat. The presence of Mediæval ceramics, Early Slavic remains, and Avaric graves of the Migration Period (as adduced from material seen in the Pančevo Museum), and Roman "Blau-grau" sherds support the interpretation of a more or less continuous use of the site from the Late Bronze Age down to the present. The Neolithic occupation itself appears to represent an unbroken period, but traces of anything like "Eneolithic" or Early and Middle Bronze Age seem totally lacking.

## MATERIAL<sup>13</sup>

### POTTERY

Three classes of ware may be distinguished on the basis of surface finish: 1) *Barbotine*, which is a lumpy, streaked, or hand-smoothed treatment creating an appearance of crude, positive relief; 2) *Burnished*, rubbed and smoothed with the aid of an implement; 3) *Painted*, predominantly in black color on a red wash.

<sup>13</sup> Only the Neolithic material and its implications are treated in this discussion. An analysis of the 1931 finds made by Mr. Aldridge, Miss Sears, and Miss Graton has been incorporated in this section.

1) *Barbotine* is the crudest of the three wares. The exterior is embellished with rough lumped or streaked finish, or with simple hand smoothing. Straw rubbing also appears but never covers the entire surface of the vessel. Produced by stroking the soft clay with a bunch of straw, twigs, or grass, its purpose may have been to smooth a surface already roughened by streaks or lumps, or to reduce a surplus of material.

There is in this class of ware a certain amount of incision which, though probably accidental at first, later developed into irregular but intentional markings. More definite lattice patterns and indented designs are present, but there is no evidence to suggest that they were not contemporaneous with irregular incising. Finger-nail markings may occur on the rim edge and body of *Barbotine* forms. Both finger pinching and impressions, and finger-nail incisions are found as exterior decoration but are rarely arranged to form definite patterns except for an occasional alignment in more or less parallel rows. The rim edge may be either finger-nail impressed, in single or double rows, or scooped by either finger nail or instrument.

It may be that the plastic bands on *Barbotine* pots were originally intended to make the vessel easier to grasp, but later they became a purely decorative feature. Handles and lugs are fairly common in *Barbotine* ware.

Occasional narrow bands of burnishing or smoothing are found at the rim and base. These are here called "rim-band and base-band burnish." The inner surfaces of the vessels were burnished, probably with the aid of bone and stone implements, to various degrees of smoothness and luster.

In color the inner surfaces vary from light gray and buff to orange, red-brown, and very dark gray, but the outer range only from buff to orange.

2) *Burnished* ware is generally finer than *Barbotine*, although a few examples of the poorer grade do approach the smooth finish of the latter. The burnishing marks are visible in almost all cases.

As a rule this pottery is undecorated, but there are a few sherds which, in restricted areas, show short parallel incisions. Some lugs and handles are known on *Burnished* ware, but they are not so common as in the *Barbotine* group.

Rim-band burnishing of an ill-defined nature has been noted. In such cases the zone immediately below the rim shows a considerably higher degree of polish than the rest of the vessel. The inner surfaces of the pots are burnished as in the *Barbotine* ware.

Color varies from buff and light gray to orange, red-brown, and very dark gray. Its range for the outer surface is like that for the inner, but, because of differential firing, the exterior and interior of the same vessel are seldom identical in shade.

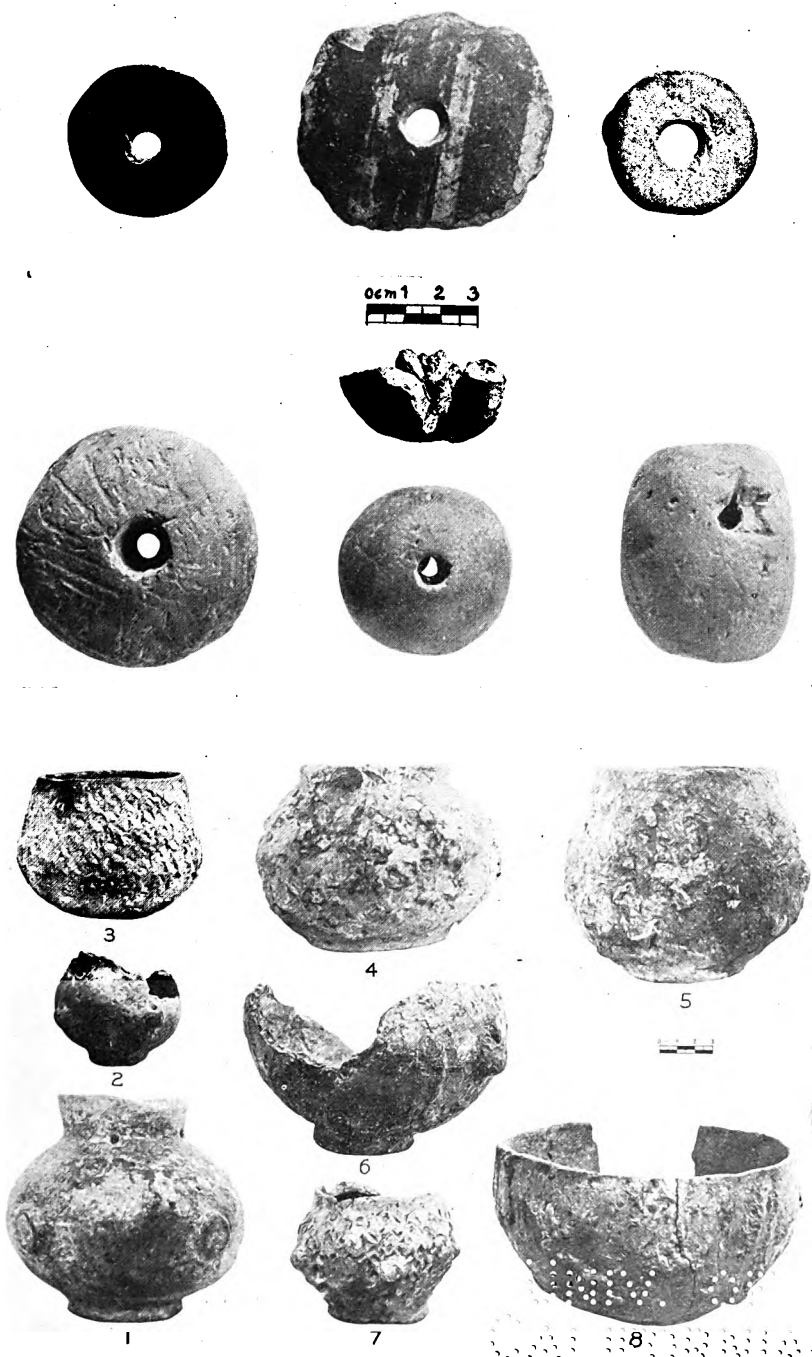


PLATE VIII. a) Ceramic whorls and weights (fragment in center unbaked).  
 b) Burnished vessels (1 and 2). Barbotine vessels (3 to 8).

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2000 2000 2000 2000

3) *The Painted ware* resembles the Burnished in texture, but its surface finish places it in a different class. Inside and out, these vessels were treated with a wash, mostly red, and occasionally buff or brown, thus giving the Painted pottery a uniform character. After the wash, which served in place of a slip, the painted patterns were applied and the whole surface then lightly burnished.

The decoration usually covered the entire outer surface of the vessel's body, and, in a few cases, a limited design also appeared on the inside. All the painting was executed before baking. Crustation technique was entirely lacking.

The colors used in the design range from white to buff, brown, red, and black. The ground coloring is red, brick-red, and buff to light brown. Certain unusual combinations, such as black on dark buff with a white border, dark brown on light brown with white borders, and black on red with white borders occur.

On account of chemical changes which took place in the earth it was sometimes difficult to decide whether the original color had been black or white. In some cases there was definite evidence that the black pigment had turned white. The use of white, however, for outlining at least, is proven by the polychrome sherds. (See illustrations of painted sherds, numbers 22 and 49.)

The patterns of the Painted ware are: 1) rectilinear, 2) curvilinear, 3) combinations of these two, 4) irregular.

1) Rectilinear designs: (a) heavy chevrons filled with cross hatching; (b) parallel vertical bands interspaced with narrow vertical streaks; (c) narrow bands combined with cross hatching; (d) triangles with cross hatching which are usually suspended from the rim, and which may or may not have a common base; (e) bands extending from rim to base which may or may not be forked at the rim; (f) irregular, wide-angled, zigzag lines which are usually vertical.

2) Curvilinear patterns are less frequent, but by no means rare. They consist of (a) open, or (b) convolute interlocking spirals which have either a plain gradual ending, or a multiple digit finish. In the majority of cases the spirals either terminate or are joined one to another by an oval contact.

3) Among the combinations should be mentioned: (a) plain or forked vertical bands interspaced by semi-circles which are suspended from the rim and which show a half dot at the center; and (b) vertical bands with semi-circles which are added on either side at irregular intervals.

4) Irregular patterns consisting of free wavy bands.

Classification of all three types of ware falls into two groups :

1. Body shapes

- a) hemispherical bowls
- b) vessels with flaring walls
- c) vessels with convex sides
- d) shouldered pots, including those with non-differentiated to well-marked necks.

2. Bases

- a) undifferentiated, having truncated or tumbler-like form
- b) differentiated, or pedestals with a sharp break in profilation, either flared or straight.

In general it may be said that the forms of the Barbotine ware include all classes and all combinations of body shapes with low bases. The Burnished usually falls into the bowl and shouldered vessel classes with or without pedestals. The Painted Pottery consists almost entirely of pedestalled bowls.

Lugs and handles are divided as follows: (1) unperforated lugs, usually built up directly from the wall of the vessel itself, although sometimes applied separately; (2) perforated lugs, like (1) except for the perforations; (3) true handles, made separately and attached to the pot. A variation of the true handle is the double handle, the occurrence of which may be due to outside contacts. Handles and lugs are not unknown in the painted group, but are, on the whole, rather rare.

A local clay of relatively fine quality was used in pottery manufacture and, as far as one can judge, levigation was not necessary. The native loess which underlies the site seems to have been utilized. Temper was of three sorts: (1) chaff, (2) mica, (3) occasional sand and small pebbles. The last two could well have been indigenous to the clay itself. Chaff, however, was the most frequently employed in all classes of ware. Coarse temper does not occur in the Burnished pottery.

So far as can be determined, coiling was used in the manufacture of all classes of Starčevo pottery. The walls were first built up, shaped to the desired form, and the base was then added. Incompletely smoothed coils can sometimes be seen. There is evidence of two kinds of shaping: (1) continuous, and (2) sectional (such as the formation of the body and pedestal separately, and their subsequent joining).

Although cruder domestic ware is not as well fired as the Painted or Burnished, all the Starčevo pottery is completely baked.

Indications of ancient mending are present. These are holes drilled through the vessel walls on either side of the break. A thong strung through them bound the fracture together.

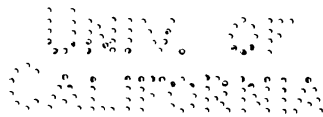
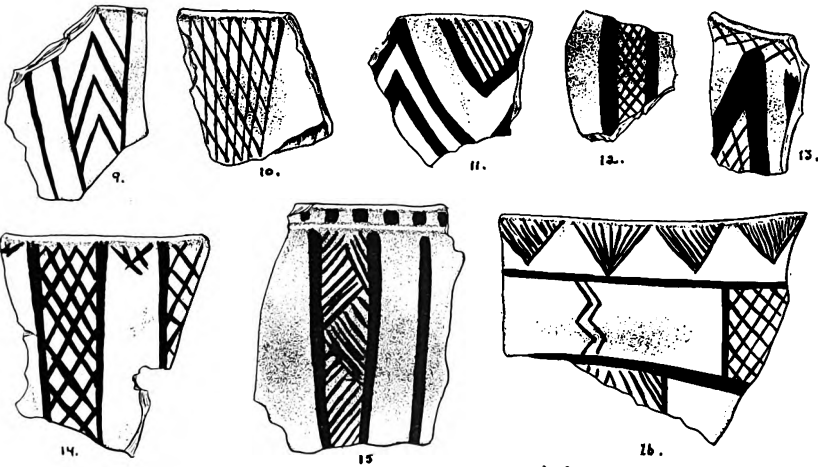
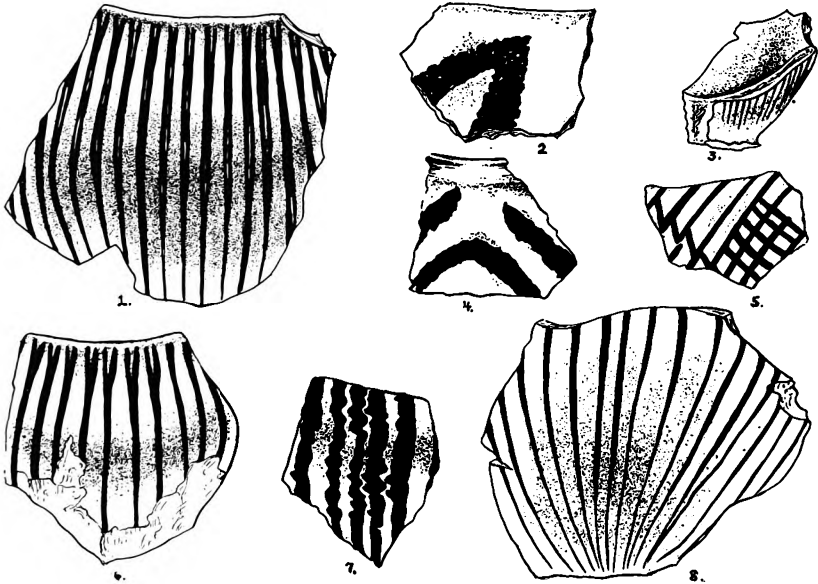


PLATE IX. Painted pottery, black on red.

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Other ceramic objects include: (1) tables, (2) whorls, (3) weights.

1) The tables may be altars or libation platforms. They have three or four legs, occasionally modelled into the form of animal heads, often with eyes in relief. These objects are burnished.

2) Whorls are divided into two classes: (a) those made primarily to function as whorls, and (b) those adapted from sherds. Those of the first class are crude and tend to be poorly shaped. Those of the second are more abundant and are made from broken sherds shaped into discs which have been drilled in the center. One specimen was made from a painted piece.

3) Weights fall into two classes: (a) vertically perforated discoidal and spherical weights slightly flattened on the top and bottom; (b) roughly four-sided weights flattened at the bottom and slightly rounded on top, with a horizontal hole near the upper end. All the weights are fine in texture and well baked, except for one example which is sun-dried.

Mention should also be made of wall plaster, preserved by sun-drying and accidental firing. It is very crude for it is filled with a coarse organic temper. In some cases impressions of the twigs and posts, to which it was applied, can still be seen.

#### BONE OBJECTS

These fall into four classes: (1) spatulas, (2) awls, (3) points, (4) miscellaneous.

1) The spatulas are carefully made, well-polished implements with slender shafts. They are fashioned from the long bones of small animals. Their use is not definitely known at present.

2) The awls show a great variety in shape, ranging from short, thick, and heavy implements to slender, highly polished, and very sharply pointed ones.

3) This group consists of well-shaped arrow heads and spear heads (rare in occurrence) made of shaft bones.

4) Under miscellaneous objects are: sawed bones, cut with the aid of a string; antlers utilized for a variety of functions; ill-defined, accidental, and problematic forms.

#### STONE IMPLEMENTS

1) Celts resembling the shoe-last type, but somewhat compressed; chisels, and adze forms. All these are made of slate.

2) Flint blades with and without secondary chipping, obsidian blades and chips. Since the material of these latter is not indigenous to the region,

they are of importance in showing a probable importation from Hungarian sources.

3) Quartzitic hammer stones with abraded edges sometimes showing facets from rubbing.

4) Milling and grinding stones with concave surfaces.

5) Miscellaneous stones, including sandstone, mica schists, slate, etc., representing either material for implements or, perhaps, temper for pottery paste.

#### ANIMAL BONES

Only those recovered in 1931 have so far been studied by Professor Glover M. Allen of Harvard,<sup>14</sup> who identified the following: domestic cattle, pig, sheep, dog, wild red deer; also remains of sturgeon.

### CULTURAL SIGNIFICANCE

Although the ground features of the site were too disturbed to be satisfactorily interpreted, the material recovered is of the highest importance. It is expected that a detailed comparative study will throw new light upon some little known aspects of the Neolithic Age in the Middle Danube Valley. Until such an analysis is completed, only certain generalizations, limited to the scope of a preliminary report, can be made.

Grad, Starčevo, is a Neolithic settlement site reflecting organized life based upon a hoe-culture economy. While accurate dating is impossible, the uniformly Neolithic character of the settlement material places it, on the whole, well before 2000 B. C., and its origins may even go back as far as the first half of the 3rd millenium. In general it seems to represent the earliest Neolithic culture in the whole region of the Banat, while its geographical distribution, in Yugoslavia at least, appears to be largely restricted to the north side of the Danube. At Vinča, Starčevo type material (both barbotine ware and black on red painted sherds) appears in the lowest deposits, and, apparently, although sporadically only, occurs as high as 5 m. above virgin soil.<sup>15</sup> On the other hand, the most characteristic types of Vinča pottery are not paralleled at Starčevo. It is also important that no figurines whatever were found by the Expedition at Starčevo. In the Pančevo Museum, however, one of baked clay, with only the facial features in detail and with its body decorated with parallel grooves, is said to have come from there. Its general style, however, does not seem local for it has several features common

<sup>14</sup> Professor Allen has kindly consented to study the rest of the osteological material and to publish it in detail in the final report.

<sup>15</sup> Personal observations in the rich University collection in Belgrade, made possible by the courtesy of Professor Miloje M. Vasić, who has not as yet completed his analysis of the Vinča pottery.

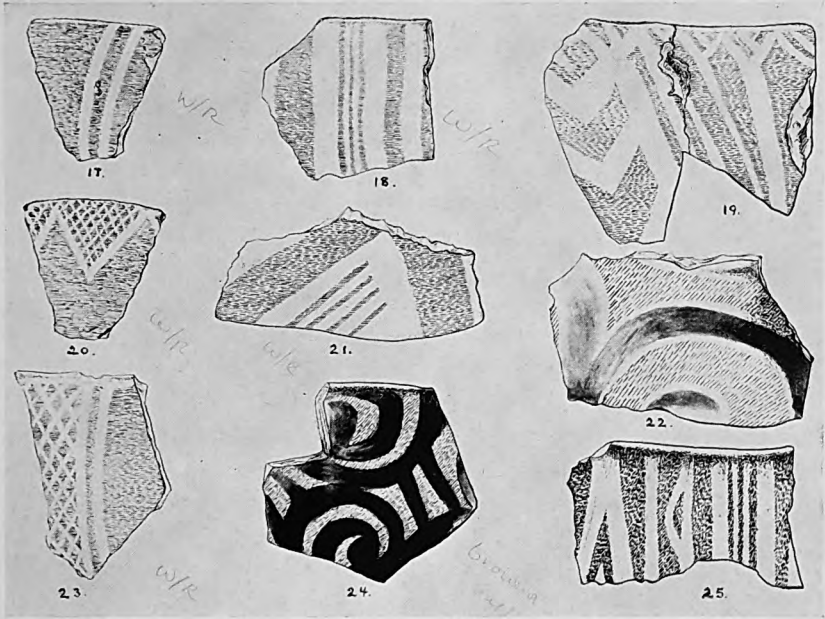


PLATE X. Painted pottery, white on red (17-21, 23), dark brown with white border on light brown (22), brown on buff (24), black on red (26-33).

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in the Tisza ware.<sup>16</sup> This is significant, for figurines are thus postulated as totally absent in the true Starčevo cultural background, whereas the great number and variety found at Vinča attests their importance there. Moreover, the quantity of Starčevo painted pottery represented at Vinča seems very limited and is, furthermore, sharply distinct from the local crusted ware.

Some of the Butmir<sup>17</sup> material exhibits characteristics comparable to the earlier Starčevo "prototypes." In forms, lugs, handles, and decorative designs (incised and relief spirals which resemble Starčevo painted motifs) Butmir shows many striking similarities. In view of the fact that the Starčevo settlement appears to have persisted for a considerable length of time, the apparent difference in relative age between it and Butmir would not stand in the way of a possible connection.

The important archæological collection in the Museum of Vršac,<sup>18</sup> assembled by its Director, Professor B. Milleker, who has explored extensively in the Banat,<sup>19</sup> contains many examples characteristic of Starčevo ware, indicating a considerable distribution throughout the region. Dr. Grbić has found the same to be true along the Yugoslav portion of the Tisa (Hungarian Tisza) Valley.<sup>20</sup> Also, pending a more detailed inquiry, it may be said that the painted ware of Starčevo finds comparable elements outside of Yugoslavia in Transylvania and Siebenbürgen,<sup>21</sup> and, to a lesser degree, among the Bükker and Tisza material of the central and eastern Hungarian<sup>22</sup> and Slovakian plains.<sup>23</sup> From this it appears that the Banat and its adjacent regions to the north and west have a fairly general, although perhaps not uniform, distribution of material culturally akin to that of Starčevo. In central and southern Yugoslavia, on the other hand, it seems, on the whole, to be absent. Vinča and, to a considerably lesser degree, Butmir are the only notable exceptions.

Towards the east further similarities, indicated by the collections in Sofia, Šumen, and Razgrad,<sup>24</sup> suggest another area of distribution for analogous traits. This is that region of western and central Bulgaria which lies north of the Balkan range, on the right bank of the Danube.

<sup>16</sup> Tompa, F. v., "Die Bandkeramik, etc." *Arch. Hung.*, V-VI (Budapest, 1929).

<sup>17</sup> Radimský, W., *Die Neolithische Station von Butmir*, etc., I, II (Wien, 1895 and 1898).

<sup>18</sup> Visited in 1931 and 1932.

<sup>19</sup> Milleker, B., "A verseci muzeum, etc.," *Arch. Ért.*, (Budapest 1898); *A Vattinai őstelep*, etc. (Temesvár, 1905).

<sup>20</sup> Personal information.

<sup>21</sup> László, F., "Stations, etc.," in *Dolgosatok az Erdélyi Nemzeti Múzeum* (Kolozsvár, 1911); "Erdád, etc.," in *Dolgosatok*, etc. (Kolozsvár, 1914); "Les types de vases peints, etc.," in *Dacia*, I (Bucuresti, 1924); also Tompa, *op. cit.*

<sup>22</sup> *Ibid.*

<sup>23</sup> Results of recent excavations of the State Archæological Institute in the Domica cave in Slovakia; material now being studied in Prague.

<sup>24</sup> Popof, R., *Predistorija*, etc. (Sofia, 1926). Material observed by Dr. Fewkes and Dr. Goldman during their joint visit and later checked by Dr. Kandyba, who also visited several museums in Roumania.

In Roumania, general parallels are present in Valachia,<sup>25</sup> and, more specifically, in the material from Cucuteni<sup>26</sup> in Moldavia. It seems highly probable that these same characteristics will be found, during a further investigation, to have a fairly wide distribution in both of these provinces, and also in Transylvania, and in Siebenbürgen.<sup>27</sup> Altogether, these sections of Roumania, the Yugoslavian Banat, and the greater parts of Hungary, Slovakia, and South Moravia<sup>28</sup> seem to form a single area of related Neolithic painted pottery development.<sup>29</sup> This larger region, in turn, connects geographically and culturally with Poland, Ukraine, and Bessarabia. At Koszyłowce,<sup>30</sup> Tripolje,<sup>31</sup> and Petreni,<sup>32</sup> certain resemblances to Starčevo material are noticeable in decorative motif, negative design, and even in form. In a broad sense, further analogies may be recognized in Greece, especially in Thessaly,<sup>33</sup> though not limited exclusively to the north.<sup>34</sup> Some of these, perhaps, can be attributed to independent derivations from a common center of origin.

It is particularly noteworthy that in the Neolithic sites of the Morava Valley system in Yugoslavia, Starčevo affinities are apparently lacking. The Upper Morava, the Morava-Vardar divide, and the Vardar Valley itself, as far as the Demir Kapija at least, seem to be entirely devoid of Neolithic sites.<sup>35</sup> On the southern bank of the Danube, extending roughly from Golubac to the Iron Gate, Roman remains seem to furnish the earliest evidences of ancient occupation.<sup>36</sup> The topographic conditions cause not only a dearth of arable lowlands, but also a general natural adversity to sedentary life, thus accounting for the archaeological situation. There is, then, a geographical and archaeological break between the Middle and Lower sections of the Danube Valley. Contacts between the two, however, are apparently to be found in Transylvania and Siebenbürgen, which occupy a central position between Valachia and Moldavia on the one hand, and the

<sup>25</sup> Reported by Dr. Kandyba, who is working now on the details.

<sup>26</sup> Schmidt, H., *Cucuteni*, etc. (Berlin, 1932).

<sup>27</sup> Dr. Kandyba's report on his museum studies in Roumania.

<sup>28</sup> Palliardi, J., "Die neolithische Ansiedlungen mit Bemalter Keramik in Mähren, etc.," *Mit. d. Präh. Com.*, Bd. I, No. 4 (Wien, 1897); Vildomec, F., "O moravské neolithické keramice malované," *Obzor Præhist.*, VIII (Praha, 1929).

<sup>29</sup> The painted Neolithic pottery discovered in Bohemia by the late J. A. Jira (published by him in "Malovaná keramika neolithická v Čechách," *Pravěk*, č. 2-4 [Kojetin, 1910]) marks the most western known extension of this type of ware in Central Europe. In the two sites of Šárka and Podbaba both in Greater Prague, a small quantity of painted vessels occurred. Outside of these, occasional isolated painted sherds have been found in other sites. In general, however, Bohemia cannot be considered an area into which painted pottery extends as a unit of culture; it is rather a territory adjacent to the region of painted ceramic development, from which an occasional example penetrated.

<sup>30</sup> Hadaczek, K., *Osada przemysłowa w Koszyłowcach z epoki neolitu* (Łwów, 1914). Dr. Kandyba also calls attention to similar elements in Bilcze Złote.

<sup>31</sup> Chvojka, V., "Kamennij vjek, etc.," *Trudi XI*; Kozłowska, V., *Tripylska Kultura*, etc. (Kyjiv, 1926).

<sup>32</sup> Stern E. R. v., "Doistoričeskaja Kultura, etc." *Trudi XIII*.

<sup>33</sup> Wace, A. J. B. and Thompson, M. S., *Prehistoric Thessaly* (Cambridge, 1912).

<sup>34</sup> Goldman, Hetty, *Excavations at Eutresis*, etc. (Cambridge, Mass., 1931).

<sup>35</sup> Field notes on Yugoslavian Reconnaissance trip, 1932. See "Preliminary Report on an Archaeological Reconnaissance in Yugoslavia, American Expedition, Season 1932," in this *Bulletin*.

<sup>36</sup> Personal information from Dr. Grbić.



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38.



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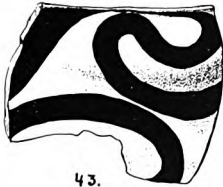
40.



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47.

PLATE XI. Painted pottery, black on red.

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Banat with its adjacent lowlands, on the other. The valleys of the Cerna, Timis (Temeš), Olt (Aluta), Mures (Maros), and other rivers afford communication between the two regions. Whether the northwest Bulgarian development diffused into Yugoslavia by way of the Timok Valley and the Kladovo basin (i. e., as a detour around the Iron Gate) must be investigated in the field. Thus far, there is no positive evidence bearing on the question although some Neolithic material from the vicinity of Kladovo has been reported to the National Museum in Belgrade.<sup>87</sup> Similarly, little can be said of possible relationships between the Lower Danube Valley and the regions south of the Balkan range. There are two probable routes of cultural movement between the two areas. One by way of the Black Sea, totally unsubstantiated as yet, although sometimes assumed;<sup>88</sup> the other by way of the Marica or the Struma up to the Western Balkan range and thence along the Iskar to the Danube, also, as yet, lacking in specific proof. The geographic distribution of Neolithic sites in Thrace and in south Bulgaria is incompletely known. Extensive fieldwork, therefore, is needed before anything definite in diffusional interpretation can be established.

The foregoing is a general summary of the considerations to be dealt with in the detailed analysis of the material from Starčevo. It is planned to finish these studies in the near future and to present the final report as soon as practicable.

<sup>87</sup> Personal information from Dr. Grbić.

<sup>88</sup> Childe, V. Gordon "The Danube Thoroughfare, etc.," in *Antiquity*, I (Gloucester, 1927), pp. 71-91; also *The Danube in Prehistory* (Oxford, 1929), pp. 26 ff.

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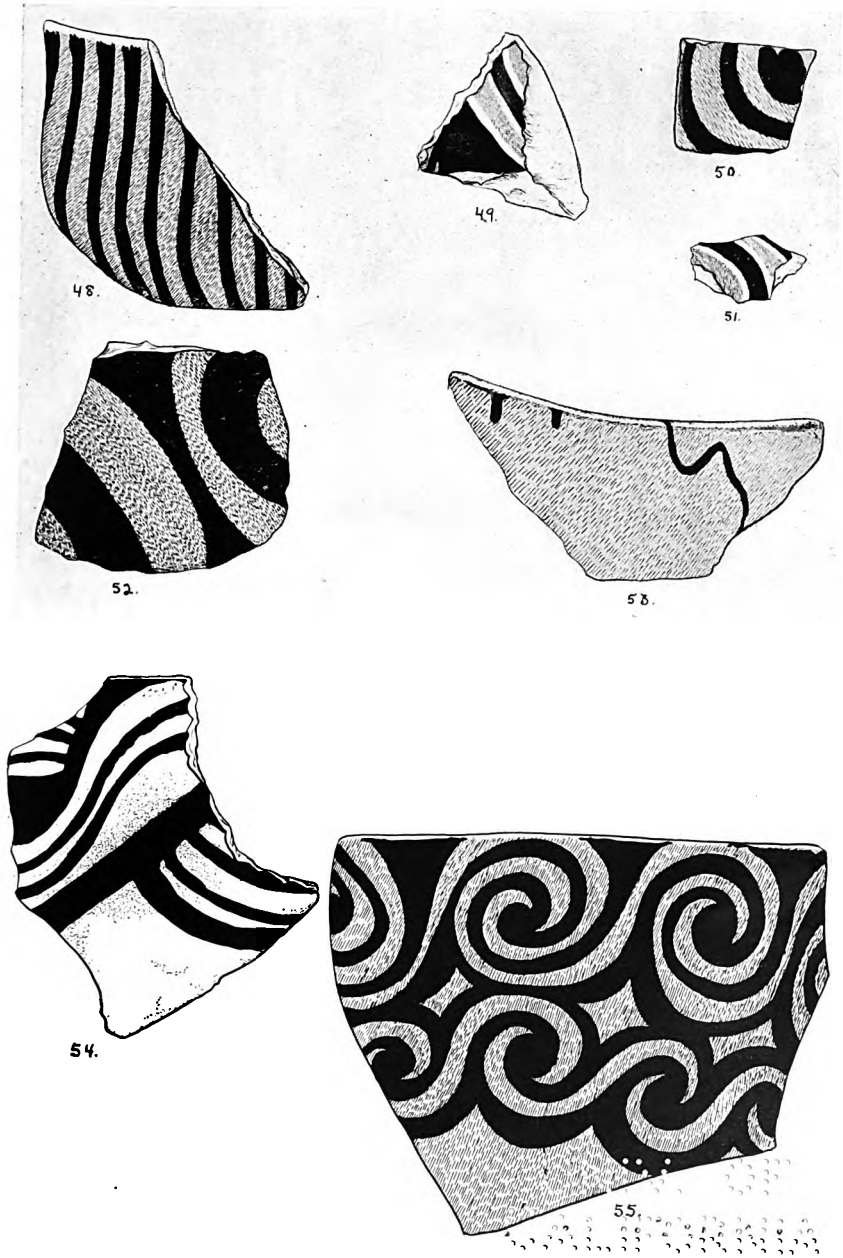


PLATE XII. Painted pottery, black on buff (48, 53, 55), black with white borders on red (49), black on yellow (50), black with cream borders on red (51), black on brown (52), black on red (54).

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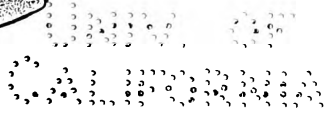


PLATE XIII. Painted pottery, black on red. Height, 22.5 cm.; diameter, 26 cm.

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## PRELIMINARY REPORT ON AN ANTHROPOLOGICAL RECONNAISSANCE IN MONTENEGRO, SEASON 1932

By *Robert W. Ehrich*

AT the close of the archæological reconnaissance, described in this Bulletin, I departed to make an anthropometric survey of Montenegro in the free time before the opening of the Expedition's excavation at Starčevo. Dr. Fewkes at this time was conducting the School on its museum trip.

The funds for this work came from the Division of Anthropology of Harvard University, under whose auspices the data secured are now being analysed. Thanks to the Yugoslavian government, free rail passes from Belgrade to the nearest points to Montenegro, and official letters of recommendation to the local administrators, school teachers, and police were obtained. We received excellent coöperation on every hand and I wish here to express my gratitude to all those who helped make this trip a success.

The party consisted of Erhart Muller, a graduate of Harvard, who did the thankless job of recording; Professor Marčetić of Vršac, who, for the first ten days, accompanied the party as interpreter; and myself.

Although some work has been done in Hercegovina, and although Dr. Coon of Harvard has made a thorough survey of Albania, the intervening territory of Montenegro is, racially speaking, practically unknown. In general, the region extending from northern Albania to the northern part of Hercegovina seems to be the center of concentration of a peculiar physical type, known as the Dinaric, which seems to have certain affiliations with the so-called Armenoid type of the Near East. The Dinarics, however, are now spread throughout the Balkans and extend northward through central Europe well into Poland. The purpose of the Montenegro survey was not merely to secure data which might add to the descriptive knowledge of the Dinaric race, but also to work out, in so far as possible, the various sub-racial types and their distribution, and coupling this with historical, traditional, and ethnologic sources, to try to work out the racial history of these parts. This might then serve as a clue for the solving of the racial tangle of the Balkans.

Race, as used in the anthropological sense, has a purely biological connotation. It is determined by the associated inheritance of a multitude of separately heritable characteristics. A number of such criteria regularly

found in such an association make up racial groups. From this definition it is obvious that many criteria observed upon a few individuals, or a few observations made upon many, are of little value. There is a general agreement among anthropologists that certain characters are important, and the technique of actual measurement has been standardized to such an extent that series gathered by men of different nationalities working in different fields can be compared.

If many observations are taken upon a large series of subjects, the results may be broken down statistically to show an association of factors, dominance in inheritance, proportion of racial type present, degree of variation within the type, as well as the definition of the types present.

On this trip 22 actual measurements (which were later worked up into 17 indices of proportion as well) and 75 morphological observations were taken upon each subject in addition to some sociological data.

Inasmuch as our time was limited (we left Belgrade on June 24th and were due back July 20th), it seemed best to start by auto on the western side of Montenegro and to follow the roads, stopping at the main centers. We found that on market days particularly the tribesmen came into the towns, thus rendering it possible to get sample series of isolated mountain groups which we did not have time to visit.

Since it took us two days each way, to and from Belgrade, we had from June 26th to July 18th, only 22 days in the field. This meant working at high pressure the entire time, in order to get samples from as many different tribes and districts as possible. In all, 852 subjects were recorded. These were measured under almost every conceivable kind of condition, by roadside wells, in our hotel bedroom, local hans, open markets, restaurants, cafés, town halls, spare rooms, corridors, rented rooms, private houses, and even in the bedrooms of three local administrators, to say nothing of schools, a military hospital, and a road gang found sleeping under an apple tree.

Although the material is at present being prepared for statistical treatment, certain ideas crystallized from field impressions can be tentatively advanced. To begin with, the geographical situation must be taken into consideration, for it plays a significant rôle. On this basis Montenegro can be divided into three districts: 1) Old Montenegro, the barren limestone mountains of the west; 2) The Brda or "Black Mountains" of the east; 3) The Northern Border, a broken chain of upland valleys running from the plateau above Risan on the coast—beyond Nikšić—to the Durmitor region.

Old Montenegro is perhaps the least inviting from a settler's point of view. Furthermore, it was never subjected by the Turks as was the surrounding territory. The implication then would be that here would be the logical

place to expect a "refuge area" for the oldest surviving physical types of the region. Besides the presence of a considerable Dinaric factor, it is here that the element of original Mediterranean stock seems strongest. The 22 tribes here are small and in close proximity. Since tribal exogamy with male descent is the rule, there is naturally considerable though somewhat traceable mixture.

In the Brda, on the other hand, the conditions differ. This district was at one time under Turkish dominance, and has only relatively recently been resettled. The tribes here are large and cover considerable areas. Exogamy is not quite so common. The individual tribes, and often even family units, have distinct traditions of origin or affiliation with Albania, Old Serbia, Hercegovina, and Bosnia. There seems, moreover, to be a distinction in physical types following the cleavage lines suggested by these traditions. Dinaric groups seem most prominent among those with Albanian affiliations; "Alpine" types increase among the Old Serbian units and form one of the two strains noticeable in those of Hercegovinian lineage.

The Northern Border presents the most striking type of all. This strip for centuries was the no-man's-land boundary against the Turks, and only relatively recently has been opened to immigration from the south. The original tribes are still traceable. All have traditions of a Hercegovinian origin. Although there are some pure Dinaric types present among them, they can be broken up into two main strains. The one is the short, globular-headed, stocky little "Alpine" already mentioned. The other is remarkably tall and should prove to be one of the highest stature groups in the world. Various factors suggest strongly that they represent a cross between Nordic and Dinaric types.

To interpret all this in a historical light, the logical inference is that the long-headed, slender Mediterraneans were the oldest people in the region. These seem to have been followed by the intrusive Dinaric strain (marked by great stature, roundheadedness with a flattened occiput, general ruggedness, etc.) which seems to bear eastern relationships. These, in turn, were probably followed by the stocky "Alpine" group which may have come in with the Slavs. The Nordic group which mixed with the Dinarics to form the tall Hercegovinian strain may, as has been suggested for the Dinarics also, have been brought in by the Romans as colonists or as garrisons. This, of course, requires careful checking in classical sources.

Although these conclusions are merely tentative, it is fairly obvious from the data itself that something of this sort will appear. If the statistical analysis confirms its expected significance, a point of attack upon the racial problems of the Balkans will probably have been developed.