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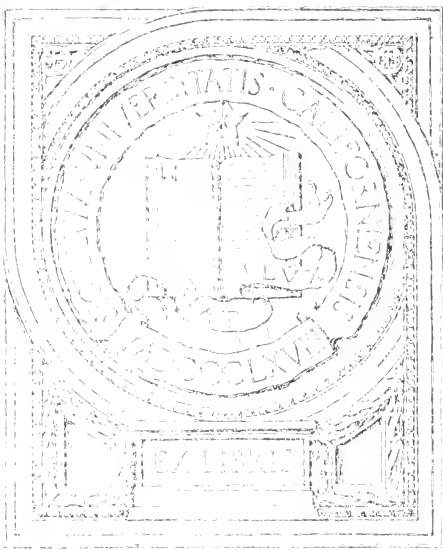
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By A. R. Crook

BULLETIN

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The Illinois State Museum

SPRINGFIELD

May, 1922

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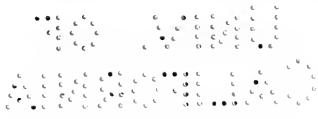
The Origin of the Cahokia Mounds

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EXCHANGE

THE ORIGIN OF THE CAHOKIA MOUNDS

A few miles east of St. Louis, on the flat alluvial plain of the Mississippi, in Madison and St. Clair Counties, Illinois, are several score of mounds or low swellings from a few to a hundred feet in height. For more than a century they have attracted attention being in a fertile region, on a main line of travel, and near a center of population.

Many writers have described these mounds usually saying that they were made by Indians. However there have always been people who have thought that the mounds were just like sand bars or islands in rivers. Some writers like *Worthen, Fenneman and Crook. (*Geol. Surv. Ill., A. H. Worthen; U. S. G. S. Bulletin No. 438, p. 12, N. M. Fenneman; Bull. G. S. A., Vol. 29 No. 1, p. 80, A. R. Crook) have expressed the idea that they may be in whole or in part natural.

In early days workers had a chance to dig into the mounds to see what they contain and to observe their structure, but for many years past no one has had opportunity to do so. Without digging accurate studies could not be made. Furthermore without accurate levels and measurements a correct idea of the relations of the mounds could not be obtained. All of the maps of the region which the writer has seen, leave much to be desired. The topographic sheet of the U. S. Geological Survey, Saint Louis quadrangle, though excellent, shows twenty foot contours only on a scale of one inch to the mile while five foot contours and four inches to the mile are desirable.

Since map making is slow and expensive the writer turned to the photographer and endeavored to secure aerial photographs which would show the geography and topography of the region. After two years of watchful working, happy fortune put in an appearance when through the courtesy of General Pershing, Colonel Palmer arranged with the Chief of the Air Service to have photographs of the region taken at elevations of from one hundred to fifteen thousand feet. This is another instance of the value of the U. S. Army Air Service, which in war times is indispensable and in times of peace makes valuable contributions to map making, to exploration, to scientific discovery, to the protection of forests from fire, mail service, etc. The wiser we become as a people the more will we promote our Air Service.

Because of the smoke from the manufacturing plants of the St. Louis region and the atmospheric condition of the low lying plain, it is unusually difficult to secure good photographs of the locality. However, Lieutenants G. W. Goddard, photographer, and H. K. Ramey, pilot, worked with such skill and persistence as to secure splendid results in spite of unfavorable conditions.

Some of the results of their work which are here shown, give a better idea of the geography of the mounds than can be obtained in any other way. They show how the mounds are scattered over the level plain which stretches east of the Mississippi river opposite to St. Louis. This plain, known from very early times by the white settlers as "The American Bottoms", is as much as a dozen miles broad and seventy-five miles long. It was formerly a lake bottom and is still occupied by numerous lakes and swamps which are being drained by several extensive projects. The topographic sketch map (Fig. 1) shows the location of the chief mounds in relation to the eastern bluffs, East St. Louis, the Mississippi river and St. Louis. The river is 400 feet above sea level in this locality, the highest portions of the bluffs are 200 feet higher, and the general line of the bluffs is at the 500 foot level. The top of many of the mounds is about 440 feet.

The first aerial picture (Fig. 2) shows the appearance of the region looking east over St. Louis. The Mississippi river, flowing to the right, with two of the four bridges which connect the Missouri with the Illinois side, is in view. The railroads, cement roads, canals and lakes are spread out upon the flat floor, and the bluffs mark the eastern boundary of the plain.

In none of the three views (Figs 3, 4 and 5) looking west from over Collinsville does St. Louis appear through the haze, but the Mississippi river is evident in the background and the lines of the Pennsylvania and B. & O. railroads, the Collinsville hard road, the Cahokia drainage project and the numerous lakes are easily recognized. The nearer views (Figs 6-13) show the large mounds clearly—Monks', Merrill's, Schmidt's, Powell's and mounds number 51, 57, 60, etc. These mounds were numbered by Patrick about 1880 and his numbers have been adopted by *Moorehead ("The Cahokia Mounds", W. K. Moorehead, Uni. of Ill. Bull. Vol. XIX, No. 35, April, 1922. Bibliograph see p. 40; also Transactions Ill. State Acad. Sci. Vol. IX, 1916, p. 83.)

The numerous small mounds are difficult to distinguish from straw stacks which are abundant in the fields. The country has been under cultivation for more than a century and the plowing over the small mounds and past the large in a north, south, east, west direction has given the mounds an artificial appearance which is well shown in the aerial photographs. Photos taken from the ground give a truer idea of the actual horizontal outline (Figs. 14-19).

The mounds are scattered mainly along the divide between Canteen and Cahokia creeks on the north and Schoenberger creek on the south. Many of them are flat topped and of the same general elevation (Figs. 14, 17, 18). Many show upstream faces which are rather steep and the down stream edges which trail out into long tongues (Figs. 17 and 19). Their number, general contour and location are such as to suggest a natural origin. But the internal structure of several of the mounds does not seem to sup-

port this idea. (Figs. 20, 21). It is an interesting question. New light has been shed on the subject within the past few months by the excavations of Prof. Warren K. Moorhead who last summer, with admirable persistence, secured funds for the work from a number of friends and institutions, when others less enthusiastic thought it impossible. The specimens which he secured were sent to the State Museum and the University museum and the University has just issued the bulletin referred to above. This spring the work was continued under the auspices of the University.

As a result of his excavations more is known of the mounds than ever before. Several of the smaller mounds were cut clear through, exposing complete sections. Upon first sight they appear to be stratified. There are well marked layers as may be seen in the photographs (Figs. 20, 21) but closer examination reveals the fact that the different layers are usually composite in character. In places there are fine laminae of water deposited materials but these are probably minor local deposits upon the sides of the mound as it was being built. The largest mound excavated is just north of Schmidt's. It is mound No. 33 and has been named by Moorehead the "James Ramey Mound". A wide trench about 100 feet long from north to south was excavated clear to the bottom, a depth of 22 feet.

The west face was chimneyed and carefully hand troweled in places and minutely studied by Dr. M. M. Leighton, professor of pleistocene geology, at the University of Illinois, and the writer. Unusual care was used since Leighton inclines to the idea that the mounds are artificial, while the writer has regarded them as natural. The deposits had the unpleasant tendency of sustaining Leighton's view. The face showed a fine, sandy, light colored loam 3 feet thick, underlain in succession by darker colored loam, 1 foot; greyish yellow loam, 5 feet; mottled sandy silt loam and darker clay masses, calcareous in some places, in others not, 9 feet; fine laminated silt, 1 foot; mottled layer, 3 feet; original soil non-calcareous and containing rootlets, 1 foot; undisturbed alluvial clay unknown depth. If these materials were laid down in water, leached soils would not be mixed with unleached; clay masses would not be scattered through sandy loam; pieces of flint, pottery, shells, bone and charcoal would not be found in all parts of the mass without regard to their specific gravity. The charcoal would come in the top layers; the flint, rock fragments and pottery in the bottom; and the bones and shells between.

This is the crucial point. All others are subsidiary. Heretofore there has not been opportunity to study the structure. Six years ago the writer was permitted to collect samples of soil from Monks' mound with a two inch auger which was sunk twenty-five feet down from the top (Fig. 22). At another time he collected soils from holes made with spade and posthole digger in the north face. These tests showed the presence of different layers and a kind of stratification, just as is evident in the mounds now exca-

vated. But they were not enough to show that the layers were themselves composed of lenses nor to make the true structure evident. Moorehead and Leighton point out that the builders piled up the earth several feet and then used the mound for several seasons. Thus vegetation had an opportunity to take root, grow and form a soil layer rich in carbon and dark. In some instances the layer is an inch, in others many inches thick. In Asia Minor and Egypt people had a similar habit. When one house fell and was buried by its own roof or by shifting sands, another was often built on the ruins. As a result whole towns arose on the ruins of previous towns and excavations show half a dozen layers built on the oldest layer.

There are a number of features disclosed in these Cahokia explorations which are worthy of further study. There are certain yellowish brown layers half an inch or more in thickness which are called "burnt floors" though they show no sign of fusion. If fire were built on them the fires were small since vitrified or fused masses are wanting. Some of these floors slant at an angle as steep as 45 degrees. Dr. Reinhardt Thiesson says that much of the so-called charcoal in the mounds is rather natural peat or coalified wood and much of the so-called ashes are silicifications. The writer finds that many of the samples of "ashes" contain fifty percent of calcareous matter and nothing like true ashes. Dr. R. S. Smith classified the soils collected by the writer, in accordance with usage in the department of soil physics at the University of Illinois.

The mounds deserve careful study, not only by the archaeologist who can picture to us the manner of life and mode of thought of the men who built them and used them, but also by the microscopist, chemist, zoologist, physiographer and geologist who can bring a wealth of knowledge and experience to the study.

A. R. Crook.

May 19, 1922.



FIG. 1. Topographic sketch map of St. Louis and the Illinois bluffs bordering the alluvial plain between. After U. S. Geol. Survey. St. Louis Quadrangle.

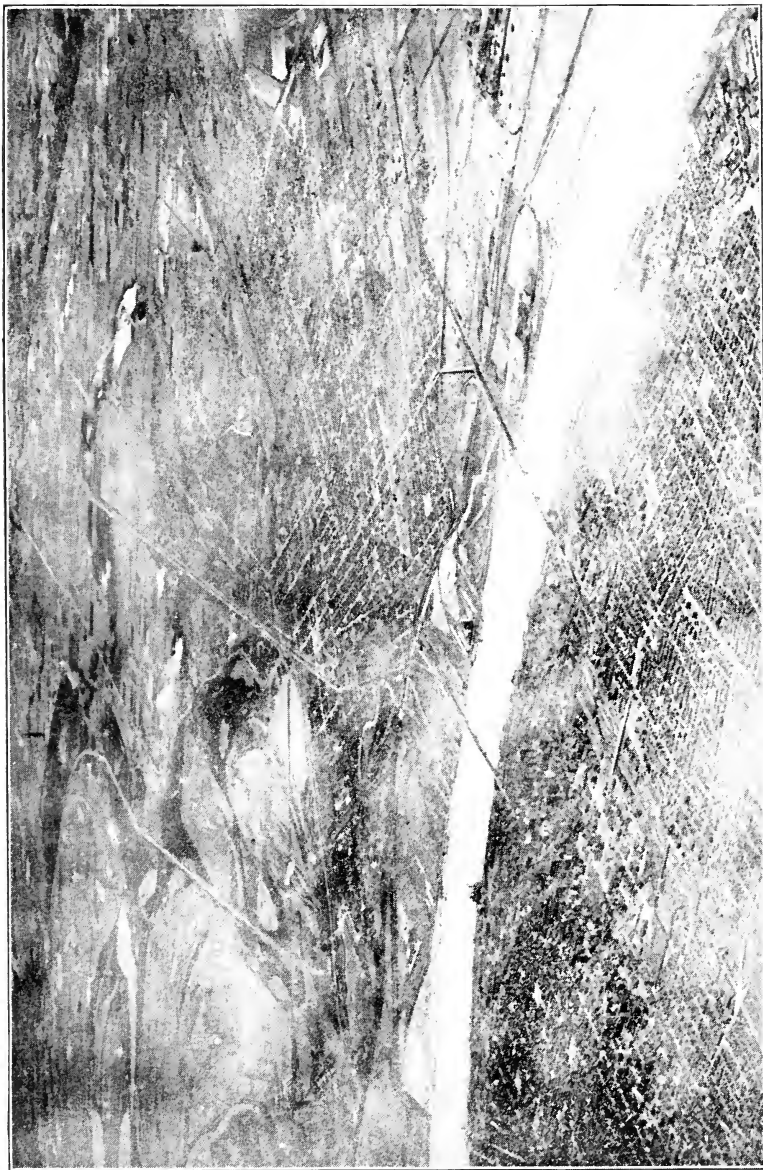


FIG. 2. Looking east over St. Louis. Mississippi river flowing to right, crossed by Ead's and Municipal bridges, East St. Louis. At extreme left near top Horseshoe lake; next, the white line of Cahokia drainage canal; next the Collinsville cement road; next, the straight stretch of the Pennsylvania and B. & O. S.-W. railroads. At right edge of photo Pittsburg lake. At the top, the bluffs frame the old alluvial plain. Most of the mounds are above the smoke which shows a bonfire. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.



FIG. 3. Looking west over "American Bottoms". Collinsville in foreground. Pennsylvania R. R. extending to left and then west to St. Louis which is invisible in the smoke. The Mississippi shows the western limit of the plain. The white line of the Collinsville road is in middle of view and Monk's mound may be distinguished half way up the straight stretch. At the right is the drainage canal and Horseshoe lake. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.



FIG. 4. Looking southwest. The haze which conceals St. Louis indicates the difficulty of photographing the region. A bonfire is visible slightly to left in upper portion of view. Below are two small clouds under which is Monk's mound. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.



FIG. 5. Same as preceding but approaching Monk's mound. A dozen of the smaller mounds are discernible. Drainage canal at right. Collinsville road in center. Pennsylvania and B. & O. railroads at left. Mississippi river in background and St. Louis "out of sight". Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.



FIG. 6. With Monks' mound on the right of the road nearly half way up, as starting point, the following may be located: Mound No. 51 about 500 feet southeast just across road, Schmidt's 1000 feet east on north side of road, Merrill's 1200 feet west, Jesse Ramey's 400 feet southeast and mounds No. 57 and No. 60 half a mile south. Many smaller mounds are evident also. The James Ramey mound shows as a black streak north of Schmidt's.



FIG. 7. Looking east with Collinsville on bluffs at top of view and Monk's mound in lower left hand corner. Mounds' is 1000 feet long, nearly 800 feet wide and 100 feet high. Official Photograph U. S. Army Air Service, Lieut. G. W. Goddard.

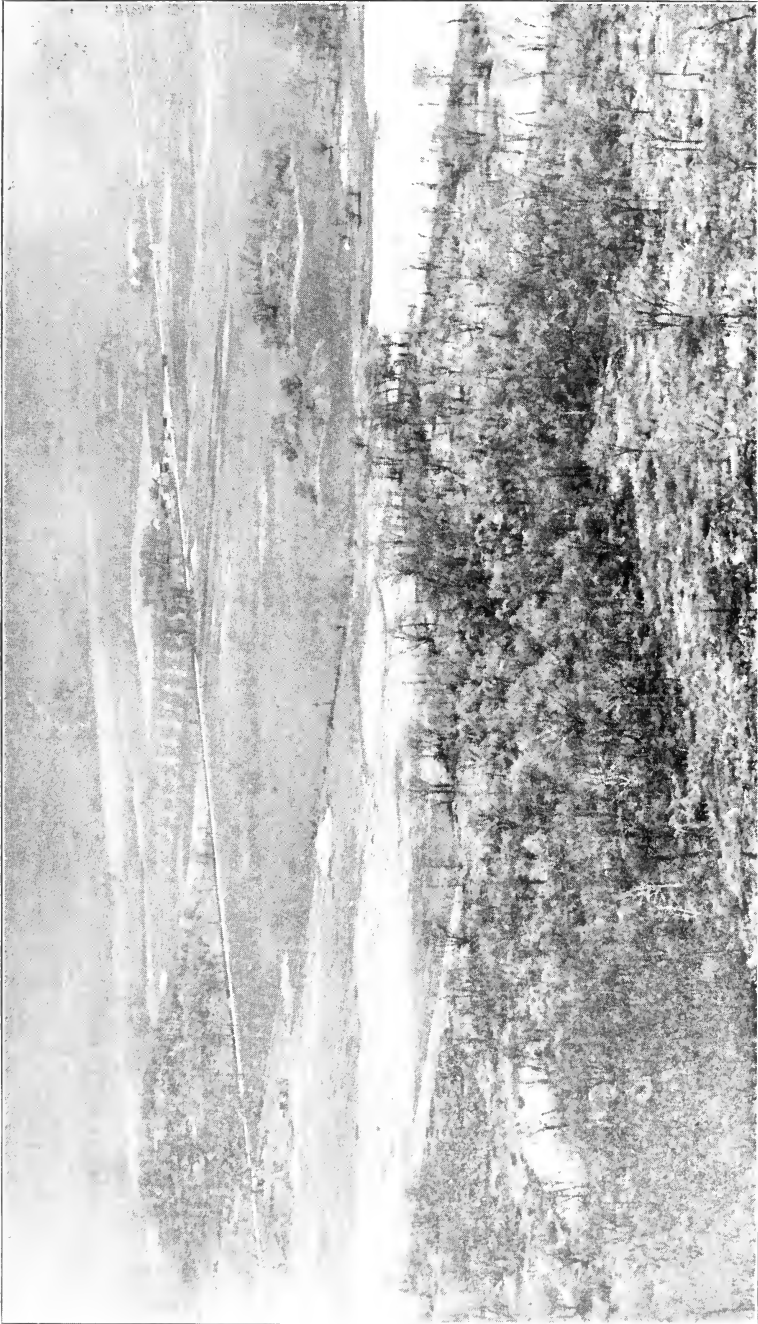


FIG. 8. Looking northeast with Monks' mound in left hand upper corner; two mounds (No. 57 and No. 60) about half mile south of Monks'; mound No. 51; Schmidt's mound with several buildings about it. Just back of it to the north is the James Ramey mound (No. 33) which was most thoroughly explored by Moorehead. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.

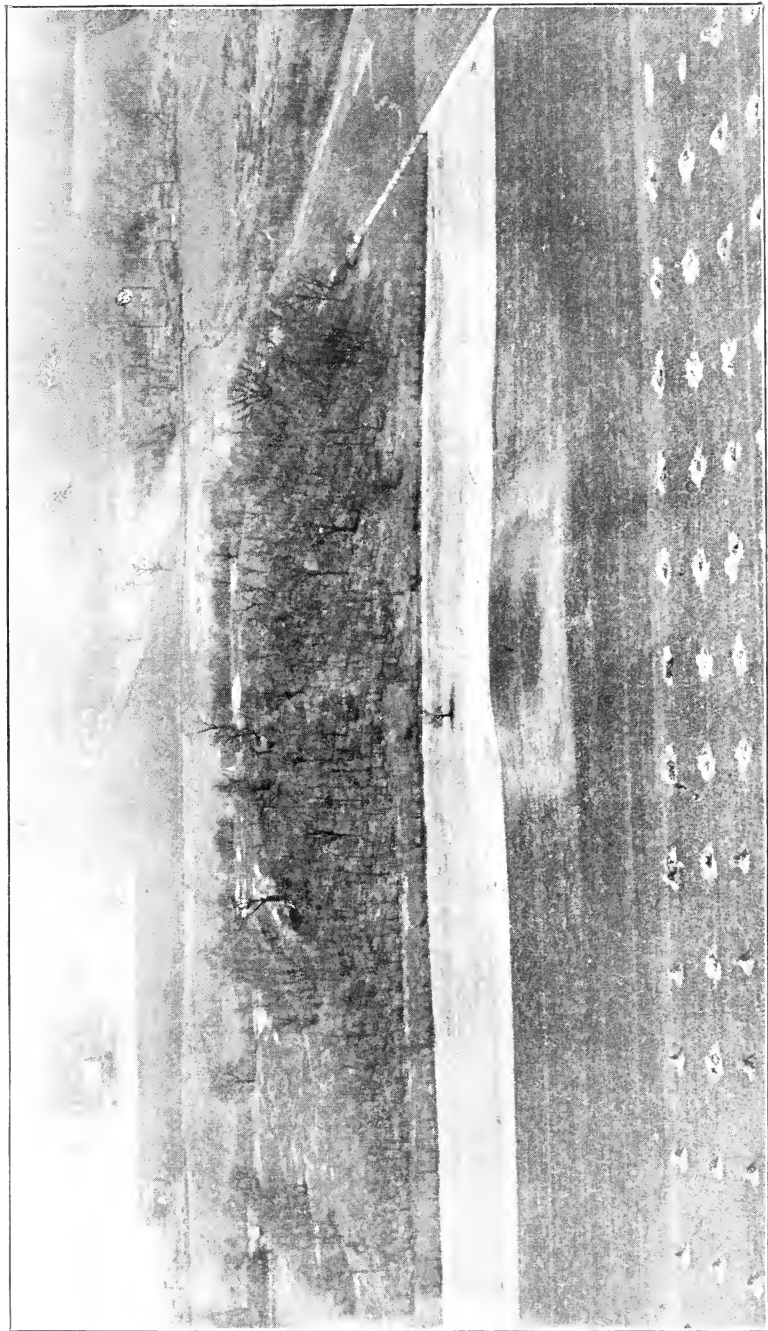


FIG. 9. Looking west. Eastern face of Monk's mound. The flat, low mound No. 38 just this side. Mounds No. 39 and No. 41 just over the top, Merrill's mound (No. 42) and buildings are in upper left hand corner. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.

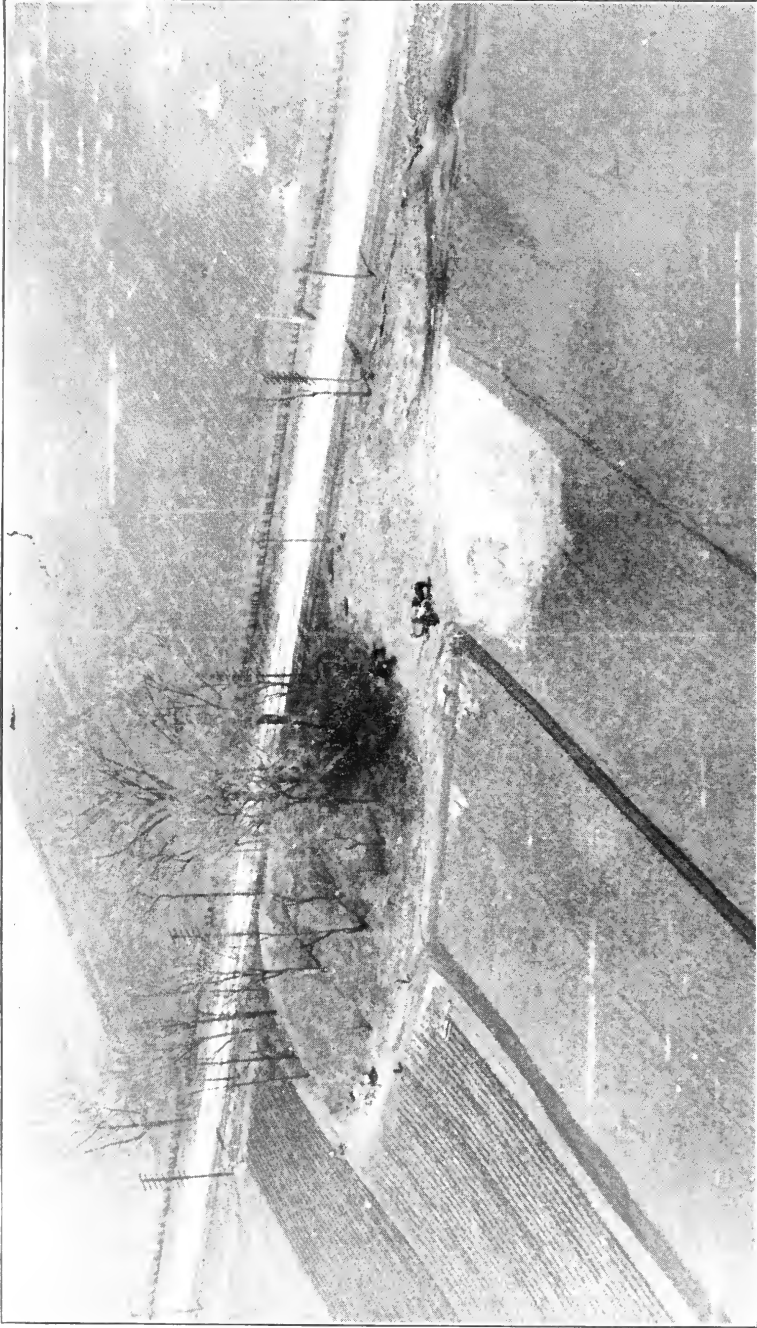


FIG. 10. Mound No. 51 about 500 feet southeast of Monks'. The men and wagons indicate size of mound. Numbers of mounds, those assigned by Patrick and adopted by Moorehead. University of Illinois Bulletin No. 55, 1922. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.

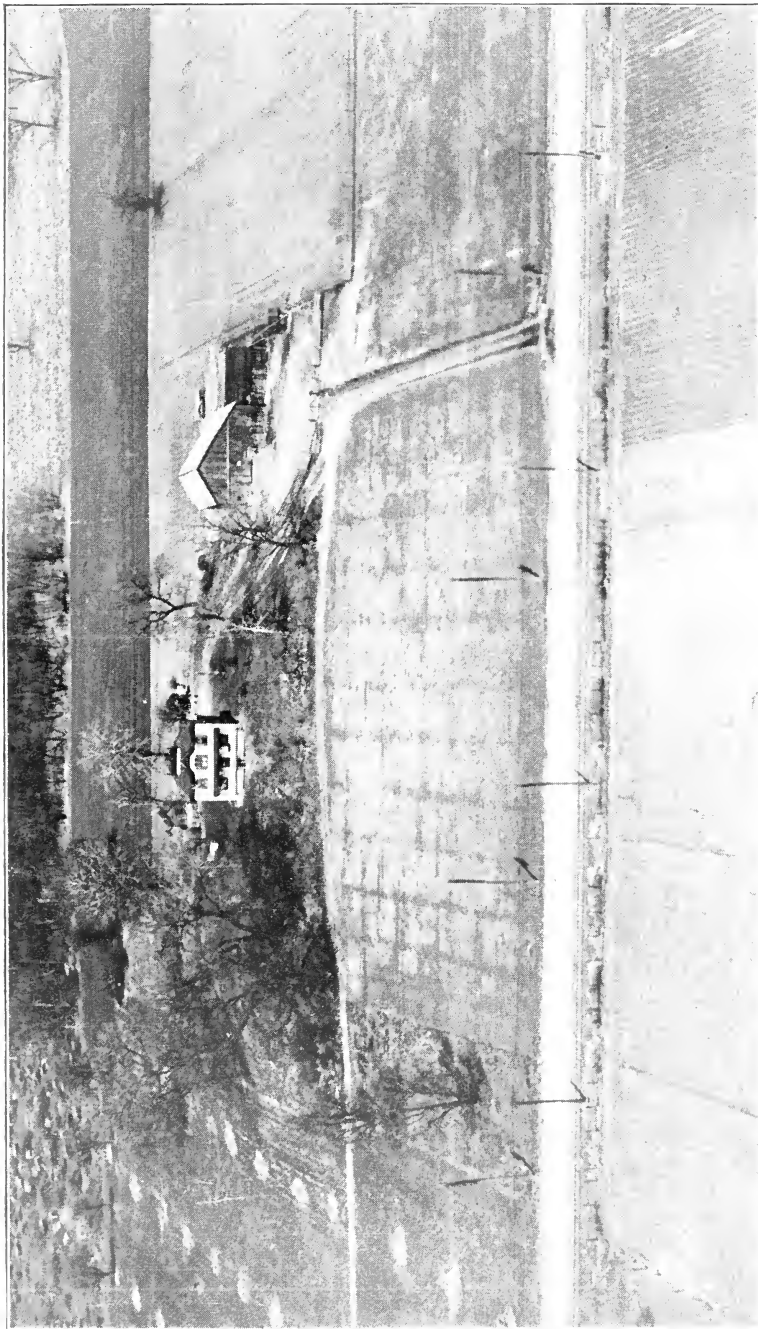


FIG. 11. Merrill's mound viewed from south. Just as the Indians used these mounds, so white men have from early times placed their dwellings on them. This attractive home is a quarter mile west of Monks'. Official Photograph U. S. Army Air Service, Lieut. G. W. Goddard.

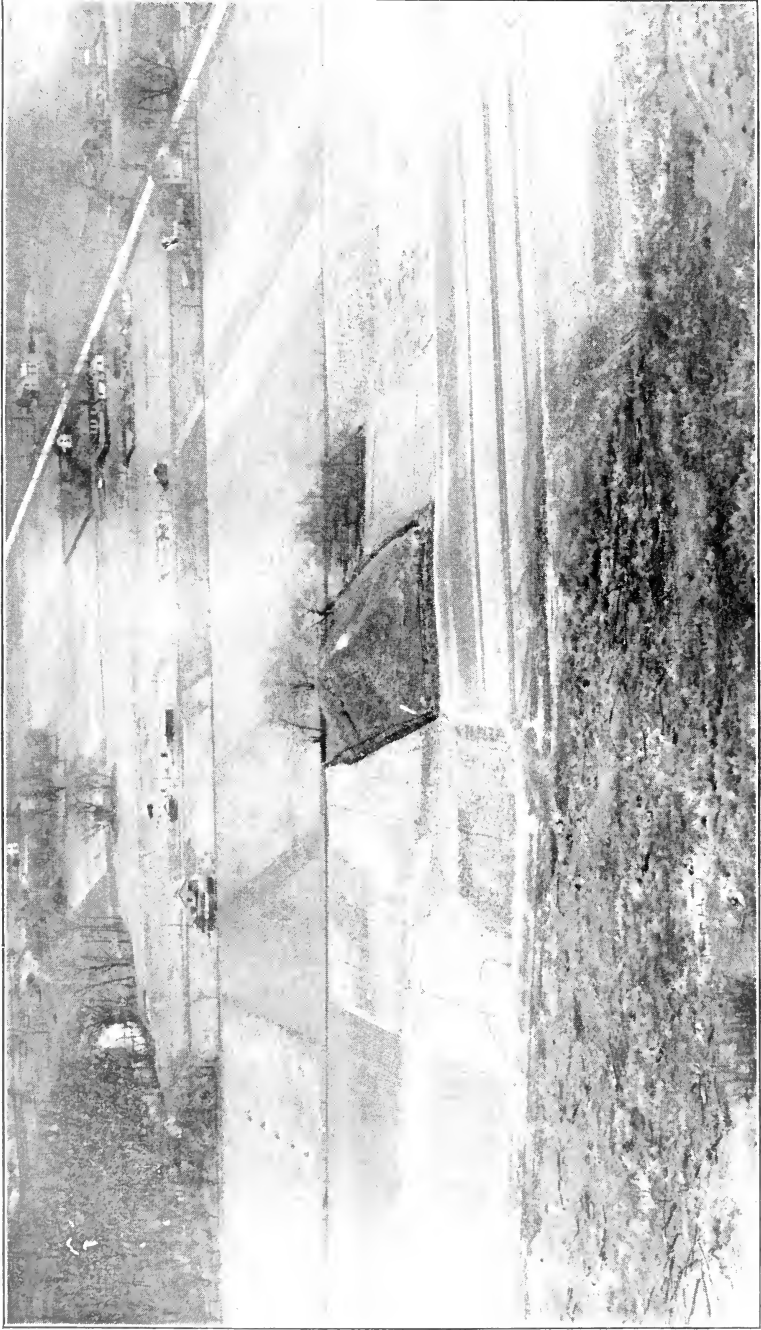


FIG. 12. Powell's mound from northwest. Collinsville road to right. Cahokia creek to left. Official Photograph U. S. Army Air Service. Lieut. G. W. Goddard.

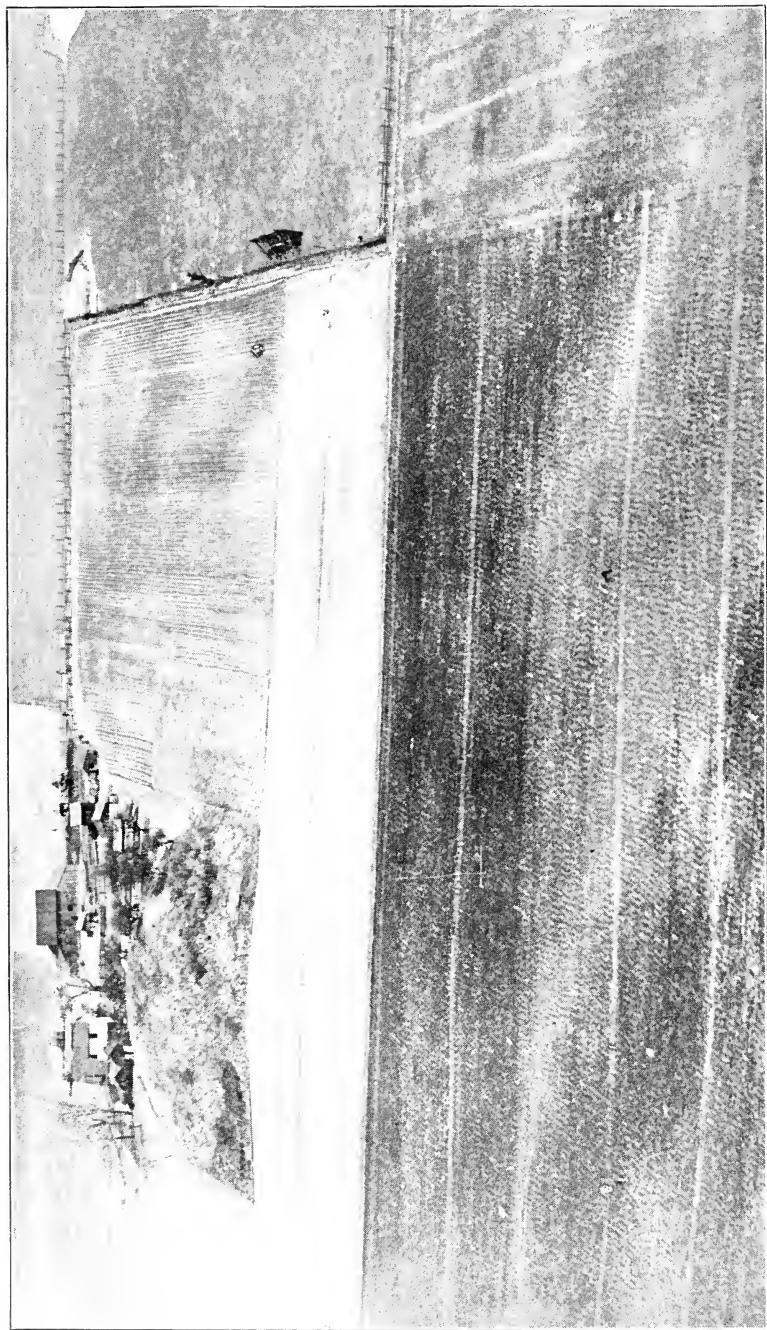


FIG. 13. One of the most southerly mounds of the group (No. 70). U. S. Army Air Service (Official Photograph). Lieut. G. W. Goddard.

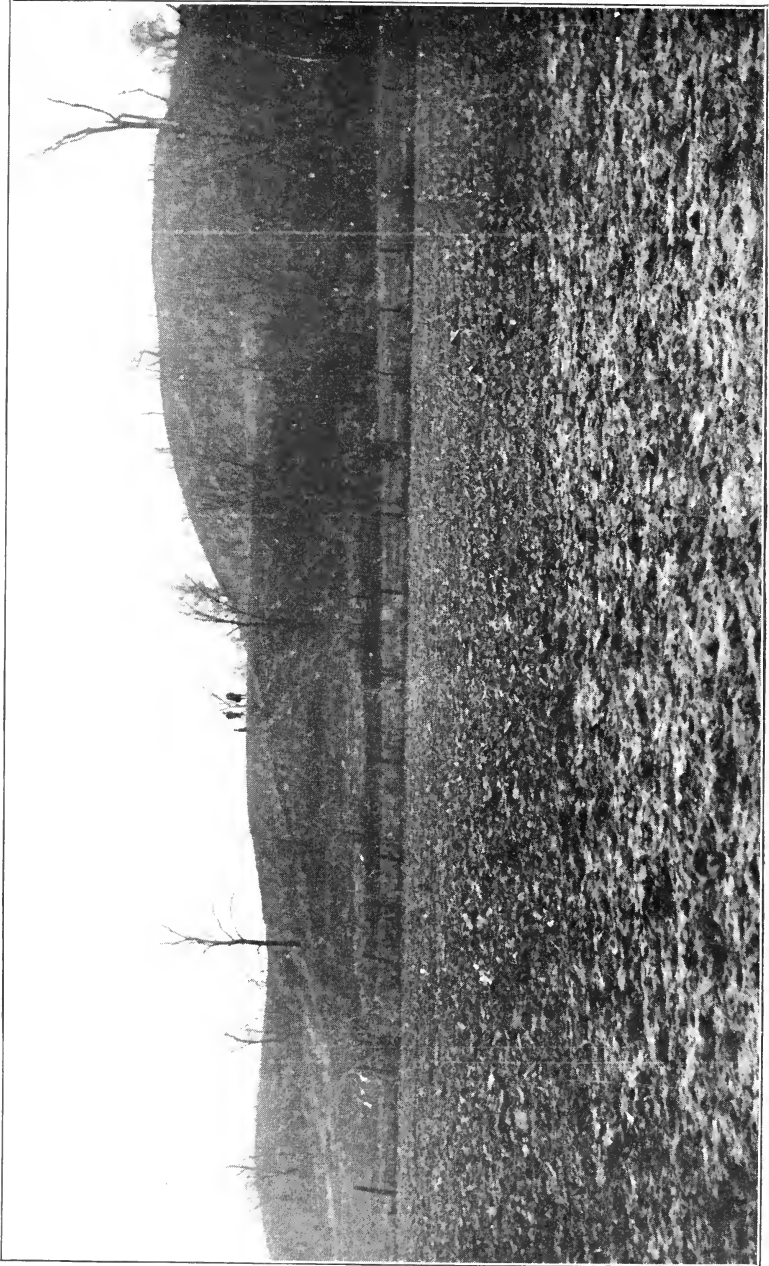


FIG. 14. Monks' mound from the southeast. The boy and men are on the first terrace. It presents a level skyline characteristic of river terraces. Photo by A. R. Crook.

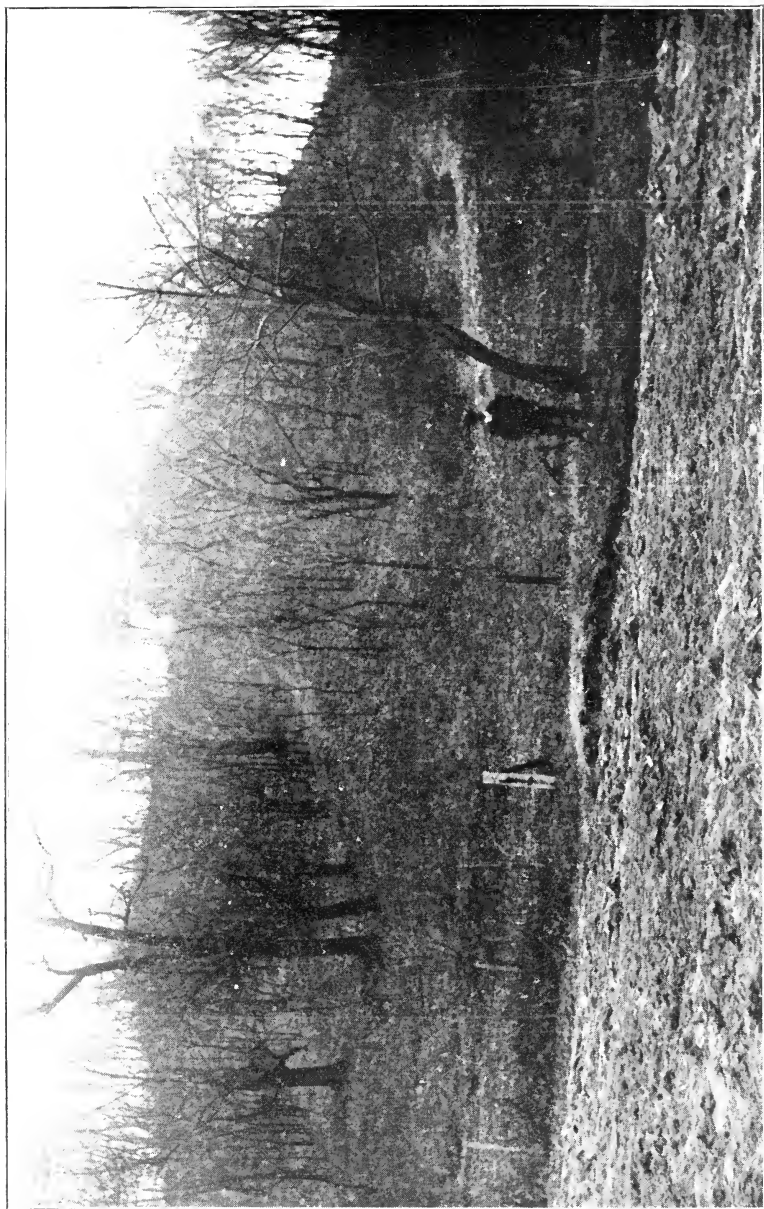


FIG. 15. Monks' mound from the north. One of the owners, Mr. Fred Ramey, who has guarded the mounds for many years in order that they may be preserved for future generations. Photo by A. R. Crook.

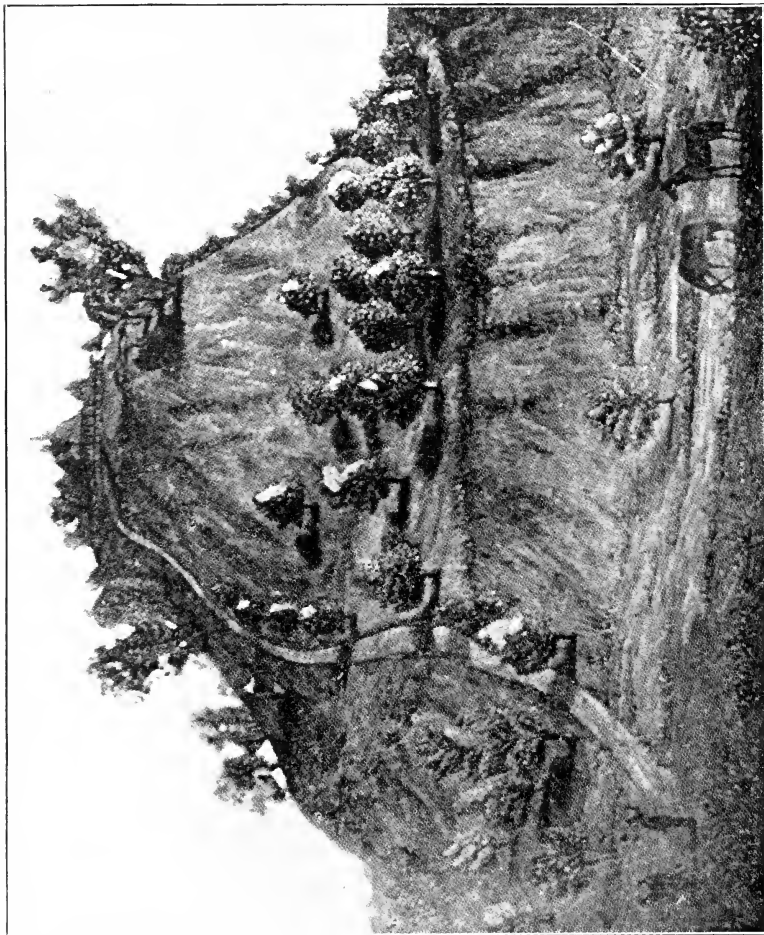


FIG. 16. A well known picture of Monks' mound which shows how early workers were handicapped for reliable illustrations. Photo by A. R. Crook.

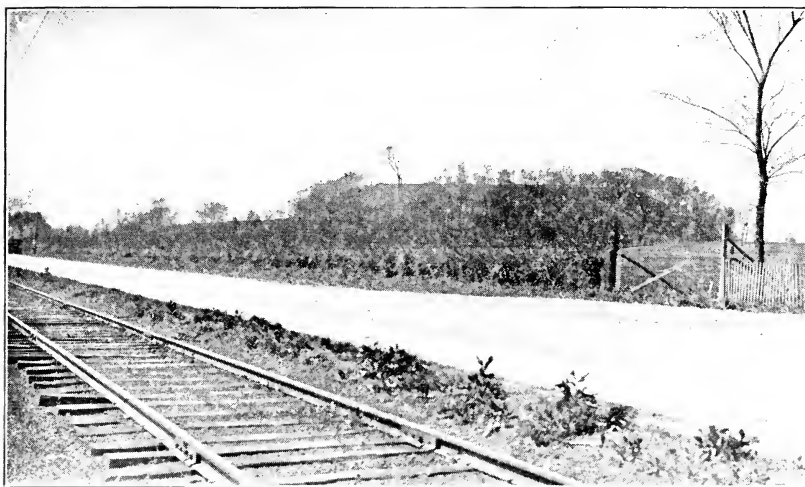


FIG. 17. The level skyline of the two terraces; the steep upstream face and trailing downstream face of Monks' mound viewed from east. Photo by A. R. Crook.

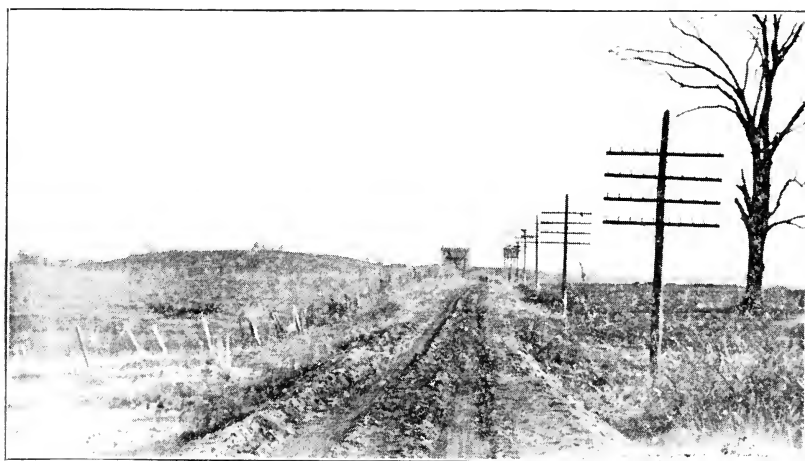


FIG. 18. Mound No. 41 at left. Mound No. 48 (Jesse Ramey) with house on it in the distance. Level topped. Photo by A. R. Crook.

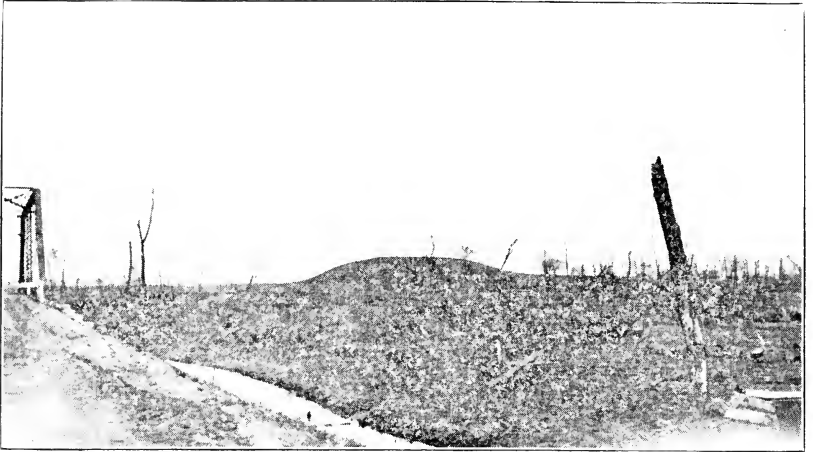


FIG. 19. Kunneman mound from the south. The north quarter was excavated in fall of 1921 by Moorehead. See next view. Photo by A. R. Crook.

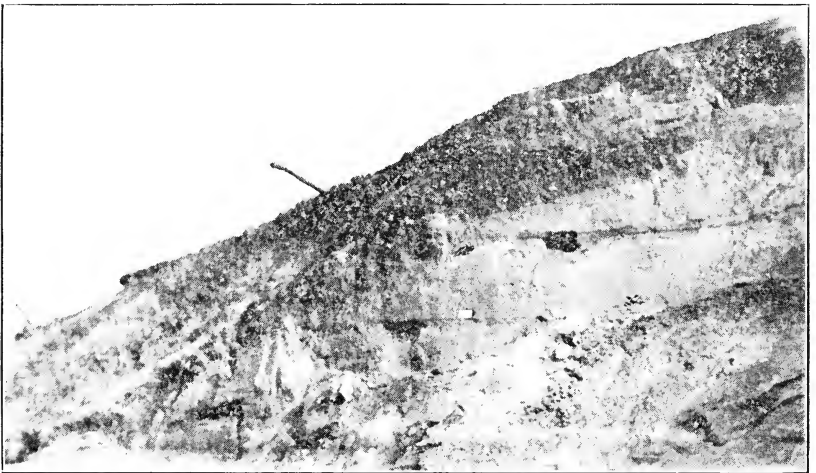


FIG. 20. Kunneman's mound. East end of north face. April, 1922. Camera case and film mark top and bottom of one layer. Photo by A. R. Crook.

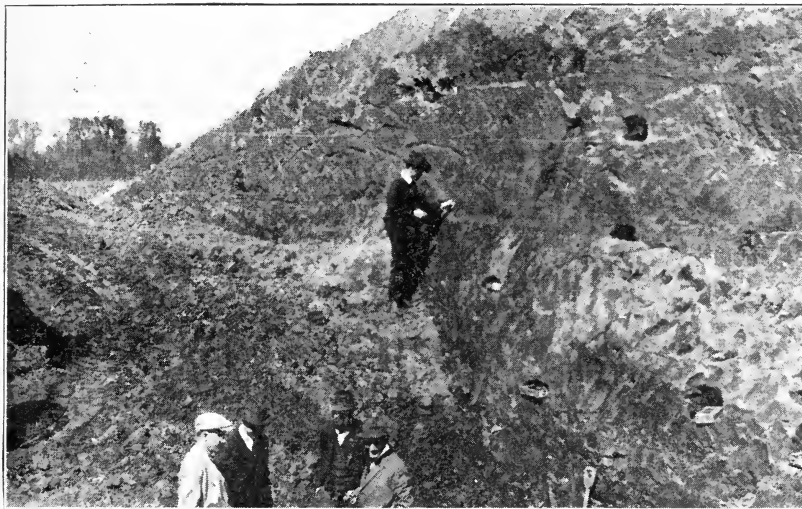


FIG. 21. Excavation in James Ramey mound, (Mound No. 33) May, 1922. The man standing by east face holds hand on fine laminae which appear to be water laid. But a troweled surface shows unassorted masses are the rule. Photo by A. R. Crook.



FIG. 22. Exploring the top 25 feet of soil in Monks' mound. Robert works as persistently at geological investigations for the State as any man works at his favorite pastime. Photo by A. R. Crook.

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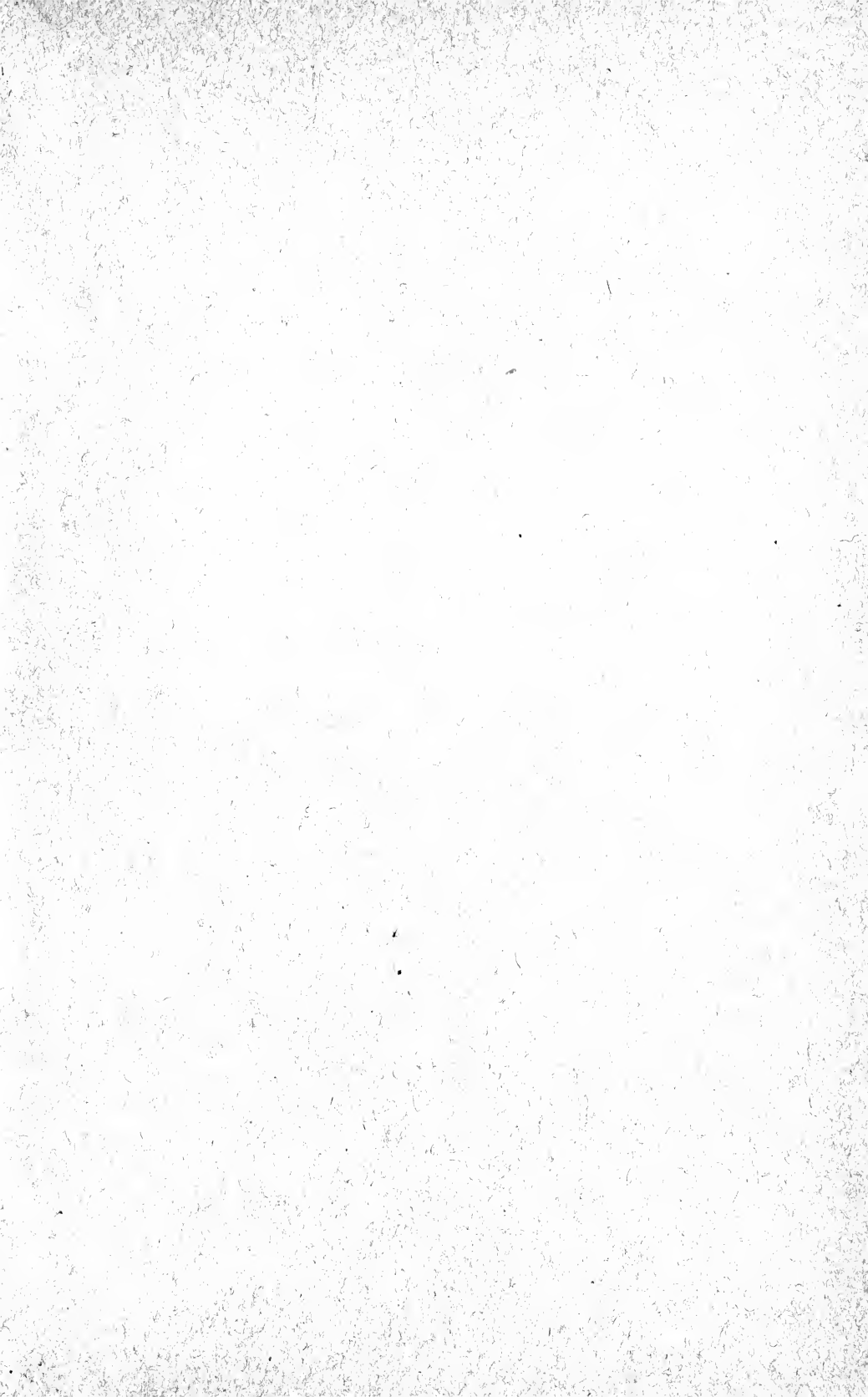
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