NUMBER 10 *Bulletin* MAY, 1934

AMERICAN SCHOOL OF PREHISTORIC RESEARCH

Founded, 1921 -:- *Incorporated, 1926*

EDITED BY
GEORGE GRANT MACCURDY, Director

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

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REPORT OF THE DIRECTOR

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REPORT OF THE DIRECTOR ON THE WORK OF THE SCHOOL, INCLUDING THE THIRTEENTH ANNUAL SUMMER SESSION

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

EXPEDITIONS

The Sixth Season of excavations in the Valley of the Cave, near Athlit, Palestine, carried on by our School jointly with the British School of Archaeology in Jerusalem, began on April 3, 1933, with the following staff: Miss Dorothy A. E. Garrod (Director) and Miss Eleanor Dyott, both of the British School; and Miss Ruth Sears and Miss Anne H. Fuller, both of our School. The season ended on July 11.

Work was confined largely to the Mugharet et-Tabun (Cave of the Oven). This cave contains five culture horizons:

5. Mixture of Mousterian and Recent
4. Mousterian
3. Dark Mousterian hearths. Levallois flakes resembling in size those from Baker's Hole (Northfleet); Human Skeletal remains; rhinoceros, hippopotamus
2. Mousterian. Levallois affinities; points of the Still Bay type (South Africa); large ox, *Hemionus*, hyena
1. Early Mousterian, Acheulian and Tayacian

Horizon Number 1 may be subdivided into six levels. Near the top are many Châtelperron points and narrow blades with fine edge retouch, both resembling the Upper Paleolithic and in striking contrast with the thick scrapers and hand axes, with which they are associated. At 7.45 m. below Datum, are many superb hand axes of La Micoque type. At 8 m. below Datum, Micoque hand axes become rare, while scrapers are abundant. At 9 m. below Datum, a level was reached that seems to be true Upper Acheulian. This Acheulian layer has a thickness of 2 m., reaching down in places to 13 m. below Datum. Below the Acheulian, there is a level containing small flakes and cores of an indeterminate character, corresponding to the industry recently found by Neuville below the Acheulian level at

Umm Qatafa and resembling, according to Breuil, the Tayacian of the Dordogne. It belongs to the early part of the Riss-Würm Interglacial. The excavation of the Mugharet et-Tabun will be completed in the spring of 1934.

The excavation of the Mugharet el-Wad (Cave of the Valley) was completed by the removal of the Natufian deposits under the medieval wall at the mouth of the cave. Here three Natufian burials were unearthed, also bone points and a typical Lower Natufian flint industry.

STUDY OF THE COLLECTIONS

The work of preparing for study and of studying the enormously valuable mass of material already dug from the group of three caves (two of which are already completely excavated) near Athlit is progressing satisfactorily. The School's share of the cost of this work is being met through a generous Grant from the American Council of Learned Societies. Miss Garrod for the British School and Mr. Theodore McCown for our School are working on the cultural remains. McCown is also superintending in London, where he went in September, 1933, the work of removing the breccia from the nine Neandertal skeletons which he found at the Mugharet es-Skhul. These are to be studied by him and Sir Arthur Keith. Sir Arthur is also working on the Neandertal skeletal remains from Mugharet et-Tabun and on the great number of human skeletons of Natufian age from Mugharet el-Wad. It will take a year or more to complete these studies. Enough has already been done on the Neandertal skeletons to make it possible to refer them definitely to the race of Neandertal, although they antedate the skeletons from Spy, La Chapelle-aux-Saints, La Quina, and La Ferrassie.

SUMMER TERM OF THE SCHOOL

Dr. V. J. Fewkes had charge of the summer term (see his Report, p. 21), as was the case in 1932. Three students were enrolled: Robert McCormick Adams, University of Chicago; Bernard Charles Glueck, Jr., Columbia University; George Sumner Hill, Wesleyan University. The course combined lectures, museum studies, excursions, reconnaissance, excavations, and examinations. Lectures by Fewkes covered the prehistory of Europe with special emphasis on the Danubean area. Lectures on special topics were given by Director Buchtela of the State Archaeological Institute, Prague; Professor Albin Stocký, Charles University, Prague; Director Marton Lajos, National Museum, Budapest; Dr. Miodrag Grbić, National Museum, Belgrade; Dr. Jaroslav Böhn and Dr. Oleh Kandyba, both of the

State Archaeological Institute, Prague. Dr. Kandyba not only held conferences on the Neolithic painted pottery of Europe, on which he is a recognized authority, but also had charge of the drawings, mapping and the preparation of charts. Robert W. Ehrich of Harvard University, a former student of the School, lectured on physical anthropology. Twenty museums in Czechoslovakia, Austria, Hungary and Yugoslavia were bases for special study.

Excavations were carried on in Czechoslovakia at Lubná (Aurignacian), Štětí (Bronze Age), Křepenice (Bronze Age III), Dolni Počernice (Pre-Bronze Age I, Iron Age, Roman), Stažkov (Early Iron Age); and in the Morava valley system, Yugoslavia, at Lipovac (Neolithic). The cost of conducting the summer term was met through a generous gift from one of our Trustees, Mrs. Julius H. Haass.

The School received excellent coöperation and unfailing support everywhere. Especially helpful was the state Archaeological Institute of Czechoslovakia, whose Director, Dr. Karel Buchtela, is sincerely to be thanked for accommodating the School at the Institute's splendid laboratory and arranging such an attractive and instructive field program in Bohemia. The Director of the National Museum in Belgrade, Professor Vladimir R. Petković, and his Curator, Dr. Miodrag Grbić, did much for the School during its stay in Yugoslavia.

During the year, the School has distributed valuable collections from all three Palestine caves to the American institutions, which are supporting its work. It has published Bulletin No. 9, containing 57 pages and thirteen plates. From February 1 to May 1, 1934, a temporary exhibition of the results of the joint Palestine Expeditions was held at the British Museum, Bloomsbury, through the courtesy of the Trustees of the Museum and the coöperation of Reginald Smith, Keeper of the Department of British and Medieval Antiquities, and T. D. Kendrick and Christopher Hawkes, Assistant Keepers. Miss Garrod and Mr. McCown installed the exhibition so as to include: 1) a complete sequence of the cultural remains from the Tayacian to the Natufian; 2) various animal bones from the different layers; and 3) some of the Neandertal and Natufian (Mesolithic) skeletons.

Respectfully submitted,

GEORGE GRANT MACCURDY.

EXCAVATIONS AT THE WADY AL-MUGHARA (PALESTINE) 1932-33

By *D. A. E. Garrod*

WORK at the Wady al-Mughara is now concentrated on the last cave of the group, the Tabūn (Oven) which lies at a higher level in the same stretch of cliffs as the Mugharet el-Wad.

Excavations were carried out in two seasons, October-December, 1932, and April-July, 1933. In the autumn I had as my assistants Miss E. Kitson, Miss J. J. Hopkins (Mrs. Christopher Hawkes), Miss E. Dyott, and Mr. T. P. O'Brien, all of the British School of Archaeology. In the spring I had Miss R. Sears and Miss A. H. Fuller of the American School of Prehistoric Research, and Miss Dyott.

Before excavation the Tabūn cave appeared to be quite small, and I thought it might be possible to finish it in one season. It has turned out, however, to be the largest cave of the group, with a very great thickness of deposit (Pls. I and II).

Layer A (av. thickness 1 m.) was uninteresting, containing much less material than Layer A in the Mugharet el-Wad. The sherds range from Early Bronze to modern Arab, and a small number of Natufian flints were found. This site was not inhabited in Upper Paleolithic times, and immediately below A, we got the Upper Mousterian in Layer Tabūn B (av. thickness 3.50 m.). This differs considerably from the Upper Mousterian of Europe. It is definitely in the Levallois tradition, with numbers of small triangular and oval Levallois flakes. The points and scrapers have a very beautiful flat retouch, and resolved flaking is rare. Gravers occur in small numbers, and some of these are indistinguishable from Aurignacian forms. The animal remains in this layer consist almost entirely of two species of deer; *Dama mesopotamica*, which is very abundant, and a species of red deer, and this fauna points to forest conditions, with a considerable rainfall.

Layer Tabūn C (av. thickness 1.70 m.) I have placed in the Lower Mousterian, because I believe it to date from the latter part of the Riss-Würm interglacial. We are still in the Levallois tradition, and the most typical and abundant form is the oval Levallois flake, often of very large size. Triangular flakes are very rare, and in relation with this is the fact

that points are much less abundant than scrapers. A small number of gravers was found and some of these are indistinguishable from Aurignacian specimens.

The fauna of Tabūn C is very abundant, and points to warm swampy conditions, with a heavy rainfall. Miss Bate has identified rhinoceros (allied to *Rhinoceros hemitoechus*) hippopotamus, crocodile and a very large fresh-water tortoise.

A nearly complete human skeleton was found in the upper part of the layer, and 90 cm. below it, at the base, was a well-preserved lower jaw. The skeleton is of a type closely related to the Neandertal, but with certain well-marked peculiarities. It belongs to a small person, almost certainly a woman, and has a low cranial capacity. The frontal torus is very massive, and the mandible is shallow and receding, with no trace of a chin. The mandible found at the base of the layer, on the other hand, is deep and has a well-developed chin, and at first sight presents a striking contrast to the other. Sir Arthur Keith, however, having regard to the characters of the teeth and other details, considers that the two represent extreme variations of the same race.

The layer underlying C—Tabūn D (av. thickness 2.30 m.) contains an industry of Levallois tradition, which is not unlike that of Tabūn B. The triangular flake is much more abundant than in C, and in consequence there is no marked disproportion in the number of points and scrapers; at the same time, the broad flake is much smaller than in C. A fair number of points have retouch on the bulbar face, and some of these approximate to the Bambata and Still Bay types.

The fauna of D is much less abundant than that of C, but it seems to point to similar conditions, both rhinoceros and hippopotamus being present. At the same time the other species present are very varied, and seem to call for a varied topography. Miss Bate suggests that there must have been permanent rivers of some size, with the low country consisting of open grassy plains and bordered by wooded hills; a great contrast with the Palestinian landscape of to-day.

The three layers I have just described, Tabūn B, C and D, although they undoubtedly cover a long period of time, contain flint industries that are fundamentally alike; all belong to the Levallois tradition, and they differ from each other mainly in such matters as the size of the implements, and the relative abundance or scarcity of certain types. With the transition from D to E comes a complete change. In the place of scrapers on flat flakes with prepared striking platform, we get a very large number of thick scrapers with resolved flaking, the majority made on flakes with plain

PLATE I.—Mugharet et-Tabun (Cave of the Oven). All the layers are visible except: A (Bronze Age to Recent) at the top; and Ed (Acheulio-Mousterian) and F and G (Acheulian and Tayacian) at the bottom.

striking-platform, in some cases of definite Clactonian type. There is a great variety of shapes; pointed, elliptical, fan-shaped, triangular, etc. Associated with these are hand-axes, the majority pear-shaped and often rather rough. Hand-axes are not unknown in Tabūn B, C and D, but they are extremely rare, and in some cases have the appearance of being derived from other levels; in Tabūn E, on the other hand, the proportion of hand-axes to scrapers is about 10%.

Layer E is very thick (5 m.), and has therefore been subdivided into Ea, Eb, Ec, and Ed, but the differences between these layers are in most cases not very marked. On the whole Ea contains the largest and best-made implements, Ed the smallest and least well-made, but the transition is gradual. Ec, however, is marked out from the other divisions by the character of its hand-axes. In Ea, Eb, and Ed the hand-axes are generally pear-shaped and on the whole rather roughly made; in Ec we get hand-axes of true Micoquean type, broad at the base with fine tapering points, often excessively sharp.

I have named the industry of Layer Tabūn E Acheulio-Mousterian, though I am not entirely satisfied with this label. The flake-industry is certainly Mousterian of a kind; it is reminiscent of High Lodge, though certainly later in time, and must lie somewhere in the line which leads from the true Clactonian to the Mousterian of the French caves. The hand-axes are generally rougher than those of the true Acheulian, and the majority have undoubtedly been made with a stone hammer, but the presence of a characteristic Micoquean horizon is a definite link with the final stages of the Acheulian, and I see no reason to suppose that it is not roughly contemporary with the Micoquean of Europe. The Acheulio-Mousterian of the Tabūn must, I think, be added to that group of industries rather unsatisfactorily labelled pre-Mousterian which appear in the course of the Riss-Würm interglacial (for instance, Ehringsdorf, Krapina, Grimaldi), and which are more or less ancestral to the typical Mousterian of the first Würmian maximum.

A very interesting feature of Tabūn Eb is the presence of a group of implements of Upper Paleolithic type. These include Châtelperron points, end-scrapers and gravers, and a whole series of narrow blades with nibbling retouch of the edges. There can be no doubt that these implements are perfectly in place; the great thickness of the overlying deposits rules out any possibility of their being a later intrusion. The whole technique of their manufacture is in marked contrast to that of the typical implements of this layer, and I consider them to be due to contact with a very early Aurignacian rather than a development in situ of the Acheulio-Mousterian

industry. Dr. Leakey has found Acheulian tools associated with a primitive form of Aurignacian in East Africa in a deposit older than that of the Tabūn, and there seems to be no doubt that the origins of the Upper Paleolithic must be sought a very long way back.

Part of the shaft of a human femur was found in Tabūn Ea. It does not give us much information about the individual to whom it belonged, but as far as can be judged it is of Neandertal rather than of modern type.

The fauna of E is less abundant than that of the upper layers, and the remains collected cover only Ea and Eb. The reason for this is that the deep levels have only been reached in a trench which does not extend to the walls of the cave, and has therefore missed the area close to the rock where bone is usually best preserved. When the trench is extended next season I hope to add considerably to the fauna of the deep layers. Up to the present the great majority of remains belong to fallow deer, though ox and gazelle are also represented. No rhinoceros or hippopotamus has been found. This fauna suggests a wood habitat, but Miss Bate reserves her opinion, as the collection of bones is small.

The industry of Layer F (av. thickness 1.90 m.) I consider to be true Upper Acheulian. The hand-axe predominates all through, and towards the bottom scrapers and points become more and more uncommon. The hand-axes are on the whole better made than those of E, and there are one or two true ovates, though the pear-shaped still predominates. The true La Micoque type is very rare.

No fauna has yet been found in F, but as in the case of Ec and Ed, I hope this may be remedied next season.

Underlying F is our oldest layer, Tabūn G (av. thickness 2 m.) which rests immediately on the bedrock. This contains an industry of miserable appearance, almost entirely composed of small utilised flakes, the majority with plain striking-platform. There are no hand-axes, and very few of the flakes show secondary working. This industry is closely comparable with that found by Peyrony in the middle layers of La Micoque, well below the level of the Micoquean hand-axes. Breuil considers this industry to be derived from the Clactonian, and has named it Tayacian. He places Tayacian I at the end of the Mindel-Riss interglacial and Tayacian II at the beginning of the Riss-Würm. Tabūn G appears to correspond to Tayacian II, and its position in the sequence at the Tabūn agrees with the La Micoque section, as well as with that of Castillo, where a Tayacian layer occurs below the bed containing Acheulian hand-axes.

I hope to complete work in the Tabūn during the coming season. It will not be practicable to excavate the whole site, but our aim will be to explore the oldest layers over a wider area than has so far been possible.

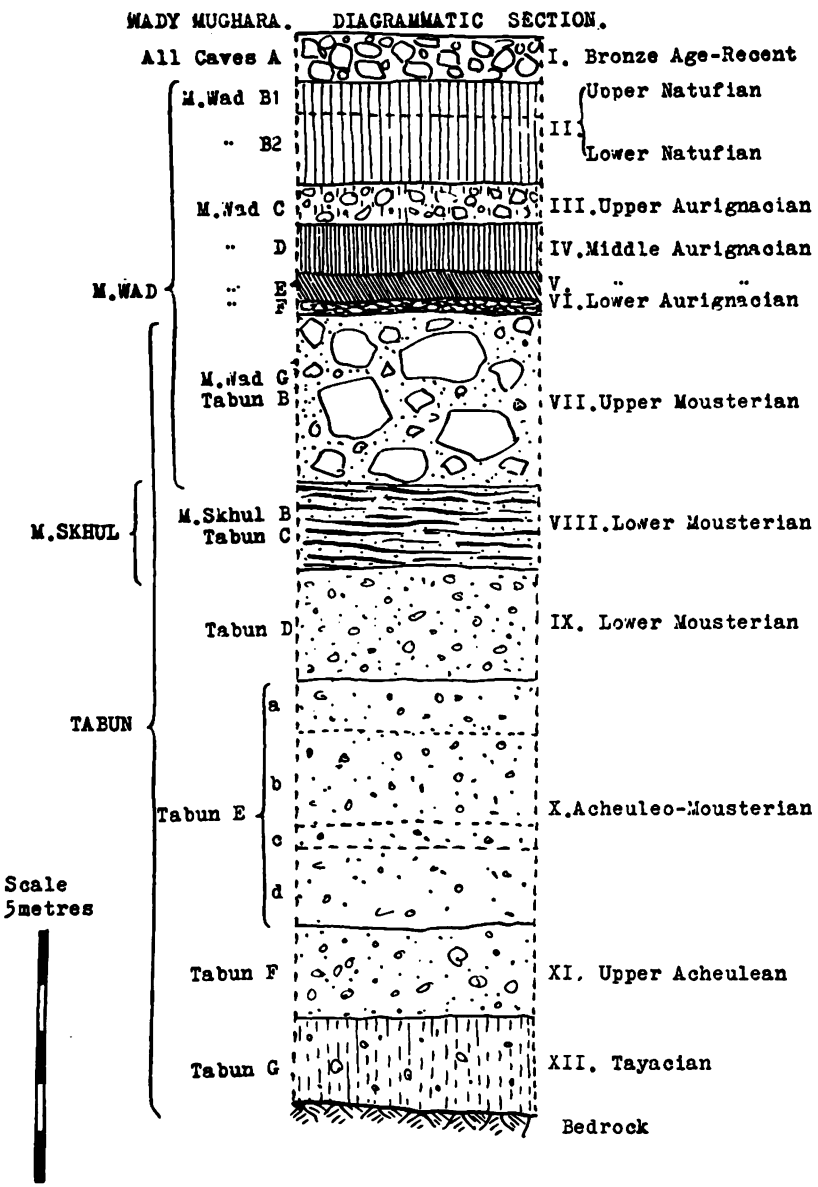
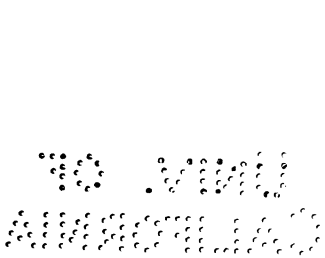


PLATE II.—Composite section of the three Wady al-Mughara caves; it represents a period of about 100,000 years and its thickness, not counting duplications of layers, is more than 21 meters.



In addition to the excavation of the Tabūn, which constituted the main part of the year's work, some supplementary digging was carried out on the terrace of the Mugharet el-Wad. In the autumn Miss Kitson and Mr. O'Brien completed the clearing of the trench begun in 1931. They were working entirely in the Lower Natufian, and their most important find was a group burial containing ten skeletons, two of which had head-dresses of dentalia, similar to those found in 1931. One of these also had a well-preserved necklace of bone pendants of the same type as the 1931 necklace.

In the spring Miss Sears and Miss Fuller took charge of the removal of the modern wall in the mouth of the cave, and thus linked the excavations inside the cave with those on the terrace. A Lower Natufian layer was found underneath the wall, and this yielded two burials, one in the extended and one in the crouched position. No objects of special interest were found.

The excavations at the Mugharet el-Wad are now at an end, and next season's work will be confined to the Tabūn. Four years' work at least would be required to excavate the cave completely, but it is proposed to clear the terrace sufficiently to enable a proper examination to be made of the lower layers, leaving a large control section inside the cave, and it should be possible to carry out this plan in one season.

PLATE III.—Frontal bone of the cranium from Layer C, Tabun cave; a) norma lateralis; b) norma frontalis.

THE OLDEST COMPLETE SKELETONS OF MAN

By *Theodore D. McCown*

THERE have been accounts by Miss Dorothy Garrod and myself in preceding numbers of the BULLETIN of the American School of Prehistoric Research describing the results of the several seasons' work of the Joint Expedition of the American School of Prehistoric Research and the British School of Archaeology in Jerusalem. The group of caves at the mouth of the Wady al-Mughara in the flank of Mt. Carmel facing the Mediterranean across the Plain of Sharon have yielded an amazingly fine harvest of prehistoric information. The discovery of a long sequence of prehistoric cultures in a relatively untouched and unknown area is important enough, but the Mugharet et-Tabūn (Oven Cave) and the Mugharet es-Skhūl (Cave of the Kids) have provided us with what is undoubtedly the richest harvest of Mousterian fossil man yet to have been uncovered—a veritable necropolis of the Middle Palaeolithic. The significance of this fossil human material is more than local. It is giving to us, to be sure, an accurate picture of the Palestinians of the Lower Mousterian, but of far greater interest is the fact that we have a new group of mankind, related to Neandertal man of Continental Europe without any doubt, but differing from the latter in several respects. The more striking of these differences I have mentioned previously (Bull. A.S.P.R., No. 9) but it is well to remember that this information concerns the skeletons from the Cave of the Kids.

Miss Garrod's campaign in October-December, 1932, produced results of the same extraordinary character that have attended all her work. A virtually complete, adult female skeleton was found in the "C" layer of the Oven Cave and at the same level a massive, male mandible. In addition there were recovered some teeth and the fragmentary remains of several other individuals. Elsewhere (p. 8) Miss Garrod has recounted the discovery and removal of these valuable finds. (See also MacCurdy in Proc. Amer. Philos. Soc., LXXII, 132-135, 1933.)

Fossil man is always a tremendous reward for the tedious hours of normal excavation. In the case of the Oven Cave, however, Miss Garrod has found seventy feet of stratified Lower and Middle Palaeolithic deposits, a discovery as unique in its way as the abundance of the fossil human

remains from the Mousterian. This stratigraphy is particularly satisfying inasmuch as it settles positively the precise relationship in time of the Tabūn and Skhūl Mousterians as well as their position with regard to the general sequence of Palestinian stone age cultures. The flint tools found in layer C of the Tabūn are identical with the industry of the Skhūl cave, both of which Miss Garrod now assigns to a later phase of the Lower Mousterian of Palestine.

The bones of the partially extended Tabūn skeleton are a reddish brown color and extremely hard as well as heavy. This is in contrast with the flexed Skhūl burials, the yellow-brown color of their bones and the somewhat softer condition of the bone itself. The important contrasts, however, are in the anatomical characters of the bones themselves.

The Tabūn skeleton is a moderately young, adult female though the wear on the crowns of both upper and lower dentitions would suggest a somewhat greater age. The strikingly pronounced supra-orbital torus and the tremendous inter-orbital breadth are reminiscent of both the Galilee skull and the Skhūl specimens. The vaulting of the frontal, however, seems to be less elevated and as far as one can judge at present the general size and height of the skull were less than the Skhūl examples. Post-mortem crushing accompanied by a certain amount of distortion is making the task of reconstructing this skull a somewhat lengthy one (Pl. III).

The mandible, though broken in several places, has been repaired and reproduces as nearly as possible its original shape. The principal defects are the loss of both condyles. There are striking differences between this jaw and those of several of the Skhūl people but the most evident contrasts are with the massive, male mandible discovered in the same layer of the same cave. The female lower jaw is relatively slender, the ascending rami slope markedly backwards and there is a total absence of even the suggestion of a chin. The big Tabūn mandible, which has the form and dimensions of the Skhūl mandibles, was in several fragments. These have been fitted together and the missing portions restored on the basis of complementary parts of the opposite side. One of the missing sections involved the base of the body at the symphysis. There is, however, not the least doubt as to the shape of this missing part. The swelling forward on both sides of the jaw of the anterior-inferior margin of the horizontal body of the ramus just below and in front of the large single mental foramina admits of but one possible reconstruction: that this jaw had a well-defined chin of moderate development. The accompanying illustrations exhibit quite clearly some of the more striking differences between these two jaws (Pls. IV and V). They provide a tempting series of problems upon which

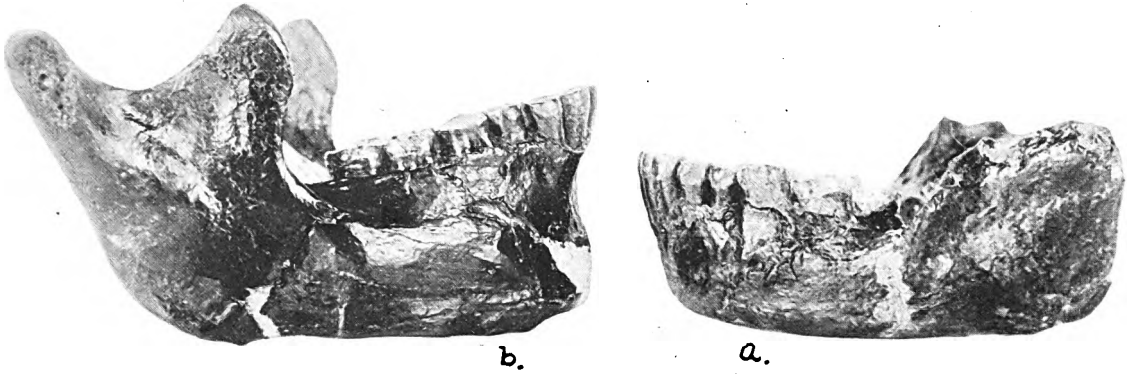


PLATE IV.—a) Chinless lower jaw of the skeleton from Layer C, Tabun cave; b) lower jaw from Tabun cave, resembling those found in the near-by cave of Skhul. Norma lateralis.

PLATE V.—The two lower jaws from Layer C, Tabun cave. Norma verticalis.

to speculate but until further work and study make available a larger and an exact body of information concerning the Skhūl skeletons it seems inadvisable even to suggest conclusions. Until one can estimate more closely the possible range of variation in these matters it is of doubtful value to suggest a form of relationship that may be entirely erroneous, based as it is on the apparently large absolute differences between only two specimens.

The limbs of the Tabūn skeleton, in comparison with the Skhūl bones, are relatively short and slight. The contrast between the massive, lengthy limbs of Skhūl skeletons IV and V and those of the Tabūn female are impressive. Even allowing for differences due to sex, they are undeniably very great. It is, I believe, quite accurate to say that the Tabūn skeleton approaches the Neandertal types of Europe more than do the Skhūl skeletons. Because of this it raises an additional group of problems connected with the inner relationships of the Mousterian population of Palestine as well as their relations to contemporary groups elsewhere (Pl. VI).

The fossil hominid material from the Cave of the Kids was shipped to London and was finally delivered to the Royal College of Surgeons during the winter of 1932. Sir Arthur Keith was seriously ill during the winter of that year and the following spring, but his most gratifying recovery and continued well-being depend upon the amenities of a country life. As Master of the Buckston Browne Research Farm at Downe, Kent, of the Royal College of Surgeons, he retains a valued and essential relationship with the College but is spared the fatigue of the Conservatorship of the Museum, now conducted by his successor, Dr. John Beattie. Duties connected with a Teaching Fellowship in the Department of Anthropology, University of California, made it impossible for me to return to London before late September, 1933. For these reasons the long and laborious task of cleaning, repairing and studying the Mt. Carmel fossil Mousterian material was not begun until the first part of October last year.

Some idea of the difficulty of extracting the skeletons from the hardened deposits of the Cave of the Kids was contained in my account of the discovery of this material. The actual task of removing the bones from the breccia is infinitely more slow and delicate. The very considerable cost of equipment and labor is being borne equally by the American School of Prehistoric Research and the Royal College of Surgeons, the latter institution serving as headquarters for the work and providing unparalleled advantages in the way of comparative material from the Museum in addition to laboratories and technical facilities. My own continued association

with this work is due largely to my appointment as Taussig Travelling Fellow in Anthropology, University of California, 1933-34, with some additional support from the American School of Prehistoric Research.

A visit to Sir Arthur Keith immediately upon my arrival in England settled the preliminary conditions upon which the work was to be done. The technical phases of the work obviously could be effected most satisfactorily in London. There remained then the problem of equipment and of assistance. A light electro-pneumatic chisel was purchased and has proved of tremendous value not only in preliminary clearing around the bones but for finer work as well. An electric dental lathe with grinding arm has also been indispensable. In addition there had to be obtained the usual assortment of chisels, scrapers, hammers, etc., that are essential and peculiar to work of this kind.

The staff consists of Miss M. G. Collett, formerly a Crewdson Bennington Research Student of the Galton Biometric Laboratory, University College, London, and Mr. W. C. Willmott. Miss Kathleen Parbury has been employed from time to time to make detailed drawings at various stages of the work. At present she has very kindly volunteered her services gratis and is engaged in making clay models, to scale, of the more complete Skhūl skeletons. One of these has been cast in plaster and reproduces most faithfully, half size, the burial position and features of the skull, jaw and limbs. The funds at present available and the amount of space at our disposal make the employment of a larger staff impossible. In addition there was the difficulty of maintaining adequate supervision over a greater number of workers.

The blocks containing the skeletons were placed in the basement of the College, the only place, as a matter of fact, where it was possible to transport these masses weighing several tons. The general scheme is to work out the bones in situ, during this process make drawings and take photographs when necessary, construct the models and make measurements and plaster impressions to be used in later work of reconstruction. This is done in the corridors and in the laboratory we have fitted up in the basement. The final process of cleaning and the intricate and slow task of reconstruction are done in a well-lighted laboratory on the top floor of the College. The fully prepared material is then photographed and also drawn with the aid of the Leakey-Harper tracing apparatus.

The past months have been occupied almost exclusively with various aspects of the technical processes outlined above. The Tabūn skeleton is in the final stages of cleaning, the mandible, maxilla, frontal bone, one complete arm and some other portions of the skeletons have been finished. One

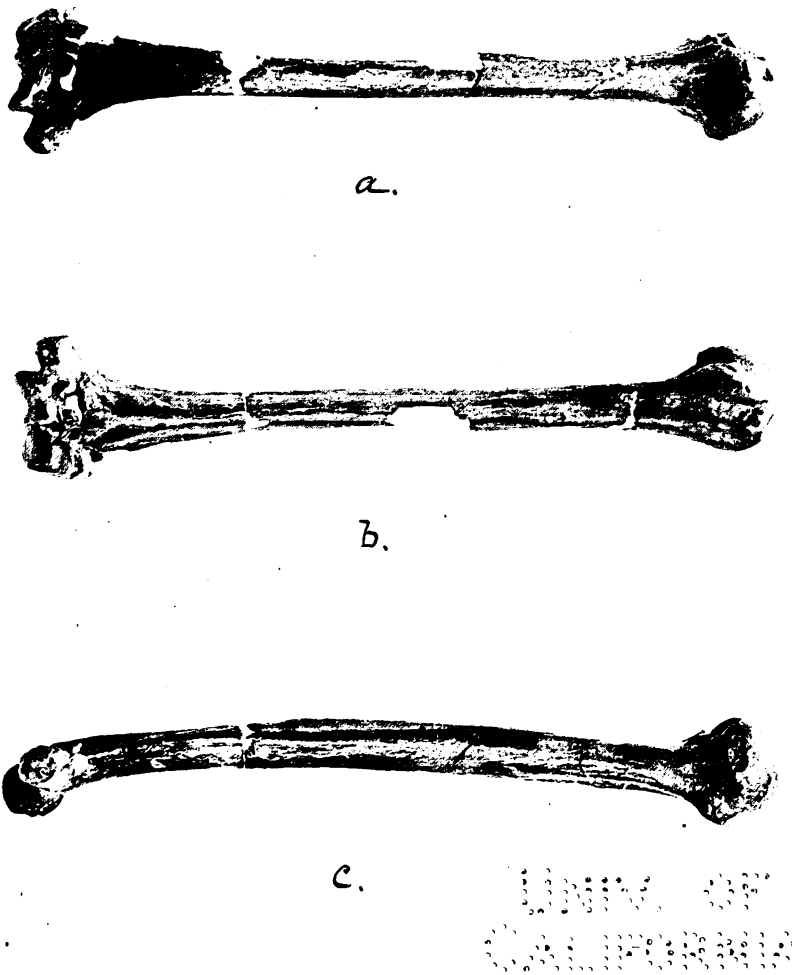


PLATE VI.—Left upper arm bone (humerus) of the skeleton from Layer C, Tabun cave: a) posterior aspect; b) anterior aspect; c) view of the side nearest the body.

assistant has been, and is, at work on some of the more fragmentary individuals from the Cave of the Kids, but no attempt has been made to reconstruct the existing bits. The greater part of the present efforts have been concentrated on Skhūl numbers IV and V. About two tons of plaster and cement casing have been removed with the aid of the pneumatic chisel and some superficial cleaning was done to facilitate the work of making the detailed scale drawings and the models. Number IV is now in full process of removal. The long suspected but hitherto undiscovered vertebral column is coming to light. The carpus and fingers of both hands are nearly complete as is the tarsus and toes of the right foot, items which our preliminary work in the field had only partially disclosed. The skull lies directly on the limestone rock of the shelter-floor and unfortunately has been compressed both from above and laterally but will be restorable with sufficient patience and care. The bone is brittle but softer than the tough matrix in which it is imbedded and in consequence extreme care is required to prevent serious damage to it during the work of removal. It is abundantly clear that the trouble involved in removing these burials en bloc was more than worth the labor and expense. Even under the present favorable conditions, patience and technical facilities are sometimes taxed to the utmost in extricating the bones with safety.

I have not attempted to present a preliminary report on the anatomical characters of these ancient Carmelites but rather an account dealing briefly with the progress made in extricating and preparing the 1932 remains, some mention of the hitherto unreported importance of Miss Garrod's find of fossil man in the Oven Cave and to reiterate the immense significance of the uncovering of the stratified lower Paleolithic deposits of the same cave. The discovery of a chinless, "lowbrowed" and slightly built individual was a little unexpected. On the other hand the single mandible from the same layer appears to be a bigger example of the type known from the Cave of the Kids. The seeming dissimilarities of the present moment cannot be harmonized offhand but when we are in possession of full knowledge of the physical characters of the Palestinian Mousterians the facts will undoubtedly be susceptible of clear arrangement. Another fruitful possibility is the discovery of further human material by Miss Garrod during the present season. A piecemeal study of such portions of the fossil material that have been finished from the technical standpoint is obviously undesirable. In consequence every effort is being made to push ahead the preparatory part of this task. The one exception is the revision and checking, with some further reworking, of the data concerning the Mousterian infant skull and skeleton found during the 1931 season at the Cave of the Kids.

Two other facts may be of interest. Miss Garrod recovered from the Acheulio-Mousterian layers of the Tabūn cave the middle part of the diaphysis of a human thigh bone. It has no linea aspera, is not platymeric and differs from many modern femora only in the light brown color and the high state of mineralization. It is the oldest fragment of any human being to have yet been discovered in Palestine. One naturally hopes that such a tantalizing promise will be fullfilled by more complete and decisive material.

The second item of interest concerns the temporary exhibition of the past season's results of the Joint Expedition at the British Museum, Bloomsbury, London. This was arranged through the courtesy of the Trustees of the Museum and the interest of Mr. Reginald Smith, F.S.A., Keeper of the Department of British and Medieval Antiquities. The actual arrangement is due to the care and attention of Mr. T. D. Kendrick and Mr. Christopher Hawkes, Assistant Keepers of the Department. Some of the Mousterian skeletal material with some of the better preserved Natufian skulls formed one exhibit. Carefully chosen lots of fauna from all the different layers formed another. The main case contained Miss Garrod's arrangement of the complete sequence of the stone industries and the associated bone implements and art objects from the Natufian to the Tayacian. These have been on view in the main Prehistoric Saloon of the Museum from the first of February until the first of May. It may be added that public interest has been most gratifying with regard to this phase of the School's activities.

NOTE BY SIR ARTHUR KEITH

Mr. McCown has shown me the report he has just drawn up, with which I am in entire agreement. The task which has been entrusted to him is, in my opinion, one of the most difficult as well as one of the most important that has ever fallen to an anthropologist. I have visited the caves of Mt. Carmel; the difficulties which Mr. McCown overcame in quarrying out the blocks of rock in which the skeletons were embedded and in transporting these blocks over rough country between Mt. Carmel and Haifa have never been adequately acknowledged. He is now overcoming difficulties which demand even greater patience, knowledge and skill. I visit the Museum in which he is superintending the extraction of these fragile but precious remains of the most ancient inhabitants of Palestine known to us and am entirely satisfied with the manner in which the work is being done under him and with the progress that he is making.

Before Mr. McCown arrived in England in the fall of 1933 I had made a preliminary survey of the bones of the female skeleton discovered by Miss Garrod in the Tabūn cave. To clear away the stalagmitic crust with chisel and needle was difficult enough in this case but the bones were hard and could be handled freely. The skeletons which Mr. McCown has now to extract from the hard rock present a much more difficult task for the bones are inclined to crumble and the greatest patience as well as skill are necessary. Those who are interested or who are concerned in raising the funds which will be needed to keep Mr. McCown and his staff at work must be prepared to continue their support for a much longer period than I had anticipated originally. With his present staff and counting on progress continuing at its present rate I cannot conceive of the task of extraction, restoration, examination, description, illustration and publication being completed before the end of 1935.

With a wide experience of fossil man to guide me I have to admit that the human beings now being uncovered by Mr. McCown are the most imposing specimens of fossil humanity I have ever seen. These skeletons could never have been extracted where first exposed in the Skhūl cave. One now realizes how wise Miss Garrod and Mr. McCown were to remove the blocks of rock in which the skeletons were embedded and do the work of extraction under conditions which are available in a modern Museum.

Mr. McCown has expressed a suspicion that more than one race of Neandertal Palestinians may be represented by these fossil skeletons. He instances the differences in chin formation and in strength and proportions of the limb bones. This may be so but my own impression, which may have to be modified as further evidence comes to light, is that we are dealing with individuals of one race and that this race is a member of the same genus as that to which the Neandertalians of Europe belong. The Neandertal Palestinians make, I think, a rather nearer approach to the type of modern humanity than do the Neandertal Europeans.

ARTHUR KEITH,
Master of the Buckston Browne Research Farm.

Downe, Kent.

REPORT ON THE 1933 SUMMER COURSE OF THE AMERICAN SCHOOL OF PREHISTORIC RESEARCH

By *Vladimir J. Fewkes*

INTRODUCTION

THE thirteenth annual summer course of the American School of Prehistoric Research, in charge of the present writer, was devoted to the Central European field. The School opened in Prague, Czechoslovakia, on July 3d, and closed in the same city on August 21st.

The School worked in close coöperation with the State Archaeological Institute of Czechoslovakia and the National Museum of Belgrade, Yugoslavia; and splendid support was received in all of the institutions in which studies were made. A sincere sense of great indebtedness and appreciation is expressed to: Director Karel Buchtela, Professor Albín Stocký, Professor Josef Schránil, Dr. Jaroslav Böhm, Dr. Libuše Jansová-Horáková, Dr. Ivan Borkovskyj, Dr. Jiří Neústupný, all of Prague; Professor Vladimir R. Petković, Professor Miloje M. Vasić, and Dr. Miodrag Grbić, all of Belgrade; Director Marinko Stanojević of Zaječar; Count Adam Orssich-Slavetich of Niš; Director Marton Lajos of Budapest. Similarly, to the many other officers of all the museums which were visited, heartfelt thanks are offered for everything which they did in the interest of the School.

THE COURSE

A regional approach was adopted in all theoretical studies. The well-established system of Bohemian-Moravian archaeological patterns[1] was taken as the starting point for a detailed study of the Central European field. The rich local material, together with the synoptic series found in several of the places visited, made it possible to deal in detail with all the phases of Central European culture history. The rest of the continent was covered in a broad yet comprehensive manner. Library facilities offered to the use of the School in Prague were particularly valuable in this respect. With the splendid aid which was everywhere received, it became

[1] Cf. Buchtela, K., "Vorgeschichte Böhmens," *Věstník Slovanských Starožitnosti*, III (Praha, 1899); Buchtela, K. and Niederle, L., *Rukověť české archaeologie* (Praha, 1910); Stocký, A., *Pravěk země české*, I (Praha, 1926); Schránil, J., *Vorgeschichte Böhmens und Mährens* (Berlin, 1929); Červinka, I. L., *Morava za pravěku* (Brno, 1902).

possible to make a practical inquiry into virtually all of the major phases of European archaeology. During the stay in Czechoslovakia, the writer was ably assisted by Dr. Oleh Kandyba of Prague, a specialist in the Black Sea, the Carpathian, and the Balkan fields.

The work accomplished during the course falls into four categories:

I) Museum studies based upon practical examinations of the material contained in nineteen institutions, accompanied by theoretical discussions, and supplemented with lectures by local specialists.

II) Laboratory exercises, consisting of actual handling of specimens, discussions of the technical processes employed in the treatment of archaeological material, map work, drawings, etc.

III) Preliminary field reconnoitering.

IV) Excavations in six different sites.

I. Museum studies:

1. National Museum, Prague
2. State Archaeological Institute, Prague
3. Charles University, Department of Prehistory, Prague
4. Hanspaulka Museum, Prague
5. Hradčany Castle Archaeological Laboratory, Prague
6. City Museum, Kolín
7. City Museum, Pardubice
8. Land Museum, Brno

(1-8 in Czechoslovakia)

9. National Museum, Budapest, Hungary
10. National Museum, Belgrade
11. University Museum (Vinča), Belgrade
12. Museum in Negotin (Krajina)
13. Museum in Zaječar
14. Museum in Niš
15. Geological Museum, Zagreb
16. Prehistoric Museum, Zagreb
17. Ethnological Museum, Zagreb

(10-17 in Yugoslavia)

18. Museum of Natural History, Vienna, Austria
19. City Museum, Rakovník, Czechoslovakia

(Listed in the order in which they were visited.)

As a rule, mornings were devoted to museum work. The subject matter was always treated historically. After an introductory survey of pertinent physiographic factors, we considered first local, then regional systems, and finally culture area patterns, in the following order: I) the Palaeolithic Age: chronology, phases represented, typology, comparative analysis; fauna, flora, climate, and geology with each phase; II) the Epipalaeolithic: similar treatment again, and a special emphasis on local survivals and the question of hiatus; III) the Neolithic Age: each phase considered separately under these headings: 1) name and history; 2) cultural position; 3) material traits: a) pottery: forms, paste, texture, surface finish, decoration (motifs and execution), manufacturing technique; intra-phasal stratigraphic or typological differentiation and chronology; b) stone artifacts, types, technique, origin; c) bone and shell artifacts; d) all other traits, technique, sources of material, possible light on trade; 4) dwellings: nature, location, size, frequency, culture pits, structures, posts, wall plaster, stratigraphy, comparative analysis from known models; 5) burials: frequency, types, physical remains of skeletons or cremations, orientation, furniture, state of preservation, distribution; 6) mode of life: type of economy, crops, domestic animals, hunting, fishing, domestic industries, trade and its routes, total cultural achievement; 7) geographic distribution throughout the continent; chronological differentiation of related groups; 8) theories of origin and diffusion, and the evidence upon which they are based; views of local authorities as well as those of outside students; inquiry into reasons for discrepancies wherever they exist; stress of the necessity of an open mind in view of the still existing shortcomings; 9) external cultural relationships, and their bearing upon chronology, typology, and dating; general placement in European culture history at large; 10) racial aspects: the actual evidence; types established or postulated; major theories.

The Bronze and Iron Ages were considered in a similar manner. However, special emphasis was laid on metallurgy, its origins, spread, and the resulting implications. Furthermore, typology and chronology of metal objects were treated under a number of classified groups. Particular attention was devoted to natural sources of metals, methods of mining, manufacturing technique, alloying, trade, and the means of transportation. The gradual, and chronologically differentiated, transitions from the New Stone to the Bronze Age, as well as from the latter to the Iron Age, received due attention.

Cultural dynamics, continuity, conservative tendencies, and survival values were discussed in all cases which offer evidence on such forces. In

each region or area considered during the course, the entire range of culture history was examined from the earliest established period to the first appearance of the modern population.

II. Laboratory work:

The greater part of this work was done in the well-equipped laboratories of the State Archaeological Institute in Prague which were placed at the School's disposal through the kindness of Director Buchtela. These sessions were held during the afternoons and consisted of the following routine: a) practical handling of material already studied in museums; examination of technique; washing, mending, and restoration of material excavated by the School; casting; b) map work: plotting of cultural distributions, diffusional routes, and of important continental physiographic features; c) charts: local, regional, and areal chronologies; comparative tables; extraterritorial synchronisms; d) drawing of specimens (approximately 1,100 drawings were made by each student in addition to museum and field sketches); e) discussions of general laboratory work and of various procedures followed in conservation, restoration, and other handling of material in preparation for publications; f) cataloguing, exhibiting, storing of specimens; g) photography.

Dr. Kandyba's services were especially important in the laboratory periods. The aid received from the technical staff of the State Archaeological Institute of Czechoslovakia was very helpful. Furthermore, Mr. Robert W. Ehrich, who stopped in Prague en route to Yugoslavia, contributed to this work by giving several lectures and practical illustrations on physical anthropology.

III. Reconnaissance:

The School devoted one week to preliminary reconnoitering in the northeastern portion of Yugoslavia. A Danube boat trip from Belgrade to Kladovo gave the students an opportunity to observe highly interesting terrain en route, especially between Golubac (the Roman Cuppae) and the Iron Gate. The remnants of Trajan's road and several Roman ruins were noted during the journey. Then from Kladovo the group made an excursion along the bank of the Danube and across the region known as Ključ. Archaeological sites exist here in large numbers[2] and represent Neolithic settlements, Bronze and Iron Age habitation and cemetery sites, Roman

[2] Cf. Vasić, M. M., "Žuto Brdo," in *Starinar*, n. r. g. VI (1911), especially pp. 3 ff.

castella, castra, and city sites, as well as ruins datable to later periods. Another Danubian trip was subsequently made from Kladovo to Prahovo, during which it was possible to scout for signs of archaeological deposits in the bank of the river. In the vicinity of Prahovo and later also at Negotin, several Roman sites were visited. The party then proceeded by train to Zaječar where the local museum collection was studied and a large series of sites were noted upon information supplied by Director Marinko Stanojević. Niš was the next stop. From here the students, with several staff members of the Niš Museum, examined a score of sites, ranging in date from the New Stone Age to the Byzantine period. An excursion was also made to Pločnik,[3] a large Neolithic settlement, in which the recent heavy erosion of the river Toplica exposed several highly instructive profiles. Then followed the excavations at Lipovac.[4]

IV. Excavations:

The primary purpose of this work was to illustrate and to teach various means of procedure in archaeological excavations. The following sites were dealt with:

1) in Czechoslovakia:

a) Lubná,[5] near Rakovník, an Upper Aurignacian loess station with a single occupational level. The site is being explored by the State Archaeological Institute, in charge of Dr. J. Böhm, who has already excavated a large area and is to continue in the future;[6]

b) Štětí on the Elbe, a cemetery site of the Únětice (Aunjetitz) phase of Bronze Age I, containing burials in stone cist graves, arranged in irregular rows, with ceramic and metal furniture. The School found six graves, all at least partially disturbed;[7]

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[3] Explored by the National Museum of Belgrade in 1928; cf. Grbić, M., *Pločnik* (Beograd, 1929).

[4] The reconnaissance trip, brief as it necessarily was, prepared much valuable ground for the work of the Harvard Expedition which came to Kladovo later in the season.

[5] Cf. Stocký, A., *Pravěk*, ibid., pp. 22 ff., and literature listed in his register of sites on p. 159.

[6] The results obtained by the School are to be incorporated in Dr. Böhm's final publication.

[7] Material in the State Archaeological Institute, to be published by Dr. L. Jansová-Horáková, scientific staff member of that institution, and the present writer. Dr. Jansová-Horáková had previously excavated a series of burials in this site.

c) Dolní Počernice, near Prague, cemetery site of the Pre-Únětice (Voraunjetitz) or Transitional phase, rich in skeletal remains and ceramics; also a settlement of the so-called "Roman" phase of the Bohemian Late Iron Age (corresponding in time to the period of the Roman Empire), with culture pits, traces of posts suggestive of a palisade, and with remains of smelting activities;[8]

d) Křepenice, near Sedlčany, a cinerary urn field site of the Late Bronze Age, rich in ceramics which combine features common to the Knovíz and Silesian phases. Earlier in the season, Dr. Böhm of the State Archaeological Institute excavated a portion of this site; the School found twelve additional graves;[9]

e) Stražkov, near Roudnice, site with burial tumuli of the Bylany phase of the Early Iron Age; the School participated in the excavations conducted here by Dr. Böhm.

2) in Yugoslavia:

Lipovac, near Arandjelovac, an extensive Neolithic settlement with material comparable to that of Jablanica,[10] the lower levels at Vinča,[11] as well as to that known from other Neolithic sites in the Morava Valley.[12]

The site has thick cultural deposits with pits and collapsed hut structures, and is rich in ceramic material. It occupies a natural knoll about 1 km. long and some 400 m. wide. The School opened two trenches and secured a large quantity of pottery, stone and bone artifacts, several figurines, weights and spindle whorls, and wall plaster.[13]

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[8] Material in the State Archaeological Institute, to be published by Dr. Jansová-Horáková and the present writer. Dr. Jansová-Horáková excavated a portion of this site in the spring of 1933 and will very likely return to it again when the current sand exploiting activities will allow further exploration.

[9] Material in the Institute for restoration; to be published by Dr. Böhm and the present writer.

[10] Cf. Vasić, M. M., "Die neolithische Station Jablanica bei Medjulužje," in *Arch. für Anth.*, XXII, No. 4 (1902), pp. 517 ff.

[11] Cf. Vasić, M. M., "Die Hauptergebnisse der prehistorischen Ausgrabung in Vinča im Jahre 1908," *Präh. Zeit.*, Band II, Heft 1 (1910), pp. 23 ff., and *Preistorijska Vinča*, I (Beograd, 1932).

[12] Cf. Vasić, M. M., "Prilozi ka reševanju trojanskih problema," in *Glas Kral. Srpske Akademie*, LXX (1906), pp. 163 ff., and "Southeastern Elements in the Pre-Historic Civilization of Servia," in the *Annual of the British School at Athens*, XIV (1907-1908), pp. 318 ff.

[13] Material in the National Museum, Belgrade, to be studied and published together with that previously excavated by Dr. M. Grbić, curator of that institution.

These excavations offered valuable experience in varied deposits. The students were everywhere required to go through all the stages of the work at hand. Material was partially handled on the sites, and records, drawings, and charts were completed daily.

During the work at Lubná, the School greatly profited by the presence of Mr. Adolf Fiker of the Geodetic Department of the State Technical School, Prague, who served as surveying engineer of the American Expeditions to Czechoslovakia and Yugoslavia in the years 1931 and 1932. Mr. Fiker reviewed the theories of surveying, especially as they apply to the needs of the archaeologist, demonstrated the principles involved in the preparation of tacheometric plans, and followed with practical exercises on the site. The specialized equipment which he furnished for the occasion would not have been otherwise procurable.

SUMMARY

The term lasted fifty days and was carried on uninterruptedly through Sundays and holidays. A total of nineteen archaeological collections was studied. The entire range of European archaeology was covered. Special emphasis was given to the Central European field, which was correlated with the continent at large. The theoretical instruction was followed by concentrated laboratory work in which the students received an opportunity to acquaint themselves with the various aspects of the practical handling of material. The reconnaissance trip was an experimental venture which proved to be entirely successful. The excavations were devised expressly for an academic purpose, and served well in this regard. Their distinct general usefulness, however, was also demonstrated, inasmuch as it was shown that the School is particularly well fitted to participate in various field programs abroad. Splendid opportunities for such work have been offered to the School by a number of institutions throughout Europe.

The primary purpose of the course was to offer a practical training in the fundamentals of European archaeology. That it was possible to achieve this successfully in so short a space of time is to be attributed to the excellent support which was everywhere received and to the high quality of the student body.

ARCHAEOLOGICAL RECONNAISSANCE IN YUGOSLAVIA
AMERICAN EXPEDITION, SEASON OF 1933
PRELIMINARY REPORT

By *Vladimir J. Fewkes*

ACKNOWLEDGMENTS

AS was the case in the past three years, so again in 1933, the expedition to Yugoslavia, this time sponsored by the Fogg Art Museum of Harvard University, worked with the coöperation and the official sanction of the National Museum in Belgrade. Professor Vladimir R. Petković, director of this Museum, arranged for the governmental permits and delegated Dr. M. Grbić, and later Mr. D. Manno-Zisi, to accompany the party in the field. Further splendid coöperation and aid were received from Professor M. M. Vasić, Belgrade; in the Muzej Južne Srbije, Skoplje, from Professor V. S. Radovanović, and Curator M. Kokić; in Niš from the staff of the recently organized Museum, and especially its Director Count Orssich-Slavetich; in Bitolj from Mr. B. Borisavljević; in Zaječar from Director M. Stanojević; in Negotin (Krajina) from Mr. S. Stefanović; in Pirot from Professor M. Petrović. To all these gentlemen, whose unfailing kindnesses greatly aided the work of the expedition, a sincere sense of indebtedness is hereby expressed. To the many administrative officials, officers and members of the state gendarmerie, professors and teachers, as well as all others, who everywhere rendered the party great services, heartfelt appreciation is acknowledged.

INTRODUCTION

The expedition was in charge of the present writer who again profited by the assistance of Mr. Robert W. Ehrich of Harvard University.[1] The actual season started August 24 and closed September 23. With two exceptions, favorable weather conditions were encountered everywhere.

[1] Mr. Ehrich was called abroad before this paper was prepared and did not, therefore, have an opportunity to collaborate in its writing. However, I am obliged to him for several helpful suggestions.—Dr. Hetty Goldman, who was a member of the staff in 1932, and who was again planning to participate in the field work of the past season, could not do so owing to serious circumstances which developed at the last moment.

From the standpoint of climate, as well as in regard to the availability of the country people, the post-harvest period seems to be the best part of the year for archaeological field work in the eastern section of Yugoslavia.

The chief aim of the work was to carry on further reconnaissance along the lines followed in 1932,[2] and especially to expand investigations in certain regions which were insufficiently covered last year, as well as to pursue soundings in several sites.

The usefulness of a general archaeological survey was clearly demonstrated by the first trip which was largely experimental.[3] The rôle of geographic factors became especially apparent and suggested the necessity of an intensive regional treatment. In order to prepare the ground for such an approach, the work of the past season combined the purpose of a general investigation in regions hitherto unvisited by the party, with a more detailed local inquiry in sections in which previous observations indicated the desirability of the latter procedure. However, the field is so rich, and so much of it remains unexplored, that additional seasons of intensive work will be necessary if one is to arrive at a satisfactory understanding of the various patterns of culture history involved. In the meantime, a service may be performed by a broad survey, supplemented with limited soundings in sites which offer evidence of specific significance. The results of such work may be expected to establish, at least roughly, the extents of geographical distributions of cultures, to indicate interregional relationships, and to yield light on diffusional movements.

Our endeavors were focused exactly upon these aspects, and the most encouraging results were obtained. It must be remembered, however, that this work is only in its initial stage. There are many gaps and shortcomings. This preliminary report, therefore, presents only a general informatory account of our findings. Theoretical issues have been purposely avoided in all cases in which it was felt that their points are based either on insufficient, or totally lacking evidence. The tentative interpretations must be understood strictly in the light of their inherent limitations. The reason for their inclusion lies in their broad suggestive values, as well as general, not specific, temporary significance. It should also be stated that literary references have been curtailed in conformity with the limits of this paper.

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[2] Fewkes, V. J., Goldman, H., and Ehrich, R. W., "Preliminary Report on an Archaeological Reconnaissance in Yugoslavia, Season 1932," in *Bull. American School of Preh. Research*, No. 9 (1933), pp. 17 ff. (Route shown in the sketch map which faces p. 17).

[3] Cf. *ibid.*, pp. 17 and 26.

While, for the sake of completeness, we try to present a regional picture of local archaeology from the earliest documented times to quite recent periods, it is only the so-called "prehistoric" field that concerns us directly. The eastern portion of Yugoslavia, which comprises the banovinas[4] of Morava and of Vardar, is considered alone. In view of the apparent lack of acceptable evidence which might indicate the presence of Palaeolithic[5] or Epipalaeolithic existence, our treatment starts with the Neolithic Age (including the usually separated Eneolithic or Chalcolithic subdivision), covers the Bronze Age, and really ends with the Iron Age. Under the last is included all post-Bronze Age to pre-classical development, that is to say the conventional Hallstatt and La Tène of continental Europe.

With very few exceptions of established English usage,[6] transliterated native nomenclature is followed. Geographic terminology is adopted from the map of Geodetic General S. P. Bošković,[7] and in case of discrepancies, the sectional maps of the Royal Geographical Institute[8] are taken as the official sources. Names of sites[9] have been retained in precise conformity with local customs.

The trip[10] began at Niš. The astonishing amount of work done by the local museum[11] greatly facilitated our inquiries. An excursion was made into the Pirot and the Bela Palanka Basins which lie to the east of Niš. Subsequently, the valley of the river Timok was followed northward, and headquarters were established in Negotin (Krajina), whence the bank of

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[4] A banovina is one of the nine administrative districts into which the country is now divided.

[5] Cf. *op. cit.*, pp. 27-28.

[6] I.e. Yugoslavia for Jugoslavija, Belgrade for Beograd, Danube for Dunav, and Iron Gate for Djerdap.

[7] Scale 1: 1,000,000 (Beograd, 1931).

[8] Scale 1: 100,000 (Beograd, 1925 and 1926).

[9] Practically every archaeological site in Yugoslavia is known by a distinct name which is preserved in local tradition. The most common among these are: "Gradište" (fortress), "Selište" (settlement), "Staro Selo" (old village), "Grobište" (cemetery), "Kula" (tower), "Gramada," "Humka," "Mogila," or "Tumba" (all four meaning mound), etc. Certain places have a more specific designation, which refers either to their presumable origin or to their physical nature, such as "Rimski Grad" (Roman town or fort), "Ilinsko Groblje" (Hellenic graves), "Velika Braništa" (great barriers), "Crkvište" (church ruins), etc. These examples are taken at random from the entire area under consideration. There is, of course, considerable regional differentiation in their application in the various sections of the country. Thus, for example, "Humka" is used largely in the north, "Tumba" throughout Macedonia, "Gramada" predominantly in Mariovo, whereas "Mogila" is common to the entire kingdom; and yet, "Glamija" derived from "Mogila" is the usual name for a mound in Ključ and Krajina.

[10] Using trains on two occasions only, the party traveled by car throughout. In addition to this, a journey by boat from Belgrade to Kladovo, and then on to Prahovo, was made late in July with the American School of Prehistoric Research.

[11] The Niš Museum was organized in the spring of 1933 through the interest of Count Orssich-Slavetich, its present director, and a number of other enthusiasts. We are much indebted to this institution for the kind permission to use its records.

the Danube between the Iron Gate and the Bulgarian border was covered. The region known as Ključ, which lies within the large bend of the Danube between Kladovo and Milutinovac, was investigated in particular detail, as was also the vicinity of Negotin itself, which is situated in a fertile basin some 12 km. inland from the present course of the Danube.

From Negotin, the party journeyed directly to Skoplje, and worked along the headwaters of the Southern Morava and the Vardar. Thereupon, the middle Vardar valley was followed as far as Veles. Here the route turned southeastward across the Babuna range into the Prilep and Bitolj Basins, where one week was devoted to soundings and general reconnoitering. After a brief visit to Mariovo, the valley of the lower Crna was entered over the Drenovo mountains.

The west bank of the Vardar was then followed through the gap of Demir Kapija as far as the Greek border. Attempts at sounding near Djevdjelia were blocked by a severe storm which lasted for several days. Rather than wait for the return of normal weather conditions, we proceeded to the valley of the Strumica, and then on across the lofty Ogražden into Maleševo, Pijanec, and the Basin of Kočane.

After a brief stop in Štip, the section known as Ovče Polje was visited, whereupon the Vardar was again reached at Veles, this time from the east. An excursion was made southward to Gradsko, and we returned to Skoplje, to cover the valleys of the Kriva and the Pčinja. Among the larger valleys of the upper Vardar drainage, only that of the Lepenac remained to be visited. This was done on the way into Kosovo, whence we turned eastward into the Morava-Vardar divide, followed the Southern Morava to Leskovac, and then continued to Niš, where the fieldwork was concluded.

Some 5,100 km. were covered by car during this trip. The work accomplished may be summed up as follows: sites visited, 122; sounded, 9; observed from close range, 38; recorded upon specific information gathered in the field, 458; total, 627.

REGIONS COVERED

The physical makeup of the eastern portion of Yugoslavia presents a series of more or less well-defined geographic units such as valleys, basins, depressions, etc., which are definitely set off by the masses and spurs of the Balkan mountain system, and further delineated by drainage distribution. Ten principal regions may be distinguished in this area:

I. The bank of the Danube from the town of Golubac to the Iron Gate;

II. the valley of the Danube from the Iron Gate to the river Timok;

III. the valley of the upper Nišava;
IV. the valley of the Southern Morava;
V. the Upper Vardar valley;
VI. the Middle Vardar valley;
VII. the Lower Vardar valley;
VIII. the Prilep and the Bitolj Basins, together with Mariovo, all transversed by the river Crna;
IX. the valley of the Strumica;
X. the drainage area of the Bregalnica.

These ten regions are blocked out more for convenience in treatment than for reasons of relationship between physical geography and culture history. Even in those instances in which such a relationship seems to be strongly indicated, more evidence is necessary to establish definite lines. Each individual region is treated under four subheadings as follows: a) Territorial definition (geographical location); b) Physiography (brief indication of the major factors); c) Archaeology (chronologically, starting with the New Stone Age); d) Remarks (comments, interpretations, general notes).

I. The Bank of the Danube from Golubac to the Iron Gate

a) Territorial definition: Golubac lies on the Danube some 90 km. east of Belgrade. The Iron Gate is identified by the Sip canal. The bank of the river between these two points, disregarding the hinterland, constitutes the region under discussion.

b) Physiography: Having crossed the open stretches of the Central European granary, the Danube enters the northwestern foothills of the Balkans near Golubac. Thereafter, the stream forces its way through a series of narrow passages and gorges with sheer rock lining either side for considerable stretches, of which the most formidable barrier is the defile of Kazan.[12] The river winds a great deal, forms many deep pools, and finally, over the rapids of the Iron Gate, reënters open lowlands once more.

c) Archaeology: Of Neolithic, Bronze, and Iron Age sites nothing is known up to the present time. The distribution of such sites appears to stop just west of Golubac and is not resumed again until the vicinity of Kladovo.[13] However, Roman remains are present[14] and are significant in

[12] The term means cauldron or kettle.
[13] Cf. Vasić, M. M., "Žuto Brdo," *Starinar*, n. r. g. V (1910), pp. 20 ff., and map in pl. I.
[14] Cf. Kanitz, F., "Römische Studien," *Denkschriften d. Kais. Akad. d. Wiss., Phil.-Hist. Classe*, 41 (1892), Abh. II, pp. 24-39, and 49-53.

relation to the first historic occupation of the region. It is along this part of the Danube that the remnants of Trajan's road can be seen, first appearing just below Golubac (the Roman Cuppae) and continuing, with interruptions, through the Kazan. Beyond this it is marked by the "Tabula Trajana," and enters, at length, the more open strip under the Djerdap range, where it becomes untraceable at present.[15] Military posts which originally guarded this important Roman highway are located in several strategic points.[16]

d) Remarks: There are neither suggestions nor evidence to show that this stretch of the Danube was settled or even penetrated prior to the entry of the Romans in the first century A.D. It would be difficult to imagine a people with the Neolithic type of cultural equipment progressing upstream from below the Iron Gate through the series of rapids and defiles out to the open country above present-day Golubac. Even if substantial means of navigation could be postulated, for which there is no historic basis, the current alone, disregarding the other hazards, would tend to preclude such an achievement.

However, Professor Vasić believes that in the Early Iron Age a cultural traffic upstream (by actual navigation) did exist, for he finds the same type of material at Kladovo (just east of the Iron Gate) on the one hand, and at Žuto Brdo (a short distance northwest of Golubac) on the other.[17] The complete lack of evidence of intervening sites is fully recognized by this writer who points out that "they are not to be expected here in view of the configuration of the terrain."[18] Until a definite proof of actual contacts via the Danubian waterway between these geographic extremes is established, it would be difficult to support this view, however technically advanced we may consider the people of the Early Iron Age to have been.

It must be remembered that even in the period of the Roman Empire, for which a variety of boats is historically documented, Trajan constructed the difficult road and did not depend on navigation alone.[19] This road was made upon ledges hewn in the rock, or carried on boardwalks secured by beams inserted in holes cut into the precipitous walls. Under aboriginal

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[15] For a splendid, brief account, consult: Hyde, W. W., "Trajan's Danube Road and Bridge," *Classical Weekly*, VIII: 8 (1924), pp. 59-64.

[16] Cf. Kanitz, ibid., p. 38, and pp. 49-53.

[17] "Žuto Brdo," *ibid.*, pp. 21-22.

[18] *Ibid.*, p. 22.

[19] In Roman times, a lateral canal, 3220 m. long, 57 m. wide at the bottom, with dams (14 m. high) and protective walls, as well as with guarding towers at either end, was constructed through the Iron Gate (off Prigrada) in order to circumvent the rapids. Cf. Kanitz, F., *Denkschriften*, 41, *ibid.*, p. 50, and t. f. 32; also his *Königreich Serbien*, etc., II (Leipzig, 1909), pp. 494 ff.

conditions, prior to Trajan's time, a journey on foot should have been well nigh impossible. It was not until the last quarter of the past century that the river was made navigable for commercial traffic and that the Szechenyi road was built on the north bank, both of which were considered engineering marvels in their time. On the Roumanian bank, a railroad now connects the town of Orsovia with that of Turnu Severin. The Yugoslavian side, however, with a few minor exceptions, has remained largely unchanged by modern hand, documenting the difficulties originally encountered by the Romans, and also preserving samples of the most inaccessible passages which they circumvented by means of the boardwalks. Turning the perspective from the Roman times towards our own era, we may well quote Professor Hyde: "Until the Széchenyi road was completed in 1885 from the town of Bazias, which is an hour and a half above Omoldova on the north bank, to Orsova, the former frontier town of Hungary, the Kazan, we may be sure, had not been traversed by vehicles since soon after Trajan's day."[20]

II. The Valley of the Danube from the Iron Gate to the River Timok

a) Territorial definition: Bounded on the north and east by the undulating course of the Danube, to the southeast by the lower Timok, and in the west by the Miroč, Veliki Greben, and Deli Jovan ranges, this region forms the head of the Lower Danubian Valley.[21] It is known as Krajina, and the spur of land within the U-shaped bend of the Danube is called Ključ. The southern sector with its political center in Zaječar is known as Timoška Krajina.

b) Physiography: Upon emerging through the Iron Gate the Danube enters an open plain which broadens gradually in the direction of the east. The river winds considerably, shifts its channel, and erodes a great deal wherever conditions are favorable. The bank in Ključ, being on the inside of the large bend off Korbovo Island, has been particularly affected by such erosion. The eastern limit of Krajina presents a similar condition.[22]

[20] *Op. cit.*, p. 60.

[21] In contrast to the Middle Danube Valley which is enclosed within the western slopes of the Balkan system and the Transylvanian Alps, the Carpathian range (which closes in upon the Danube through the White and the Little Carpathians), the eastern foothills of the Alps, and finally the Dinaric Alps. The upper part of this valley lies westward of the Little Carpathians and north of the Alps.

[22] In either case, at low water one may walk on the temporary beach, the width of which varies from 0.50 m. to as much as 100 m., and examine the wall of the bank for archaeological deposits. One may even observe the terrain from a Danubian boat and recognize sites. Both careful scrutinies from steamers and close examinations on foot were made, each on two occasions. The American School of Prehistoric Research participated in this work in 1933.

Much of the area immediately adjacent to the Danube, together with the neighboring depressions, is now subject to seasonal inundations, during which many sites are under water.

c) Archaeology: The Neolithic Age is represented by a series of sites found between Kladovo and Prahovo.[23] They are situated upon the bank of the Danube and are now exposed by the cutting of the current. The height of culture-bearing deposits varies from 0.50 m. to 3 m., and in some cases reaches even 4.50 m. In length along the river the sites run from 150 m. to as much as 1 km. The width range is difficult to ascertain without actual testing, but in certain instances a span of 50 m. to 100 m., or more, is suggested by the distribution of surface material. Dwelling and refuse pits are often clearly visible in the profile. Large quantities of ceramics, stone and bone implements, as well as hearths, wall plaster, and animal bones, are always present. The pottery shows partially West Bulgarian and Wallachian affinities, which are to be expected in view of the geographical position, and partially a definite relationship to wares found in the Banat, especially as exemplified by the site of "Grad" at Starčevo,[24] which lies on a former bank of the Danube. The barbotine and burnished types are especially close in similarity. There are figurines of baked clay, few in number as yet, but important, for they resemble the fine product of the Middle Danubian Valley. The shoe-last celt is present. Bone artifacts represent awls, punchers, and needles. A superficial examination of samples of animal bones revealed domestic cattle and pigs. The nature of these sites suggests organized village arrangements, and the rich and thick deposits seem to indicate a considerable period of occupation.

In Timoška Krajina, only stray finds, suggesting either the New Stone Age or the transition into that of Bronze, are known thus far. Among the older finds,[25] one flat celt of polished stone and several copper axes similar to the so-called Hungarian types, are particularly important. Additional copper axes have recently come to the Museum at Zaječar.

In remains dating back to the Bronze and the Iron Ages, Ključ is particularly rich. Sites similar in structural features to those of the Neolithic Age, are likewise situated along the bank of the Danube. One

[23] The sites which we have examined are located in the catastrations of the following villages: Kostol (about 1 km. east of Trajan's Bridge), Korbovo (above the village going upstream—not to be confused with the Bronze and Iron Age site which is located just below the village in the opposite direction), Ljubičevac (south of the village), Velesnica (under present village and south of it), Prahovo ("Kusjak").

[24] Fewkes, V. J., Goldman, H., Ehrich, R. W., "Excavations at Starčevo," *Bull. A. S. P. R.*, No. 9 (1933), pp. 44 ff.

[25] Cf. Kanitz, F., *Serbien, ibid.*, vol. II, p. 369 (Grljište); pp. 400-401 (Valakonje); pp. 408-409 (Slatina).

important aspect, however, is not clear for the time being, namely the question of the division line between the realm of Bronze and that of Iron. Until either a gradual continuity from one into the other, or a break between them can be proved, and this can be accomplished only by excavation, the present treatment must be taken with due reserve. This is true in spite of the fact that some of the sites seem to represent purely one age or the other, and thereby suggest certain differentiation, for there are also instances of multiple stratification which may well be more in point.

The pottery, which may be designated as of the Bronze Age, resembles the Vatin ware.[26] While our observations dealt only with settlements, the information given to us in various parts of this region seems to indicate the presence of cinerary graves, some of which, judging from the description obtained, compare with the Vatin type of urn burial. Among the metal finds which are datable to the Late Bronze Age especially noteworthy is the gold necklace from Velika Vrbica (Ključ).[27]

Sites of the Early Iron Age are particularly interesting on account of their continuous distribution along the Danube from Kladovo to the Timok,[28] as well as for their extensive nature.[29] The type of material which almost anywhere on the continent would be designated by the ill-chosen term Hallstatt, is characteristic. Pottery, identical with that from the well-known site of Žuto Brdo,[30] appears in all these sites. Both settlements and burial grounds are present. Some of these sites have purely Iron Age deposits; others are superimposed over earlier layers; and a few are overlain by Roman or still later remains.

Whether or not the "La Tène" phase is represented cannot be conclusively shown as yet. We have noted a very few sherds which might possibly be of such date.

Roman antiquities are abundant throughout the region. The bank of the Danube is lined by a series of castella placed at frequent intervals. A number of castra are to be found both along the river and inland. Traces

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[26] Cf. Milleker, B., *A Vattinai Östelep* (Temesvar, 1905), pl. XI, 6-9; pl. XIV, 1, 4, 6; pl. XXIV, 5.

[27] Cf. Mitić, M., "Preistorijski zlatan nakit iz Velike Vrbice," *Starinar*, n. r. g. II (1907), pp. 99-114, and pl. II.

[28] The river Timok, however, does not impose a barrier to further continuance of sites eastward; cf. Vasić, M. M., *Starinar*, n. r. g. V (1910), p. 16, and Čilingirov, A. D., *Izvestija na Blg. Arh. Družestvo*, II (1911), pp. 147 ff.

[29] Cf. Vasić, *ibid.*, pp. 5-16, in which 10 sites are described, material from them illustrated in pls. III-XI, and locations plotted in map on pl. I.

[30] Vasić, M. M., "Žuto Brdo," *Starinar*, n. r. g. II (1907), pp. 1-48; V (1910), pp. 1-207 (map in pl. I); VI (1911), pp. 1-93; also "Statuettes . . . de Žuto Brdo . . .," *Revue Arch.*, XI, ser. IV (1908), pp. 205-210.

of roads may still be seen in a number of places. The southern terminal abutment of Trajan's Bridge, though considerably damaged, still stands some 8 m. high.[31]

The distribution of the castella along the Danube, as well as the actual remains of pavement between them, seem to indicate that an important highway ran along the river eastward of Pontus, perhaps as far as Nicopolis.[32]

During the construction of the Negotin canal a large number of Roman graves were found. In the foothills of the mountain ranges which mark the western limit of Krajina, mining and smelting activities, datable at least back to Roman times (and in certain cases even older), are traceable in several localities.[33]

Of particular interest, and as yet very little studied, are the numerous Barbaric antiquities contemporary in age with Roman occupation, which reflect a great deal of imitation in stone work, coins, burial furniture, etc.

We have also found indications of early Slavic material in the characteristic sherds with undulating incisions, but these could not be dated accurately. Their very presence, however, is of importance in view of the prevalent lack of archaeological documentation for the Slavic occupation of Danubian regions from the fifth to the ninth century.[34]

d) Remarks: The Neolithic occupants of this region, who, as yet, have not been documented along the Timok, appear to have concentrated on the bank of the Danube. If their cultural vestiges found there today indicate a direct relationship with similar development in the Middle Danube Valley (especially the Banat), we should look for possible connecting points on the Roumanian side, if, indeed, it is not too much to hope that they can be located. There is, of course, always the possibility that Ključ and Banat may have derived their Neolithic culture expression from a common source and quite independently of one another.

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[31] Trajan's bridge spanned the Danube between the castella of Pontus, on the Yugoslav side near the modern village of Kostol, and that of Drobetae, which lies under the eastern edge of the Roumanian town of Thurnu Severin. For description of the original structure vide Hyde, *op. cit.*, pp. 61 ff.

[32] Trajan's road through the difficult passage along the Danube between Cuppae and the Iron Gate was not only a distinct advantage in his Dacian campaigns, but it also established an important link in the thoroughfare which probably connected all the cities upon the Danube. (Cf. Kanitz, *ibid.*, p. 42, and his detailed map appended after p. 158.)

[33] Especially in the foothills and mountains on the southwestern edge of the region; cf. Kanitz, F., *M. A. G. W.*, XIX (1889), p. 152, and his "Römische Studien," *ibid.*, pp. 86 ff. Cf. also Stanojević, M., *Zbornik priloga za poznavanje Timoške Krajine*, I-III (Beograd, 1929-31), *passim.*, and particularly I, p. 5, and III, pp. 52-54, 61, 70.

[34] Cf. Niederle, L., *Slovanské Starožitnosti*, II (Praha, 1905), pp. 23 ff.

Much new light may be expected to come from future exploration of local Bronze and Iron Age sites. Opportunities for large scale excavations are quite out of the ordinary. These would undoubtedly lead to a definite demarcation between the two ages, as well as to a more precise analysis of outside contacts and of diffusional aspects.

Investigations by the student of Roman history should likewise lead to very significant results. Sites are well preserved, and would not cost much to excavate. The material known from chance collecting has certain general values, but actual exploration may hope to establish specific documentation of Trajan's little known military activities against Dacia.[35] It is very likely that such investigations would also result in securing light on the periods following the Roman occupations, which are, at present, almost totally unknown.[36]

III. The Upper Nišava Valley

a) Territorial definition: This region is located between the Crni Vrh and Suva Planina mountains on the south, and the Vidlič and Svrljiška Planina ranges on the north. It extends from the the Bulgarian border westward to the Sičevo Pass. Two geographic subdivisions exist: the Pirot Basin, adjacent to the border, and the Bela Palanka Basin, located further down the river.

b) Physiography: The Pirot Basin is the larger, flatter, and also more fertile of the two depressions. A narrow, but not inaccessible passage connects it with the Bela Palanka Basin, which, on the whole, has a higher elevation, especially along its western margin where it terminates with the Sičevo Pass. This pass is really a narrow gorge, several kilometers long, and a serious barrier to communication.

c) Archaeology: Similar archaeological remains are to be found in both basins. Neolithic, Bronze, and Iron Ages are totally undocumented as yet. Roman antiquities exist throughout the region, and represent city sites (i.e. Remesiana at Bela Palanka), fortresses, and cemeteries. Byzantine remains are likewise plentiful.[37] There is a large number of "mogilas" or tumuli, some of considerable size,[38] irregularly distributed in the two basins. Our own examination of a series of such sites failed to secure any material

[35] Cf. Hyde, *op cit.*, p. 63.

[36] Several examples of Thracian sculpture have been found in the vicinity of Negotin; one of these, depicting a horse rider followed by a dog, is now deposited in the local Teacher's College.

[37] A brief account of finds representing these two periods appears in Živanović, M.D., *Nišavlje*, etc. (Pirot, 1933), pp. 36 ff.

[38] Cf. Kanitz, F., *M. A. G. W.*, XVI (1886), p. (66).

either upon them or in the occasional cuts made by the peasants,[39] nor did it lead to any suggestions or deductions as to their purpose. Local tradition attributes their origin to the customs of Turkish armies either to build earth mounds over the graves of their commanders, or to erect them whenever they put up overnight in the open.[40]

d) Remarks: The river Nišava rises in Bulgaria, a short distance from the Yugoslav border, and follows a steadily western course, emptying into the Southern Morava beyond the city of Niš. Its headwaters approach the drainage area of the Iskar which flows through the Basin of Sofia and on to the Danube. While it might appear from this that the river Nišava may have afforded a means of connection between the Iskar and the Southern Morava in remote antiquity, the archaeological evidence, at present, tends to refute such probability, inasmuch as nothing but Roman remains can be definitely established.

IV. The Valley of the Southern Morava

a) Territorial definition: The river Morava has two branches, the Western and the Southern. The upper course of the latter, furthermore, is known as Binačka Morava, this appellation applying to its course from the rise to the junction of the Moravica whose source is located a short distance north of Kumanavo. Our region consists of that portion of the large and complicated area which is transversed by the Southern branch, and includes the various adjacent lowlands which are drained by it, but ends, arbitrarily, to be sure, with the confluence of the two Moravas. The reason for this unnatural limitation, with which the culture area involved certainly does not end, is the fact that we have not, as yet, had the occasion to do enough work either along the Western Morava, or in the valley of the Morava proper further north.[41]

b) Physiography: Two main subdivisions of the region may be recognized: 1) The Northern sector, comprising the open, rather wide portion

[39] In several instances these cuts were of such proportions that the mounds were halved or quartered, thereby offering complete sections for detailed scrutiny; still in other cases, it was possible to observe that the original builders had erected these structures directly upon the ground without preparing the surface.

[40] Cf. Živanović, M. D., *op. cit.*, p. 48, note 21. Still other popular interpretations hold these mounds to be points for fire signalling or markers of roads. However, the complete absence of ashes or other traces of burning on the one hand, and their irregular distribution on the other, stand against such explanations.

[41] While much of the main body of that valley remains unexplored, it is important to note that Professor Vasić, who investigated a series of sites in its northern and western periphery, records Neolithic (and later) material closely akin to that found in the region under discussion. See *Glas Srpske Kraljevske Akademie*, LXX (1906), pp. 163 ff., and map in pl. I; *Starinar*, n. r. I (1906), pp. 1-35; *Starinar*, n. r. g. V (1910), especially p. 3, and map in pl. I; and "*Southeastern Elements in the Pre-Historic Civilization of Servia*," *The Annual of the British School at Athens*, XIV (1907-1908), pp. 318-342.

of the valley which includes the Niš Basin, the drainage of the Toplica, and the Leskovac Basin, all rich in agricultural land and thickly settled; 2) the Southern sector, consisting of the narrow stretch of the valley which extends southward of the Laskovac Basin as far as the Morava-Vardar divide; this is a heavily forested country at first, but becomes rather arid off the divide: on the whole, it has less fertile land than the northern subdivision, and is more sparsely populated.

c) Archaeology: 1) The Northern sector: Three sites, the geographic locations of which roughly indicate the northern, western, and southern peripheries of Neolithic distribution in this sub-region, have been ascertained by exploration. These are: "Velika Humska Čuka,"[42] a hilltop settlement situated 7 km. north of Niš; "Pločnik,"[43] an extensive habitation site located upon a natural knoll in the village of Pločnik which lies on the upper Toplica river; "Gradac,"[44] a hilltop settlement above the Southern Morava, 8 km. northeast of Leskovac. The presence of other Neolithic sites is strongly suggested by the most recent work of the Niš Museum,[45] the details of which are not yet available.[46]

All the known Neolithic material from this sector shows a uniform character. Fluted pottery and incised ("banded") are ever typical. So are also the many forms of figurines of baked clay, and the shoe-last type of polished stone celt with its various derivatives. Small tools of bone and hard stone are common. Artifacts of obsidian seem to be rather rare in comparison with the rest of the Middle Danubian Valley. Culture pits of rectangular or round shapes, always associated with baked wall plaster, are the predominant types of dwellings.[47]

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[42] Reconnaissance work done by the Niš Museum and the Harvard Expedition. Material in Niš, unpublished.

[43] Excavated; cf. Grbić, M., *Pločnik, etc.* (Beograd, 1929).

[44] Excavated; cf. Vasić, M. M., "Gradac, Preistorijsko nalazište latenskoga doba," in *Glas S. K. A.*, LXXXVI (1911), pp. 94-134, in which it is maintained that "Gradac is remarkable for its diversity of material, all of which is contemporary . . . The site represents a single period of occupation and a single cultural unit" (pp. 109-110). With this the present writer cannot agree because the site contains definitely Neolithic material sharply distinguishable from the La Tène remains, as may be seen from the illustration accompanying the article just cited, the partial collection from the original excavation now in the National Museum in Beograd, as well as from the abundant surface sherds available on the site.

[45] Information from Count Orssich-Slavetich, letter of December 17, 1933.

[46] For older stray finds of stone and copper implements, i.e. celts, axes, blades, etc., consult Jovanović, G. L., *Starinar*, IX (1892), pp. 81 ff. (Niš), and Kanitz, F., *Serbien*, ibid., II, pp. 137 and 139 (vicinity of Niš and Vrežina), and pp. 183-185 (Jelašnica, "Radosinberg").

[47] For illustrations of material representing the various traits just mentioned cf. Vasić, *ibid.*, and Grbić *ibid.* Comparative material from the site of Jablanica may be found in Vasić, M. M. "Die neolithische Station Jablanica bei Medjulužje in Serbien," *Arch. für Anthropologie*, XXVII, No. 4 (1902), pp. 517 ff. For analogies from Vinča cf. Vasić, M. M., *Preistorijska Vinča I* (Beograd, 1932), especially plates IX-XXXVIII.

Remains of the Bronze Age may be only tentatively inferred from rather feeble evidence, which, however, does seem significant inasmuch as it points to Danubian affinities. It is very likely that definitely Bronze Age sites will be found to exist in greater numbers[48] than the incomplete evidence would seem to indicate at present.

The same may be true of the Iron Age. "Hallstatt" comparisons have, indeed, been recognized already.[49] Certain suggestions of "La Tène" ceramic traits[50] are noteworthy in view of the important finds from the site of Gradac[51] near Leskovac.[52]

Roman antiquities are abundant, as may well be expected in a region which formed an important part of the province of Upper Moesia. The vicinity of Niš (Roman Naissus) appears to be especially rich in this respect.[53] While city sites and cemeteries are to be found in the valley, ruins of castra and castella are frequent in the neighboring hills, especially in points offering strategic advantages. The distribution of hilltop strongholds attests the thorough protective system maintained under the rule of Rome, of which considerable use seems to have been made under the Byzantine supremacy, and again in the time of Early Serbian occupation.

2) The Southern sector: Only one Neolithic site has been recorded up to date. This is a large settlement located upon the Southern Morava river at the village of Pavlovce. Although the locality is called either "Gumnište" or "Barak" at the northeastern edge of the village, and "Čukar" on the southern side of the little brook which separates the two sections so designated, the uniformity of material and terrain in both speaks for a single site. The settlement occupies a natural knoll which is located in the more open portion of the valley between Vranje and Bujanovce. Its structural features of deposits as well as individual cultural traits closely parallel those found in sites of corresponding age located farther north.

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[48] The hilltop site of "Soko Banja," located 35 km. north of Niš, from which some bronze and ceramic material has been secured by the Niš Museum, and "Velika Humska Čuka" (*vide supra*, p. 42) where we found certain suggestive sherds, are, thus far, the only indications of the Bronze Age.

[49] I.e. among the material contained in the collection of the Niš Museum. (Unpublished.)

[50] Noted also in the collection of the Niš Museum. (Unpublished.)

[51] Cf. Vasić, M. M., "Gradac," *ibid.*

[53] For sites from the vicinity of Leskovac cf. Vasić, M. M., *op. cit.*, p. 98, and *Starinar*, n. r. g. IV (1909), Dodatak, col. 28 ff.; also Krasovski, A., in *Starinar*, 3d ser. (1930), pp. 202 ff.

[52] Cf. Oršić-Slavetić, A., "Arheološka istraživanja u Nišu i okolini," in *Starinar* (1933), pp. 303 ff. (Reprint.)

Again, fluted and incised wares, figurines of baked clay, the shoe-last celt, dwelling pits and wall plaster are characteristic.[54]

While definite indications of Bronze and Iron Age remains have not been recorded as yet, their presence is perhaps to be expected. Some light on this point will very likely be forthcoming with further investigation of the sites reported from this region by Professor Vasić, the precise cultural position of which remains obscure.[55]

As in the case of the Northern sector, Roman sites are again numerous, and their distribution seems to indicate an important route from Macedonia to Upper Moesia. Hilltop posts guide vulnerable points along the waterway, while the floor of the valley bears witness of villas, baths, and communities.

d) Remarks: Archaeologically, the region under discussion appears to be an integral part of a large culture area which may be designated collectively as the Morava Valley System. This entire territory seems to have a single pattern of Neolithic culture to which the appellation of Moravo-Danubian development is applicable, both on geographic and historic grounds.

No such generalization can be made in respect to the Bronze and Iron Ages, because the necessary evidence is still unsatisfactory in the Northern sector, and entirely lacking in the south. The Roman situation falls outside the direct scope of our inquiries.

Only a comprehensive program dealing with the culture area as a whole can hope to achieve satisfactory results. This involves a huge task and a lengthy campaign, for the territory is a large one, the sites numerous, and their deposits thick as well as rich in material. Such work, however, would be of great significance to the knowledge of European archaeology at large, for this region is an important part of the Middle Danubian Valley. It is to be remembered that the Southern Morava rises farther southward in the Balkan Peninsula than any other tributary of the Danube.

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[54] Along its eastern limit, the site is traversed by the Niš-Skoplje highway. An examination of the cut made during the construction of the road brought our attention to the deposits.

[55] Cf. *Starinar*, n. r. g. IV (1909), Dodatak, col. 14-15, in which "prehistoric tumuli" from the vicinity of Korbeovac, some 12 km. northwest of Vranje, are described, but no closer designation of age given; in one mound, peasants are reported to have found a cinerary urn burial, which, however, was not preserved. Similar "prehistoric mounds" were noted by the same writer (*ibid.*, col. 28) still farther north in the valley, especially under the Gola Ornica hill, and again near the village of Mala Kopašnica, which is located just beyond the southern limit of the Basin of Leskovac.

V. The Upper Vardar Valley[56]

a) Territorial definition: From the rise of the Vardar as far as the confluence of the Pčinja, and including the lower valleys of the Treska and the Lepenac, as well as those of the Kriva and the Solema, both of which empty into the Pčinja.

b) Physiography: Three subregions may be differentiated: 1) that drained by the Pčinja, which includes the country of Žegligovo as far as the Morava-Vardar divide, the upland between Kumanovo and Skoplje, and the valley of the Kriva; 2) the Skoplje Basin, the alluvial and swampy depression of Skopsko Polje as well as its surrounding uplands; 3) the Polog (Upper and Lower), an isolated valley with a heavy alluvial floor, through which the Vardar pursues a greater portion of its south to north course.

c) Archaeology: 1) The Pčinja drainage: Our own work in this subregion resulted in determining nothing older than Roman antiquities. In Žegligovo, about the same Roman activities are apparent as in the lower sector of the Southern Morava Valley. A similar situation exists along the Pčinja, in the valley of the Kriva, as well as in the mining district around Kratovo. Local traditions of prolific Roman occupation are well substantiated by frequent sites.

The discovery of an allegedly "Neolithic settlement with an embankment" reported[57] from the neighborhood of Lojane, 12 km. north-northwest of Kumanovo, requires further investigation. The three sherds drawn and figured in that report are not convincingly Neolithic. Rather they resemble the Iron Age ceramic material from "Orlovičina" at Vuči Dol, near Skoplje.[58] Above all, the presence of Roman pottery and brick[59] seems to fix the date for the embankment as of that period, quite in consistency with numerous other Roman ruins in this region, as well as in distinct contrast to the nature of Neolithic sites in the adjacent Morava system.[60]

2) The Skoplje Basin: From the Monastery of Marko, village of Sušica, 11.5 km. southwest of Skoplje, Professor Saria[61] reports "a few Neolithic sherds and stone implements, the first prehistoric pieces which the

[56] Only the Yugoslav portion of the Vardar is considered in this paper. The triple subdivision of its valley is based purely on geographic factors.

[57] Hiessleitner, G., "Eine jungsteinzeitliche Wallsiedlung, etc.," in *Wiener Prähistorische Zeitschrift*, XX. Jahrgang (1933), pp. 10-13.

[58] Fewkes, Goldman, Ehrich, *ibid.* p. 22. Also *vide infra*, p. 45.

[59] Hiessleitner, *ibid.*, p. 12.

[60] The inference that ". . . unter den übrigen Scherben sind geriefte wohl als bronzezeitlich anzusprechen . . ." (*ibid.*, pp. 11-12) has no definite value.

[61] Saria, B., "Arheološke beležke," *Starinar*, 3d ser., vol. III (1925), pp. 159-164.

(National) Museum (of Belgrade) obtained from South Serbia."[62] While no description of this material is given, the following statement is of interest: "These (pieces) are noteworthy in view of the scanty knowledge of prehistoric, that is pre-Macedonian, sites in South Serbia. Such sites are of great significance in relation to the question of cultural penetration from the region of the Aegean to the Danube."[63] This bit of presumably Neolithic evidence remains the only suggestion of such early traces of human occupation in the entire Skoplje Basin up to date. In view of the absence of a description to justify the dating, it is necessary to regard this find exactly in the light of the report just cited.[64]

There are no definitely known Bronze Age sites. However, certain stray material, now contained in the collection of the Muzej Južne Srbije in Skoplje, does suggest that they may exist.

As far as the Iron Age is concerned only two sites have been recorded, both located near the village of Vuči Dol, some 10 km. northwest of Skoplje. In 1928 the Skoplje Museum secured certain furniture from a disturbed skeletal grave which was originally placed in a stone cist.[65] The salvaged material contained only the following bronzes: two unornamented ring bracelets; one spiral (spectacle) brooch; one arched fibula, with loops at either end of the bow, the body of which is carved to produce the effect of joined biconical beads graduated from the center towards either loop, and with a shovel-shaped, slightly bi-concave foot; the pin was lacking.[66] This site lies upon the terrace of the Lepenac and stretches in the southerly direction off the village.[67] The second locality is situated upon the rise known as "Orlovičina" just southwest of the hamlet. This is also a cemetery site, but contains intrusive later burials as well.[68] The

[62] *Ibid.*, p. 162.

[63] *Ibid.*; free translation.

[64] Cf. also Saria, B., "Izveštaj o preistorijskom, rimskom i numizmatičkom odeljenju," in *Godišnjak S. K. A.*, XXXII (1923), pp. 300-314, and especially pp. 302-303, as well as same author's "Vor- und frühgeschichtliche Forschungen in Südslavien," in *Sechzenten Bericht, Röm.-Germ. Kom.* (1925/26), pp. 86-118, and particularly p. 95.—In his letter dated March 26, 1934, Professor Saria kindly informs me that the material in question represents a chance find of unornamented handmade pottery and polished celts; that the collection was gathered in plain terrain by Professor L. Mirković of Belgrade during his excursion to the Monastery of Marko, en route from Skoplje; and that the material was originally stored in the National Museum in Belgrade. The exact place where this find was made does not seem to be known.

[65] Cf. Truhelka, Ć., "Arheološke beleške iz Južne Srbije," *Glasnik S. N. D.*, V:2 (1929), pp. 59 ff.

[66] Other bronzes and stone slabs found here by peasants seem to indicate an extensive burial ground; *op. cit.*, p. 62.

[67] A culture-bearing deposit with "prehistoric" sherds, located about 1 km. south of Vuči Dol, is mentioned in the cited report (*ibid.*), but no description is given from which to judge the material.

[68] Cf. Fewkes, Goldman, Ehrich, *ibid.*, p. 22. Last year we were not quite certain of the identification of this site, but we are satisfied now that it represents the Early Iron Age and later periods.

material which we found here includes incised and dimpled ware with geometric design often placed upon the upper plain of the flattened and overdrawn rims, sherds with white paste incrustation, and undecorated, graphite polished or slipped pieces. Among the few bronze fragments recovered in our soundings the spectacle brooch is suggested, but otherwise the rest is not determinable.

Hellenistic penetration as far as the vicinity of Skoplje is documented by local finds. Roman and Byzantine antiquities offer an especially rich field.[69] The same is true of the Early and Mediaeval Serbian periods, from which a great deal of art has been preserved in churches and monasteries.

3) The Polog Valley: Apparently, only classical and historic Serbian sites, if one disregards the period of Turkish domination, are to be found here. Their distribution seems to be limited to the foothills surrounding this depression. There are certain indications of Hellenistic contacts, and above all, numerous Roman posts. These latter suggest the former course of a road from Scupi in the direction of present-day Kičevo, which seems to be further indicated by the finds of Roman graves near the village of Tamnište, situated some 20 km. southward of Gostivar.

d) Remarks: On the whole, the archaeology of the Upper Vardar Valley, as far as pre-classical times are concerned, is very unsatisfactorily known. Field work is rendered distinctly difficult by the presence of heavy alluvial deposits of recent date, and in many instances extensive swamps impose additional limitations.

The disputable question of the Vardar-Morava route cannot, at this time, be answered definitely one way or the other, even though the existing negative evidence does tend to refute it at least as far as the Neolithic Age is concerned. The divide between the two rivers does not present any barriers to intercommunication. Indeed, Žegligovo, the western portion of the subregion which we have here defined as the Pčinja drainage, is a topographic continuation of the valley of the Moravica, a tributary of the Southern Morava.[70] However, the Polog is a totally isolated valley. The Skoplje

[69] The site of Scupi, located upon the Lepenac only a short distance from Skoplje remains untouched by the spade. The rich material contained in the lapidarium of the Skoplje museum, representing mostly chance finds, serves as an indication as to what may be expected in the way of classical remains.

[70] The geographic continuity of like terrain from the valley of the Southern Morava into Žegligovo leads to the question of corresponding similarity in cultural history. In this respect, a detailed investigation of the site near Lojane (*vide supra*, p. 44), may yield important light on the point involved. If Neolithic material is really to be found there, it should perhaps be expected to show affinities with the New Stone Age development known in the Morava Valley system as a whole. This contention is based upon our observations in the purely Neolithic site at Pavlovce (*vide supra*, p. 42), which is situated 36 km. northeast of Lojane.

Basin itself is quite sharply set off by high mountains on all sides except to the northeast, but even in that direction it is well delineated by an upland. It seems, then, that somewhat of a topographic periphery exists along the Upper Vardar proper, which will possibly prove to be the true southern limit in the distribution of the Moravo-Danubian Neolithic development.

VI. The Middle Vardar Valley

a) Territorial definition: That portion of the valley which extends southward of the mouth of the Pčinja as far as the Demir Kapija gap.

b) Physiography: The course of the Vardar from the junction of the Pčinja to the village of Batino Selo (3.5 km. north-northwest of the city of Veles) runs through a narrow gorge. A similar situation is to be found just south of Veles, where the river enters another close passage which is not relieved until near the mouth of the Bregalnica. It is from here further downstream that the main body of the middle valley exists, sharply delineated, as it were, by Demir Kapija, the last, but also the most formidable barrier on the Vardar in Yugoslavia.

The entire region has a severe continental climate. In the advanced summer season the country presents a desert-like appearance. It is to be remembered that Demir Kapija marks the climatic division between the continental type on the north and the Mediterranean zone to the south of it.

c) Archaeology: Definite sites dating back to pre-Hellenistic times have not been recorded as yet. One fragment of an unfinished stone axe with incomplete perforation, and one polished stone celt, however, are reported from the village of Rudnik (the name means mine), which is located some 13.5 km. northward of Veles, by Mr. A. Stanojević.[71] In the same locality, a considerable quantity of Roman sherds was also found, and with them weights of baked clay and a fragment of a bronze fibula.[72] Unquestionably the author correctly identified the traces of mining activities, the pottery, as well as an inscription, all of which he relegated to the Roman period.[73] The weights, however, he considers to be older,[74] and compares with his similar finds from Djevdjelia.[75] We are inclined to believe that the "pyramidal" weights[76] are also Roman, as are those which were found

[71] "Preistorijski i arheološki ostaci na Srednjem Vardaru," in *Starinar*, 3d ser., Vol. I (for 1922), pp. 293-300; see especially pp. 297 ff.
[72] *Ibid.*, p. 298.
[73] *Ibid.*, pp. 297-298.
[74] *Ibid.*, p. 298.
[75] *Ibid.*, p. 294.
[76] *Ibid.*, p. 298.

by ourselves at Djevdjelia. The two pieces of stone work cannot be interpreted as an indication of the presence of a Neolithic site.[77]

Mr. Stanojević's private collection contains rich numismatic material from a number of classical sites in the region under discussion. Outstanding among these are the ruins of the city of Stobi, now being excavated on a large scale by the National Museum of Beograd under the direction of Professor V. R. Petković.[79]

d) Remarks: The geographic position of the Middle Vardar Valley presents an internally marginal situation. The difficult passage through Demir Kapija, together with its inhospitable approach from the south, as well as the gorges above and below Veles, appear to have formed distinct barriers to cultural penetration along the Vardar in ancient times. Under aboriginal conditions, and with primitive means of communication, an attempt to follow the river would necessarily meet with serious impediments. In the immediate vicinity of the northern entrance into Demir Kapija, a convenient stopping place, indeed, either before proceeding downstream or after a successful clearance in the opposite direction, there exists no evidence of antiquities which would antedate the classical periods.[80]

VII. The Lower Vardar Valley

a) Territorial definition: That portion of the Vardar Valley which is defined by the Demir Kapija in the north and the Greek border in the south. The latter demarcation is necessarily an arbitrary one, but it must be remembered that our operations were limited to Yugoslavia alone.

b) Physiography: After emerging from the gap, the Vardar enters a narrow valley which is lined by heavily forested hills, an unusual phenome-

[77] We have found individual stone celts and axes in a number of purely Roman (and later) sites in which exposed cuttings proved the absence of earlier deposits beyond doubt.

[79] For latest report cf. Petrović, J., *Starinar*, 3d ser., Vol. 7 (1932), pp. 81 ff.

[80] Stanojević, *ibid.*, states: "The appearance of prehistoric objects (at Demir Kapija) was noted as early as 1863 by Han who reports (in *Putovanje kroz Porečinu Drina i Vardara*, prev. M. N. Ilić [Beograd, 1876], p. 262) the find of stones of a Cyclopean wall on the left side of the river, above its entrance into the gap. All other writers report only Byzantine and mediaeval remains. Neither Han nor others, however, have indicated whether traces of earlier, that is to say really old human occupation, exist as well." (Page 296; free translation.) On the same page, a cave situated immediately above the railroad station, and now totally inaccessible, is presumed to have been occupied in "prehistoric times" purely on the basis of its red clay floor (which is interpreted as "diluvial") and one canine of *Ursus spelaeus*, the uncertain authenticity of which is indicated by the author's question mark. A brief account of Roman, Byzantine, and mediaeval Serbian antiquities appears on p. 297. (For the original work of Hahn, J. G., [von], see "Reise durch die Gebiete des Drin und Wardar," etc., *Denkschriften der Kais. Akad. d. Wiss., Phil.-Hist. Classe*, XV, 2. Abt. [1867], pp. 1 ff., and XVI, 2. Abt., [1869], pp. 1 ff.)

non to find in present-day Macedonia. The river Anska, an eastern tributary, drains a tongue of swampy lowland which stretches from the left bank of the Vardar towards Valandovo, beyond which it terminates abruptly under the western foothills of the Belasica range. There is another narrowing of the valley just south of the mouth of the Anska, which is relieved after a distance of some 10 km. by a small basin, defined in its southern edge by the hills of Djevdjelijski Krst and of Kufiluk. Having passed these two, the Vardar enters the swampland just beyond Djevdjelia, but upon crossing the international boundary line, soon encounters still another narrow passage.

The change in type of climate from continental to Mediterranean is noticeable immediately below Demir Kapija. There is also a marked difference in vegetation and in general economy.

c) Archaeology: Two sites, both hilltop habitations, are known to have material datable definitely to the Late Neolithic,[81] and probably also to the Bronze Age. These are "Djevdjelijski Krst," located upon the right bank of the Vardar, just northeast of the frontier town of Djevdjelia, and "Kufiluk," which lies on the opposite side of the river, directly across from the first-named locality. In both cases, actual deposits with material *in situ* have been exposed by military activities during the last war. While the same types of ceramics appear in either site, only the fluted ware can be dated as Late Neolithic (i.e. Chalcolithic), inasmuch as the other sherds are not distinct enough to warrant closer identification. Yet certain small fragments of what appear to be raking handles comparable to the examples from Lianokladhi III,[82] do suggest that Bronze Age material also exists. In view of the fact that our contemplated soundings here were halted by adverse weather conditions, we are unable, at this time, to present a more satisfactory interpretation.[83]

In both of these sites, the earlier deposits are overlain by levels containing classical material. World War activities resulted in considerable damage, especially at "Kufiluk," where the construction of a large dugout, with massive concrete walls and ceiling, created a most peculiar situation. Outside of these two localities, we have not come upon material which would

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[81] Patte, E., *Soc. préh. franç., Bull. XII* (1915), pp. 420-421, reports three Neolithic sites from the Vardar valley, but does not state their locations, nor the nature of the pottery found there.

[82] Cf. Wace, A. J. B., and Thompson, M. S., *Prehistoric Thessaly* (Cambridge, 1912), p. 186, fig. 134, a, c, e.

[83] Stanojević, op. cit., pp. 292-293, mentions "Neolithic pottery" (without, however, describing its nature), several polished stone celts, and one perforated stone axe among his finds from "Djevdjelijski Krst" which he calls "Djevdjelijski Hrid."

indicate pre-classical occupation.[84] During the last war, however, "Hallstatt" graves were disclosed in the immediate vicinity of Djevdjelia.[85]

Remains datable to later periods, on the other hand, are plentiful. Thus Hellenistic as well as Roman antiquities are to be found on top of "Hisar," a hill overlooking the Vardar at the junction of the Anska. Farther up the valley, indications of Roman activities are traceable as far as Gradec, which lies on the left bank, some 15 km. from Demir Kapija. Hilltop ruins, as well as stray finds from the vicinity of Valandovo, furnish further evidence of the thorough occupation of the region in Roman times.

d) Remarks: The sites of "Djevdjelijski Krst" and "Kufiluk" call for exploration. In spite of the existing recent disturbances, it seems reasonable to expect the presence of untouched deposits which should shed valuable light on the pre-classical periods represented there. It is our belief that determined soundings (even if large-scale excavations should be impractical) would indicate at least the general nature of the material and establish its cultural affiliation. Pending further investigation, it should be noted that the fluted sherds which we secured in both localities are similar in type to the ware found in the Prilep and the Bitolj Basins[86] on the one hand, and in Greek Central Macedonia on the other.[87]

VIII. Prilep and Bitolj Basins and Mariovo

a) Territorial definition: The two basins represent most of the drainage area of the Crna along its north to south course. Mariovo is the mountainous mass which extends eastward of the Bitolj Basin, and is transversed by the south to north course of the same river.

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[84] The "Tumba" located 6 km. north-northeast of Djevdjelia, to the left of the road to Bogdanci, is a natural rock formation without archaeological remains.

[85] Cf. Poppow, R., "Hallstattzeitliche Gräberfunde aus Gewgeli," in *Präh. Zeit.*, IX (1917), pp. 66 ff., in which certain furniture from three stray graves, including bronze objects (i.e. bird figurines, other ornamental pieces, one fibula) and two miniature vessels, is described and compared with material from Bosnia (Glasinac) and Croatia (Prozor). It is further of interest to note the finds of other "Hallstatt" graves near Dedeli, northward of Lake Dojran, reported by Dragendorff, H., "Archäologische und kunstwissenschftliche Arbeit während des Weltkrieges in Mazedonien," in Clemens, P., *Kunstschutz im Kriege*, II (Leipzig, 1919), p. 160. The nature of the burials is not stated in either case. The material from Djevdjelia as well as that from Dedeli, together with still other "Hallstatt" finds from the neighborhood of Lake Dojran (cf. Dragendorff, *op. cit.*), is now in the Bulgarian National Museum in Sofia. Cf. also Saria, B., *16. Bericht, R.-G. Kom., ibid.*

[86] *Vide infra*, pp. 51 and 52.

[87] Especially at Vardino; cf. Heurtley, W. A., "Report on an Excavation at the Toumba of Vardino," *Univ. of Liverpool, Annals of Arch. and Anth.*, XII (1925), p. 21, fig. IV, 12-16; pl. VIII, 6, 10; pl. X, 6, 8.

b) Physiography: The two basins really form one continuous area which is lined by high mountains on all sides except the south, in which direction low terrain continues across the Greek border. Mariovo is a high plateau and rather difficult of access.

c) Archaeology: 1) Prilep and Bitolj Basins: The most characteristic sites are the so-called "Tumbas," which, although lower and smaller, are otherwise closely comparable in structure to those known in Greek Macedonia.[88] These are settlement mounds of the Late Neolithic, and apparently also of the Bronze Age. Among those that we had the opportunity to observe or to sound, Iron Age deposits were not present; nor were they ascertained anywhere else in this region.

In the Bitolj Basin, the richest tumba in material contents was that near the village of Crnobuki. This appears to have been a circular mound, probably some 60 m. in its base diameter, and several meters high. During the late war an ammunition dump was dug under it, and in recent years, a huge amount of stray explosives collected around Bitolj, was deposited here and discharged. This event, naturally, left very little of the original tumba untouched. However, sounding tests made last season showed that the remnants of the mound still contain many valuable remains. Our soundings were purposely conducted in such a manner as to avoid trenching in any undisturbed deposits which may still exist, since the limited time at our disposal would not have been sufficient to undertake a thorough dig. The material which was secured, therefore, comes from a secondary position, but it is nevertheless significant. The following was found:

1) Pottery: a) crusted ware on highly burnished yellow, reddish, gray, and black grounds; original color of paint paste not determinable (probably light in view of the predominantly dark tone of the ground); geometric design, mostly rectilineal; motifs include groups of three parallel lines running either vertically or obliquely from the rim, zigzag-filled bands, hatched triangles, and a few free lines and circles;

b) fluted ware, with very fine, medium, and some coarse execution of the design; the shapes represent bowls with everted rims, either profiated or open;

c) burnished ware, shiny gray and black finish, undecorated;

[88] Rey, L., "Observations sur les premiers habitats de la Macédoine," *Bull. de Corresp. Hellénique*, LXI-LXIII (1917-1918), pp. 17-19; for tumbas in the Bitolj Basin, see pp. 171 ff., and cf. Heurtley, W. A., "Pottery from Macedonian Mounds," *B. S. A.* No. XXVI (1923-1925), pp. 34 ff.

d) jugs with band (ribbon) or roll handles, coarsely finished, undecorated;

e) crude sherds with sand grit temper, undecorated, usually with lobate lugs which are perforated either vertically or horizontally.

2) Figurines, including seated varieties with peaked heads and no other features indicated except the breasts; one kneeling (?), with a rectangular slot for insertion of a separate head; two half torsos, one armless, one with pointed stumps in place of arms, both with rounded holes to accommodate detachable heads.

4) Miscellaneous objects: a) a score of sling bullets of spheric and ovoid shapes, all of baked clay, some with perforations for suspension; b) one substantial fragment of polished flat celt of stone; c) a number of mill stones and querns; d) a large quantity of wall plaster with impressions of heavy beams and brush, much of it secondarily baked (apparently by the terrific heat caused by the explosion, which also affected some of the pottery).

In the Prilep Basin, only one site with similar material (lacking, however, in painted ware) has been recorded. This is located upon the hillock near Čepigovo,[89] known as "Bakarno Gumno."[90] We first visited this place in 1932, at which time we collected a large amount of surface material which led us to believe that a Neolithic settlement site might be expected. The soundings made during the past season, however, failed to reveal any Neolithic deposits *in situ*, although additional material, similar to that found in 1932, was again secured either in the humus or on the surface. Four trenches revealed foundations of Roman structures, which are perhaps to be associated with the city site of Štuberra located to the south and under this hill, but no traces of any earlier occupation were noted. Among the material, the following appear: fluted pottery, mostly bowls with everted rims; low, open pots with well-differentiated neck, and with handles looped from its break onto the rim; larger vessels with bulging body, a straight well-defined neck, and usually with rather heavy, slightly pinched lugs; one

[89] Cf. Heurtley, W. A., "Prehistoric Macedonia: What has been and what remains to be done," in *Man*, XXXI (London, 1931), pp. 216-217, in which the site is recommended for exploration.

[90] Also called "Tumba," a common designation in these parts of Yugoslavia, quite generally used not only for mounds, but often even for high mountain peaks, while on the other hand certain flat fields (ploughed over mounds?) are likewise known by this term.

ovoid weight; one spindle whorl with arched cross section; one fragment of polished stone celt, with flattened butt, and oval in cross section; one fragment suggestive of the middle portion of a figurine torso.

Several tumbas in the Basin of Bitolj seem to have the same type of material except for the painted ware[91] and figurines.[92] In addition to the tumuli, there are also hilltop sites, such as that of "Jevrejsko Groblje" just north of Bitolj, and "Zmejanik," above the village of Raštani, in both of which certain analogies with Crnobuki are likewise to be found. (Our soundings in the former, however, failed to locate any such evidence *in situ*.)

It would seem then that there exists a general distribution of a single culture expression (the crusted pottery and figurines excepted for the time being) of an advanced Neolithic character, throughout the Basin of Bitolj, which also reaches the adjacent Prilepsko Polje. Its character points to southern, i.e. Greek Central Macedonian affinities.[93] The decorative designs of the painted ware resemble motives which are to be found in the Second and Third Periods of Tessaly,[94] but it must be stressed once more that our examples demonstrate exclusively post-baking application. The figurines with holes on the top of the torso embody the same principle as those found in house Q, Rakhmani, Stratum III.[95] The sling bullets are comparable with the Thessalian varieties.[96]

The lowest stratum in the tumba at Vardino, which contains pottery virtually identical with that from the mound at Crnobuki, and bearing close analogies with the ware from other sites in the two basins under discussion, is dated as Middle Helladic II,[97] and is designated as chalcolithic.[98] It remains for future work to determine stratigraphic conditions in the Yugoslav sites, and above all to show whether or not any still older material exists. In the meantime, however, "Chalcolithic" cultural affinity between the known material from the Bitolj and Prilep Basins on the one hand, and that of the central sector of Greek Macedonia on the other, may well be

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[91] In his article "Pottery from Macedonian Mounds," ibid., p. 37, Mr. Heurtley mentions three small fragments of painted ware from tumbas in the vicinity of Bitolj, but does not name the sites in which they were found.

[92] The quality and burnish technique of the majority of these figurines justify their association with the rest of the ceramic material of Crnobuki.

[93] Cf. Heurtley, W. A., "Report on an Excavation at the Toumba of Vardino," *ibid.*, especially pp. 19-22, and p. 28, and pls. VIII-XI, as well as pls. XV-XVII.

[94] Wace and Thompson, *ibid.*, p. 22 ff. Cf. especially figures: 45, b; 46, bottom left; 13; 53, h; 127, b.

[95] *Ibid.*, p. 41, and figures 27, b-d, and 28, g. (We have not found any separate heads for these figurines.)

[96] *Ibid., passim.*

[97] Heurtley, *ibid.*, pp. 31-32.

[98] *Ibid.*, p. 17.

accepted. But the point must be stressed that up to the present time there is no definite proof of the existence of similar traits either in the Vardar Valley proper above Djevdjelia, or north of the Prilep Basin.[99]

During the construction of the Teacher's College building in Prilep four cist graves were excavated by the Skoplje Museum.[100] Corroded fragments of bones (human?) are reported from one grave,[101] and the appearance of ashes mixed with earth (cremation?) from another one.[102] The furniture contained: one bronze sword (hilt and blade a single solid piece) 0.75 m. long, with one perforation in the upper part of the hilt and two additional ones placed on either side of its lower margin (crown of hilt nitched, sides slightly curved in the shape of a flat S); one socketted lance head of bronze; one fibula;[103] two undecorated pottery vessels, both handmade,[104] representing a pitcher[105] and a cup. These graves have been interpreted as Mycenaean. However, the site calls for further exploration before such a diagnosis can be accepted.

As yet, the Iron Age remains totally undocumented by local finds. Perhaps some of the tumbas will eventually shed definite light on this point.

There is abundant evidence of Hellenistic and Roman occupation in both of the basins. The city sites of Heraclea Lyncestis, Stuberra, and Ceramia (now being explored by the Skoplje Museum[106]) are particularly noteworthy. Roman material is to be found in a number of tumbas. A short distance from Bitolj, along the road to Resan, a partial course of the Via Egnatia is still visible, and in a stretch of some 5 km., the original paving slabs can still be found.

2) Mariovo: Neolithic material, consisting of crude and burnished pottery, some finger impressed, and one bottom fragment with fabric

[99] The Muzej Južne Srbije in Skoplje has secured two theriomorphic vessels, both with pointed bottoms, and each with a pair of legs which render them capable of being stood up, said to have come from the unidentified classical city site near Prilepac. These two pieces, as yet unpublished, are highly suggestive of contacts with Troy. They both embody structural features which are closely comparable to the Trojan vases illustrated in Schliemann, H., *Troja*, etc. (New York, 1884), p. 140, figs. 68-69, and Schmidt, H., *Sammlung*, etc. (Berlin, 1902), no. 1461.

[100] Cf. Kokić, M., "Preistorijski grobovi kod Prilepa," *Glasnik S. N. D.*, V:2, pp. 494 ff., and Truhelka, Ć., "Arheološke beleške iz Južne Srbije," *ibid.*, pp. 59 ff.

[101] *Vide* Truhelka, *op. cit.*, p. 59.

[102] *Vide* Kokić, *op. cit.*, p. 495.

[103] Kokić, *op. cit.*, p. 496, states that one fibula (no description given) was found in the third grave. This object is not mentioned by Truhelka who otherwise repeats all the material first published by Kokić (*ibid.*).

[104] Truhelka, *ibid.*, p. 61.

[105] Compared to the bucchero type by Truhelka, *ibid.*

[106] Cf. Mesesnel, F., "Iskopavanja u Mariovskom Suvodolu," *Glasnik S. N. D.*, XI:5 (1932), pp. 202 ff.

impression, burnt wall plaster, and stone celts, is said to have been found in a tumba near Vitolište (central Mariovo) during the war.[107] In the same place, Professor V. S. Radovanović later found a small figurine of baked clay.[108]

This seems to be the extent of the existing evidence of what appears to be the earliest documentation of human settling in this mountain fastness. Mr. Budimir Borisavljević, of Bitolj, who has a vast knowledge of Macedonian sites, assured us that similar traits are to be found in the southwestern edge of Mariovo.

During our brief visit to Vitolište, we did not locate the tumba in question, but we did record a considerable number of Roman antiquities. These point to a probable extensive site in the depression just north of the village. Local tradition and nomenclature, the frequent use of classical stonework in church building, as well as stray finds, indicate further that an impressive distribution of certainly Roman, and possibly also Hellenistic sites is perhaps to be expected throughout Mariovo.[109]

d) Remarks: 1) The Bitolj and Prilep Basins: The finds from Crnobuki, together with other sites containing similar material, represent the oldest occupation yet determined in the region. As far as we have been able to ascertain, there are no traces of comparable traits in the Upper and the Middle Vardar Valleys. On the other hand, it is significant that such analogies do appear in the immediate vicinity of Djevdjelia. Thus the currently traceable distribution would indicate that the lower extremity of the Vardar Valley south of Demir Kapija, together with the Prilep and Bitolj Basins, form the northern and northwestern cultural periphery of Greek Macedonia.[110]

The fluted pottery, which forms an important component element in the Late Neolithic (or perhaps "Chalcolithic") cultural capital in this Southern Vardar Area, shows striking similarities with the wares common

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[107] Kazarow, G. I., "Vorgeschichtliches aus Makedonien," in *Strena Buliciana* (Zagreb-Split, 1924), pp. 9-12.

[108] Personal information, Skoplje, season 1933. Professor Radovanović has done a great deal of anthropogeographical research throughout the southern portion of Yugoslavia (cf. i.e. his "Problemi antropogeografskih ispitivanja Južne Srbije," in *Zbornik Radova za III Kongres Geografa i Etnografa u Jugoslaviji 1930* [Beograd, 1932], pp. 25 ff.), and lately has been giving particular attention to the interesting and as yet very little known district of Mariovo. It was during this work that he came to note a large number of sites, recorded local nomenclature, and personally investigated many localities. We are greatly indebted to Professor Radovanović for his generous information not only on Mariovo, but on South Serbia in general.

[109] Cf. Heuzey, L. and Daumet, H., *Mission archéologique de Macédoine* (Paris, 1876), pp. 321-325, and for the Prilep and Bitolj Basins, pp. 314-321.

[110] As defined in Heurtley, "Prehistoric Macedonia," *ibid.*, pp. 318 ff.

to the entire Morava Valley system (the Moravo-Danubian development). It appears, however, that a Southern and a Northern sphere are to be distinguished. This geographic differentiation is supported by the following considerations: 1) the distribution of sites thus far known in the North appears to end with the Morava-Vardar divide; 2) the Upper and the Middle Valleys of the Vardar have not, as yet, yielded any analogies with either the North or the South; 3) the Morava-Vardar route remains unsubstantiated by positive evidence; 4) in the Southern sphere, a more pronounced influence of metals is distinctly noticeable in pottery technique; 5) the fluted ware of the South is associated with a class of crusted ceramics which is lacking in the North; 6) in the South, tumbas are the predominantly typical sites, whereas in the North, extensive settlements in the floors of river valleys are the usual occurrence. (However, a limited number of hilltop sites does exist in both areas.)

Whether the fluted ware of the two areas is to be explained as genetically related, and originally derived from one or the other direction, must be shown by additional field investigation coupled with a detailed analysis and comparative studies of the material already obtained and yet to be gathered. Tentatively, we are inclined to think that such work will show the Southern sphere to be even more substantially differentiated in its cultural entity than the existing evidence would indicate. It is to be hoped that definite light will also be shed on the true state of affairs in the intervening regions between the South and the North.

Tumbas in the strictly archaeological connotation are concentrated largely in the Bitolj Basin. However, not all the mounds so designated by the local populace need necessarily be of ancient origin, as we had an opportunity to learn. Many of the "tumbas" located in villages are quite modern, some dating back to the time of the Balkan War, and others even to the World War. Their presence is to be explained as being due to the collapse of huts which even to this day, in accordance with time-worn custom, are built of mud brick (with the admixture of a great deal of sand), upon negligible stone foundations, and with very little lumber, which is precious in this region. Furthermore, there have been considerable shifts in local population in the past two centuries, during which entire villages were abandoned. The frail mud-brick structures could not resist rapid disintegration. As a consequence, mounds of the most recent origin, uniformly called "tumbas," are now frequently encountered.

A great deal of damage has been caused to sites during the last war. Huge dugouts were constructed under many tumbas. Local inhabitants, too, have taken advantage of the conveniences offered by the tumuli and

use them either as cemeteries or as church sites, and in many cases for the two purposes combined. Finally, the swamps have claimed certain sites.

Much remains to be done in order to arrive at a proper understanding of the entire range of local culture history. The handicaps just mentioned render the task of field work quite difficult in many respects, but the known indications as to what may be expected certainly call for a determined investigation.

2) Mariovo, by virtue of its topographic isolation and the natural security which it offers, is highly suggestive of a refuge area. While indications of a Neolithic penetration have been so far identified only in one site, reports of other similar localities, and their distribution, point to a diffusion from the direction of the southwest, that is the Lower Bitolj Basin, on which side Mariovo is most accessible. It will be interesting to see which cultural trends are represented here. The published material from Vitolište[111] does not warrant a specific interpretation in this regard. However, the presence of fingertip impressed sherds and of burnished ware, is suggestive, if not even indicative, of a southern derivation, which should perhaps be expected in view of the geography.

IX. The Valley of the Strumica

a) Territorial definition: This includes the Strumica Basin proper as well as the narrower sector of the valley which stretches along the headwaters of the river bearing the same name. Roughly speaking, it represents the region between the town of Radovište in the northwestern extremity of the valley and the village of Konarene on the Bulgarian border in the southeast.

b) Physiography: The region is a flat valley with heavy alluvial deposits upon its floor and many swamps. In the northwest it is bottled up by the Jurukluk mountains, the southern edge is defined by the Belasica range, and the northern side by the foothills of the Ograždden. It is only to the east that a natural opening exists.

c) Archaeology: Our two visits to this region resulted in recording nothing older than Roman remains. The information on stray finds, possible archaeological ruins, or definitely known sites, obtained throughout the valley also indicated only Roman or later periods. The same is revealed in local tradition. Whether the numerous mounds, called "Tumbas" or "Mogilas," are of ancient origin or not, could not be deter-

[111] Kazarow, ibid., pp. 10 ff.

mined. Our brief soundings in two of these showed entirely sterile deposits. The association of Turkish tradition is perhaps significant, but the size of some of these mounds is really too great to favor the presumption that every one of them was erected by Moslem armies.[112] Since we found no material upon any of the several mounds which we observed, and since our soundings revealed no cultural evidence, we are at a loss to offer an explanation.

d) Remarks: The valley continues eastward into Bulgaria, where the Strumica joins the Struma in the Basin of Petrič. Immediately south of the confluence of these two rivers, a narrow passage is encountered before the Struma enters the open flatlands of Seres below the Rupel Pass. This topographic break between the lower valley of the Struma and the valley of the Strumica does not impose a serious barrier to intercommunication. The question arises, therefore, whether the region under discussion may not have an early culture pattern comparable to that of Eastern Greek Macedonia. While the geographic position does suggest such a possibility, there is no evidence of concrete proof. Future field work, which is indeed highly desirable, may be expected to elucidate this point. The terrain is difficult in swampy sections, but most of the mounds may be worked in the summer and fall.

X. The Drainage Area of the Bregalnica

a) Territorial definition: Starting at the rise of the Bregalnica, a tributary of the Vardar, this region covers the geographic districts of Maleševo, Pijanec, Kočane Basin, Ovče Polje, and Slanac, with the intervening uplands, and terminates just east of Veles.

b) Physiography: Highly varied physiographic conditions exist. The region could be broken up into a series of units and each treated separately. This, however, does not seem necessary in view of our finds about to be described.

c) Archaeology: Our own inquiries throughout the region had a singular result: Remains dating back to the Roman period furnished the only evidence of early occupation which we had the opportunity to observe or to secure from local information. Here and there, we did receive reports of stray finds of stone axes, but their description was always very vague, and the localities from which they came could not be learned.

d) Remarks: That the entire drainage area of the Bregalnica should have been unoccupied in times antedating Roman entrance seems very unlikely

[112] *Vide supra*, p. 40.

indeed. It should be stressed that our trip through this region was largely informative, and although we have exhausted the sources offering aid in what we consider to be the key points along the route, it must remain for future exploration to determine the true state of affairs.

Throughout Maleševo, Pijanec, and to a lesser extent also in the Kočane Basin, there exist considerable numbers of cone-shaped tumuli (called "Čuviks"), ranging in height from less than 1 m. (when ploughed over) to as much as 6 m. Our examination of several of these did not disclose any cultural material. However, we did learn from a reliable informant in Berovo (Maleševo), that skeletal burials were discovered in one of these tumuli, but no details of the find could be obtained.

As far as Roman antiquities are concerned, a rich field exists throughout the region, and especially so in Maleševo.

CONCLUSION

Yugoslavia, by virtue of its geographic position, its system of waterways, and its topographic features, forms a territory which served as a meeting ground for ancient cultural trends between Southeastern and Central Europe. Local physiographic factors, however, tended to produce a considerable differentiation in culture pattern throughout the ages. In consequence of this, regional expressions developed, and their individual attainments registered, or at least echoed, other cultural achievements with which there was contact. Since one may well presume that this was a bilateral process, it should be possible to trace the extent of the resulting interchange, and to establish, at least approximately, the spheres of cultural radiation between the major regions. Such an approach forms the foundation of the work briefly reported in this paper. That certain individual traits will be found to crop up far afield is perhaps only logical to expect.

At the present time, the Neolithic Age alone lends itself to a regional interpretation, but tentatively only, because many gaps and shortcomings still exist. Three regions are indicated: 1) the Morava Valley system; 2) the Lower Vardar-Upper Crna zone; 3) the Ključ-Krajina sector. Whether direct interrelations between the first two took place cannot be proved owing to the lack of supporting evidence in the intervening territory. For the same reason the Morava-Vardar (or vice versa) route is not acceptable. The existing negative manifestations may, of course, change with new discoveries.

Events of the Bronze Age are, on the whole, so unsatisfactorily known that they do not allow general interpretations. Still, it seems permissible, in view of the obvious continuity so conspicuously noticeable in certain

sites, to look again for a somewhat similar triple differentiation. The three Neolithic regions certainly could have received their primary metallurgical impulses quite independently.

The Iron Age is also too incompletely documented to permit generalizations. Sites of the early phase ("Hallstatt") are located predominantly upon the Danube. Their distribution and the striking uniformity of material suggest a determined concentration along this river, which is also discernible on the north bank. The later phase ("La Tène") represented in so few instances, does not warrant any regional discussion whatsoever.

As previously stated, classical, Byzantine, and Serbian antiquities have been mentioned for purely informative reasons. No attempt has been made to include them in a summary.

The results of our reconnaissance in the eastern portion of Yugoslavia, incomplete as they necessarily are, reveal rich possibilities in all phases of Balkan archaeology. Vast opportunities for field work exist almost everywhere and call for general as well as specific exploration from which significant results may be fully expected.

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