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MS 76
BX 13
NBK 6

Geology of Teays Valley
Antiquities.
Mound Builders
Indians.



MS 76
BX 13
NBK 6

pr. 1 'Among these (details) was the recognition of a great abandoned valley extending across West Virginia, from Huntington, to Charleston, through which the Ohio river was presumed once to have flowed."

This valley today averages $1\frac{1}{2}$ -2 miles across, and is near fifty miles long. The present minor streams are "incapable of excavating so great a valley, in the bedrock".

Ight did not know that the river he called Teays, was really the master river of interior America - even greater than the present Mississippi.

The prehistoric Teays was the precursor of the present Mississippi river, and predecessor of the Ohio, the Illinois, the Wabash, and others.

It had its course in the Appalachian mountains of North Carolina.

Bulletin No 2

p. 1 The Teays river once dominated the mid continent. many millions of years ago.

It was greater than the Mississippi which was then only one of its tributaries.

It was the great "father of waters" in North America.

p. 1 - The New River was there before the mountains.

"A divide between the north-flowing streams, and the Teays system, ran roughly across northern West Virginia, and ^{northern} eastern Ohio."

"This stream system apparently pre-bailed for many millions of miles. Years, during the last million miles, the ice overrode and obliterated the lower Teays Valley, from Chillicothe to the river mouth."

p. 4 - "The source of the Teays was somewhat east of Blowing Rock, North Carolina"

n. 3. The Appalachian mountains were much higher than the present ranges are. They've since washed down to an almost level plain, by the Teays, and other rivers.

p. 4. The depth of the New River Gorge marks the extent of the erosion since the uplift.

p. 4. The Teays river consisted of two forks - The Gauley river, and the New River., which was the main headwaters of the Teays, at the summit of the Appalachian divide. Gauley Bridge is at the junction. The Teays is one of the oldest rivers, in America.

p. 4 Water worn boulders up to 12 inches, in diameter, are found in the old Teays channels. Here and there, potholes are found.

p. 5 - The Teays river flows past the towns of Pikelou and Waverly, Our new Atomic Energy plant is between them.

p. 5 - Large quantities of sand and gravel washed down during the great Ice Age reversing the slope &

p. 5. - From the line of Wheelersburg to Chillicothe, there was a gradually heavier fill of gravel, sand, silt and clay which completely bury all vestige of the previous land surface, over which the glaciers moved.

p. 5. The Teays river completely disappeared, at Chillicothe

Geologists then could trace the buried valley no farther. Some thought it went north to the great lakes. Others thought it went to the Wabash river. This idea continued as late as 1845.

p. 5. Does the Ice Age come before the Teays? No.

A study and plotting of thousands of well records. In the case of water wells, shows the elevation

p. 5 - The elevation of the Teays river at Chillicothe is 620 ft. above sea level; at the Indiana line 580 ft.; near Lafayette, in western Indiana, 384 ft., and 280 ft., in western Indiana, at Illinois river. Here it is again exposed.

It is not yet known exactly what it is when it reaches

the point of discharge (as it was then) into the Gulf of Mexico.

This was south of St. Louis.

p. 6 - The average width of the Teays Valley, between Charleston and Chillicothe Ohio is about $1\frac{1}{2}$ miles. The buried portion gradually widens, to about four miles, near the Indiana Illinois line. Near Decatur Illinois, it is about five miles wide.

(Query - does this mean the Teay changed courses along its route?)

Near Lincoln, Illinois, the valley widens to about 15 miles. Here the Teays and Mississippi joined.

The Teays river was dismembered into smaller rivers, and partly buried, by direct action of the of the great glaciers of the ice age.

The river was buried by the ice after leaving Chillicothe.

The well records have shown the location of the buried Teays and its buried tributaries.

THE UNIVERSITY OF CHICAGO
CHICAGO 37 • ILLINOIS
DEPARTMENT OF GEOLOGY

September 17, 1956

Mr. F. B. Lambert
Barboursville, West Virginia

Dear Mr. Lambert:

This is to acknowledge receipt of your letter dated Sept 15 and addressed to the Department of Geology, University of Chicago.

I showed your letter to a number of our staff members and they were inclined to think that your letter did not belong in the Geology Department but rather in the Geography and Anthropology Departments.

I showed the letter to a Geography professor and he said that an article on the Teays River was published in a scientific magazine called Scientific Monthly about a year ago. Maybe your local library has a copy and you could get the information you wish from that.

The other part of your letter seems to belong to the Anthropology Department, and I have forwarded your letter to Dr. Braidwood of that Department and you should be hearing from them shortly.

We are sorry that we could not be of more help in this matter.

Sincerely yours,

Odessa Kellem
(Miss) Odessa Kellem
Departmental Sec'y

State of West Virginia

OKEY L. PATTESON, Governor

Geological and Economic Survey

PAUL H. PRICE, State Geologist

Report of Investigations No. 7

The Geomorphic History of the New-Kanawha River System

By

HARRY M. FRIDLEY



Morgantown, West Virginia

1950

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NOTE

By Paul H. Price, State Geologist

Many requests have come to the West Virginia Geological Survey and the Department of Geology of West Virginia University for information concerning the history of the Teays Valley in Cabell and Putnam Counties in West Virginia, and also the history of the Ohio River. At my suggestion, Dr. Harry M. Fridley, Professor of Geology, West Virginia University, prepared this paper in answer to some of these questions. Field work was done in the summers of 1947 and 1948.

It is not the purpose of this bulletin to develop revolutionary ideas on drainage history but rather to summarize the fairly well established facts pertaining to the geomorphic development of the area.

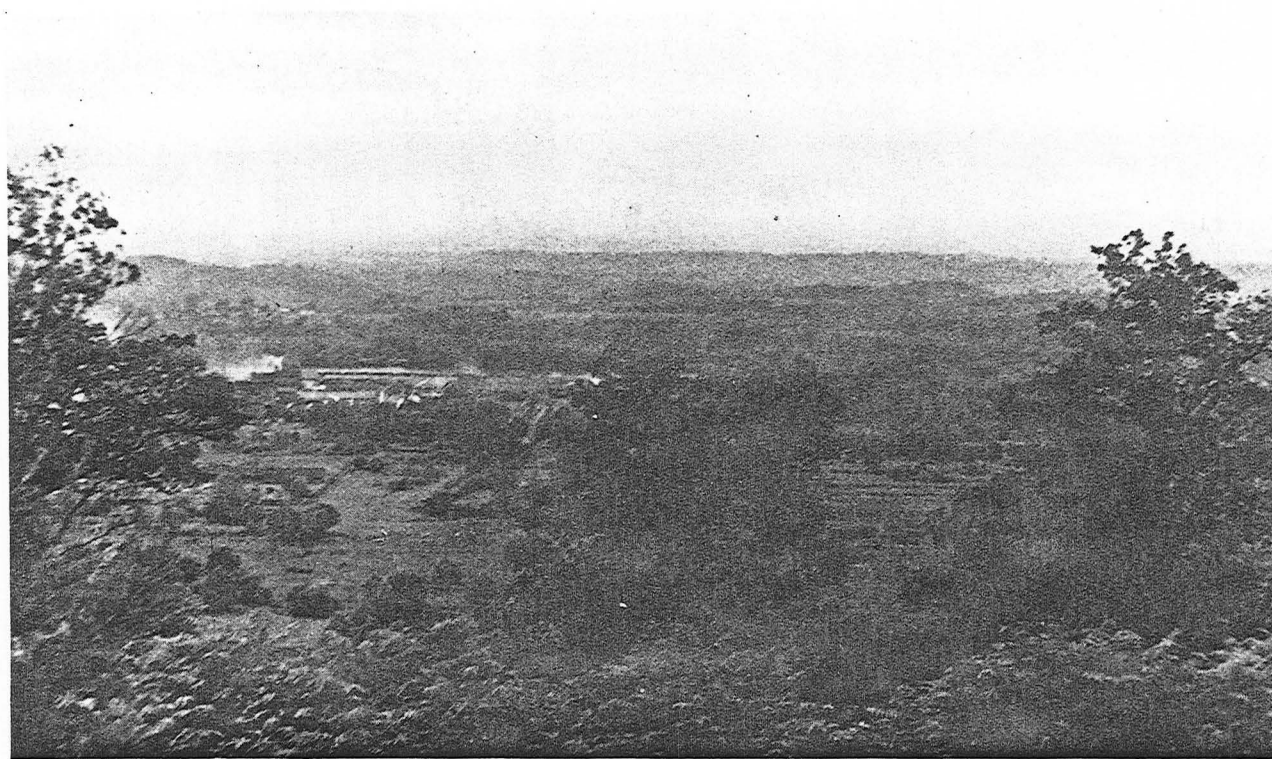
A false idea has been circulated that there is an underground or "lost" river flowing under Charleston. The fallacy perhaps stems from the fact that the preglacial Teays River was diverted from its course west of Nitro, West Virginia, to the course of the present Kanawha.

Several papers have been written on the Teays Valley and in general the investigators agree. However, this bulletin presents a new explanation of the change in course of the Teays River. Also, a new point is made of the difference in age and character of the two silt beds.

ACKNOWLEDGMENTS

Dr. Paul H. Price, State Geologist, suggested the writing of this Report and gave helpful advice during its preparation. The writer wishes also to thank the members of the staffs of the Geological Survey and the Department of Geology of West Virginia University for their aid, especially Charles E. Hare and David P. Cruise for drafting work on the illustrations.

Helpful suggestions were made in the field by the following geologists and soils experts: S. L. Galpin, H. F. Johnston, John C. Ludlum, G. G. Pohlman, and Boyd Patton.



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PLATE I.—Teays Valley, looking west from point one-half mile east of Nitro, West Virginia. (Photo. by Garnar).

THE GEOMORPHIC HISTORY OF THE NEW-KANAWHA RIVER SYSTEM

By HARRY M. FRIDLEY

The New-Kanawha river system is unique in many ways. (The New River, contrary to its name, is one of the oldest streams draining the Appalachian Highlands.) It has been flowing in its general north-northwest course for several geologic periods. It is the only river which flows completely across the Appalachians from east to west. It has its origin in the Blue Ridge Mountains less than two miles south and east of Blowing Rock, along the southern boundary of Watauga County, North Carolina.

The divide between the New River drainage and that of the southeast flowing Yadkin is at an elevation of about 3700 feet. The tributaries of the Yadkin River have much steeper gradients and have long been pushing the divide westward. It is obvious that, at one time, the divide between the Atlantic and Gulf drainages was not far from the present Fall Line. This was before the eastern portion of the Blue Ridge Mountains was leveled, by erosion, to form the Piedmont.

From its source, the New River flows more than one hundred miles in a northeasterly direction over crystalline rock, consisting mostly of granites, gneisses, and quartzites. It then swings northward through the Ridge and Valley Physiographic Province. Because of the varying resistance of the sedimentary rocks in this folded section, the New River Valley alternates between broad valleys in the weak shales and limestones to narrow valleys, or water-gaps, as the river cuts through massive sandstones and conglomerates.

What is it?

Gradient of New-Kanawha River System

	Elevations Feet	Fall Feet	Distance in miles	Gradient (in feet per mi.)
Two miles east of Blowing Rock, N. C. (source).....	3775			
to Junction with North Fork New River.....	2480	1295	77	16.8
Mouth of North Fork New River.....	2480			
to mouth of Crooked Creek (Carroll Co., Va.).....	2080	400	55	7.3
Crooked Creek.....	2080			
to Va.-W.Va. boundary line (Wylie Falls).....	1480	600	105	5.7
Va.-W.Va. boundary line.....	1480			
to mouth of Greenbrier River.....	1385	95	24.2	3.9
Mouth of Greenbrier River.....	1385			
to mouth of Gauley River.....	645	740	64.8	11.4
Mouth of Gauley River.....	645			
to mouth of Kanawha River.....	540	105	93	1.1

In Summers County, West Virginia, it becomes deeply incised in the Allegheny Plateau, thus forming the picturesque New River Gorge. (see plate IV.)

The New and Gauley rivers join at Gauley Bridge, West Virginia, to form the Kanawha which flows in a northwesterly course and now enters the Ohio at Point Pleasant, West Virginia.

Soon after the Kanawha enters Kanawha County, the gorge appearance of the valley diminishes and the flood-plain widens. This is due largely to the fact that the resistant Pottsville sandstone is rapidly dipping in the direction of the stream flow and no longer extends far above the valley floor.¹

Tens of millions of years ago, perhaps in the early Cenozoic time, the Appalachian region was eroded to near base-level, forming a true peneplain, generally known as the Schooley Peneplain. Streams meandered over this level surface without regard to the resistance of the underlying rock. There then followed an uplift of the land and an entrenchment of the streams. The New River was entrenched below the surface of a northwesterly sloping plain. Millions of years passed and again erosive forces formed a partial peneplain. This peneplain covered a large portion of the Allegheny Plateau and is known as the Allegheny Peneplain.

In Summers and Fayette counties and in the eastern part of Kanawha County, the rocks over the Pottsville Series were stripped away as the peneplain was developed.

Once again the Appalachian Highlands were uplifted and slightly warped and a broad arch was formed athwart the course of the New River in south-central West Virginia. However, the uplift was slow and the river continued its course, cutting deeply into resistant Pottsville and upper Mauch Chunk formations. It is true that the Pottsville Series contains much of the coal of West Virginia but the massive sandstones make up by far most of the column.

The uniformity in level of the upland above New River Gorge is so complete that one "may stand within a few hundred yards of the brink of the New River Gorge and yet be unaware that 1000 feet below him flows a mighty stream."²

As the river flows through Kanawha County, the flood-plain widens and the valley slopes become less pronounced. Near the mouth, in the vicinity of Point Pleasant, the flood-plain of the Kanawha is more than one and one-fourth miles wide. Here the surrounding hills are much lower and more subdued but the accordance in level of the hills remains.

The only part of the great river system which is new is the lower portion of the Kanawha from Nitro, West Virginia, to

¹The Pottsville has the approximate thickness of 3000 feet in Fayette County. W. Va. Geological Survey, Fayette County Report, p. 111.

²Campbell and Mendenhall, "Geologic Section along the New and Kanawha Rivers in West Virginia." U. S. G. S. Seventeenth Annual Report, part II, p. 481, 1896.

Point Pleasant. When geologists speak of something which is new, or recent, they mean an event which has taken place within, perhaps, the last million years. Thus, the Great Ice Age is considered to be recent, geologically speaking.

At the time the first continental ice sheet advanced from Canada into the northern part of the United States, there flowed a great river in essentially the present valley of the New and Kanawha as far west as Nitro, West Virginia. Then, instead of following the present northwesterly course, it made a bend to the west and followed a fairly straight course through what is now Hurricane and Barboursville to Huntington. Then it followed, with a few slight diversions, the present Ohio River to Wheelersburg, Ohio, where the ancient river turned northward into Ohio. North of Chillicothe, it turned westward to cross Indiana. (Fig. 1). In order to distinguish the ancient stream from parts of the present stream system, it has been given the name, Teays.

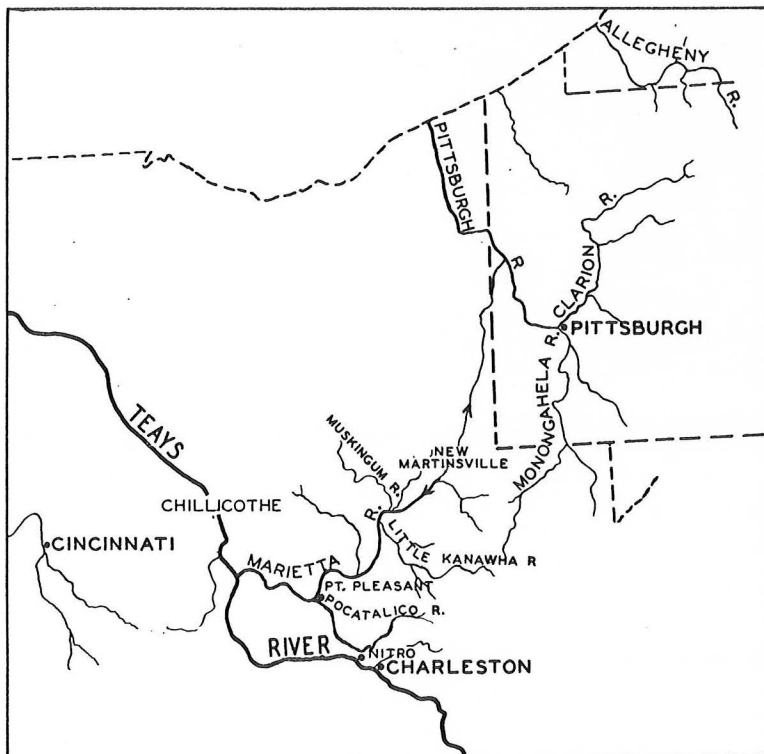


FIGURE 1. PRE-GLACIAL DRAINAGE OF UPPER OHIO BASIN
(AFTER TIGHT, STOUT, LAMB, AND VER STEEG.)

ORIGIN OF THE OHIO RIVER

In order to intelligently study the geologic history of the Kanawha River, it is necessary to understand the major developments in the history of the Ohio. (When the Teays River was in existence, the Ohio River had not yet been formed.) The Monongahela and Allegheny rivers flowed northward into the Erie basin to join the ancient St. Lawrence.) When the first great ice sheet moved down from Canada into the United States, the Monongahela-Allegheny drainage was blocked. The water thus ponded rose until it overflowed to the south. Several overflow channels were formed, but the one which was cut down the most rapidly and finally drained the glacial lake was the overflow channel south of New Martinsville, West Virginia. (Fig. 1). This outlet took approximately the present course of the Ohio River.

There were several advances of the ice from Canada during the ice age or Pleistocene epoch. Glacial geologists generally recognize four stages: The Nebraskan, Kansan, Illinoian, and Wisconsin.

There is evidence that the flow of the new Ohio was not maintained after the first ice sheet was melted. According to Frank Leverett³ drainage north of New Martinsville resumed its original northward flow when the ice barrier in Canada was removed.

Perhaps not until the Wisconsin glacial stage was the Ohio River permanently given its present course.⁴

When the ice moved southward, after first blocking the northward Monongahela-Allegheny drainage, it covered the ancient Teays Valley in western Ohio and forced water to flow around the southern margin of the ice. There must have been several overflow channels, which were successively blocked, as the glacier pushed southward until the ice eventually covered part of Kentucky south and west of Cincinnati. Whether this was accomplished in the first or second stage is not certain, but glacial debris (containing crystalline boulders of Canadian origin) is found high in the uplands of Kentucky and is of pre-Illinoian age. With such an ice dam, the drainage of the Upper Ohio was ponded to an elevation of 900 feet and perhaps higher.

No doubt there has been some uplift of the land in the Ohio basin since the beginning of the Ice Age, but evidence is lacking of any great crustal movement.

³Leverett, Frank, "Stream Capture and Drainage Shifting in the Upper Ohio Region." *Journal of Geomorphology*, Vol. 11, no. 4, pp. 339-344, 1939.

⁴Stout, Wilber, and Lamb, G. F., "Physiographic Features of Southeastern Ohio." *Ohio Journal Sci.*, Vol. XXXVIII, no. 2, 1938, pp. 79-80.

Stream terrace material, apparently deposited in the slack water above the ice dam, is now found well above 800 feet in Ohio, Kentucky, and West Virginia.⁵

DIVERSION OF THE LOWER KANAWHA RIVER

When slack water filled the valleys of the Upper Ohio basin, deep beds of silt were deposited. In some places, such as in the Teays Valley of West Virginia, these silt beds must have been more than 100 feet in thickness. The most detailed description of the Teays Valley is given in a paper by W. G. Tight.⁶

That structural control might have a bearing on the problem was suggested by Happ.⁷

Both Happ and Ver Steeg⁸ agree with the general conclusion of Tight.

The theory of the change in the course of the ancient Teays River (lower Kanawha) as presented by Tight is the same as



FIGURE 2. PRE-GLACIAL DRAINAGE OF THE ANCIENT TEAYS RIVER AT THE ELBOW OF CAPTURE.

⁵Stout, Wilber, and Lamb, G. F., *op. cit.*, pp. 69, 70.

⁶Tight, W. G., *Drainage Modifications in Southeastern Ohio and Adjacent Parts of West Virginia and Kentucky*. U. S. Geol. Survey Professional Paper No. 13, 1903.

⁷Happ, Stafford C., *Drainage History of Southeastern Ohio and Adjacent West Virginia*. Jour. Geol., Vol. 42, No. 3, pp. 274-279, 1934.

⁸Ver Steeg, Karl, *The Teays River*. The Ohio Journal of Science, Vol. XLVI, No. 6, pp. 297-307, 1946.

postulated by the present writer, except in details of stream capture.

Figure 2 illustrates the preglacial drainage of the Teays at the "elbow of capture" in the vicinity of Nitro, West Virginia. Here the assumption is that the preglacial Pocatalico River flowed in essentially the same course in which it flows to-day.

Tight assumed that the Pocatalico formerly flowed across the Flatwoods and entered the ancient Teays through the present Armour Creek Valley. This theory is not convincing because Armour Creek Valley is very narrow, almost gorge like, and does not have the appearance of the former site of a river the size of the Pocatalico. It is true that terrace material exists on the sides at about 700 feet, but such would be the case in either theory, since all valleys in the vicinity, large and small, were silted up above the 700-foot level. Furthermore, the rock floor of the Flatwoods slopes to the east and not to the west as it would if this flat area represented the course of the preglacial Pocatalico.

The original course of this river is very important in this discussion for, if the writer's theory is correct, the Pocatalico and Teays passed within about three miles of each other. It is generally agreed by all of those who have studied the problem that all of the major streams in western West Virginia and southern Ohio had very low gradients. It would then follow that the two rivers were nearly at the same elevation at Raymond and Nitro, where their courses were separated by a low divide. (Fig. 2).

According to Tight, the Point Pleasant River, flowing along the present course of the lower Kanawha, had its source in the vicinity of Winfield. The drainage from Winfield to Nitro was reversed. The reason for a divide being placed at Winfield is that the present Kanawha Valley is narrowed at that point and, also, that some of the streams are barbed in the present stream pattern. However, massive sandstones outcrop east of Winfield at an elevation of 700 to 750 feet, thus contributing to the narrowing of the valley. A few streams, such as Bull Creek, would be barbed in the stream pattern postulated by Tight.

Tight assumed that the Point Pleasant River flowed into the ancient Marietta near the present city of Point Pleasant. The Marietta followed the present course of the Ohio southwestward to Gallipolis, Ohio, where it swung westward through Rodney and Rio Grande to join the Teays in eastern Pike County, Ohio.

If the Pocatalico flowed preglacially in the course it now occupies, its waters would have reached the junction of the Marietta and Teays in a shorter distance than the distance from Nitro along the course of the Teays to that junction. Since the Teays was a much larger stream than the Pocatalico, it would

be logical to assume that the Teays would be as low, or lower, than the Pocatalico. However, in this discussion, it is assumed that the two streams were near the same elevation at Raymond and Nitro.

The dip of the rock from Nitro to Raymond is about 30 feet per mile, whereas the abandoned Teays Valley follows the strike of the rock. The rock floor of the Teays is on the massive Morgantown Sandstone. Above this sandstone is more than 100 feet of shales and thin-bedded sandstones, which offered comparatively slight resistance to the down-cutting of the Kanawha River once it was diverted from its old course, the Teays Valley.

When the first glacial advance filled the Teays Valley in western Ohio, there was a marked ponding of water in the tributaries in eastern Ohio and in western West Virginia. As Tight suggested, the greatest amount of silting would occur in the Teays Valley of West Virginia. From the present thickness of the silt beds, they must have attained an elevation of more than 800 feet. Silt deposits are found in many neighboring valleys but at lower levels.

With the lowering of the ponded waters, the Kanawha River flowed northward over a narrow divide into the Pocatalico Valley (Fig. 2). The silt deposit in the Teays Valley was a sufficient barrier to force the flow of the Kanawha into its present course. Once this course was established, the stream cut through a veneer of silt and entrenched itself in to the weak Conemaugh sediments above the Morgantown Sandstone (Figure 3).



FIGURE 3. DIVERSION OF THE TEAYS TO FORM THE PRESENT KANAWHA DUE TO SILTING UP OF THE FORMER VALLEY.



PLATE II.—Teays Valley, one and one-half miles west of Nitro, West Virginia. (Photo. by Garnar).



PLATE III.—Kanawha Valley, looking north from Nitro, West Virginia. (Photo. by Cruise).

A long period of erosion followed the diversion of the Kanawha River in which most of the valley cutting, which we see to-day, was done. During the Illinoian stage of glaciation, the tributaries of the Ohio River were again filled to an elevation of at least 900 feet as the ice sheet dammed the Ohio River drainage in the vicinity of Cincinnati (Figure 4). Again silting in the slack waters occurred but not to as great a degree as in the earlier stage.⁹

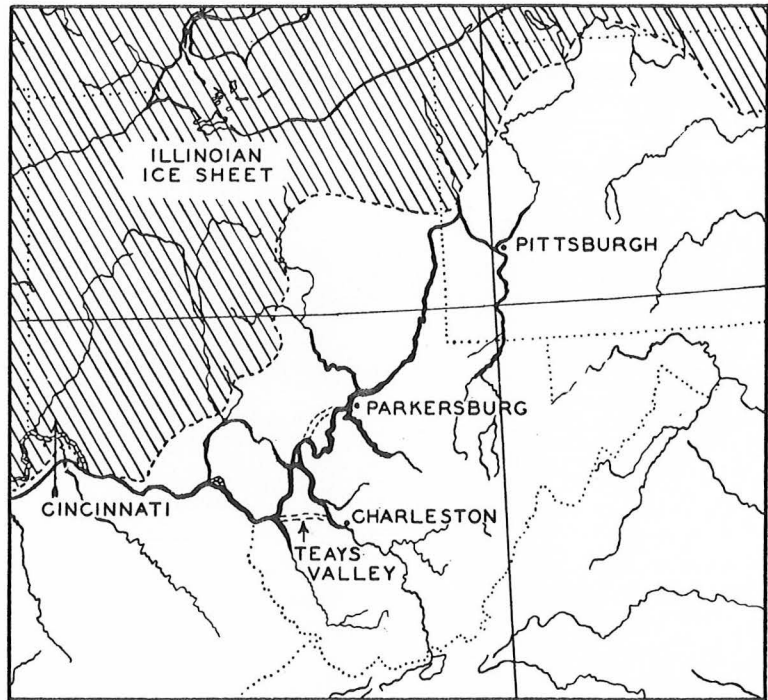


FIGURE 4. MAXIMUM EXTENT OF ILLINOIAN ICE SHEET
SHOWING PONDING IN OHIO BASIN
(AFTER FLINT)

(Morgantown Sandstone forms most of the floor of the Teays Valley from Nitro to Huntington. Resting on this floor is a deposit of stream-rounded gravels. Most of these gravels are quartzites and must have been transported from the Blue Ridge Mountains by the ancient Teays River.¹⁰)

⁹Tight, W. G., *op. cit.*, p. 57.

¹⁰During a field trip with the writer, H. F. Johnston found two granite pebbles embedded in the base of the Minford silts near Scotts Depot.



PLATE IV.—New River Gorge, looking southeast from Hawks Nest. (Photo. by Cruise).

The overlying slack-water deposits are fine grained and are known as the Minford silts.¹¹

In the Kanawha basin these silts are usually layered or varved and have an acid reaction. Over the Minford silts are slack-water deposits probably of Illinoian age. In many places in the Kanawha Valley and the Ohio Valley in West Virginia these higher silts have a marked alkaline reaction (Table I).

Table I		Ph
Location	Calcareous Silts	
Barboursville, U. S. 60	-----	8.2
Two miles east of Barboursville, U. S. 60	-----	7.8

¹¹Stout, Wilber, and Lamb, G. F., "Physiographic Features of Southeastern Ohio." Ohio Jour. Sci., Vol XXXVIII, no. 2, pp. 64, 65.

Minford Silts

One-fourth mile east of Scotts Depot.....	4.8
Flatwoods, one-half mile north of Fry.....	5.6

The high alkalinity of the silts overlying the Minford has puzzled soils men for some time. It is possible that the drainage of the limestone belts in southwestern West Virginia and Virginia brought the lime into the slack waters during the Illinoian stage. This theory seems plausible when we think of the great amount of erosion occurring during the interval between the Kansan and Illinoian glacial ages. It is now considered by glacial geologists that this interval, known as the Yarmouth interglacial age, extended over about one-third of Pleistocene time. During this time large areas of limestone in the Ridge and Valley Province were laid bare by erosion.

SUMMARY

Before the Great Ice Age, a river known to geologists as the Teays flowed from the crystalline area of North Carolina in a northwesterly direction across Virginia, West Virginia, Ohio, and Indiana and finally into the Mississippi River. When the continental ice sheet advanced over Ohio and Indiana, the Teays River was blocked and an overflow was created farther south. The overflow channel was much higher in elevation than the bed of the old river, thus causing a deep ponding of water in the Teays system farther east. This caused a silting of streams far into the Appalachian Highlands.

In one section of the Teays between the sites of the present cities of Nitro and Huntington, West Virginia, the silt deposits were so deep that a new course of the river was established. The new course became a part of the present Kanawha River. The Pocatalico had carved a valley which in one place approached within about two miles of the Ancient Teays. The diversion was accomplished simply by the erosion of a narrow divide composed of weak rock between the two valleys.

The Monongahela River and other streams in northern West Virginia and Ohio flowed northward preglacially. The early advances forced the drainage southward and finally the present Ohio was formed.

The lower portion of the Teays Valley deposits is varved, clayey, and has an acid reaction. This deposit was laid during the first or second ice advance. The upper deposits are calcareous silts and were probably laid during the third or Illinoian Stage.

The Teays River, Ancient Precursor of the East

RAYMOND E. JANSSEN

Dr. Janssen is professor of geology and head of the department at Marshall College, Huntington, West Virginia. He did his undergraduate work in geology at Northwestern University and received his Ph.D. from the University of Chicago. He was formerly on the staffs of the Chicago Natural History Museum and the Museum of Science and Industry in Chicago. He was active in the preparation of geological exhibits for the Chicago Century of Progress Exposition in 1933 and for the Texas Centennial Exposition of 1936. In addition to research interest in coal paleobotany and physiography, he has actively fostered popularization of science and scientific education.

A mighty river, coursing toward the sea, presents a wondrous spectacle of power, strength, and endurance. Its surging waters have cut into the bedrock and stripped away the strata which once lay across its valley. Unceasingly at work, it has become the master of its environment, entrenching itself into the landscape of which it is a part. The stream is the creator of both the valley and the hills; and in creating them, the river inscribes the history of its own eventful past.

The pathway of the river, however, may sometimes be beset with difficulties. Upheavals of the lands, invasions by the sea, advances of glacial ice, landslides, all tend to turn the river from its course. If they be great, the river may be turned aside; if overwhelming, the river meets its end. Such was the fate of one of America's grandest rivers. Unseen by man, it was the master stream of a prehistoric age, a precursor of rivers that flow today.

More than half a century ago, geologists working in the basin of the great Ohio River first noticed certain peculiarities of the river valley. They saw that some portions of the valley seemed to be much younger than others, that some of the river's tributaries appeared to be older than the master stream, and furthermore, that certain confluent valleys showed evidence of former occupancy by torrential currents no longer flowing through them. This led to the conclusion that the Ohio River had not always flowed in its present course, but that during some time in its history it had abandoned portions of its well-established valley and had carved out another route. With this, it was reasoned, had

come adjustments in its tributary drainage. Summarizing this accumulated knowledge and adding much of his own, W. G. Tight in 1903 worked out partial details of these changes.¹ Among these was the recognition of a great abandoned valley extending across West Virginia, from Huntington to Charleston, through which the Ohio River was presumed once to have flowed. Averaging a mile and a half to two miles wide and nearly fifty miles long, the valley is occupied today only by minor streams that drain the immediate territory and are incapable of having excavated so great a valley in the bedrock.

To this valley Tight gave the name Teays, from a tiny crossroads station located within it. He also applied this name to the former river which flowed through it to distinguish it from the present course of the Ohio River. He did not know that one day the name he had proposed would become applicable to a greater river—a river which was once the master stream of interior America, with the Mississippi as a tributary. He was unaware that the Ohio River had not yet been born when the Teays flowed across the lands. The story of how the Teays helped to carve a great continent, of how it ultimately ceased to exist, and of how the Mississippi later became the master stream of the interior was not fully realized until nearly half a century later.

The prehistoric Teays, precursor of the present Mississippi, and predecessor of the Ohio, the Illinois, the Wabash, and others, had its source in the Appalachian Mountains of North Carolina (Fig. 1). From there it followed a northwestward course across Virginia and into West Virginia as far as

Charleston, along the same route occupied by the New and Kanawha rivers today. From Charleston it continued due west through the abandoned valley to Huntington, and then swerved northward to Chillicothe, Ohio. Here it resumed a northwestward course past Springfield, Ohio, to the Indiana state line southeast of Fort Wayne. It then turned south and formed a great loop to the north. After reaching its northernmost point in Fulton County, Indiana, the Teays swerved southwestward to Lafayette, proceeded west into Illinois, passing near Champaign, swung down toward Decatur, and then back northwest to Lincoln, Illinois. At this point it was joined by its tributary, the Mississippi, which then flowed considerably east of its present channel. The Teays continued to Beardstown, Illinois, and followed the present lower Illinois River Valley as far as the latter's confluence with the modern Mississippi Valley near St. Louis. Here the Teays received drainage from the western plains through channels which later became identified with the present

Missouri River. The Teays continued for a short distance past St. Louis where it emptied into the Gulf of Mexico, an embayment of which formerly extended northward to this point. Here was the mouth of the great Teays River. With its headwaters in the Appalachians in the East and in the Rockies in the West, the tributaries draining the Great Lakes region on the north and the Kentucky terrain on the south, the Teays was the master stream of a primeval America.

The discovery of this ancestral river was not the accomplishment of a single individual. It was the culmination of study and exploration made in recent years by a great many geologists working individually in the scattered territories through which the river flowed. Gradually it became evident that several streams, shown on present-day maps as individual rivers, are really disconnected portions of a former big, single river. Associated underground waters were also found to be moving along definite buried channels. Finally, the entire course of the ancient river became apparent.

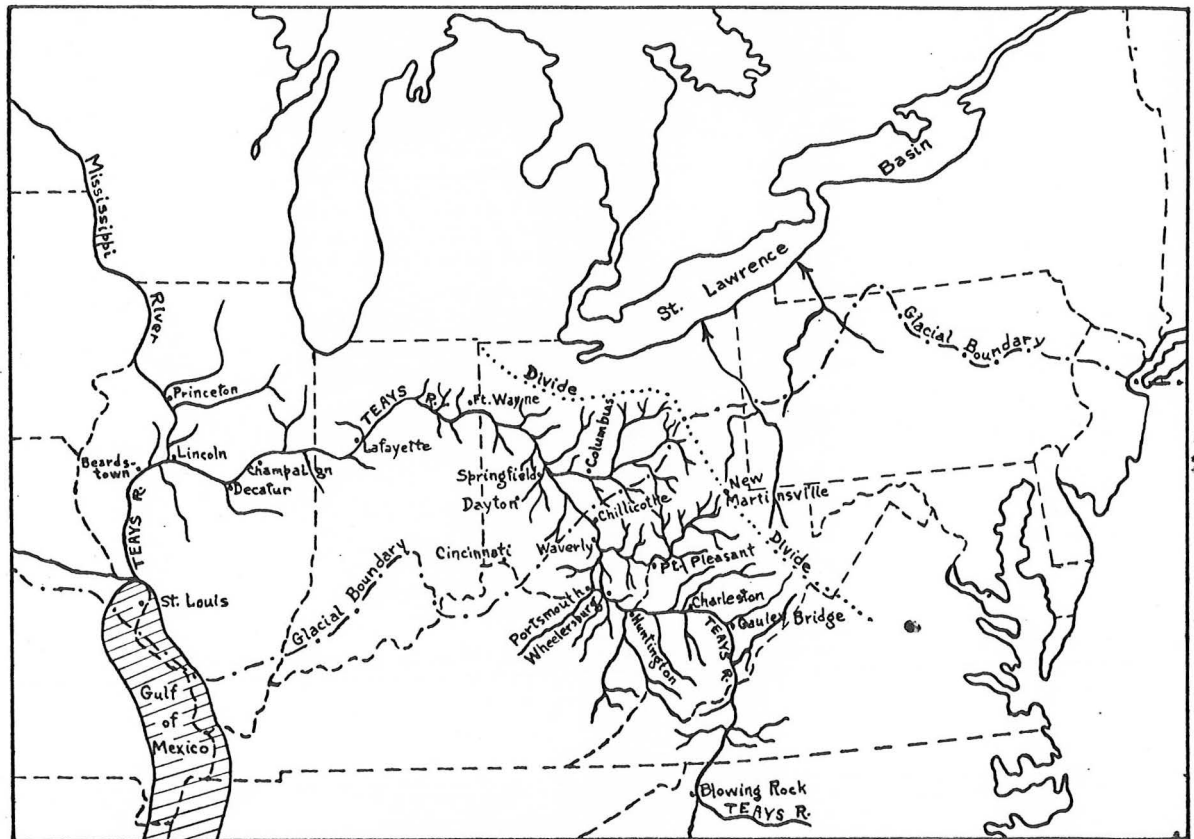
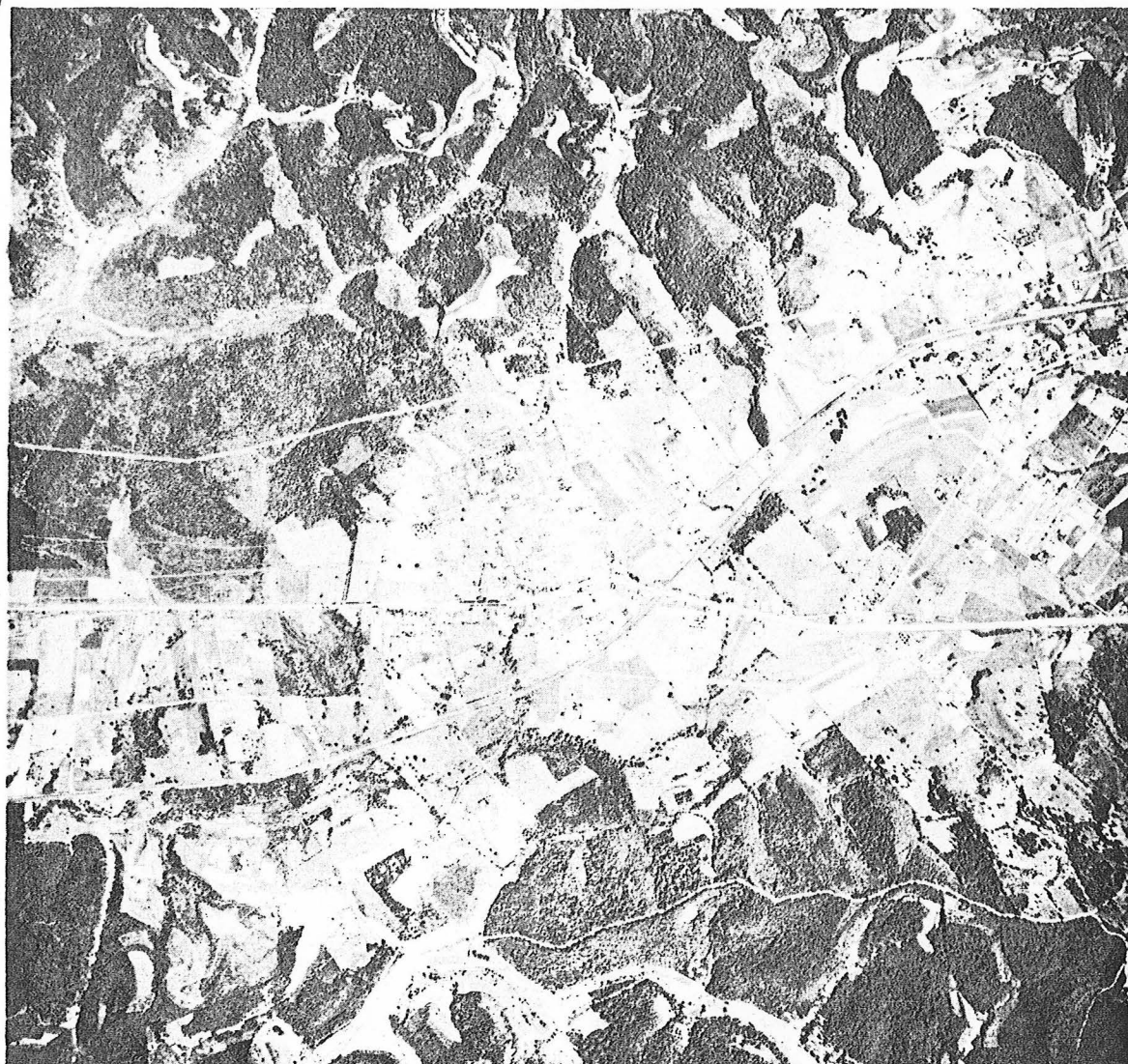


FIG. 1. The Teays River and its chief tributaries in so far as they are known. Some of these still flow as surface streams today; others are completely buried under the glacial debris. Also shown are the northern extension of the Gulf of Mexico and the line of southernmost advance of the Ice Age glaciers. (Adapted from Tigh, Fidler, Ver Steeg, Lamb, and Horberg.)



The abandoned Teays Valley as seen from the air above the town of Culloden, West Virginia, about midway between Charleston and Huntington. The light portion through the middle marks the old river bed, and the forested hills rise on either side. The main line of the Chesapeake and Ohio Railroad and U. S. Highway 60 can be seen extending through the valley. (Courtesy of Chesapeake and Ohio Railroad.)

The Teays River had its origin many millions of years ago in the Ancestral Appalachian Mountains, a higher range of mountains, preceding in geologic time the present ranges. These earlier mountains were eroded to an almost level plain, and the Teays River was one of the rivers that had worn them low. Thereafter, it flowed westward across the great plain, which it had helped to create, toward an immense inland sea that covered the central part of North America. The river developed a winding, meandering course as it crossed the plain.

In the course of time, pressures from within the earth lifted the plain to a high plateau, with the

uplift highest in the East so that its surface sloped westward toward the interior of the United States. At the same time, the great inland sea was drained away, except for a long narrow arm which extended northward from the Gulf of Mexico as far as southern Illinois. These changes did not destroy the Teays River, as it was carried upward on the surface of the rising land. With its gradient steepened, it continued to flow down the new slope to the sea at the northern end of the long arm of the Gulf. The uplift gave the stream renewed energy, and it cut its way downward through the uplifted rock layers. The course of the river could not be straightened; hence, it entrenched itself in the

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bedrock, while retaining the shape of the meandering course which it had developed previously on the low, flat plain.

Evidence of this can still be seen in the gorge of the New River, which is the present name for the upper portion of the Teays where it flows from North Carolina to central West Virginia. The deep canyon, with its nearly vertical walls and winding course, marks the extent of the river's erosion since the uplift. Similar relationships may be seen throughout the vast Appalachian region wherever other streams have incised their valleys into the great plateau. From some high vantage point, such as those along the Blue Ridge Parkway, one can see that the Appalachian ranges of today are essentially flat topped and of nearly equal elevation in their highest parts. If one imagines all the valleys refilled with the great quantities of rock that once were there, he has reconstructed the vast, rolling plateau surface that existed before the valleys were cut into it. The present Appalachian ranges, with their long, flat-topped summits, are remnants of the former plateau which has been dissected by the stream-cut valleys between them. The Blue Ridge marks the eastern limit and highest part of the former plateau. The steeply tilted rock layers seen in the sides of many of the ranges are the spreading roots of the Ancestral Appalachians, now re-elevated and dissected into numerous parallel ranges. Hence, the Teays, older than the present mountains themselves, actually held its course while the bedrocks were pushed upward from beneath it.

The headwaters of the Teays consisted of at least two main forks. One, rising in eastern West Virginia, is known today as the Gauley River. The other, rising in North Carolina, is the present New River. It is longer, and was the main headwater channel of the Teays. It rises today near the resort town of Blowing Rock, at the summit of the Appalachian Divide. Originally it extended much farther east to the present Fall Line along the eastern base of the mountains. This was before the eastern portion of the Blue Ridge was eroded to become the Piedmont area. Streams flowing down the east side of the Blue Ridge directly into the Atlantic had much steeper gradients than did the Teays and others draining toward the Gulf of Mexico. Consequently, during the intervening ages, the divide has been shifted farther and farther west by erosion, resulting in the disappearance of the uppermost headwaters of the Teays. Contrary to its name, the New River, as the remaining headwater portion of the ancient Teays, is one of the oldest rivers in America. Because it was there

long before the mountains were carved, it is the only river crossing the entire Appalachian belt from one side to the other.

The union of the New and Gauley Rivers at Gauley Bridge, West Virginia, forms the present Kanawha River, which was a part of the ancient Teays as far as Charleston, West Virginia. The valley of the Kanawha here crosses the heart of the vast Appalachian coal field. Along the steep valley sides can be seen the entries to coal mines which extend back under the hills on either side. Along the river banks are great chemical plants which process the many products made from coal.

A few miles below Charleston, near the town of St. Albans, the Kanawha suddenly turns out of the old valley of the Teays and pursues an independent course northwestward toward the Ohio River. The Teays Valley proper, however, continues westward across the remainder of West Virginia. It was this valley that Tight long ago recognized as the abandoned course of a great river. Thick beds of sand and gravel, including water-worn boulders up to twelve inches or more in diameter, lie upon the valley floor. Many, composed of rocks quite dissimilar to the bedrock of the valley, show unmistakably that they were washed by river action from the bedrock region of the Blue Ridge. Only a great and powerful stream could have accomplished this. At places where erosion has removed the river gravels and exposed the bedrock beneath, potholes ground in the bottom of the former channel provide further evidence of the river's course. Along the full length of this broad valley floor runs today the main line of the Chesapeake and Ohio Railroad, its right-of-way selected long ago because it provided the only natural avenue of direct travel through the terrain of the West Virginia hills.

Within the city of Huntington, West Virginia, the abandoned valley of the Teays suddenly ends. Here it joins the stream bed of the more recently formed Ohio River, which enters the city from the northeast. The occupied valley continues toward the northwest, past Ashland, Kentucky, and Ironton, Ohio, to the town of Wheelersburg, about ten miles east of Portsmouth, Ohio, where the Ohio River again leaves it. For this distance of about forty miles, the younger Ohio River has appropriated a portion of the old Teays Valley. Within this section, a major tributary of the Teays, the Big Sandy River, entered from the south. It is still in existence and forms part of the state boundary between West Virginia and Kentucky. Rising on the northwest slopes of the Appalachians, it is now a tributary of the newer Ohio River.



Potholes, ground into the bedrock when pebbles have been whirled about by streamwater, have been found in a part of the abandoned Teays Valley in Huntington, West Virginia.

At Wheelersburg the Ohio River leaves the Teays Valley and flows westward to the Mississippi; but the old Teays Valley continues almost directly north past the towns of Piketon and Waverly, between which our newest atomic energy plant is now under construction, and thence on to Chillicothe, Ohio. This section of the Teays Valley is now occupied in part by the Scioto River, which flows south to join the Ohio instead of flowing north as did the Teays. During the Great Ice Age, large amounts of sand and gravel were washed into the valley from the north, thereby reversing the slope of the valley floor.

If one drives northward along the present highway to Chillicothe from the south, he approaches the city through the old Teays Valley. The adjacent hills are rather flat topped, and en masse present an even horizon line against the sky. This skyline level is the western continuation of the vast plateau surface that inclines eastward to the top of the Blue Ridge where the Teays had its source. As one continues toward the city, he sees the distant buildings at a slightly higher elevation, although still within the valley. This gradual rise of the valley floor results from the partial filling of its bottom with glacial sands and gravels, poured into it by the meltwaters from the receding continental glaciers of the Ice Age. The city is built on the surface of this valley fill. The great ice sheets which moved into the United States from Canada during the Pleistocene Epoch advanced almost to the northern edge of Chillicothe.

Continuing northward from the city, the traveler ascends the gradually sloping surface of the valley fill until he is on a vast rolling surface composed of gravel, sand, silt, and clay, which completely bury all vestige of the previous land surfaces over which the glaciers moved. The ice,

in its movement over the land, planed off the higher hilltops, filled the valleys with this debris and, in place of the former plateau surface, left a broad, rolling topography which continues to the shores of the Great Lakes.

The long valley of the Teays, which can be followed from its source in North Carolina, disappears at Chillicothe under the blanket of glacial drift. Geologists who first traced the course of the old valley as far as Chillicothe had no means of tracing its buried course. Some thought it continued northward to the Great Lakes. Others thought that it turned westwardly into Indiana and met the valley of the Wabash. Indeed, as late as 1943, the lower course of the Wabash was thought to be a continuation of the original Teays Valley.²

Knowledge of the actual course of the Teays, from Chillicothe to its former mouth at the Gulf of Mexico, has come from the recent study of thousands of well records. Such records, in the case of water wells, show the elevation at the present ground surface, the depth to ground water, the type of material penetrated, and, if the well goes deeply enough, the depth of bedrock. Because of the greater depths of oil and gas wells, additional information about the bedrock becomes available. By plotting the well locations on maps, and showing the depth to bedrock for each, the topography of the preglacial buried land surface has been determined. Thus, it has become known that the general bedrock surface from central Ohio westward into Illinois represents a continuation beneath the glacial drift of the gently sloping plateau surface. In many places the wells have penetrated the drift to depths of 200 to 300 feet deep before reaching bedrock. The distribution of these deeper wells follows a definite pattern and indicates the long winding course of the Teays River from Chillicothe to southern Illinois.

Not only has the course of the buried river been traced, but the slope of its bed and the width of its floodplain have also been learned with reasonable accuracy. At Chillicothe, where the valley floor first becomes lost under the thick deposits of glacial material, its elevation above sealevel is 620 feet. As it enters eastern Indiana it is 508 feet, and near Lafayette in western Indiana it is 384 feet above sealevel.² It continues to drop gradually across Illinois until a minimum elevation of 280 feet is reached where the valley of the Teays is again exposed and is occupied today by the Illinois River. The elevation of the Teays bed at its point of discharge into the Gulf of Mexico south of St. Louis is not yet definitely established. However, at a point fifteen miles south of St. Louis,

Does the ice age come before the Teays?

where the surface elevation is about 400 feet above sealevel, bedrock was reached at a depth of 277 feet,³ which would be about 123 feet above sealevel. Whether this represents the actual bed of the Teays or the bottom of the Gulf of Mexico, which was then becoming filled with delta deposits, cannot yet be definitely stated. Sealevel just prior to the Great Ice Age was higher than at present, so that this indicated elevation of the Teays near its mouth might coincide with the possible sealevel of that time. On the basis of the known elevations of the river bed between Chillicothe and western Illinois, however, the Teays River had an average drop of seven inches per mile,⁴ which coincides closely with the average gradient of the Mississippi today between Cairo, Illinois, and its mouth.

The width of the exposed Teays Valley between Charleston, West Virginia, and Chillicothe, Ohio, averages about one and one-half miles. The buried portion gradually widens to about four miles near the Indiana-Illinois line. Near Decatur, Illinois, it is about five miles wide, and near Lincoln, where the Teays was joined by the Mississippi, the valley floor broadens to almost fifteen miles.⁴ The Teays was a massive and well-established river, as the size and gradient of its buried valley indicate.

The Teays River was dismembered into several smaller rivers and partly buried by direct action of the great glaciers of the Ice Age. The massive sheets of ice which moved into the northern United States from Canada traveled farther south in western Ohio, Indiana, and Illinois, than elsewhere. The ice extended into northern Kentucky in a few places and made its farthest advance in southern Illinois where the lowest elevations were. The entire lower course of the Teays River below Chillicothe was overridden by the ice. The Teays was overridden and all its tributaries within the glaciated area were covered.

The well records which have shown the location of the buried Teays Valley have indicated the courses of many of the buried tributaries. In so far as these are known, they are shown on the accompanying map. Most interesting of these was the primeval Mississippi which flowed southward from the border of Canada. Originally it did not make the big bend around west-central Illinois. Instead, its course diverged at Clinton, Iowa, and flowed near the middle of Illinois to meet the Teays near Lincoln. Farther south, the Teays received at least one major tributary from the west, the predecessor of the Missouri River, which had a somewhat different course than at present and was not so long.

Originating, perhaps, in the days of the dinosaurs, the ancient Teays established its course from



The New River Gorge as seen today from Hawks Nest State Park, West Virginia. Here the river follows the same winding course that it had in ancient times. The nearly level skyline marks the surface of the elevated plateau into which the river has since entrenched its channel. (Photo by U. S. Geological Survey.)

the Blue Ridge to the Gulf. With its great network of tributaries, it helped carve the landscape of a large portion of the continent. The amount of sediment—mud, silt, sand, and pebbles—which it eroded and carried to the sea must have been tremendous. The sea into which it poured those sediments was the long narrow arm of the Gulf of Mexico. This long seaway, from southern Illinois to New Orleans, has been completely filled, and the great delta now juts far into the Gulf proper.

The building of the delta has been attributed to the Mississippi River, which now follows its entire length. This part of the Mississippi, however, has been in existence for a brief time in comparison with that of the former Teays. It seems evident that the greater bulk of the delta was built by the Teays, with the Mississippi adding only the latest portions. Hence, the immense delta, more appropriately, might be called the delta of the Teays.

It is possible that the Teays may have extended its course considerably beyond the point near St. Louis which was originally its mouth, just as the Colorado River has filled the northern end of the Gulf of California, and must today flow over this extended land. If the Teays had accomplished as much as the Colorado in this respect, its lengthened course over the filled land would have extended well beyond Cairo, Illinois. This would mean that it had as an additional tributary the ancestral Ohio River, which then was a relatively small, short river with its source near Cincinnati. If the Teays had extended its course much farther before becoming extinct, it may have had essentially the same additional drainage as does the lower Mississippi today.

The great Teays River ceased to exist as a surface stream with the coming of the vast glaciers of

The Ice Age. For some reason, as yet unknown, the subarctic climates in the North began to deepen. The snows fell more frequently and lasted longer. The temperatures were lowered to the extent that the long winter snows did not all melt in the short summer months. The unmelted snows packed into ice, and as the years passed, the ice fields grew larger. Great mountains of solid ice took form in Greenland, Labrador, central Canada, and the Canadian Rockies. The great weight of the thickening ice caused it to sprawl outward from these centers of accumulation. These behaved like gigantic mounds of stiff molasses, slowly spreading in circumference as more ice continued to gather at the tops of the domes.

Eventually, the ice moving outward from one dome merged with that from another. Finally, all Canada was blanketed with a continuous ice sheet from sea to sea. In the north, the ice moved toward the pole; in the south toward the United States. Covering hill and valley, the blanket of ice grew thicker as it slowly pushed forward. Attaining thicknesses of 10,000 feet, or possibly more, the sliding sheet of ice advanced along an irregularly scalloped front, with great lobes protruding ahead of the main mass. Inching forward over the land, it wrecked everything in its path. The topsoil and underlying mantle of weathered rock were churned and plowed. Chunks of broken rock became frozen into the bottom of the ice, and as these were dragged along by the advancing glacier, they scratched and gouged the barren bedrock over which they moved.

Slowly the vast sheet of ice moved across the region of the Great Lakes. The lakes were not present then, for they were born of the Ice Age. It was then a region of hills and valleys, probably similar to that of southeastern Ohio and West Virginia today, with the streams draining toward the St. Lawrence River. The valleys were deepened and widened and changed in shape; and the materials gouged out of them were carried forward by the advancing ice.

By this time the great mass of ice was overriding the upper Mississippi and encroaching upon other northern tributaries of the Teays. The mammoth, the mastodon, and the musk ox, which had ranged far northward along the shores of Hudson Bay, found themselves migrating ahead of the towering ice sheet. They crossed the Teays River in great numbers. Today we find their fossil bones in Kentucky and West Virginia, and some as far south as Florida and Mexico.

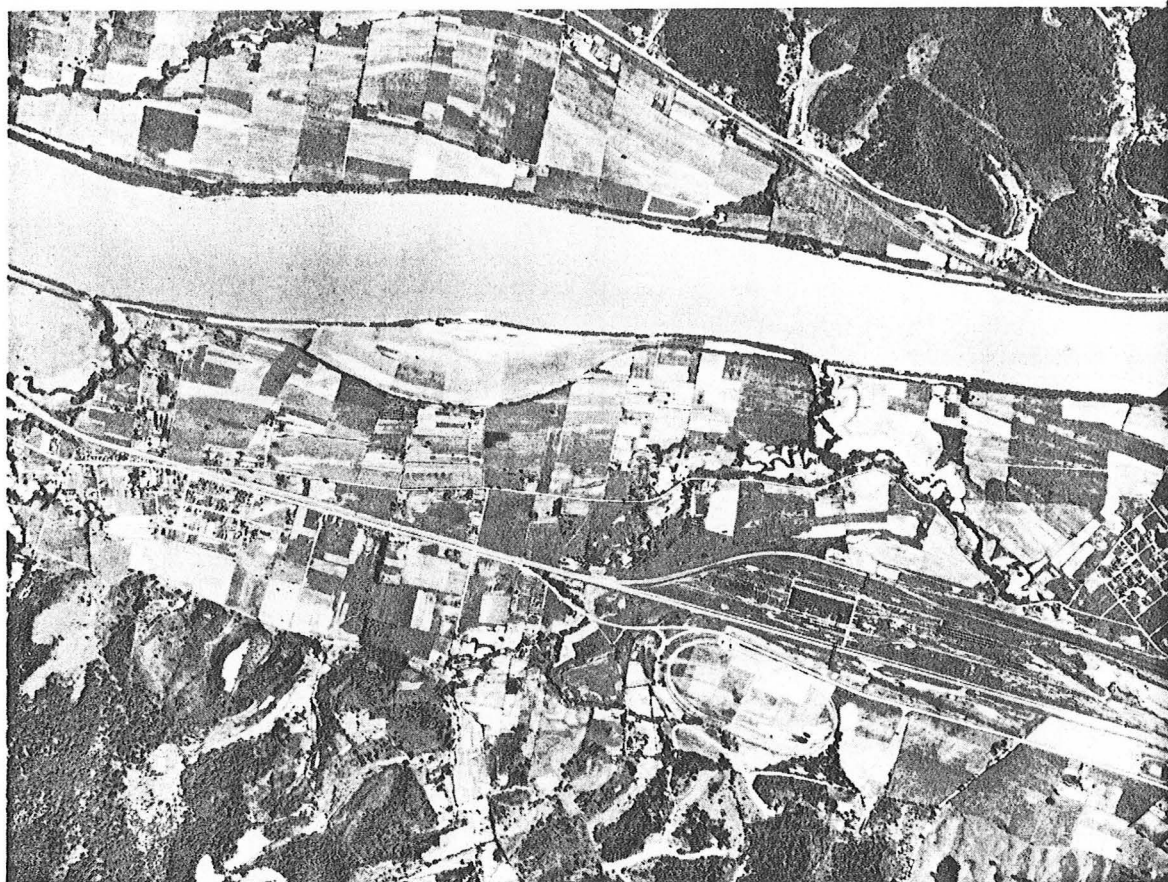
Eventually, the advancing ice reached the banks of the Teays and slowly moved across it, burying

both the river and its wide valley beneath a blanket of debris. The ice mass inched its way almost to the tip of southern Illinois before it stopped. Its irregular front tapered backward in each direction, into New England on the East, and into the Montana Rockies on the West.⁵ The lower course of the Teays below Chillicothe lay buried beneath the vast sheet of glacial ice.

The long wall of ice, which now covered the upper course of the river, became a great natural dam beyond which the headwater flow could not penetrate. Consequently the upper waters became ponded, converting the stream into a long narrow lake confined within the valley walls. Thick layers of finely laminated clays deposited in this lake bottom indicate that it stood several thousands of years before the ice melted and released the ponded waters.⁶ Perhaps, when the lower course of the Teays had been uncovered, stream waters again surged through its partially filled valley. On the other hand, if its valley had by then become completely filled with glacial debris, it is unlikely that the river ever returned to its previous surface course.

This much, at least, we do know. The great glacier, which had moved southward over the Teays and had later melted, was only the first of four which followed each other in geologically rapid succession. Each of these advanced along its own individual front, so that the points of farthest advance do not coincide. In many places, the later ice sheets extended beyond the limits of the earlier ones. Each had the effect of partially or completely obliterating the deposits dumped by the preceding ones. In only a few places can all four successive beds of glacial deposits be found on top of one another. At least two, probably three, and possibly all four of the great glaciers of the Ice Age overrode some portion of the lower Teays Valley. What the first glacier may have failed to accomplish was completed by one or another of the others. When the last of these glaciers had melted back for the final time, the entire lower valley of the Teays was deeply buried. The valley was filled with deposits of gravel, sand, and silt, and the glacial debris covered the entire landscape, the highlands and the former valleys. The average thickness of the material which now blankets the north-central United States is in the neighborhood of fifty or sixty feet.⁷ In some places it is thinner, in others it is thicker by a hundred feet or more. Below this general depth are the buried valleys whose bedrock bottoms sometimes extend several hundred feet deeper.⁸

The ponding of the river waters, which were



Aerial view of the Ohio River where it cuts diagonally across the valley originally occupied by the Teays River near the outskirts of Russell, Kentucky. (Courtesy of Chesapeake and Ohio Railroad.)

blocked by the ice during one or more of its advances across the valley of the Teays, flooded the main valley above Chillicothe and those of the entering tributaries. Such valleys became long finger lakes. Nearly all the tributaries in southeastern Ohio and adjacent regions of Kentucky and West Virginia, in their lower courses, then held standing water instead of flowing streams. As a result, the bottoms of these temporary lakes, like that of the main Teays Valley, received layers of fine silts and muds that settled out of the water in great thicknesses over the coarser streambed sands and gravels. Eventually, some of these lake waters overflowed their rims, cutting through low divides in the enclosing hills. New systems of drainage evolved, and when these lakes were finally drained by the melting of the glacial dam, stream patterns bearing little resemblance to the former Teays system were in effect.

Portions of the Teays Valley, such as the abandoned section between Huntington and Charleston, West Virginia, as well as similar abandonments

in various tributaries, were thereafter cut off from direct connection with the new stream systems. In other cases, the drainages were completely reversed because the glaciers had left the new land surfaces sloping generally southward from the Great Lakes. For example, the Allegheny and Monongahela rivers in Pennsylvania were originally northward-flowing tributaries of the St. Lawrence River, whose headwaters extended into the region of the Great Lakes before the glaciers gouged out those tremendous basins. The direction of their flow was reversed by the advancing ice, and they were made to merge at Pittsburgh, thereby sending a flood of water southward—the start of the modern Ohio River. These waters poured southward toward Huntington where they found the now-abandoned valley of the Teays, which they followed as far as Wheelersburg, Ohio. Additional waters, pouring southward all along the melting front of the glacial ice, added their torrents to the new river. Since the river was prevented from continuing to Chillicothe in the old valley, which now

d a slope in the opposite direction, the waters
 ke over the low divide to the west and poured
 o the previously existing lower Ohio Valley
 hich then had its source near Cincinnati. Thus
 e Ohio River, as we know it today, came into
 stence, replacing in part the surface system of
 e Teays.

A million years have passed since the advancing
 of the first great glacier slid down over the
 ley of the Teays. This represents a mere fraction
 the much greater length of time that the age-
 ing Teays had dominated the drainage of pre-
 cial interior America. But during this relatively
 ch shorter time, the ice sheets completely
 aged the face of the lands over which they
 ved. They established the Great Lakes, they
 t 10,000 smaller lakes in Minnesota, they turned
 e headwaters of the Missouri southward, they
 shed the lesser Mississippi to the west, and sent
 e combined waters of a new river system down
 ross the old delta of the Teays.

In spite of these tremendous changes, the Teays
 ver is not totally extinct. Its headwaters, be-
 een North Carolina and central West Virginia,
 ll flow, under different names, along the identi-
 l age-old channel. At St. Albans, they were
 nply diverted to add their flood to the new
 hio. But much more important is the fact that
 e greater, buried portion of the Teays still car-
 es its waters across Ohio, Indiana, and Illinois.
 ecause it is much easier for rainwaters and melted
 ow to percolate between the loose sands and

gravels that fill the buried valley than it is for
 them to seep through the bedrock on either side,
 there remains an avenue for the movement of
 ground water along the old channel. The Teays
 River is not really gone; its waters still flow slowly
 underground.

The discovery of the buried Teays Valley as a
 carrier of subsurface water has greatly advanced
 the cause of geologists whose task it is to search
 for adequate supplies of ground water. In many
 parts of the United States our expanding economy
 and increasing population have drawn so heavily
 upon the supplies of water that many communities
 and areas have found themselves dangerously short
 of this basic necessity even when no drouths exist.
 In the future, geologists concerned with such prob-
 lems will search for buried river channels with the
 same diligence that they now search for hidden
 pools of oil and gas.

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Made in United States of America
Reprinted from THE SCIENTIFIC MONTHLY
Vol. LXXVIII, No. 4, April, 1954

"TEAYS RIVER" OR "CONTINENTAL RIVER"

THE STORY of the ancient Teays River, as told by Raymond E. Janssen [*The Scientific Monthly* 77, 306 (1953)] is astonishing. Here before our eyes we see one of nature's greatest marvels—now that it has been illuminated by the light of science.

With all due respect for W. G. Tight, who discovered and named the Teays Valley, I, for one, protest the name "Teays River." Are we to accept this name, taken from an insignificant "crossroad station" in West Virginia, for the name of a gigantic river that for millions of years "dominated the drainage of preglacial interior America," and still flows beneath the country now known as the United States of America?

Surely some more meaningful name can be proposed. Why not "Continental River?"

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MR. FEE'S SUGGESTION is quite interesting and would have merit if there were need for a geographical name of an existing river. However, the river, as an entity, no

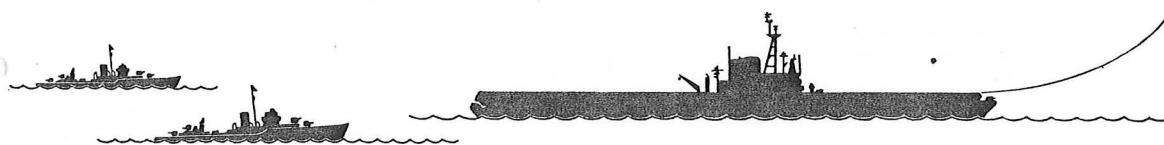
longer exists, and its residual portions already have their own names. The name is solely of scientific significance for precise identification, like the names of rock formations, plants, and animals. In scientific circles, it is customary for the discoverer of a new species, a new mineral, a former landmass, lake, sea, or river, to apply a name of his choosing, as long as the name has not already been used for a similar application. Once a name has been applied and become recognized by usage in the literature, changing of it fosters confusion, and is therefore seldom acceptable. The mere fact that a selected name may later seem inappropriate is not a valid reason for changing it.

The name Teays, as applied to the great valley and the river that formed it, has been used by geologists for half a century, but only recently are others beginning to hear of it. If the former existence of the great river catches the popular fancy, its name too will become famous like any other great thing that had a humble or unknown beginning.

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When radar intelligence reports approaching enemy bombers,
the carrier-based Douglas Skyray streaks up
to intercept

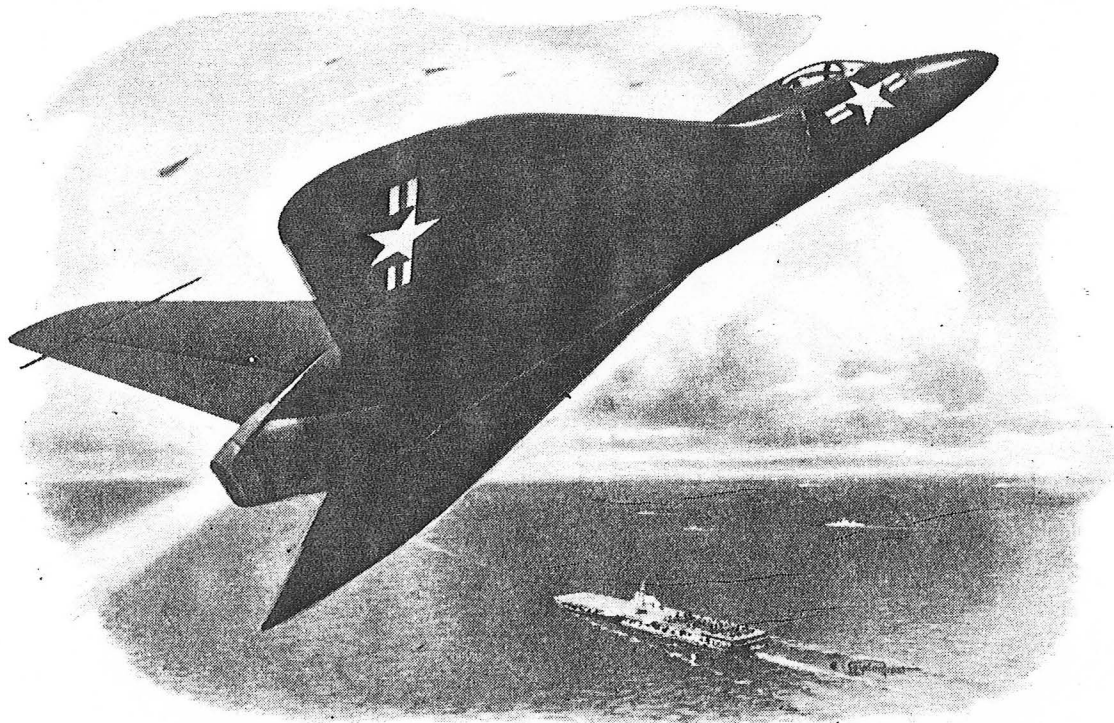


New jet interceptor—the Douglas Skyray

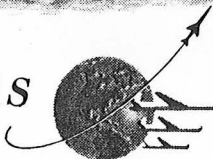
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The History of a River

The Ohio is comparatively young. The course of its predecessor, mightier than the Mississippi, has now been traced by the work of many geologists and even exploited for the benefit of man

by Raymond E. Janssen

TO THOSE who live along its banks the mighty Ohio River is a symbol of power and permanence. It has carved itself deep into the bedrock of the ancient Appalachian hills and into the Middle Western landscape. Yet the present Ohio is not as ancient as it may seem, and as for its place in the American scene, it is but a stunted descendant of a mightier river that once dominated the mid-continent. The predecessor of the Ohio, which many millions of years ago surged across the length and breadth of the Middle West, was greater than the Mississippi, which indeed was then only one of its tributaries. Geologists call the ancient river the Teays. The Teays, rather than the Mississippi, was really the great "father of waters" in North America.

The story of the Teays, as pieced together by many geologists, is a chronicle of how rivers come and go and how the land shifts and changes countenance in the long stretch of time. It is also a story with a practical ending, for the tracing of this ancient river course has turned up an unexpected addition to our vital national resources.

Nearly 50 years ago the Ohio-born geologist William G. Tight made a study of certain signs of comparatively recent shifts in the Ohio River's bed. He decided that the river had once followed a somewhat different course from its present one, and that the changes were due to the Ice Age glaciers. Tight's study was confined to the upper reaches of the Ohio. Through the years many other geologists have carried the tracing further and pieced together additional parts of the puzzle. It is now recognized that the Teays (a name given by Tight to the Ohio's supposed old course from a hamlet on its ancient banks) was not the Ohio itself but a very different river that largely disappeared before the Ohio was born. Only in one brief stretch does the Ohio run in the same channel as the old Teays.

The Ohio has its source in the confluence of the Allegheny and Monongahela Rivers at Pittsburgh and follows a

southerly and westerly route to join the Mississippi at Cairo, Ill. Its predecessor, the Teays, was a considerably longer stream which for approximately two-thirds of its course ran almost at right angles to the direction of the present river. Its source was in North Carolina on the eastern edge of the Appalachian Mountains. From there it flowed roughly northwest to a point beyond Fort Wayne, Ind., thence almost due west to Lincoln, Ill., where it was joined by the Mississippi. It then turned sharply south to empty into a northern embayment of the Gulf of Mexico, which at that time extended to a point near St. Louis, where the Illinois River now meets the Mississippi (see map on pages 76 and 77). The only part of the present Ohio that follows the ancient Teays bed is the section from Huntington, W. Va., to Wheelersburg, Ohio.

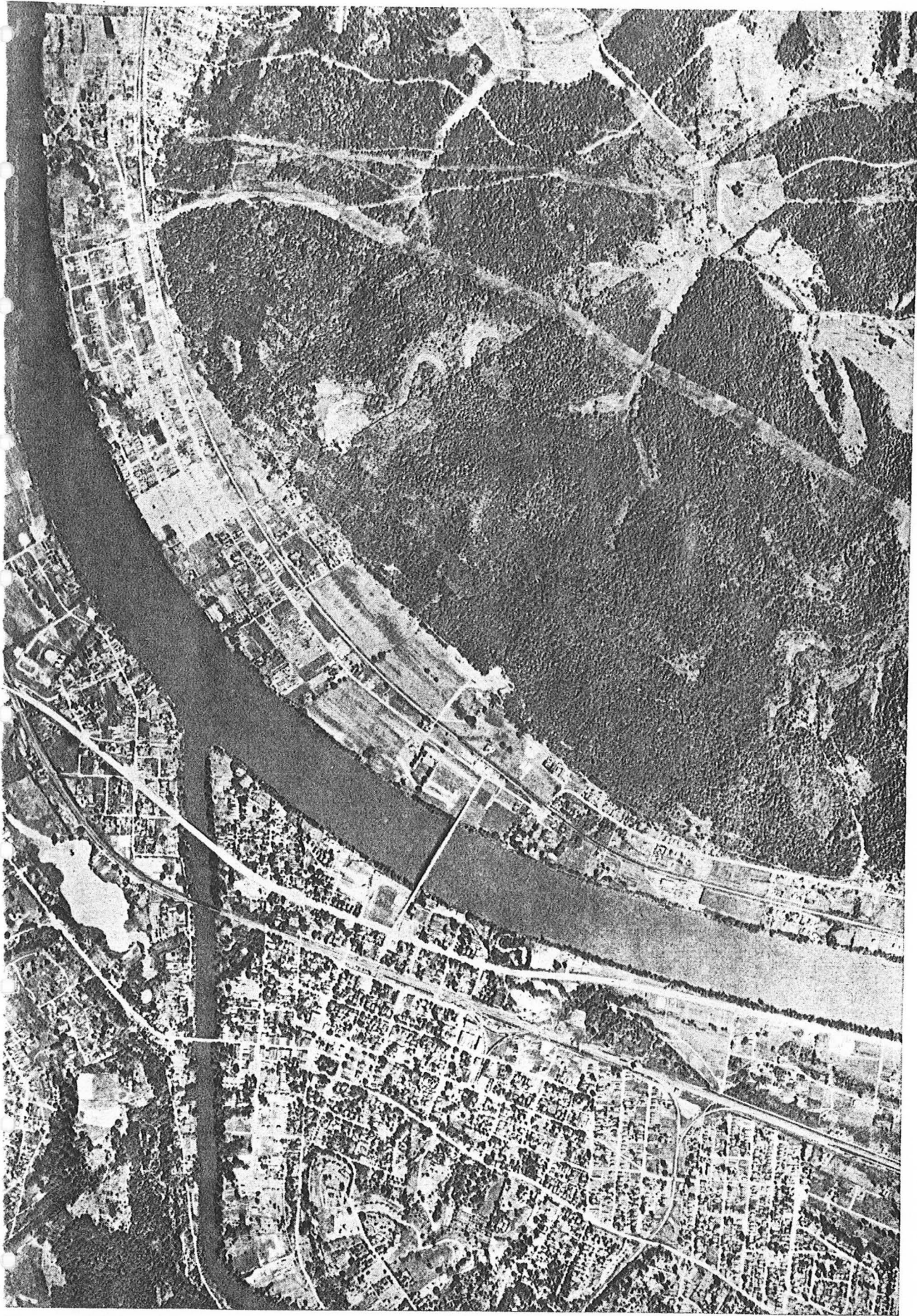
THE UNRAVELING of the histories of these rivers is an epic of geologic attainment. To understand how it came about that the Ohio supplanted the Teays, one must review first the major developments in the formation of the Appalachian region. Originally the area comprising the Central and Eastern U. S. was beneath the sea. About 200 million years ago the sea bottom was uplifted and the Appalachian Mountains, a range loftier even than the present Rockies, came into being. In time these mountains were worn by erosion to a nearly level surface. The plain was then in turn elevated to become a plateau. This high prairie sloped gently toward the west to merge with the present Mississippi Valley. The ranges we now call the Appalachians are no more than the remnants of that plateau—segments separated from one another by stream excavation of the valleys between. Anyone standing today at the summit of the Skyline Drive and looking out over the Appalachians can see that the tops of all the ranges are nearly flat and at about the same elevation. One has merely to imagine the intervening valleys filled again with the rock that

was originally there to reconstruct his mind's eye a vast rolling plateau stretches on all sides to the horizon.

The Teays was already flowing when this plateau was lifted; it was one of streams that had helped to cut away mountain peaks. As the land rose, the river cut its way down through the strata. Evidence of the process can be seen in the present gorge of the New River in West Virginia, which occupies a portion of the upper course of the Teays. When the uplift came, the river cut like thread through cheese, but with this difference: the stream had etched a lazy, meandering course on the plain, and it could not later straighten its route. The loops and curves were preserved in the deep, winding pattern of the present gorge. The New River really one of the oldest streams draining the Appalachians, and the only one that flows across the whole range from east to west. As the headwaters of the Teays had the advantage of being there before the mountains.

The Teays was not the only river draining the western slopes of the Appalachians at that time. Precursors of the Monongahela, the Allegheny and other rivers were also present, but they flowed northwest to the upper St. Lawrence River Basin, which then extended into the region later occupied by the Great Lakes. A divide between the north-flowing streams and the Teays system ran roughly across northern West Virginia and northeastern Ohio.]

THIS STREAM system apparently prevailed for many millions of years. Within the last million years, when continental glaciers of the Pleistocene pressed as far south as northern Kentucky, the advancing ice overrode and obliterated the lower Teays Valley from Chillicothe, Ohio, to the river mouth. For a considerable time the upper part of the Teays was dammed by the ice and one or more large lakes formed on southeastern Ohio and western West Virginia, where they can be identified today by the extensive silt beds in



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TEAYS RIVER, a tributary of the Ohio, follows the course of the extinct Teays for part of its length. This aerial photograph shows the river at St. Albans,

W. Va., where it begins to depart from the course of the Teays. Photograph by the Production and Marketing Administration of the Department of Agriculture.



TEAYS RIVER arose in what is now North Carolina and emptied into the Gulf of Mexico, which then extended much farther north. [The Mississippi was a tributary of the Teays;] the Monongahela and the Allegheny flowed north toward the region now covered by Lake Erie. After the ice moved across the lower Teays and retreated, the the Monongahela and the Allegheny were joined to the Ohio and flowed southwest. The edge of the ice sheet

area. When at last the glaciers began to melt northward, the tremendous volume of water from the waning ice sheets joined the lake water and poured west to form the course of what became the Ohio, or at least its lower portion from Wheelersburg to the Mississippi. Upstream from Wheelersburg, where the land was not covered by ice, the Ohio occupied the old channel of the Teays as far as Huntington, but above this region another set of circumstances provided the Ohio with its own source and upper reaches.

The glaciers which erased the lower Teays and formed the lakes also blocked

the northward flow of the Allegheny and Monongahela systems. These streams were thus forced to reverse direction. [Before the Ice Age there had been two small streams in the New Martinsville area of West Virginia, one of them a south-flowing tributary of the Teays, the other a north-flowing tributary of the Monongahela.] Their sources were within a few miles of each other but separated by the divide. When the blocked Monongahela and Allegheny reversed themselves by overflowing their basins to the south, the barrier was apparently broken through and the rivers poured down into the old tributary of

the Teays. Thus what had previously been two minor streams flowing in opposite directions became the upper Ohio from Huntington to Pittsburgh, and water that had once flowed north to the St. Lawrence now found its way to the Gulf of Mexico.

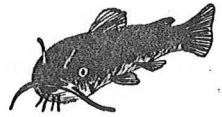
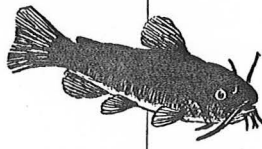
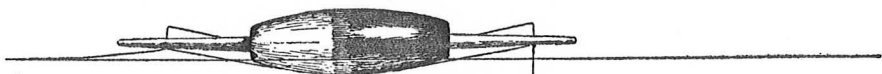
The Ohio we know today was formed of five major links: 1) the headwater portion, consisting of the Monongahela and the Allegheny; 2) the reversed-flow stretch between Pittsburgh and New Martinsville; 3) the section as far as Huntington, formerly a tributary of the Teays; 4) the bed of the Teays itself from Huntington to Wheelersburg, and



rs are shown in blue; the extinct
s, in black. Where the blue and
run closely parallel, the present
streams occupied the same course.

the lower river from Wheelersburg to
Mississippi. If this last section existed
all before the Ice Age, it was as an
dependent drainage system emptying
o the Gulf.

THEANWHILE, what happened to
the upper Teays River—the east-
end that cut westward across the
palachians to Huntington? It is now
bed of two streams—the New River
d the Kanawha—which are merely tribu-
ry to the new master, the Ohio. This
tion of the ancient Teays has its own
ry to tell. The source of the Teays was
newhat east of Blowing Rock, N. C.,



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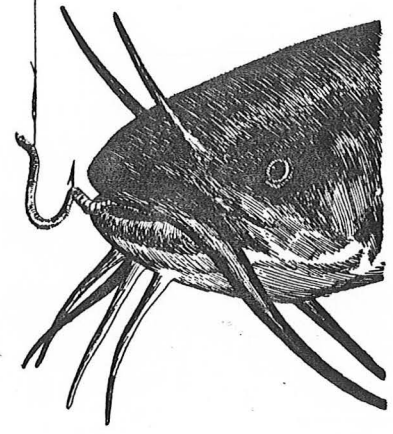
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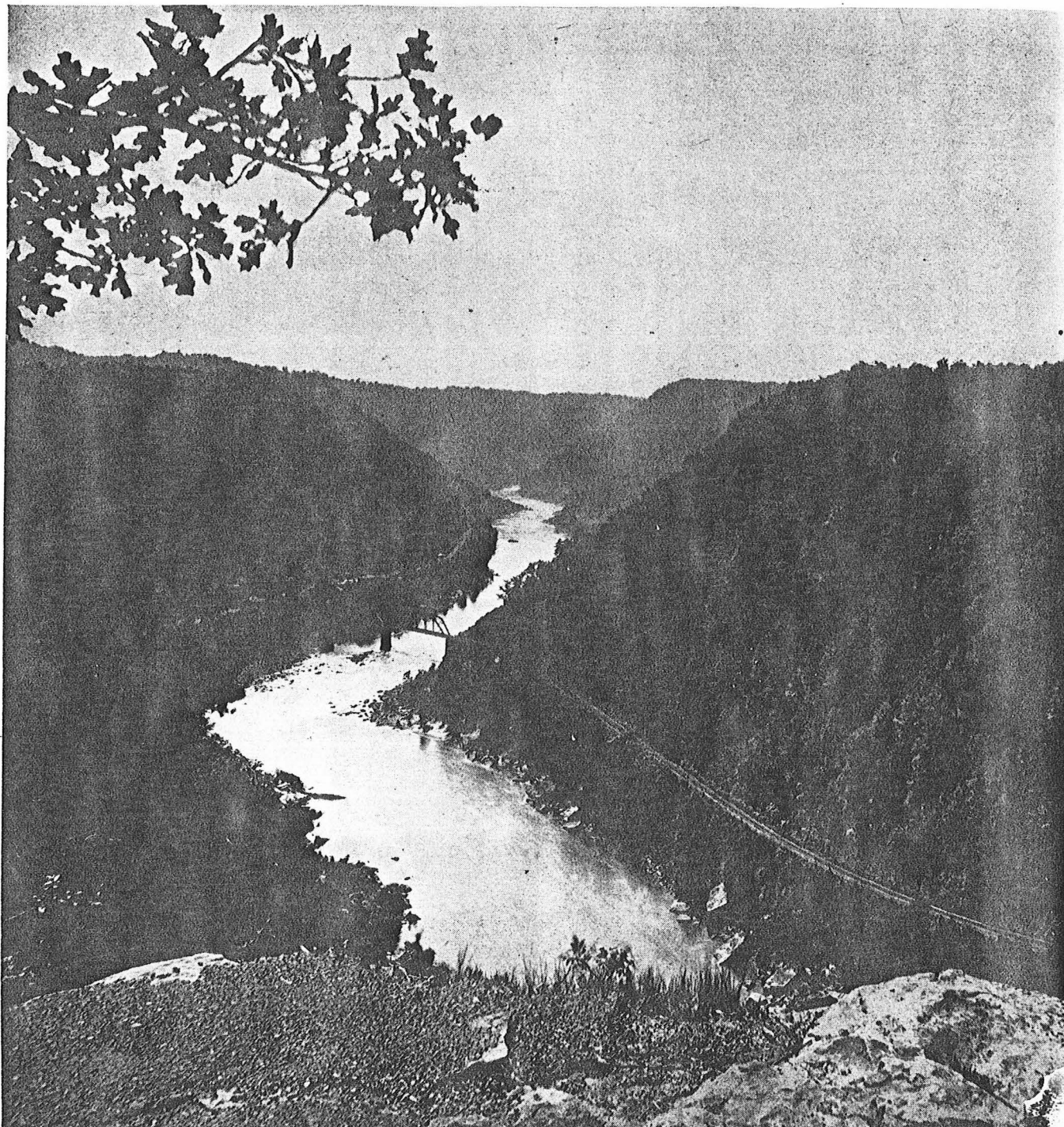


where the New River rises today. The part of the old river east of Blowing Rock has been lost, because the crest of the Appalachians has gradually been shifted westward by the erosion of the range's steep Atlantic slopes. From Blowing Rock west the New River occupies the bed of the Teays as far as Gauley Bridge, W. Va. There it joins the Gauley River and the two become the Kanawha. The latter river follows the ancient Teays course as far as Charleston, W. Va. Just below Charleston it makes an abrupt turn out of the old

Teays Valley, passes through a deep cut in the hills and joins the Ohio at Point Pleasant. The Teays Valley between Charleston and Huntington, a stretch where it is from a mile to a mile and a half wide, is now dry except for minor streams that drain the immediate neighborhood.

How did it happen that the Kanawha, having started off in the bed of the Teays, suddenly abandoned the valley to pursue a long and seemingly more difficult route to the Ohio? Again the answer is to be found in the glaciers.

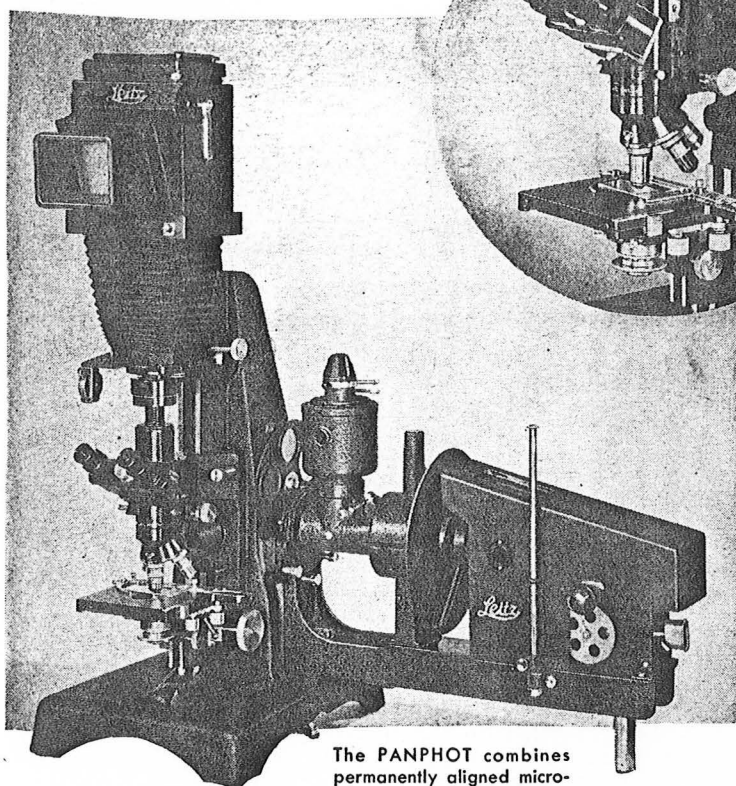
This section of the valley was one of the lake sites produced by the ice jam. There are deep layers of silt overlying the old Teays bed, which indicates that the ponded water remained there a long while. During the lifetime of this lake a small stream having its source near the upper shore gradually ate back to the lake's rim and permitted the dammed water to escape toward the northwest. By the time the glacier was in retreat and the Ohio had begun to flow, this new stream had cut itself lower than the silt-filled bed of the old Teays, and the



NEW RIVER above Gauley Bridge, W. Va., follows the course of the Teays in cutting a steep valley in an

ancient plateau that was lifted upward. The nearly level skyline marks the original surface of the plateau.

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released waters from the Appalachian highlands established themselves in the new course, instead of reverting to their former route.

Numerous local and minor changes also occurred in these huge drainage areas to blot out the old Teays system and establish the Ohio system in its place. Almost all the tributaries of the Teays were affected in one way or another, and many new tributaries came into existence. Some of these retrace, others cut across, old stream beds now filled with glacial sands and gravels. The Mississippi, which originally reached the Teays near Lincoln, Ill., established a new and longer course farther west. The lowest reaches of the Teays became the Illinois River. Meanwhile the northern embayment of the Gulf of Mexico in southern Illinois, into which the Teays discharged, gradually filled with sediment until the shoreline of the Gulf was pushed south to its present location near New Orleans. We speak of the river valley from Cairo to the Gulf as the delta of the Mississippi; it would perhaps be more accurate to call it the delta of the Teays.

THE DISCOVERY of the lost Teays and the reconstruction of the birth of the Ohio has primarily been the work of geologists, but drillers of water wells have also played a part. When the mighty Teays disappeared, it did not wholly die: parts of it merely went underground! Water still flows along sections of its bed, long since buried by the glaciers. Where its surface waters once poured down to the Gulf of Mexico, underground streams now follow the old channels, filled with the loose sands and gravels of the glaciers. The course of the ancient river, and of many of its extinct tributaries, has been traced in large part by map plots of thousands of water wells that now tap these underground watercourses. The old Teays system today supplies water to countless towns, villages and farms in the Ohio Basin!

Since the uncovering of adequate water supplies is an increasingly urgent problem in this country, the tracing of the great buried river system of the Teays is not only an adventure in historical geology but a prospecting venture of the greatest utilitarian concern. It has opened a whole new field for geological exploration: the locating of buried river channels that can add to our water resources. Geologists of the future will search for buried rivers as today they hunt for hidden pools of oil.

Raymond E. Janssen, professor of geology at Marshall College in Huntington, W. Va., was the author of "The Beginnings of Coal," which appeared in the July, 1948, issue of this magazine.



FRANK J. LAUSCHE
GOVERNOR

A. W. MARION
DIRECTOR

OHIO
DEPARTMENT OF
NATURAL RESOURCES

Address Reply to:

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Orton Hall, The Ohio State University
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SEPTEMBER 18, 1956

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DEAR MR. LAMBERT:

THE FOLLOWING REFERENCES ARE GIVEN FOR TEAYS DRAIN-
AGE SYSTEM IN BIBLIOGRAPHY OF OHIO GEOLOGY (1950):

FIDLAR, MARION M. THE PREGLACIAL TEAYS VALLEY IN
INDIANA: JOUR. GEOL., VOL. 51, P.411-418, 2 FIGS.
INDEX MAPS. (1943).

STOUT, WILBER E (AND LAMB, GEORGE F.) PHYSIOGRAPHIC
FEATURES OF SOUTHEASTERN OHIO: OHIO JOUR. SCI., VOL.
38, P. 49-83, 9. FIGS. INCL. MAPS, 1938; OHIO GEOL.
SURVEY REPRINT SERIES No. 1, 35 P., 1939. 152

(AND VER STEEG, KARL AND LAMB, GEORGE F.)
GEOLOGY OF WATER IN OHIO: OHIO GEOL. SURVEY BULL. 44,
1943. 18, 50

WOLFE, JOHN N. SPECIES ISOLATION (PLANTS) AND A PRE-
GLACIAL LAKE IN SOUTHERN OHIO: OHIO JOUR. SCI., VOL.
42, P. 2-12. 1 PL., PALEOGEOL. MAP, 1942.

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CF:JA

By F. B. Lambert

There were no Indians here at the time of the coming of the white men, but there is every evidence to show that they were plentiful in this region at an earlier date. Tomahawks, arrow heads, and other relics were found on the bottoms everywhere. Mounds were found on the bottoms below Huntington, on the Miller farm, near the brick residence yet standing on the pike at the beginning of Pea Ridge just beyond the bridge across the Guyandotte. There was a large Indian graveyard near Salt Rock. Mounds were found on the Godfrey Scites farm *above Salt Rock* *base of the hill, on the same farm,* and near the ~~river bank~~ *early of Thomas Buffington and* is a large stone on which a full sized Indian, and other figures such as birds, turtles, &c. were carved. The point of land opposite Guyandotte near the residence *of the late Colonel C.D. Emmons* was also an Indian burying ground. *(There is a small mound in* *Park.*

Our school histories have long taught that that these mounds were built by an unknown race, to which they gave the name Mound Builders. This region was claimed by the Cherokees before the coming of white men. It had long been a "bone of contention" among the Indian tribes north of the Ohio, and others. The Iroquis, of New York probably drove out the other tribes a few years before the coming of white men. One of the lesser Shawnee trails extended up through Teay's Valley to the Kanawha,, and another up the Guyandotte, to the Valley of Virginia, *another up the Big Sandy and Jug Fork rivers, to the Valley of Virginia* So far as known, there was never but one Indian depredation, in this immediate neighborhood. Jonathan Buffington lived on the Guyandotte, below Barboursville. Tradition says that the Indians once attacked his family *(but this was in Randolph Co.* when he was away from home and murdered all but one little girl--a baby. He followed them into Ohio and remained among them for some time in a vain effort to find her; but she was gone forever *(Late investigations prove that)* *(this did not, occur here).* *It occurred in Randolph County before Mr. Buffington came to Cabell County.*

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Strope

Tradition also says that William ~~Strope~~ was shot and killed on Greenbottom.

Two brothers, James and William Kelly, on their way from Maysville, Ky to Pennsylvania, traveling in a large canoe, were fired upon about a mile below the mouth of Guyandotte. They had with them Mrs. James Kelly, her two children, James, a boy about five years old and a little girl named Jane. There were also two men in the party to assist in managing the boat, but their names are not known. As they neared this point which could not have been far from the present Ensign shops, they were fired upon by the Indians secreted behind the trees. William Kelly was standing up in the boat and was shot through the body. His brother James, while trying to save him from falling into the river, was shot and mortally wounded and fell forward in the boat. The two men immediately turned the boat toward the Ohio shore. On landing, one of them sprang ashore and ran into the forest, and was never again heard of. The other man remained with Mrs. Kelly and her children. Leaving the boat, they at once started for Gallipolis, about thirty miles away. In their haste, they had forgotten to take a supply of provisions from the boat. They had not gone far when Mrs. Kelly was bitten by a copperhead, but her companion determined to travel alone to Gallipolis and return for her with a boat and a party of men. Accordingly, she hid in the paw paw bushes and he started on his journey. He was pursued by the Indians and in order to avoid them, turned inland, and after three or four days arrived at his destination where he obtained a keel boat and a party of ~~men~~ thirty men, and started down the Ohio. During his absence several boats passed but refused to stop or to heed the cries of the little boy whom Mrs. Kelly had been accustomed daily, to send to the River's edge to hail any boats that might pass. They feared a decoy from the Indians. About an hour, however, before the arrival of the boats from Gallipolis, another boat from farther up the river passed down and the occupants were finally prevailed on to take the starving family aboard. They were given food and were and were soon overtaken by the other boat, taken back to Gallipolis, and, later

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Pennsylvania.

Mrs. Kelley married again a few years later. The baby became a woman of remarkable beauty. The little boy, James, grew to manhood and emigrated to the Muskingum river in Ohio, where he and his mother related this story to Henry Howe, by whom it was published in 1846 in his "Historical Collections of Ohio".

During the Indian wars wrecks of boats were frequently seen on the shore, to remind the traveler of the unhappy fate of those who had fallen a prey to the rifle, tomahawk and scalping knife."

Guyan River often served as a route for the Indians on their way to the Valley of Virginia to steal horses and murder the people.

Andrew Davidson married Rebecca Burke, granddaughter of James Burke who was claimed to be the discoverer of Burke's Garden, Virginia. They settled about a half mile east of the present City of Bluefield, West Virginia. In the spring of 1791 Mr. Davidson, having important business to attend to went to the Draper Meadows Settlement on New River. He left his wife at home with her three small children--two girls and a boy, and two bound children named Brumfield. They were orphans. A few days after his departure, Mrs. Davidson, while gathering sugar water from the sugar maple trees near her house, was suddenly surprised and captured by a band of Indians who told her that she would have to go with them to their towns in Ohio. They then went to the house, and collecting such plunder as they could carry, they set fire to it and started toward Ohio with the whole family prisoners. They passed over the mountains to the present site of Logan, West Va. where Mrs. Davidson, on account of the excitement and worry of the trip, prematurely gave birth to a child. They allowed her two hours rest, when they again resumed their journey. Next day they drowned the little baby in the Guyandotte.

Shortly after the capture of the family the alarm spread in the neighborhood and a party was made up to follow the Indians; but, owing to the fact that

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the leaves were dry, it was found impossible to over-take them. From Lagan the Indians came down the Guyandotte and went on to their town in Ohio. Here, they tied the little girls to a tree and shot them before their mother's eyes. They gave the boy to an old squaw who accidentally upset a canoe with him while crossing a river. No one ever knew what became of the two bound children. Mrs. Davidson remained a captive from April 1791 until after Wayne's victory over the Indians at the battle of Falling Timbers in August, 1794. Mr. Davidson made two trips in search of his wife. He finally found her in Canada, where she had been sold as a servant to a French farmer. He stopped at this farm house to obtain a meal, and was recognized by his wife, who came in shortly carrying a load of wood. Her hair, which had been black, had now turned white, and Mr. Davidson did not know her. It was a joyful re-union. They returned to Virginia, where they lived for many years and reared another family.

Joseph Gilbert and Samuel Lusk, in 1792, joined a party of about forty men who had enrolled under Major Crockett for the purpose of punishing a band of Ohio Indians who, in July, 1792, came into the Valley of Virginia and began their depredations in the Blue Stone, and Upper Clinch settlements. They stole the horses of the settlers and took them to Canada and sold them. Gilbert was a noted Indian scout and hunter, while Lusk was a mere youth of about sixteen years. Major Crockett with the main body, came down Horse Pen Creek, near the present town of Gilbert, Mingo County, and then to the head of Clear Fork and down to Tug River, and on to the mouth of Four Pole Creek. While on Horse Pen they sent Gilbert and Lusk to a buffalo lick located on what is now Gilbert Creek, and a short distance below Twisted Gun Gap. Here they killed a deer and wounded an Elk, which they followed, but were unable to over-take^{it}, and returned to the Lick to get the deer. The Indians waylaid them near this spot. Lusk was wounded in the hand and begged Gilbert to save himself; but this he refused to do, saying that he had promised Lusk's mother to take care of him.

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The Indians then closed in on them and captured Lusk and killed Gilbert. They took Lusk prisoner and then went down Gilbert Creek to the Guyandotte, which they followed to the mouth of Island Creek, where they went into camp not far from the present city of Logan, and behind a ridge called Hog Back. In the meantime Major Crockett followed another route and camped within two miles of the Indians; but, of course, without knowing what had happened to Gilbert and Lusk. On the next morning, July 25, 1792, they boarded their canoes and came down the Guyandotte to the mouth, and crossed the Ohio, whence they went over-land to their homes, near Chillicothe. Here Lusk met Mrs. Virginia Wiley, who had been captured by the Indians in 1789. He remained among the Indians for some time. After many adventures among the Indians, Lusk and Mrs. Wiley determined to escape. They secured a canoe and came down the Scioto, and up the Ohio to Gallipolis. A few days after Lusk's departure, she determined to walk to her home up Kanawha and New Rivers. After a long and dangerous journey she succeeded in reaching the home of her brother-in-law at Wiley's Falls on New River, in the present Giles County, Virginia. Lusk made his way to Pittsburg, and then went to Philadelphia; from which place he returned home with Major Joseph Cloyd, of Back Creek.

These few Indian stories comprise about the sum and total of all that is known of Indian depredations in this region, but there is no doubt that there were many more cases whose history has been lost in the course of time.

THE LAST BEAVERS IN GUYAN VALLEY.

Beavers explored the Guyandotte River and a few small streams especially Beaver Pond Creek from 1830 to 1850. Beaver Pond creek which is located just above Gill, W. Va. is widely known throughout Lincoln County. At this period the beavers were seen by many people, among them being Sarah Smith Adkins. She told, and re-told many times to her son Walter F. Adkins, about the beavers and the dam they built in Beaver Creek. How industrious they were, how they cut down the small timber in the backwoods and dragged it into the stream to build dams.

This stream was named Beaver Pond Creek because of the beavers that were found there in the early days. But before the civil war the beavers were killed off by the hunters. Miss Louanne Smith, of Ranger, w. va. who was a small girl when the beavers were present in this creek is still living to tell the story of the beaver colony.

OTTER.

The otter has been seen by Richard Adkins in the year of 1875 about one and one-half miles above Ranger. The last one that was ever seen or heard of was about the year 1888.

Written by Stuart Adkins.

See in Huntington Public Library
"Sketches of Virginia, Historical and
Biographical" by Rev. Wm. Henry Foote
D.D. Pub. Lippencott, 1856. Page
143- "The Captivity and Escape of
Mary Ingles". Thrilling.
Don't forget Jenny Wiley.

22

This region was claimed by the Cherokees at an early date, but, without doubt, the Shawnees were the most dangerous foes to an early settlement of this section. They had some of their towns on the Ohio River, on the lower side of the Scioto. This section had long been a bone of contention among these and other Indian tribes north of the Ohio. The Iroquois probably drove out the Indians from this section some time before the coming of white men, but the Shawnees were never really defeated until the Battle of Point Pleasant, ^{in 1774,} when General Andrew Lewis completely broke their power.

One of the lesser Shawnee Trails extended up the Guyandotte river and Mud River through Teays Valley to the Kanawha River and on east. It was sometimes called the Buffalo Trail.

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Another trail went up the Guyandotte River from the mouth of Mud River to the settlements in the Valley of Virginia. A third one went up Sandy to the same settlements in the valley.

There are well authenticated cases, in which Indians brought white prisoners down the Guyandotte, and on into Ohio, and even into Canada, but nothing further.

Howe's Historical Collections
of Virginia, on Cabell County,
page 209:

"A portion of the beautiful
flatland of what is called
Green Bottom, lying partly in
this and Mason County, a
few years since, before the
plough of civilization had
disturbed the soil, presented
one of these vestiges of a city
which are met with in Cen-
tral America, and occasion-
ally in the southern and
western forests of the United
States. The traces of a regular,
compact, and populous city
with streets running parallel
with the Ohio River, and cross-
ing and intersecting each
other at right angles, cover-
ing a space of nearly half a
mile, as well as the superfi-
cial dimensions of many of the
houses, are apparent and well
defined. Axes and saws of an
unique form - the bones of

iron, the latter of copper - as well as other implements of the mechanic arts, have been found. These remains betoken a state of comparative civilization, attained by no race of the aborigines of this country now known to have existed. Who they were, or whence they came springing, tradition has lost in the long lapse of ages. It is a singular fact, that these remains are rarely, if ever, found elsewhere than upon the river bottoms, or flat level lands."

Probably Conelley's Hist. of the Big Sandy Valley gives articles on Jenny Wiley.

On ~~Many~~ Jenny Wiley Johnson - Hist. of Johnson County, Ky.

The Founding of Harmon's Station,

Nale - Trans-Allegheny Pioneers, Hulbert -

THE OHIO STATE UNIVERSITY

HOWARD L. BEVIS, President

COLUMBUS 10

DEPARTMENT OF GEOLOGY

February 12, 1948

Mr. F.B. Lambert
Barboursville
West Virginia

Dear Mr. Lambert:

I will undertake to answer a few of the questions which you posed in your December letter to Dr. Spieker, the Head of this Department. Please note the outline map of the successive ice advances over this state in the Pleistocene (Great Ice Age). I suggest that you look up Bulletin 44 of the Ohio Geological Survey, "Water in Ohio" and read pages 21 to 44 and 51 to 98 carefully.

The events which you ask about were

these:

(1) Long erosion by rivers of the Teays system cutting valleys sloping northwestward from West Virginia across central Ohio and into Indiana.

(2) The first ice invasion to affect Ohio (it was either Nebraskan or Kansan in Age) came halfway across the state from the north blocking this old system of Teays Valleys and forcing ponded rainwater and meltwater to cut a new course southwestward on the site of present Ohio River below Portsmouth.

(3) Another period of vigorous downcutting by streams, known as Deep Stage, because it cut the buried valleys far deeper than our present valleys. But, this stage had rivers flowing in the diverted new path down the Ohio River Valley.

(4) The second glaciation to affect Ohio, known as Illinoian, invaded clear across the western half of the state covering Cincinnati and part of Kentucky. Obviously this blocked the Deep Stage river down the Ohio Valley and caused a lake to form flooding all the valleys back up into West Virginia for a few tens of thousands of years.

(5) When this ice melted away the river resumed its old course and the lake drained out. However, the water was loaded with glacial gravels so the valleys were largely filled with gravel. The rivers never cut deep enough to reach the Deep Stage Valley floors again.

(6) The third and last glaciation to affect Ohio is called Wisconsin. It never passed south of Chillicothe, Wilmington, etc. so it did not block the Ohio River. Instead it choked the rivers with

began over 1,000,000 years ago

began 650,000 years ago

began 575,000 years ago

began 260,000 years ago

began 185,000 years ago

began 65,000 years ago

THE OHIO STATE UNIVERSITY

HOWARD L. BEVIS, *President*

COLUMBUS 10

DEPARTMENT OF GEOLOGY

glacial gravels carried by its torrents of meltwater. These filled the Ohio valleys up again partway. (7) In the 30,000 years or more of Post-Glacial time here the present rivers have cut valleys into these gravels leaving them as terraces high and dry along the valley walls.

began 30,000⁺ years ago

In general it took several ten-thousand years for the ice to advance to southern Ohio each time and an equal time to melt back. Each glaciation took from 50,000 to 100,000 years in all. Between Kansan glaciation and Illinoian it is estimated that there were over 300,000 years. Between Illinoian glaciation and Wisconsin there were some 120,000 years. It has been only 30,000 years or more since Wisconsin ice left.

We can merely guess how thick the ice was from the heights of moraine deposits on hills. It thinned to nothing at the southern edge and had a watch-glass shape. Perhaps it was 3000 feet thick over Columbus, Ohio at times. Far to the north in Canada it must have been more than 10,000 feet thick in order to make it flow outward like pancake batter on a griddle.

Sincerely yours,

Richard P. Goldthwait

Richard P. Goldthwait
Associate Professor of Geology



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July 2, 1948

Mr. F. B. Lambert
Barboursville, West Virginia

Dear Mr. Lambert:

Whitelaw Reid, in his *Ohio in the War*, Volume 2, gives a five page history of the 34th Ohio Volunteer Infantry.

Ohio Indian Trails by Frank Wilcox gives a brief description of the Kanawha and Belpre trails in Ohio. This book does not give information on the tribes in Ohio - has map showing Ohio Indian trails and towns.

These books may be borrowed for you by your local librarian.

Sincerely yours,

Edith L. Rathbun

(Mrs.) Edith L. Rathbun, Head
Reference Department

ER:ho

THE OHIO STATE UNIVERSITY

HOWARD L. BEVIS, President

COLUMBUS 10

DEPARTMENT OF HISTORY

June 26, 1948

F. B. Lambert
Barbourville, W. Va.

Dear Mr. Lambert,

In answer to your letter regarding the Indians of Southern Ohio, the best discussion is found in an article by Henry R. Shetrone on "The Indian in Ohio", printed in the Ohio Archaeological and Historical Quarterly, Volume XXVII (July 1918), pp. 274-508. This has also been printed separately. I imagine that you can find it in a large library.

Very truly yours,

Francis P. Weisenburger

Thwaites Early Western Travels

Vol 19 - Ogden's Letters -

Photostat p. 30-31, 32-33

" Vol 13 "

p. 58-59

" Vol IV p. 146-147

147

148-149

150-151

152-153

154-155

~~of p. 162~~

156-157

158-159

160-161

161-162

Cumings
Tour of
The West
to follow

About

9 photo
slats

Cumings went July 18, 1807
down the Ohio to Mays-
ville, Ky.

Ordered May 17, 1948

THE OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

Ohio State Museum

COLUMBUS 10

January 24, 1948

Mr. F.B. Lambert
Barboursville, West Virginia

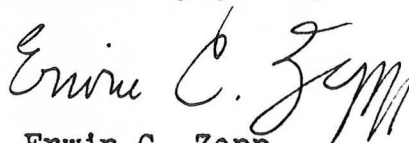
Dear Mr. Lambert:

Mr. Shetrone has referred to me your letter concerning the Cabell County quotation from Howe's "Historical Collections of Virginia."

Mr. Richard G. Morgan, Curator of Archaeology, informs me that he has corresponded with you in regard to this particular quotation.

I suggest that you address Mr. Morgan for information on any archaeological problem. He will answer your inquiries promptly.

Sincerely yours,



Erwin C. Zepp
Director

ECZ/s

*Copy accd. of Jonathan Buffington's
family being murdered or carried away,
in a History of Randolph County.*

THE OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

Ohio State Museum

COLUMBUS 10

December 2, 1947

Mr. F.B. Lambert
Barboursville, West Virginia

Dear Mr. Lambert:

I have your inquiry of November 29. We can supply the material you have listed as follows:

QUARTERLY, Vol. I (Travellers and Annalists etc. and Western Land Policy etc.)	\$.75	} 2.23
QUARTERLY, Vol. 49, Nos 3 and 4. 75¢ ea.	1.50	
✓ QUARTERLY, Vol. 20, Nos. 1, 2 and 4 75¢ ea.	2.25	2.00
✓ Ohio Historical Collections Vol. 9 (Genesis of Western etc.)	2.00	4.50
Ohio Historical Collections Vol. 3 (Frontier Ohio)	2.50	8.75

Bound volumes of the QUARTERLY sell for \$2.00 each, so in the cases where you need more than two numbers of a particular volume, it will be less expensive to take the entire book.

If you wish to have us send this material, we shall be glad to fill your order promptly.

Sincerely yours,

Erwin C. Zepp
Erwin C. Zepp
Director

ECZ/s

THE OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

Ohio State Museum

COLUMBUS 10

December 19, 1947

Mr. F.B. Lambert
Barboursville, West Virginia

Dear Mr. Lambert:

Your recent letter, addressed to the Professor of Archaeology, University of Pittsburgh, Pittsburgh, Pennsylvania, has been referred to this office.

I am turning over the correspondence to Mr. Richard G. Morgan, Curator of Archaeology for the Society. You will no doubt hear from him shortly.

Sincerely yours,



Erwin C. Zepp
Director

ECZ/s

STATE OF OHIO
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GEOLOGICAL SURVEY OF OHIO
ORTON HALL, OHIO STATE UNIVERSITY
COLUMBUS 10

December 30, 1947

Mr. F. B. Lambert,
Barboursville, W. Va.

Dear Sir:

We are surprised that the book we sent you on December 12th failed to reach you. We are sending a duplicate copy today. If both copies finally are delivered, we would appreciate it a lot if you would return one of them as the bulletin (No. 44) is in demand.

A list of our publications is enclosed.

Very truly yours,

Geological Survey of Ohio

By

E. S. Dean
Secretary

Enclosure

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Mr. F. B. Lambert
Banhoursville, West Virginia

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KELLY INDIAN MASSACRE

Among the early settlers of Mason County, Kentucky, was Mr. James Kelly, who emigrated from Westmoreland, Pennsylvania. Shortly after his arrival (1791) the Indians carried on their murderous incursions with so much energy as to seriously threaten the annihilation of the infant settlement. His father, alarmed for his safety, sent another son, William, to Kentucky, to bring his brother and family back to Pennsylvania. They embarked at Maysville, in a large canoe, with two men as passengers, who were to assist in navigating the boat. When about a mile below the mouth of Big Guyandotte - - about the foot of 24th Street, Huntington - and near the Virginia shore, they were suddenly fired upon by a party of Indians secreted behind the trees on the bank of the river. William, who had risen up in the boat, was shot through the body, when James sprang up to save him from falling into the river, and receiving his death wound, fell forward in the boat. The two men, as yet unharmed, steered for the Ohio shore. The instant the boat touched land, one of them, panic stricken, sprang ashore, and running to the recesses of the forest, was never heard of more. The other passenger, however, was ~~amman~~ of undaunted courage, he summoned a rescue party from Gallipolis, who arrived in a boat and rescued Mrs. Kelly and her two children.

West Virginia University

MORGANTOWN, W. VA.

COLLEGE OF ARTS AND SCIENCES

DEPARTMENT OF BIOLOGY

November 25, 1947

Mr. F. B. Lambert
Barboursville, W.Va.

Dear Mr. Lambert:

Your inquiry concerning the presence in early days of beavers in the lower valleys of the Guyandotte and Mud Rivers should undoubtedly be answered in the affirmative, but I am unable to cite specific literature that would furnish irrefutable evidence in support of such a reply. In an article on the mammals of West Virginia, written by Fred E. Brooks, and published in a Report of the West Virginia State Board of Agriculture for 1910, and again in an article dealing with the mammals of West Virginia, written by A. B. Brooks and published in the West Virginia Encyclopedia, pp. 536-545, reference is made to the fact that the beaver was once a common mammal in West Virginia. Dr. Ambler, in his book on West Virginia, Stories and Biographies, p. 97, states that Daniel Boone "moved to the Kanawha Valley, where he settled at or near Point Pleasant. While living there, Boone made hunting trips, far and near, in search of beavers, otters, foxes, raccoons, and deer".

May I suggest that you send your question to Mr. Wendell Swank, game technician with the State Conservation Commission, Elkins, West Virginia? Mr. Swank is at present engaged in a study of the ecology of beavers and perhaps in his studies he may have gained some knowledge of the distribution of beavers in West Virginia at a time when much of the forested areas remained untouched.

I regret that I cannot give you definite information concerning your problem and I hope Mr. Swank can do abundantly what I have failed to do.

PDS:rk

Very sincerely

P. D. Strausbaugh
P. D. Strausbaugh
Head of the Department

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November 13, 1947

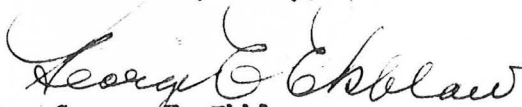
Mr. F. B. Lambert
Barboursville
West Virginia

Dear Mr. Lambert:

In response to your request of November 9, 1947, we herewith enclose a copy of our Report of Investigations No. 106.

You will note that this publication describes principally a pre-glacial valley in Illinois and the possible relationships of this valley to other preglacial valleys in Indiana and the Teays Valley in Ohio. However, it does provide you with the references to the various papers that discuss the Teays Valley and other preglacial valleys in Ohio and West Virginia, listed in footnotes 17 to 20. W. G. Tight's paper listed in footnote 17 apparently would give you just about the information you desire. You may be able to obtain the U. S. Geological Survey publications listed in footnotes 17 and 18 from the U. S. Superintendent of Documents, Washington, D. C., but if they are out of print you may be able to consult them in technical or university libraries in your vicinity.

Yours very truly,


George E. Ekblaw
Geologist and Head
Division of Engineering Geology
and Topographic Mapping

Enclosure

West Virginia University

MORGANTOWN, W. VA.

COLLEGE OF ARTS AND SCIENCES

DEPARTMENT OF GEOLOGY

November 21, 1947

Mr. F. B. Lambert,
Barboursville, W. Va.

Dear Mr. Lambert:

Dr. Price, State Geologist, has turned your letter of November 15 over to me. I have been studying the "Teays Valley" history for some time but have nothing new to report except some details as to the change in the course of the old Kanawha or "Teays" River.

Perhaps you were misled by some of the reports which came out in the Charleston papers last May. What I will give you now is agreed to by all geologists who have studied the problem.

Before the "Ice Age" a river, which is designated by geologists as the Teays, occupied much the same site as the present New River. This river (as the New now has) had its source in the Blue Ridge Mountains of North Carolina. The Teays followed the valley of the present Kanawha to a point near Nitro, West Virginia, and then turned westward to pass through the "Teays Valley" to Huntington where it entered the present Ohio valley. With a few minor exceptions it followed the Ohio to Portsmouth where it swung northward to central Ohio, then westward to Indiana and eventually to the Mississippi.

The Ohio River as we know it came into being when the ancient Monongahela and Allegheny rivers which flowed northward into the Erie basin were blocked by the glacier and the meltwater from the ice overflowed the valleys of the north-flowing streams, thus creating new south-flowing streams. In western Ohio the ice sheet extended southward beyond Cincinnati, thus blocking the ancient Teays River. Drainage from western Pennsylvania and northern West Virginia followed approximately the course of the present Ohio. The ice block at Cincinnati caused a ponding of the streams east of that point to an elevation of at least 850 feet above sea level. This caused a silting up of the Teays Valley to an elevation of at least 800 feet. When the ice finally melted and the waters subsided a new course of the Teays (lower Kanawha) was established from Nitro to Point Pleasant.

Barboursville is located on the old silt beds. In spite of later erosion the silt deposits (Minford silts) are very thick. You will observe that at the base of the silt beds crystalline gravels occur. These gravels must have come from the Blue Ridge Mountains because we do not have crystalline rock anywhere in West Virginia within the New River drainage.

If you want a detailed description of the Teays Valley and the physiographic history of the region, I would suggest that you go to the

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Mr. F. B. Lambert - 11/21/47 - page 2

Geology Department of Marshall College. Perhaps Professor Raymond E. Janssen, head of the Department, will let you see some of the publications on the Teays River. The most complete description is to be found in the United States Geological Survey Professional Paper No. 13, entitled "Drainage Modifications in Southeastern Ohio and Adjacent Parts of West Virginia and Kentucky", by W. G. Tight. Another good reference is: "Drainage History of Ohio and West Virginia" by Stafford Happ. This article appeared in the Journal of Geology, Vol. 42, 1934.

I hope the above information will be helpful to you.

Very truly yours,

H. M. Fridley

H. M. Fridley,
Professor of Geology.

HMF:JR

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THE UNIVERSITY OF CHICAGO

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DEPARTMENT OF ANTHROPOLOGY

Jan. 14, 1947

Mr. F.B. Lambert
Barboursville,
West Virginia.

Dear Mr. Lambert:

Your letter concerning the relationship between Middle American cultures and those of West Virginia has been referred to me for reply.

May I first define the terms I will use in answering your question. "Race" refers entirely to physical type. "Culture" refers to the material remains of a people; the things that they made.

[Anthropologists find no evidence of a "pre-Indian" or "Mound Builder" race different from the main types of American Indians. The "Mound Builders", of which there were several cultures (Hopewell, Middle Mississippi, etc.) were American Indians. There is also no suggestion that the types of American Indians found in Middle America (Aztecs, Mayas, etc.) inhabited the Southeastern Part of the United States. However, many items of Middle American culture found their way into the cultures of the Southeast, including those of West Virginia. These items of culture centered mainly around temple mound ceremonial concepts and burial rites as seen in the mounds and burials of the Middle Mississippi Pattern cultures. There is some question as to whether some of the more elaborate funeral concepts of the Hopewell culture had Middle American connections. At present, it appears as though these Middle American ideas diffused into the Southeast due to contacts between Southeastern cultures nearest to Middle America (Lower Mississippi Valley cultures, Caddoan area cultures) and such Middle American cultures as the Huastecan of northeastern Mexico. No middle American cultures in their entirety have been found in the Southeast; indeed materials of definite Middle American manufacture are largely lacking in this area. However, many Middle American ideas undoubtedly stimulated Southeastern cultures. Both Hopewellian and Middle Mississippi mound building cultures occur in West Virginia.

I am at loss in interpreting Howe's reference to streets laid out at right angles, since there are no other accredited sites in the Southeast with such a characteristic. You may discount the iron tools as being perhaps hematite since iron was unknown until the coming of the Whites even to Middle American cultures. Copper and Silver were used by the Hopewell culture. Earthworks such as erected by the Hopewell Indians may have suggested "streets" to Howe. At any rate, you may be fairly sure that the site reported was not "Middle American" though many

of the items of culture may have been inspired by ideas from the (centers of higher civilization in Middle America. I suspect that a Hopewell or Middle Mississippi site is here represented.

For further information on these cultures may I refer you to Martin, Quimby, and Collier, Indians Before Columbus, 1946 (University of Chicago Press). I trust this information will enable you to evaluate archaeological materials in the writing of your history of West Virginia counties.

Very cordially yours,

Kenneth G. Orr

Kenneth G. Orr, Ph.D..
Asst. Professor of Anthropology
(In charge of North American Archaeology)

STATE OF WEST VIRGINIA
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ADDRESS REPLY TO
DIRECTOR CONSERVATION

June 28, 1948

Mr. F. B. Lambert
Barboursville, W. Va.

Dear Mr. Lambert:

I am very sorry to say that we have very little history on the range or the numbers of beavers in West Virginia before they were trapped out. We do have some records of Daniel Boone trapping beaver in the Kanawha River, close to Charleston, around 1800. It seems that most of the beaver were taken out of West Virginia by Indian and fur traders before the first settlements were made. Beaver furs were sold at fur-trading houses at Pittsburg, Philadelphia and around the tidewater settlements of West Virginia. There was also a trading post at Point Pleasant around 1755. From the records we have I would say that beaver disappeared from West Virginia around 1825. They did not last long after a few settlements were made west of the Allegheny Mountains, for beaver pelts were in very high demand at that time.

From information we have I would say that beaver inhabited the ~~Guyandotte~~ ^{Guyandotte} River and every other stream in West Virginia that was suited to them. Certainly all but the very small streams were occupied by beaver. I would also venture to say beaver were not as numerous in that section of West Virginia as they were in the mountainous sections which have maple, beech and birch trees, which they seem to prefer as food.

There are very good books available on the beaver, although none of them are suited to West Virginia conditions. The Michigan Department of Conservation at Lansing, Michigan, has just put out a new bulletin entitled "Michigan Beaver Management". I believe this pamphlet is for free distribution to those interested in this phase of wildlife.

The West Virginia Conservation Commission is now preparing a booklet on the beaver in West Virginia. This booklet will deal entirely with West Virginia conditions and will also contain the early history of beaver in this state. I am hoping to get this booklet out sometime this fall.

If I can be of further help to you, please contact me.

Very truly your,

Wendell G. Swank
Wendell G. Swank,
Field Technician

WGS:bv

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SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

July 2, 1948.

Mr. F. B. Lambert,
Barboursville, West Virginia.

Dear Mr. Lambert:

Judging from the passage quoted in your letter of June 25, our archeologists do not hesitate to express the opinion that the author of "Howe's Historical Collections of Virginia" either echoed the misinformation of others or let his own imagination run wild when discussing supposed remains of once populated cities in the Ohio River valley.

The archeology of Ohio and neighboring states is well known. The first volume of the Smithsonian Contributions to Knowledge published in 1848, just one hundred years ago, was entitled "Ancient Monuments of the Mississippi Valley" by E. G. Squier and E. H. Davis. Since then dozens of other books and monographs have been published on the same subject. We know positively that there was never an Indian village in the United States with parallel streets; we know there was no resemblance whatsoever between the Indian settlements north of Mexico and those of Central America. The latter likewise had no streets as we use the word.

Iron was unknown in the Western Hemisphere prior to arrival of Europeans; copper implements and ornaments have been found throughout the Mississippi Valley but they were made invariably from native copper mined in the Lake Superior region.

Very truly yours,

H. W. Krieger

H. W. Krieger,
Acting Head Curator,
Department of Anthropology.

THE OHIO STATE UNIVERSITY

HOWARD L. BEVIS, *President*

COLUMBUS 10

DEPARTMENT OF HISTORY

Nov. 19, 1947.

F.B. Lambert
Barboursville, W. Va.

Dear Mr. Lambert,

Your letter of Nov. 17 has been referred to me.
The most widely used one-volume history of Ohio is that
by Roseboom and Weisenburger, published by Prentice-
Hall, New York City (70 Fifth Ave.). Probably The Ohio
Guide in the American State Guide Series, published
by the Oxford U. Press, N. Y. would also be helpful.
Very truly yours, F.P. Weisenburger

THE OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

Ohio State Museum

COLUMBUS

December 4, 1947

Mr. F.B. Lambert
Barboursville, West Virginia

Dear Mr. Lambert:

Thank you for your order of December 3 and for your check in the amount of \$4.00. You sent only one check.

Under separate cover, we are sending you Volume 20 of the QUARTERLY and Volume 9 of the OHIO HISTORICAL COLLECTIONS. We will be glad to send the other books as you need them.

Sincerely yours,

Erwin C. Zipp
Erwin C. Zipp
Director

ECZ/s

R. 3 ^{Rock} ~~Gravel~~ Mill. 45

Lancaster, Ohio

Dec 11-44

Mr. F. B. Lambert.
Barboursville, W. Va.

Dear Mr. Lambert:

Am asking the Geological Survey of Ohio to send you a copy of Bulletin 44, Geology of Water in Ohio, which will give you a rather complete story of the old Tapps River. The glaciers and the effects of each are also shown. Think this report will give the data you desire.

Very truly yours

Wilbur Stout

Route 3, Rock Mill,

Lancaster, Ohio

P.S. Send me a copy of your manuscript on these drainage and I will correct it for you.

W. S.

UNIVERSITY OF VIRGINIA

A. D. FRASER

PROFESSOR OF CLASSICAL ARCHAEOLOGY
AND HISTORYBOX 1141
UNIVERSITY STATION
CHARLOTTESVILLE, VA.

Dec. 9, 1947

Mr. F. B. Lambert,
Barboursville, W. Va.

Dear Mr. Lambert:

I have looked up the passage in Howe's book in case the context should throw light on the question involved; I see that it does not. As you say, if one were to accept at face value his remarks, the inference would be some sort of detached or isolated community on the bank of the Ohio, bearing certain affiliations to the Central American cultures. I daresay that the very fact that it is situated where it is would lend a certain a priori plausibility to the contention. The great river system must have served as an admirable vehicle for the transportation of displaced persons in prehistoric times.

Of course it must be confessed that Howe's account is somewhat vague. His "city" is "nearly half a mile" in extent--whatever that may mean, presumably half a mile either way. On the assumption that there may be a degree of unconscious exaggeration here, one may postulate an Indian village of not altogether unusual extent. Some of the stockaded villages, e.g. of New York State are fully of this size. I suppose the level nature of the land (I assume that it is level at this point) would superinduce a somewhat regular plan of village, with streets crossing each other with some degree of system.

The iron axes and copper saws present a stiff problem. Possibly the former may have been mistakenly regarded as Indian while they were in fact colonial. I must confess that I have never come across a copper saw--even in the Eastern Mediterranean where copper is very abundant. And I have never heard of northern Indians utilizing copper for any purpose except in the Lake Superior region where some natural deposits occur. I am afraid that a copper saw would have little in the way of utility. Possibly, if such a commodity did exist, it may have been hardened by the admixture of a little tin; that is to say, turning it into bronze of a sort.

A very important point would be involved in the survival of these axes and saws--are any specimens in local museums or private collections? If so, they ought by all means to be re-studied.

After all, I am afraid that I cannot be of much service to you, as my special field is, as the letter-head intimates, the archaeology of Greece. Unfortunately we do not as yet have an American archaeologist in the University. May I suggest that you submit the matter to the Smithsonian Institution of Washington? They may, perhaps, be familiar with the region and its antiquities and would gladly help you in your quest.

Very sincerely yours,

A. D. Fraser

P.S. If you should purchase, obtain, any considerable degree of light on the problem, do let me know about it.
A. D. F.

CHICAGO NATURAL HISTORY MUSEUM
FORMERLY FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE SHORE DRIVE
CHICAGO 5, ILLINOIS

OFFICE OF
THE DIRECTOR

10 December 1947

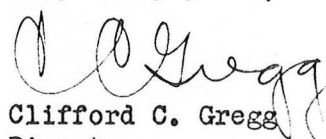
Mr. F. B. Lambert
Barboursville,
West Virginia

Dear Mr. Lambert:

In reply to your letter of 6 December, concerning the account in Henry Howe's book on Historical Collections of Virginia, the Curator of Anthropology, of this Museum, makes the following comment:

The mound builders were Indians who lived about A. D. 900-1600 or later. All of the American races before Columbus were Indian. The site seems to be a distorted description of an Adena or Hopewell ceremonial center of about A. D. 1100-1400.

Very truly yours,


Clifford C. Gregg
Director

CCG/maw

THE OHIO STATE UNIVERSITY

HOWARD L. BEVIS, *President*

COLUMBUS 10

DEPARTMENT OF HISTORY

November 18, 1947

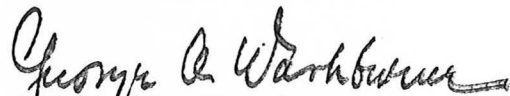
Mr. F. B. Lambert
Barboursville
West Virginia

My dear Mr. Lambert:

I am replying to your letter of November 17th concerning the matter of Ohio Valley History.

This letter is at the present time referred to Professor Francis P. Weisenburger who is a specialist on the subject of Ohio History. I am quite sure that in a short time you will have the answer you wish.

Yours very sincerely,



George A. Wasnburne
Chairman
Department of History

GAW:B

KENT STATE UNIVERSITY
KENT, OHIO

November 21, 1947

Prof. F. B. Lambert
Barboursville, W. Va.

Dear Professor Lambert:

Thank you very much for your letter of November 15, which arrived a few days ago. It was good to hear from you after a lapse of so many years. I am surprised that you remember that I exist at all, since I was so young when you were in Guyandotte. You would of course remember John and Bill much better.

I rarely get back to Huntington any more, since my work is very confining, and outside of Dad, I have very few connections there. The last time I was down, I went over to Guyandotte alone, and drove all over the old town, trying to remember the houses and the people who lived in them in the old days. It was a pleasure, but rather sad, too. My visit called to mind persons that I had not thought of for thirty years or more. The town doesn't look much like it did when we lived on Main Street and I went to school in the "New Building" on Richmond Street, and later in the "Old Building" on Third Street near the B&O station. I am glad that Dad is still in Huntington, because through him I am able occasionally to renew old connections which would otherwise be permanently lost.

The research project on which I am working now is the history of river show boats - you know, the old floating theatres which flourished on the streams of the Mississippi river system from the late 1870s until the second decade of the present century. It is a fascinating subject. I fell in love with the show boats as a child, and long ago determined that some day I would dig up the facts about them and write their history. I am just now getting around to doing it. Although I have been able to devote only spare time to it in the year since I started, I have traveled about 10,000 miles seeking material, and have gathered a staggering amount of information. I am now trying to get a Rockefeller grant so that I can take time off to complete the project. I plan to write a popular, but authentic, book, in addition to my thesis. If I get the grant, I shall finish within a year.

I am much interested in your work on the history of pioneer families, and would like to get a copy when it is published. I don't know whether or not my work will contain anything of value to yours, but I'll see that you get a copy when it comes out.

Thanks once again for writing. Let me know from time to time how your work is coming along.

Sincerely,

Edgar Wright

STATE OF ILLINOIS
DWIGHT H. GREEN, *Governor*
DEPARTMENT OF REGISTRATION AND EDUCATION
FRANK G. THOMPSON, *Director*

DIVISION OF THE
STATE GEOLOGICAL SURVEY
M. M. LEIGHTON, *Chief*
URBANA

REPORT OF INVESTIGATIONS—NO. 106

A MAJOR BURIED VALLEY IN EAST-CENTRAL ILLINOIS
AND ITS REGIONAL RELATIONSHIPS

BY
LELAND HORBERG

REPRINTED FROM THE JOURNAL OF GEOLOGY,
Vol. LIII, No. 5, 1945



PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

URBANA, ILLINOIS
1945

A MAJOR BURIED VALLEY IN EAST-CENTRAL ILLINOIS AND ITS REGIONAL RELATIONSHIPS¹

LELAND HORBERG

Illinois State Geological Survey, Urbana

ABSTRACT

A large buried valley, tributary to the well-known bedrock valley along the Illinois River, has been traced eastward across central Illinois to the Indiana state line, and continuation into Indiana and beyond is indicated by well records and outcrop data. Detailed studies are confined largely to Illinois, and the valley is herein named "Mahomet Valley" after a locality in Champaign County, Illinois. Mahomet Valley is considered preglacial, as Kansan, Aftonian, and possibly Nebraskan deposits occur within the channel. After the advance of the Kansan glacier the valley probably ceased to function as a major drainage line; and by the end of Illinoian time the valley was so completely filled with drift that the Sangamon interglacial plain continued across it without interruption.

A new working hypothesis favored by the writer is proposed, namely, that Mahomet Valley represents the lower course of Teays River, a preglacial master-stream which probably had its source near the eastern scarp of the Blue Ridge in North Carolina; flowed westward across Ohio, northern Indiana, and central Illinois; and finally discharged into the Gulf Embayment through bedrock valleys now generally occupied by the present Illinois and Mississippi rivers.

INTRODUCTION

The geological studies made by the Worthen Survey of Illinois revealed that at several points in central Illinois the bedrock occurred at elevations much lower than at adjacent localities. The distribution of these low points led F. H. Bradley² to postulate that a preglacial valley extended southward from Lake Michigan through Kankakee and eastern Iroquois counties into Champaign County and thence northwestward under the city of Bloomington into the Illinois Valley in southern Tazewell County. It is now known that these low points lie within independent preglacial drainage systems.

Frank Leverett³ confirmed the pres-

¹ Published with the permission of the chief of the Illinois Geological Survey, Urbana, Illinois

² "Geology of Kankakee and Iroquois Counties," in *Geology and Paleontology* ("Ill. Geol. Surv.," Vol. IV [1870]), pp. 226-40; "Geology of Champaign, Edgar and Ford Counties," *ibid.*, pp. 266-75.

³ "The Preglacial Valleys of the Mississippi and Its Tributaries," *Jour. Geol.*, Vol. III (1895), pp. 744-57; "The Illinois Glacial Lobe," *U.S. Geol. Surv. Mono.*, Vol. XXXVIII (1899), pp. 654-64, 701-7.

ence of low bedrock elevations in east-central Illinois and suggested possible relations to the preglacial courses of the Kaskaskia, Wabash, and Illinois rivers. In a regional summary in 1910, H. M. Clem⁴ suggested the presence of a "spur" connecting Illinois and Wabash bedrock valleys; and in 1931, T. E. Savage⁵ definitely related the preglacial drainage of the region to the Illinois bedrock valley. Within recent years L. E. Workman and George E. Ekblaw, of the Illinois State Geological Survey, in unpublished maps and cross sections outlined the eastern margin of the valley in Champaign County and made the first subsurface interpretation of the glacial deposits within the area.

The name "Mahomet" is herein proposed for the major bedrock valley crossing the area because near the village of Mahomet in western Champaign County

⁴ "The Preglacial Valleys of the Upper Mississippi and Its Eastern Tributaries," *Proc. Ind. Acad. Sci.*, 1910 (1911), pp. 335-52.

⁵ "On the Geology of Champaign County," *Trans. Ill. Acad. Sci.*, Vol. XXIII (1931), pp. 444-45.

three wells penetrate bedrock at low elevations and determine the position of the deep part of the channel.

The present study is an outgrowth of a ground-water study of Pleistocene aquifers in central Illinois (Fig. 1), in which all available well records were examined, detailed studies were made of about seventy-five sets of well cuttings, and a contour map of the bedrock surface (Fig. 2) was compiled. Data for the bedrock-surface map of western Indiana

reach it where the drift is thin. For this reason considerable detail of relief is usually shown on the bedrock uplands, but only the general outlines of the major valleys are revealed.

DESCRIPTION

According to the present study, Mahomet Valley enters the state near the southeastern corner of Iroquois County and with a broad southward loop continues westward for 120 miles to enter

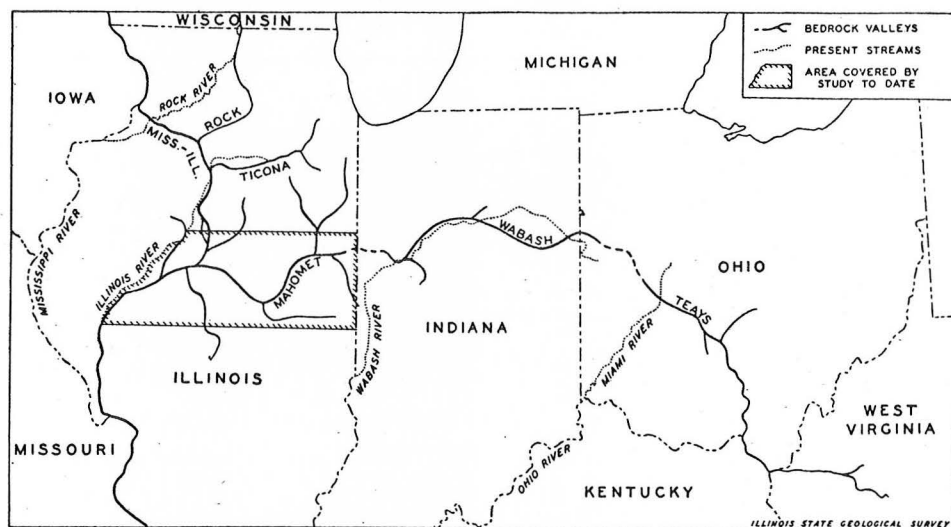


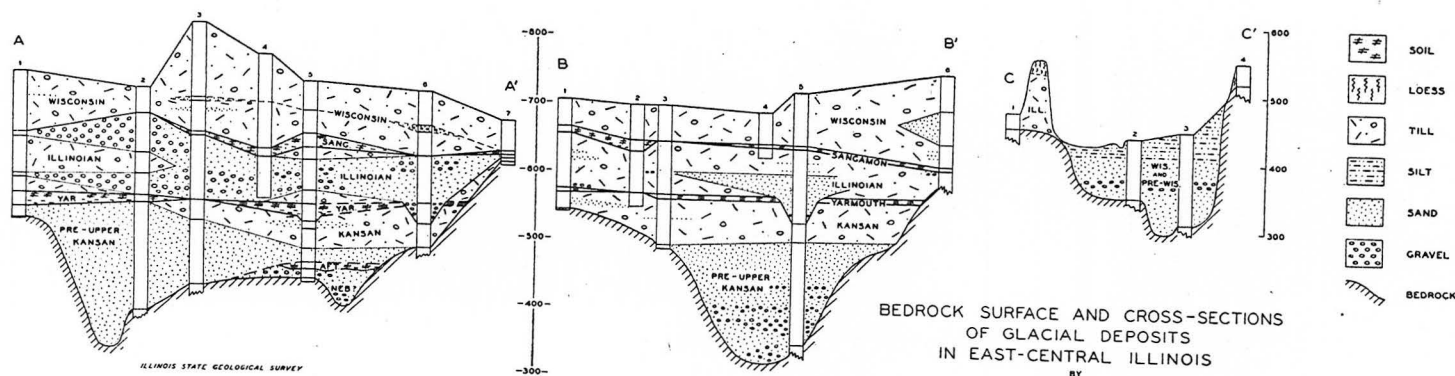
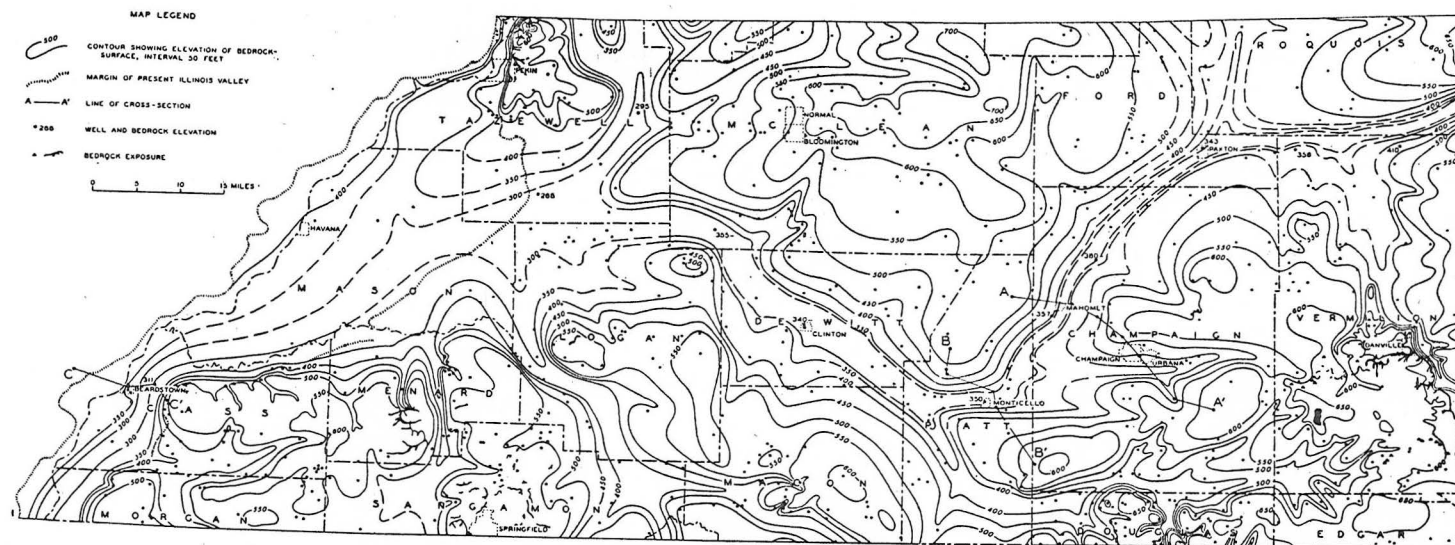
FIG. 1.—Map showing area studied in Illinois and proposed Teays drainage system. (Adapted in part after Fidler, Tight, and Ver Steeg.)

were compiled from the literature and from well records provided by Wallace W. Hagan, formerly of the Indiana Division of Geology.

The thickness of the glacial drift in the area ranges from 0, where bedrock is exposed at the surface, to over 450 feet, where moraines of Wisconsin age cross deep bedrock valleys. Few water wells reach bedrock where the drift is over 200 feet thick,⁶ whereas numerous wells

⁶Mr. C. F. Stiegman, a water-well driller at Paxton, states that he has drilled wells along Mahomet Valley for twenty-five years without encountering bedrock in any of them.

the Illinois bedrock valley in southern Tazewell County (Fig. 2). Bedrock elevations along the valley are less than 400 feet above sea-level, or 200–300 feet lower than elevations on the adjoining bedrock uplands. The average depth of the valley appears to be about 200 feet, and in general the valley lies between the 300- and the 500-foot contours. The width of the inner portion of the valley lying below elevations of 450 feet is about 4 miles near the east state line, 5 miles in central Piatt County, and about 15 miles in DeWitt County. Although the valley-



BEDROCK SURFACE AND CROSS-SECTIONS
OF GLACIAL DEPOSITS
IN EAST-CENTRAL ILLINOIS
BY
LELAND HORBERG, MAY 1944

FIG. 2

walls cannot be drawn sharply in most places because of the lack of detailed data, a notable widening is indicated for the downstream portion of the valley.

The descent of the valley floor appears to be gradual; and, when estimated on the basis of a minimum elevation of 280 feet above sea-level along Illinois bedrock valley and the elevation of 300 feet above sea-level at Oxford, Indiana,⁷ an average gradient of 1.65 inches per mile is obtained. This is a descent of 20 feet in 145 miles.

A mature stage of development of the valley is indicated by its relative width and depth and by the wide distribution of low elevations in DeWitt County, which suggest the presence of a flood plain. There is also a suggestion that the valley may have been eroded during two cycles so that the inner valley is entrenched below a broad outer valley. This is evidenced by the pronounced break in slope below the 550- and the 500-foot contours and by the absence of comparable low elevations outside the inner valley.

A single major tributary from the north enters Mahomet Valley near Paxton. This valley appears to have its source along the margin of the Niagaran escarpment in northeastern Illinois. Important tributaries from the south enter Mahomet Valley north of Danville, west of Monticello, and in western Logan and northern Menard counties, which is in opposition to the general slope of the present drift plain.

Bedrock uplands bordering the valley range in elevation from 720 to 550 feet above sea-level, with the most extensive areas falling between the 550- and 600-foot contours. These uplands are parts of preglacial watersheds that separated River Mahomet from River Ticona⁸ to the north, from upper Mississippi drain-

age to the northwest, and from Wabash and lower Mississippi drainage to the south (Fig. 1).

Maximum total relief for the area is about 460 feet, with the lowest elevations, 280-290 feet above sea-level, along Illinois bedrock valley and the highest elevations, about 720 feet above sea-level, on the bedrock upland in northeastern McLean County.

In the absence of closely spaced data along the upper course of the valley two alternative interpretations may be considered: (1) a low divide near the northern boundary of Champaign County may have separated Mahomet Valley from another valley east of Paxton, which drained eastward rather than westward; (2) there may be a divide near the state line so that Mahomet Valley did not extend into Indiana. By both of these interpretations major valleys end abruptly without important headwater tributaries, thus failing to satisfy physiographic requirements. The first alternative is further discounted by the northwest trend of the tributary valley north of Danville, indicating drainage to the west, and by a record showing bedrock less than 380 feet above sea-level in the northwest part of Champaign County. The major objection to the second alternative is the low bedrock elevations in southern Benton County, Indiana (Fig. 4). In view of these facts the writer's interpretation, shown in Figure 2, will be assumed in subsequent descriptions.

RELATION TO PRESENT TOPOGRAPHY

The present topography of the area is controlled almost entirely by moraines of the Wisconsin glacial stage, which bear no direct relation to the bedrock

⁷ Leverett, p. 757 of ft. 3 (1895).

⁸ H. B. Willman, "Preglacial River Ticona," *Trans. Ill. Acad. Sci.*, Vol. XXXIII (1940), pp. 172-75.

topography and cross Mahomet Valley at various angles without change in trend or elevation. These moraines belong to the Tazewell substage, and in succession northeastward from the outermost are the Shelbyville, Cerro Gordo, Champaign, Bloomington, Normal, and Chatsworth.

The western part of the area lies west of the Wisconsin drift margin (Fig. 3) and includes uplands underlain by loess-covered Illinoian drift and a broad bottom land along the present Illinois River (Fig. 2). The lowland, which is a striking feature of the middle Illinois Valley, coincides with an extensive bedrock lowland developed at the confluence of the Mahomet and Illinois bedrock valleys and four important tributary bedrock valleys.

RELATION TO BEDROCK

Mahomet Valley cuts across regional structural trends and, from east to west, crosses the western Indiana syncline, the LaSalle uplift, and the northern part of the Illinois basin. The rocks underlying this area are largely nonresistant Pennsylvanian shales, although limestone and sandstone beds locally form thin units of greater resistance to erosion.

The major feature due to differential erosion is the bedrock lowland along the Illinois River and the related narrows at Beardstown (cross section C-C', Fig. 2). The narrows resulted from entrenchment in more resistant Mississippian limestones, which are exposed along the river at this point; and the lowland may be attributed to lateral planation of weaker Pottsville and Carbondale strata upstream from this local base-level. Other features of the preglacial surface which locally appear to reflect bedrock lithology are: (1) the broad ridge in western Ford County may be due to

Devonian-Silurian limestones along the LaSalle uplift; (2) the small upland in southwestern Vermilion County represents an outlier of LaSalle limestone; (3) the narrow ridge in north-central Douglas County is a reflection of Devonian-Silurian limestones along the crest of the LaSalle uplift; (4) the valley-wall in northern Menard and northwestern Logan counties may be partly the result of control by Pennsylvanian limestones above No. 6 coal.

DESCRIPTION OF THE VALLEY-FILL

Eleven units of Pleistocene deposits have been identified in the area:

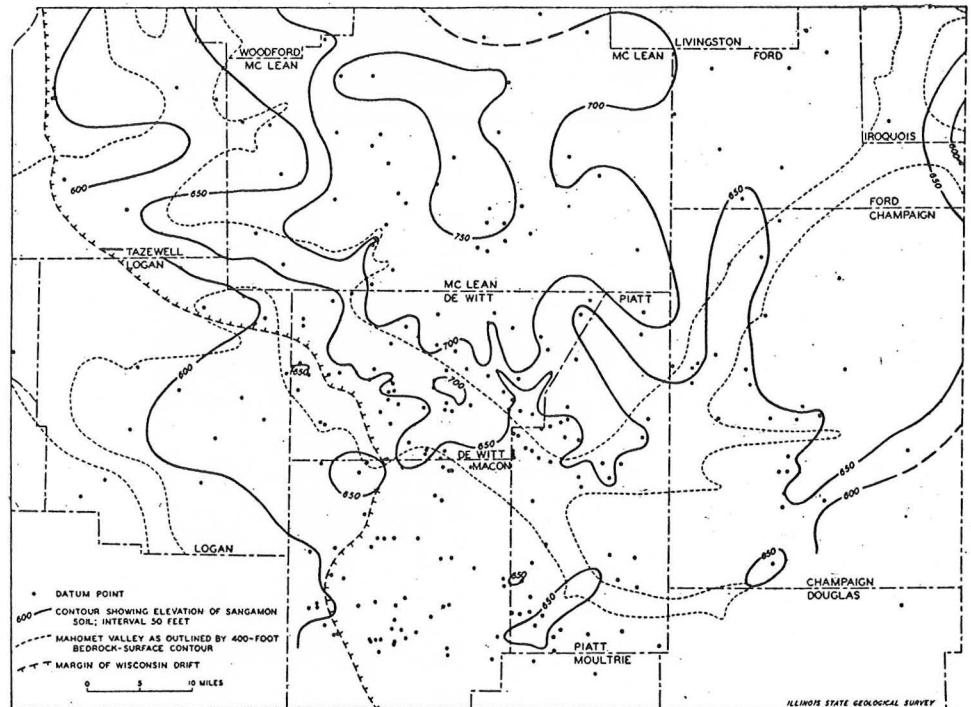
11. Post-Shelbyville (Wisconsin) till and outwash
10. Shelbyville (Wisconsin) till
9. Sangamon soil and alluvium
8. Upper Illinoian till
7. Middle Illinoian sand and gravel
6. Lower Illinoian till
5. Yarmouth soil and alluvium
4. Kansan till
3. Kansan sand and gravel
2. Aftonian alluvium
1. Nebraskan (?) sand and gravel

Within this sequence significant unconformities occur at the base of the Kansan sand and at the bases of the Yarmouth and the Sangamon interglacial deposits. These unconformities are responsible for major variations in the succession below the Sangamon soil zone; the Wisconsin tills form a relatively regular unit, in which Shelbyville and post-Shelbyville divisions are usually recognizable. An outstanding feature of the pre-Wisconsin deposits is the dominance of water-laid silts, sands, and gravels within Mahomet Valley in contrast to glacial till, which is the dominant material along the margins of the valley and under the adjoining uplands (cross sections, A-A' and B-B', Fig. 2).

RELATIONS OF THE SANGAMON AND
THE YARMOUTH SOIL ZONES

The Sangamon plain below Wisconsin drift has been reconstructed for a part of the area on the basis of about 200 well records in which buried soil was either logged by the driller or was determined from sample cuttings (Fig. 3). Consider-

fall between 620 and 640 feet above sea-level. The surface has an average gradient of about 5 feet per mile and varies in elevation from 760 to 590 feet above sea-level. In northwest Champaign County a shallow sag in the plain lies approximately over Mahomet Valley, but elsewhere there is no coincidence with the



SANGAMON PLAIN BELOW WISCONSIN DRIFT
IN CENTRAL ILLINOIS

BY
LELAND HORBERG, 1944

FIG. 3

ing the minor errors possible in logging and in determining the location and elevation of wells, the close agreement of data-points for any given part of the map is noteworthy. The plain slopes gently away from the bedrock upland in McLean County and crosses Mahomet Valley without significant change in gradient. In Macon, Piatt, and western Champaign counties most of the elevations

bedrock surface. Upon this plain were spread the Wisconsin drift sheets and their moraines.

The Yarmouth surface is not so well known as the Sangamon, but it appears to cross Mahomet Valley at fairly uniform elevations (cross sections A-A' and B-B', Fig. 2). About 60 wells in the area covered by Figure 3 encounter the horizon and indicate that the undissected

plain was generally parallel with the Sangamon surface. Highest elevations occur over the bedrock upland in McLean County, and from that area the Yarmouth surface slopes outward in all directions. Elevations range from 670 to 514 feet above sea-level, most of them falling between 550 and 600 feet.

INTERPRETATION OF LOCAL DRAINAGE HISTORY

The oldest feature of the bedrock surface is represented by the upland surface, which crosses the structures of the area and slopes southwestward from elevations of about 600–500 feet above sea-level. The most extensive parts of this surface appear to lie between the 550- and the 600-foot contours. In the northern part of the area in McLean and eastern Iroquois counties higher portions of the upland rise to a uniform level of about 650 feet and have restricted summits at elevations over 700 feet. In northwestern Illinois a summit erosion surface, called the "Dodgeville peneplain,"⁹ has been recognized. This surface slopes southward from an elevation of about 900 feet in the Driftless Area to an elevation of about 600 feet in the Starved Rock region in LaSalle County.¹⁰ Bedrock valleys, eroded 200–300 feet below this upland, are pre-Kansan and probably preglacial in age. The elevation, slope, and dissection of the bedrock uplands in east-central Illinois suggest their correlation with the Dodgeville surface.

⁹ A. C. Trowbridge, "The Erosional History of the Driftless Area," *Iowa Univ. Studies*, 1st ser., No. 40 ("Studies in Nat. Hist.," Vol. IX, No. 3 [1921]), pp. 1–127; R. E. Bates, "Geomorphic History of the Kickapoo Region, Wisconsin," *Bull. Geol. Soc. Amer.*, Vol. L (1939), pp. 819–80.

¹⁰ H. B. Willman and J. N. Payne, "Geology and Mineral Resources of the Marseilles, Ottawa, and Streator Quadrangles," *Ill. Geol. Surv., Bull.* 66 (1942), pp. 204–5.

Mahomet Valley and its tributaries were eroded below the upland surface in pre-Aftonian time, as Aftonian and possibly Nebraskan deposits have been identified within the valley in cuttings from wells at Urbana, Champaign County (Fig. 2, cross section A–A', well No. 5), and in southwestern McLean County. In both localities three soils are recognizable, the lowermost or Aftonian being underlain by sand and gravel. The age of the basal sand and gravel is uncertain, and it is considered Nebraskan rather than Aftonian largely because of the absence of humus, the pronounced break at the top of the deposit, and its general similarity to known glacial, rather than interglacial, deposits. Valley cutting thus appears to have been completed by preglacial Pleistocene time. Later modifications of the bedrock surface in the area were probably brought about largely by drainage diversions and only to a minor degree by true glacial corrasion. Glacial erosion by Wisconsin ice was certainly negligible, as there are few instances where the surface drift is not underlain by older glacial deposits.

The dominant glaciofluvial character of the pre-Wisconsin deposits within Mahomet Valley indicates that the valley remained an active drainage line until late Illinoian time. During the early Pleistocene the channel was probably open and cleared of fill, as the pre-upper Kansan sand and gravel in several places rests directly on bedrock (cross sections A–A' and B–B', Fig. 2). However, after the deposition of this material, the valley was progressively filled with glacial and interglacial deposits so that by Sangamon time (possibly even by Yarmouth time) it had ceased to function as an important drainage-way and the Sangamon plain crossed it without interruption.

The available evidence indicates that the initial drainage diversion leading to the abandonment of the valley was caused by the advance of the Kansan glacier and that the valley continued only as a minor channel-way during Yarmouth and Illinoian time. The possibility of diversion in pre-Kansan time is opposed by the occurrence of Aftonian and older deposits at elevations between 450 and 500 feet above sea-level within the valley and by the stratified character of all the deposits within the valley that lie below the upper Kansan till. The alternative of diversion by the Illinoian glacier finds some support in the widespread occurrence of middle Illinoian sand along the valley. However, the base of this sand has an elevation of about 550 feet above sea-level, which is 250 feet above the valley-floor and close to the level of much of the upland. This relation, together with the uniform elevation of the Yarmouth soil, suggests that the valley in Illinoian time was a broad sag which followed the general course of Mahomet Valley and received Illinoian outwash but was not an important through-valley. This view is further attested by the fact that the Yarmouth and Sangamon deposits consist largely of peaty soil and alluvial silt and fine sand, most of which probably represents wash from adjacent gentle till slopes.

With the advance of the Wisconsin glacier across the Sangamon plain, all vestiges of the old valley were obliterated, and there is nothing in the present landscape to suggest its existence.

RELATION TO REGIONAL PRE-GLACIAL DRAINAGE

Numerous well records in southern Benton County, Indiana, suggest that Mahomet Valley continues eastward to join the bedrock valley along the present

Wabash River near LaFayette. This interpretation (Fig. 4) is based on well records and bedrock-exposure data compiled largely from the literature and is thus subject to important revisions, although the amount of published data and their agreement are notable.

Low bedrock elevations in southern Benton County were first noted by S. S. Gorby¹¹ in 1866 and were subsequently verified by Leverett.¹² Three interpretations of these low bedrock elevations have been proposed: (1) the preglacial valley at LaFayette continues west past Oxford (Fig. 4) and thence south to the preglacial valley near Covington;¹³ (2) a possible "spur" connects Wabash and Illinois drainage;¹⁴ and (3) the bedrock valley near LaFayette continues south through Fountain County, and the valley in Benton County represents an important western tributary.¹⁵ Concerning the main valley at LaFayette, Fidler further postulated¹⁶ that this valley continued eastward into Ohio, where it joined the ancient Teays Valley¹⁷ in the central part of the state near Chillicothe (Fig. 1). The course of the valley from LaFayette eastward across northern Indiana to the Indiana-Ohio state line in Adams County is based on numerous well records and in part follows the

¹¹ "Geology of Tippecanoe County," *Ind. Dept. Geol. and Nat. Res.*, 15th Ann. Rept. (1886), p. 76.

¹² "Wells of Northern Indiana," *U.S. Geol. Surv. Water-Supply and Irrigation Paper* 21 (1899), pp. 61-66.

¹³ Leverett, p. 744 of ft. 3. (1895).

¹⁴ Clem, ft. 4 (1911).

¹⁵ M. M. Fidler, "The Preglacial Teays Valley in Indiana," *Jour. Geol.*, Vol. LI (1943), p. 417.

¹⁶ *Ibid.*, pp. 411-18.

¹⁷ W. G. Tight, "Drainage Modifications in Southeastern Ohio and Adjacent Parts of West Virginia and Kentucky," *U.S. Geol. Surv. Prof. Paper* 13 (1903), pp. 1-111.

course of a buried channel previously described by S. R. Capps.¹⁸

Near the Indiana-Ohio state line the channel coincides with preglacial channels discovered by J. A. Bownocker,¹⁹ and the course southeastward to Chilli-cothe is based upon the work of Karl Ver Steeg.²⁰

west boundary of Tippecanoe County and flows essentially on bedrock to a point about 3 miles south of Covington, where it again enters a buried bedrock valley. In this area Fidler indicated that the preglacial valley followed a buried channel through Fountain County some distance east of the Wabash River and

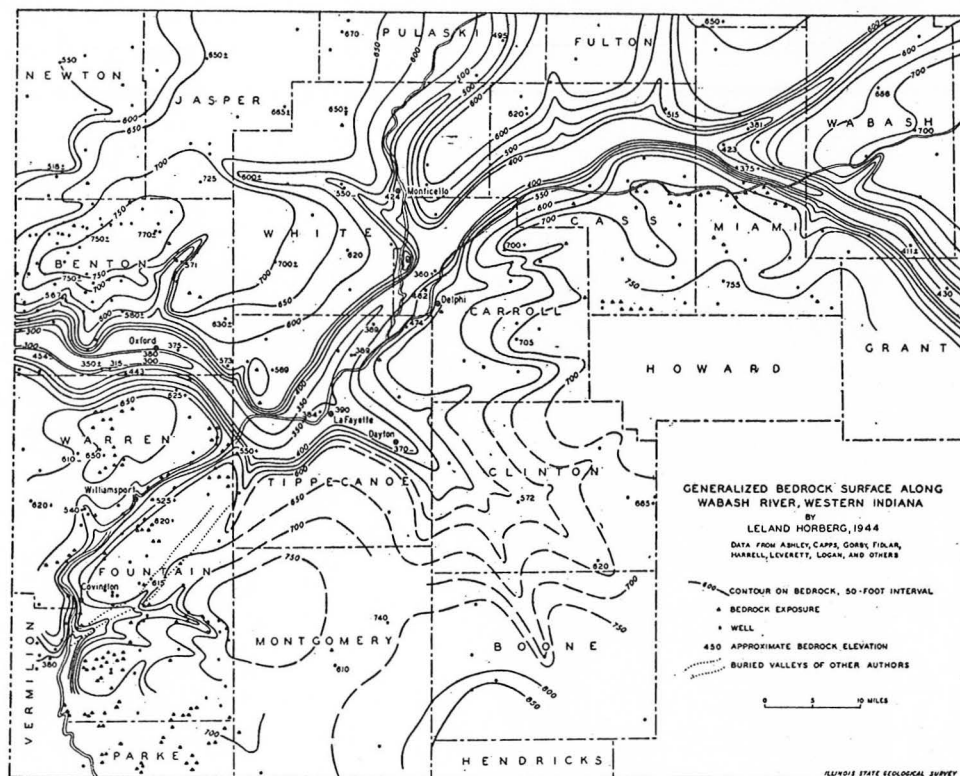


FIG. 4

The course of the ancient bedrock valley south of LaFayette does not follow the present Wabash River, as that stream enters a narrow valley near the

¹⁸ "Underground Waters of North-central Indiana," *U.S. Geol. Surv. Water-Supply Paper* 254 (1910), p. 26.

¹⁹ "A Deep Preglacial Channel in Western Ohio and Eastern Indiana," *Amer. Geol.*, Vol. XXIII (1899), pp. 178-82.

²⁰ "The Buried Topography of Western Ohio," *Jour. Geol.*, Vol. XLIV (1936), pp. 918-39.

joined the present valley south of Covington (Fig. 4). As an alternative hypothesis it is proposed that the main valley turned west near LaFayette, through southern Benton County into Illinois and, as Mahomet Valley, continued west to join the bedrock valley along the Illinois River. The following considerations are offered in support of this interpretation: (1) the valley in southern Benton County appears to be comparable in

size to the valley above LaFayette, whereas any buried valley in Fountain County must necessarily be restricted in width; (2) bedrock elevations to the west are lower and more closely spaced than they are to the south, where there is an interval of about 90 miles before comparable low elevations are shown by Fidler;²¹ (3) this interval is an area of high bedrock indicated by well records

no reference to an important buried valley within the county.

No satisfactory interpretation of drainage changes in the area south of LaFayette can be made until further information becomes available. It is questionable whether the diversion from Mahomet Valley into the lower Wabash bedrock valley was directly into the present valley above Covington or

TABLE 1
BEDROCK ELEVATIONS ALONG PROPOSED TEAYS VALLEY

Locality	Feet above Sea-Level	Reference
Seary, W. Va.....	670	Stout and Lamb*
Chillicothe, Ohio.....	630	<i>Ibid.</i>
Madison County, Ohio.....	Less than 538	Ver Steeg, p. 925 of ftn. 20 (1936)
Jay County, Ind.....	463	Fidler, p. 416 of ftn. 15 (1943)
La Fontaine, Wabash County, Ind.....	411 ±	Capps, p. 226 of ftn. 18 (1910)
Miami County, Ind.....	423	Fidler, p. 416 of ftn. 15 (1943)
Delphi, Carroll County, Ind.....	360 ±	Logan†
LaFayette, Ind.....	384	Fidler, p. 416 of ftn. 15 (1943)
Oxford, Benton County, Ind.....	300	Leverett, p. 757 of ftn. 3 (1895)
Rankin, Vermilion County, Ill.....	358	Files, Ill. Geol. Surv.
Paxton, Ford County, Ill.....	343	Savage, p. 444 of ftn. 5 (1931)
Mahomet, Champaign County, Ill.....	357	Files, Ill. Geol. Surv.
Clinton, DeWitt County, Ill.....	Less than 340	Files, Ill. Geol. Surv.
Delavan, Tazewell County, Ill.....	288	Savage, p. 444 of ftn. 5 (1931)
Beardstown, Cass County, Ill.....	311	Files, Ill. Geol. Surv.

* Wilber Stout and G. F. Lamb, "Physiographic Features of Southeastern Ohio," *Ohio Jour. Sci.*, Vol. XXXVIII (1938), also in *Geol. Surv. Ohio* ("Reprint Ser.," No. 1 [1939]), p. 14.

† W. N. Logan, "The Sub-surface strata of Indiana," *Ind. Div. Geol. Pub. No. 108* (1931), p. 47.

and numerous bedrock exposures²² (Fig. 4); (4) the published evidence supporting the buried valley through Fountain County is inconclusive,²³ and it is significant that Leverett²⁴ in a later discussion of the wells of Fountain County makes

through a buried valley to the east. Sub-surface studies of the deposits filling the valleys are needed to establish the times of important erosion; and until this is done, interpretations will remain uncertain.

²¹ Fig. 1, p. 412 of ftn. 15 (1943).

²² Leverett, "Wells of Southern Indiana," *U.S. Geol. Surv. Water-Supply and Irrigation Paper 21* (1899), pp. 19-20.

²³ The evidence consists of a map and statement by R. T. Brown, published in 1881 without supporting data, in "Fountain County," *Ind. Rept. Geol. and Nat. Res. 11th Ann. Rept.* (1881), p. 92, map facing p. 89.

²⁴ P. 20 of ftn. 22 (1899).

Although the details of drainage history in the LaFayette region are not entirely clear, the existing evidence strongly indicates that the main preglacial valley continued into Illinois as Mahomet Valley. If this is true and if the course of the ancient Teays east of LaFayette outlined by previous writers is confirmed, Mahomet Valley represents the course

of the lower Teays River.²⁵ By this hypothesis Mahomet Valley was eroded by a preglacial master-stream which probably had its source near the eastern scarp of the Blue Ridge in North Carolina;²⁶ flowed westward across Ohio, northern Indiana, and central Illinois; and finally discharged into the Gulf Embayment through bedrock valleys along the present Illinois and Mississippi

²⁵ In this case the name "Mahomet" should be dropped and the valley referred to as the "lower Teays."

²⁶ Wilbur Stout and Downs Schaaf, "Minford Silts of Southern Ohio," *Bull. Geol. Soc. Amer.*, Vol. XLII (1931), pp. 663-72.

ivers. Bedrock elevations (Table 1) along this valley indicate an average gradient of about 7 inches per mile for that portion of it above Beardstown, Illinois.

ACKNOWLEDGMENTS.—This paper is an outgrowth of bedrock-surface and ground-water studies made at the Illinois State Geological Survey under the supervision of L. E. Workman, head of the Subsurface Division, and Dr. George E. Ekblaw, head of the Areal and Engineering Division. The early studies of Pleistocene stratigraphy in the area made by these two men assisted progress of the work, and the manuscript has benefited by their criticism. The aid and suggestions of other members of the Survey staff are also acknowledged.

Route 3
Rock Mill
Lancaster, Ohio

On ~~Indian~~ Teays
Dr. Wm. Lockwood

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Topographic Mapping in Cooperation with the United States Geological Survey.
This report is a Contribution of the Subsurface Geology Division.

May 15, 1945

West Virginia University
COLLEGE OF ARTS AND SCIENCES
MORGANTOWN

DEPARTMENT OF GEOLOGY

September 4, 1951

Mr. F. B. Lambert
Barboursville, W. Va.

Dear Mr. Lambert:

When I received your letter of August 22, I was busy with the examinations coming at the end of Summer School and have now just gotten around to answering.

I am sending you under separate cover my report on the New-Kanawha River System. It may help you some.

I would advise you to visit the Department of Geology at Marshall College and see the model of the lower Teays valley. Professor David Stewart has been working on this problem, and I am sure will give you help.

You mention something about geologic time. All geologic time is measured in a few billions of years. However, the time you are interested in is the Pleistocene or Ice Age. This is considered to have required about one million years. At the beginning of the Pleistocene epoch the Teays River flowed in its original course.

Very truly yours,

H. M. Fridley

H. M. Fridley

HEF:gmp

The Teays river flowed in the Pleistocene or Ice Age, and was about a million years.

The Rivers of America.

THE OHIO

By R.E.Banta

Illustrated by Edward Shenton.

Rhinehart & Company

new York -- Toronto

Chapter One

LA BELLE RIVIERE.

When the French first met the Iroquois in the seventeenth century those truculent red skin inhabitants of the eastern Great Lakes basin wpoke of a great river which rose to the south of their land and flowed west.

News of a river flowing, in that direction, always aroused the interest of Europeans, still obsessed with their search for a short route to China, and the Indians gave a particularly glowing account of the wonders of this one. They had long coveted control of this river; and when, about the middle of the century, Dutch traders sold them guns, the Iroquois put the new weapons to immediate use in a successful campaign to impose their will upon the inhabitants of its valley.

The Iroquois called the river "Ohio", and the name was later translated by the French as "The Beautiful"-- La Belle Riviere. Not a beautiful river, mind you, but THE beautiful, with no fear that it might be confused with any other.

The French may have been mistaken, as to the exact meaning of the Iroquois word; linguists, --possibly no better qualified as translators than were the early French--have preferred, "The Great" or "The White" or "The Sparkling". But it was a beautiful river, of a certainty, and the first translation has seemed appropriate enough to those who have succeeded the Irowuois--be they Colonial French or English, American emigrants or European travelers.

Maybe rhe linguists had better ear for the niceties of Indian language than they had for color or line. The last moments of a sunset on the westering reach of the upper Ohio, smooth-flowing water the color of burnished copper between almost perpendicular

stone banks already pitch black in shadow; or the ~~pale~~ green of low winter water on the middle river, accented by a cold sun on bordering snow banks; or a summer morning above its mouth where the broad stream makes a sweeping curve through rich, black bottom lands, bound by yellow willows and gnarled white-limbed sycamores--those sights should convince even scholars of linguistics that Ohio MUST mean, "The Beautiful," no matter what the apparent connotation of the Iroquois noun..

But appreciation of the river's beauty was not limited to French and Iroquois. Few travelers, ancient, or modern, failed to add to its fame, by exclaiming in some such flamboyant vein as Charles Fenno Hoffman, urbane editor of the KNICKERBOCKER MAGAZINE, who got his first view of the Ohio at Wheeling, in 1833:

"The Ohio is beneath your feet - - - - - The clear, majestic tide, the fertile islands on its bosom, the bold and towering heights opposite, with the green esplanade of alluvion in front, and the forest-crowned head-lands above and below, round which the river sweeps away, to bless and gladden the fruitful regions that drink its limpid waters,--these, with the recollections of deeds done upon its banks--contrasted with all the luxuries of civilization that now float securely upon that peaceful current--these make a moral picture ~~xxxx~~ whose colors are laid in the heart, never to be effaced; no man will ever forget his first view of the Ohio.

In fact, so much of this inflated rhetoric had been expended upon the subject by 1838 that that one prosaic Englishman (who bore the appropriatel prosaic name of Abner D. Jones) was prepared to find the Ohio wanting. But after he had viewed its length, even Abner added his mite of commendation:

I had often heard the praises of this majestic river sung, and had curbed my expectations, lest I should be disappointed. The Ohio ~~is~~ a beautiful river. There are points on the Hudson and the Connecticut, and other rivers of the east which equal anything I saw on the Ohio; but its peculiarity is that it is all beautiful. There are no points bare of beauty; but every mile is a rich in scenery as it was in verdure, at the time of my passage down its "winding way".

Modern dwellers on the Ohio River are not ones to buttonhole the stranger and bare their souls, but even the casual sojourner is soon aware that the devotion of its people to their river is among the Ohio's most interesting attributes.

Obviously, to the people of Ohio it seems to be pretty certain that their river flows through the ~~most~~ beautiful country and has the handsomest water --jade green to cream, to coffee-with-cream to milk chocolate--that it makes the sharpest bends, has the longest straightaways, the highest hills, the richest bottoms, the smoothest flow, and the damndest floods, on this earth or any other. They know that along its banks lie almost all sights worth seeing, from hell-for-leather industrial progress to a stretch of bank preserved as it was before men of any race set eyes upon it.

And perhaps one feels, having seen their river, the heart is a better guide to values than the mind, perhaps the dwellers on the Ohio may not be too far from right at that.

The Ohio, besides its beauty, has another significance--a geographical and historical significance apparent even, to those who know it only by its appearance on the maps.

Visualize the great interior valley of North America. The continent, at the latitude of the United States, is some 2,500

miles in width. Slightly more than 200 miles from the eastern edge is the Appalachian crest: 600 miles or 800 miles from the Pacific coast rise the Rocky Mountains. Between these heights lies a great wedge, 1500 miles wide and almost as deep, with its point reaching the Gulf of Mexico. It is a great segment of the continent which stretches from Western Pennsylvania to Western Montana, from North Dakota to Texas, from the edges of the Great Lakes to the delta of the Mississippi. This region, comprising one of the most important single areas of productive land in the world, is drained by the Ohio-Mississippi-Missouri River system.

Earliest section of this fabulous valley to be developed--and hence, the stepping stone to the even farther west--was the region between the Appalachians and the Mississippi. Explorers, traders and soldiers had thrilled to its appeal, even in Colonial days; an appeal which gave "a prospect into unlimited empires," to, which, as George Washington said, the poor, the needy and the oppressed of the earth might repair and abound "as in the Land of promise, with milk and honey." After Independence, as the common run of Americans followed destiny to the west, they found nature on a grander scale than they had, before, been able to conceive--measureless forests, prairies extending farther than the eye could reach, and waters "whose sweep is over uncounted leagues." The more articulate described it as a "happy region, large and fertile enough for the abode of many millions," a region where "yesterday all was silent, save the beast and the bird" but which becomes today the home of the backwoodsman--the center of human affections--the nucleus, perhaps, of an intelligence, social, virtuous community--the focus, where it might be, light shall emanate to other parts of the world."

To all this the Ohio was the highroad from the early settlements on the seaboard: no aid toward the development of the great

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Perhaps the surest way to locate the Ohio river for the modern reader is to state that it heads at latitude 40 degrees, 25 minutes North, longitude 80 degrees west (that being the city of Pittsburgh) which is about 320 miles west of the Statue of Liberty, a shade less than 200 miles northwest of Washington, 520 miles due north of Charleston, S.C. and 225 miles south of Toronto, Ontario. Flowing in a generally south of west course, the Ohio empties into the Mississippi at Cairo, Illinois, latitude 37 degrees, 1 minute north; longitude 89 degrees, 10 minutes west. That point is some 345 miles south of Chicago, 500 miles north of New Orleans, , and 1,825 miles (as the crow is reported to fly) east of San Francisco, California.

Debate sometimes rages for generations upon the subject of the exact source of a river: whether it is So-and-so's pond, which is dry six months out of twelve, or Such and-such Branch, which, in an ordinary year is dry only from June to October. There is no such doubt about the Ohio.

The Ohio's point of beginning cannot be mistaken. The Monongahela river flows up from the south through its lateral valley along the western foot of the Alleghany Mountains: the Alleghany river rises in north-central Pennsylvania, flows in an arc into New York, and back again into Pennsylvania, where, in its now southering course, it joins the Monongahela. Where these waters meet, at what is now the western point of Pittsburgh's Golden Triangle, THERE begins the Ohio.

Each of these two rivers which combine to form the Ohio has more than 300 miles of course and many tributaries drawing upon the plentiful rain-fall of the eastern water-shed; the Ohio is off to a thriving start. When it empties into the Mississippi, after 981 miles of windings, it has flowed in every direction on the compass--mostly

south of west--to drain a water-shed 203,900 square miles in ~~extent~~, extent, which spreads into fourteen of the United States. It has passed through a valley as rich, as beautiful, as varied in production, and as important in history as any in the Americas, North, South, or Central.

Before its windings are explored, however, one point must be made clear: in the language of the old rivermen, here are no north, south, east, or west banks on a river--only a RIGHT and a LEFT bank, as those appear when one faces down-stream. Since old rivermen, these days, make up only a small percentage of the population, and since the unintiated river voyager is likely to forget whether he should be facing with or against the current while calling his direction, it seems best to consider here that the Ohio flows west, as it mainly does, and thus has banks called north and south. At times, they must be designated by additional terms. While Indians were still a menace, they north bank was referred to as the INDIAN shore and the opposite nak as the Virginia shore, for instance; after that early day they took the names of new states formed along them--Kentucky, Ohio, Indiana, Illinois, and West Virginia.

From its beginnings at the Forks the Ohio starts north-west as if bound for Lake Erie, but bends west again after receiving Beaver River. A few miles after crossing the Pennsylvania-Ohio line the river makes a long sweep to the south and west, which holds all the way to Marietta; it flows between rocky hills, indented by the gullies of numerous tumbling streams which rise in the high, back country of West Virginia, and the only slightly less rugged unglaciated areas of south-eastern Ohio. At Marietta enters the Muskingum, beloved by the Indians, where a hand written code of laws nailed to a tree in the spring of 1888 marked the active beginning of the first American civil government of the Northwest Territory .

Scarcely a dozen miles farther down stream the little Kanawha comes in from the south. Just below its mouth lies an island, once the home of one Blennerhassett, who had a friend and frequent visitor, named Aaron Burr; that island was the place where certain conferences which might have resulted in a United States bounded on the west by the Mississippi River.

As the Ohio swings west, then south, it receives the Hocking from the Ohio side, continues its southward course, then makes one of its large northward bulges, and starts another long reach to the south. Half way down this southern stretch enters the Kanawha, from the West Virginia side. The Kanawha, valued in pioneer times for its salt springs, has a principal tributary which cuts its way through various ridges, and reaches back to the west side of the Blue Ridge in North Carolina for its headwaters. Just below the mouth of the Kanawha, but on the Ohio side, is Gallipolis, the city of the Gauls, the "semi-tropical" site of which the poet-preacher-salesman, Joel Barlow, sold to innocent French emigrants during the days of France's Revolution, thus perpetrating the most harrowing American real estate swindle between John Law's day and the Florida boom of the 1920s.

The Ohio ends this southern sweep north of Huntington, West Virginia, and again turns west-ward. About 311 miles from its beginning, as the river flows, (but less than 200 by air), the Ohio receives the Big Sandy. That stream now forms the West Virginia-Kentucky boundary line. At this point, where the Ohio is within a hundred miles of being as far south as at any place along its course, it makes another ~~lnnrth~~ northward sweep. Shortly after it again turns west it is joined by the Scioto, another favorite stream of the Indians, flowing from the north.

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For almost a hundred miles thereafter the Ohio's general direction is west and northwest, to the mouth of the Little Miami, also entering from the North. Opposite the mouth of the Licking, and a few miles farther, the Great Miami flows from the **north**. Opposite the mouth of the Licking, and between the two Miamis have arisen in the past century and a half the prosperous city of Ohio and its Ohio and Kentucky satellites.

After the Ohio passed the Great Miami its major indecision as to direction is definitely over; though it indulges in momentary vagaries in which it dashes off briefly to the east, north and south, as the lay of the land and the contours of the hills make temporarily expedient, its general course is along a gradual south-of-west progression.

At one time the fifty miles above and below the mouth of the Licking was the favorite crossing of the Indians for making captives out of Kentucky's "dark and bloody ground"; some famous captives were led over here, among them, Daniel Boone. Later this stretch would serve as well for running slaves across into free territory, to ~~reach~~ the underground railroad trail, operated largely by the Quakers, straight north to Canada. A Mrs. Stowe, militant wife of an always impecunious professor got some ideas from the tales of the goings-on here and up-river, which resulted in a book that sold widely, and helped to stir up a good deal of excitement one way and another along the Ohio.

To-day there are no sizable cities on the river for fifty miles below Cincinnati, although early real estate promoters and town planners were, no doubt, optimistic of the prospects when they christened Aurora and Rising Sun on the north bank. (Whoever laid out the Kentucky town opposite Rising Sun was, perhaps, not so hopeful of its prosperity and growth, or he would not have named it

Rabbit Hash).

Hills still border the Ohio as it receives the historic Kentucky River from the south; but the heights more often retreat to leave broad and fertile fields well above high water; these areas continue to increase in both frequency and size for the next sixty miles or so, until the geographical fault known as the Falls of the Ohio, is reached. That rough stretch of water was always, more properly, a chute, with a fall of about twenty-four feet in three miles; but Falls it was, and Falls it shall be. On the south side of the river, at the Falls, the gradual sloping banks were originally covered with a thick growth of beargrass, which gave the region its name; they are now occupied by Louisville and its environs. Behind Louisville begin the "Knobs" sharp hills of ancient sand stone which swing east in a broad circle to encompass the Kentucky Bluegrass country--and across the river the Indiana Knobs approach to within a few hundred yards of the bank --from which they appear as earth and stone haystacks, sugar loaves, and hat crowns, covered still with enough trees to give the appearance of being forested.

{ The Falls could be passed in the early days without difficulty by canoes and pirogues, and later on, with the water at normal stage they could be negotiated by keel boats, flatboats, arks, and even at high water, by steam boats. The last, however, since the channel wound through descending rock shelves, required the services of an experienced pilot for safety. Below the Falls is the site of Corn Island, (no longer there) where George Rogers Clark rallied his harum-scarum troops to start, in 1778, the expedition by which he captured Kaskaskia, Cahokia, Vincennes, and Colonel Henry Hamilton, the "Hair-buyer" British commander, in the North-west. Beyond that

point the greatest dangers to navigation on the old Ohio came to an end. [From there on, were to be met only the normal hazards of sand bars, snags, stumps, rocks, and Indians and river pirates.]

Continuing below the Falls for fifty or sixty miles the bluffs still approach close to both shores. Once past the stretch the river is edged on both sides by gently rolling prairies and wood lands, broken only occasionally by folds and ridges of exposed bedrock. Free of its retaining hills, it begins to play some of those tricks of channel shifting, at which the Missouri is the acknowledged past master. Cut-offs and abandoned channels are frequently to be seen -- obvious examples of a process which has gone on for ages. In a short century and a half, [during which the opposite banks have been under the jurisdiction of various territorial and state governments, these shifts of the river have caused boundary and jurisdictional perplexities--including one which resulted when the Evansville, Indiana waterworks found itself transferred to Kentucky territory.]

In the lower fourth of its course the Ohio passed through the southern end of the central lowland plain that extends, by way of the Indiana-Illinois prairies, north to the Great Lakes, and westward to the Great Bend of the Missouri. It is in this section, with three-fourths of its length already behind that ~~it that~~ the Ohio receives, within an easy twenty-four hours voyage, its greatest tributaries, four of them in all.

First, from the south comes the Green River. It rises far back to the east, within fifty miles or so of the Great Bend, in the Kentucky River, and its unforgettable tinted waters pass the famous Kentucky cave country. The Green is thought to have been an underground river, in its earlier history, but its limestone roof eventually wore away to bring its waters to the surface. Deep and narrow,

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its lower two hundred miles are passable by small steam boats.

Sixty-five miles farther down stream the Wabash, after flowing some 550 lazy miles, enters from the north. The Wabash rises in northwestern Ohio, crosses into Indiana, comes within short portage distance of the head of the northeastward flowing Maumee, swings west and south across north central Indiana, and becomes the boundary line between that state and Illinois, in the lower third of its valley. Down the Maumee and the Wabash came the French from Quebec to establish, in the first three decades of the eighteenth century the military and fur trading posts of Ouiatenon and Vincennes. By way of these streams, probably before 1720, the first regular commerce of the white man entered the lower Ohio. The French also used the Wabash-Ohio route to keep in touch with their settlements of Kaskaskia and Cahokia, on the Mississippi.

The early familiarity of the French with the lower Ohio was probably responsible for an error which plagued European geographers for years. For the voyageurs rechristened the Indian named Wabash, the "River St. Jerome" and included the Ohio, below the mouth of the Wabash, under that title. Perhaps the explanation for the French mistaking the tributary for the main stream was observation of the Wabash when it was in flood, from northern rains, at a time when the Ohio was at a low water stage. Whatever the reason for this error, it long added to the mystery of where the Ohio rose and where it had been before it appeared as a great river just east of the Mississippi.

Next, and also from the north, comes the Sabine River most unappreciative as to size but important because of the salt springs that that lured game in early days and yielded a commodity necessary to the primitive economy of both Indians and white

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pioneers.

Below the Saline there is a big, right angle turn as the river changes changes direction from south to west, and on the north shore, bored in one of those folds of stone which still, occasionally crop out, lies Cave-in-Rock. ~~xxxxxxxthexxxxxxxtimexxxxxxxpassing
xxxxxxxthexxxxxxxachievementxxxxxxx~~ This historic hole is not much as a cave--there are hundreds deeper and more commodious in Southern Indiana and Western Kentucky--but it was notorious in the early nineteenth century as a hide-out for bandits, murderers, pirates, and desperadoes,

Safely past Cave-in-Rock, and there was a time when passing it was an achievement, the traveler finds the river's course serene for almosy fifty miles before it comes to the mouth of the Cumberland; ten miles farther, and also on the south side of the mouth of the Tennessee. Many a person sufficiently informed in geography to know that there are two such rivers as the Cumberland and the Tennessee, would incline to believe that both flow into the Mississippi. To the glory of the Ohio, this is not the fact.

The Cumberland rises in the eastern edge of Kentucky along the west slopes of the Cumberland plateau, flows west and south into the State of Tennessee, and as it turns north back into Kentucky flows for a hundred miles parallel to and in places only a dozen miles or so east of the Tennessee. The Tennessee stems from the Powell, Clinch and Holston rivers, which rise among the Appalachian ridges of Western Virginia, and from the French Broad and Nolichucky, which begin in the Great Smoky Mountains. For 650 odd miles it flows through mountain valleys and alluvial plains, through Eastern Tennessee, south into Alabama, across a corner of Mississippi, and back north again, through Kentucky, to the Ohio; in its course it drains more than 40,000 square miles.

The Ohio, now a great river, indeed, is away on its last long reach; sweeping in a long, flat arc, first north-west and then south-west, it flows for its last few miles, through a great low and often inundated bottom-land to play its part in one of America's most impressive natural scenes, the juncture of the Ohio and the Mississippi.

This brief sketch of the river naturally, does not do it justice; to a fuller description dozens of editions of river pilot's guide books have been dedicated in past years, and still many of its interesting features have not been fully catalogued. In this sketch most of the delightfully named small streams--Rolling River, the Tradewater, Pigeon Creek and Little Pigeon Creek, Indian Kentucky creek, Big Grave Creek, Sinking Creek, Bull Skin Creek, and all the rest, have been passed unrecognized, as have Dead Man's Island, Three Brother's Island, Little Hurricane Island, and Green Bottom Ripple. But some of these will be examined later.

Chapter Two.

THE RIVER, OLD AND NEW.

[The present Ohio, except for its lower third and short segments of its upper reaches, is not old, as rivers go; perhaps it achieved its present form only forty or fifty thousand years ago. Long before that, millions of years before, during the Paleozoic era, the sea covered much of the continent of North America. During this era, which was the first to show abundant recognizable life in the water, most of the bed rock under the Ohio Valley was laid. In the Ordovician period --an early part of the Paleozoic era --the sea teemed with a strange, nightmarish life: cephalopods, or octopuslike creatures,

sluggish giant snails or gastropods fifteen feet long, hard-shelled trilobites somewhat like our crabs and crayfish, and fish with rudimentary spinal columns which would eventually so develop as to make water no longer a necessary habitat for some of them. In the region surrounding Cincinnati is a huge, pushed up dome--called the Cincinnati Arch--which shows Ordovician rock exposed to view by erosion.

Upon the flanks of the Cincinnati Arch, to the east and west of the Ordovician appear outcroppings of rocks formed in the Silurian and Devonian periods. By the latter the trilobites were dying out and some kinds of fish had developed protective armor. Through most of the stretch past Indiana, and a good part of that bordered by Illinois, the Ohio runs through rock formed in the Mississippian period.

Near both its headwaters and its mouth the river passes through rock of the Pennsylvania period--known popularly to-day as the Coal Measures--the product of a time in which the most spectacular of living things must have been the giant plants that were later decomposed, heated, and compressed, to be mined, --after the passing of some millions of years --as the coal that now enriches and begrimes the ~~valley~~ valley.

Between the towns of Marietta and Pomeroy, Ohio, is exposed rock, of the Permian period--the next after the Pennsylvanian, and the last of the Paleozoic era. By the time this rock was deposited as silt at the bottom of the still warm sea, some primitive forms of animal life had developed rudimentary lungs, became amphibious, and spent part of their time on land. With the end of the Paleozoic era, the region emerged from the sea, and so far as geological

evidence shows, was never again submerged.

Only near the mouth of the Ohio is there an exposure of rock more recent than that of the paleozoic era. There, where once the Gulf of Mexico encroached during the Cretaceous period when dinosaurs of different kinds wandered over the continent, are rocks laid only a few hundreds of thousands of years ago.

Though the present course of the river was shaped largely by the successive invasions of the great continental glaciers that came down from the north, in inexorable creeping advances to cover most of the north-eastern part of the United States, a glance at the preglacial drainage pattern of the year might be of interest. The picture is clear only in broad outline; some of its features still lie in the realms of theory and conjecture. Briefly, it is as follows:

A partial recession of the waters that covered most of the continent took place in the latter part of the Paleozoic era--during the Mississippian period-- and left the Cincinnati Arch the first land exposed. The coal areas developed in the adjoining swamps of the Pennsylvanian period.

At the end of the Paleozoic era there was a general upheaval of the land and the Appalachian Mountains, which had risen, been leveled, and been raised again in the earlier days of the earth's existence, rose now once more and the whole Ohio River area was uplifted with them.

In the upper part of the Ohio Valley the Monongahela River even then, flowed north in approximately its present course and received a smaller stream flowing through the northern part of the Alleghany River's present valley. Joined, they flowed along the present Ohio's course, but only to the present Beaver River, near the

Pennsylvania-Ohio line. There the stream, called for purposes of identification, the ANCIENT Monongahela, turned north through something like the modern Beaver River valley and continued into the Grand River valley in the Erie basin. One of the small tributaries of this Ancient Monongahela, arose to the east of a great ridge in the neighborhood of New Martinsville, West Virginia, and flowed north through a great stretch of what is the Ohio's present channel to join the Ancient Monongahela, near the present city of Beaver, ~~Rx~~ Pennsylvania.

Teays River

[The main stream of the next great preglacial drainage system to the west, in the present Ohio Valley was a now-extinct river which ~~the~~ geologists have named the Teays. It was a large stream which arose far to the east, in the Piedmont District of North Carolina and Virginia, and flowed in the valley of the present Kanawha river, to the modern town of St. Albans, West Virginia, where it left that valley, to go westward. It entered the present Mud River valley at Milton, continuing west, and it began to occupy the present Ohio Valley at modern Huntington, West Virginia. The ancient and modern valleys largely coincide until they reach Wheelersburg. Here the valleys diverge, the modern Ohio turns west; but the ancient Teays river continued north through the valleys of the present Scioto and its tributaries, to Chillicothe, Ohio, where evidence of the Teays now disappears and becomes untracable under the glacial drift, to eventually enter the ancient Mississippi.]

The pre-glacial Teays had important tributaries, some of which account for ~~other~~ parts of the present Ohio Valley. The extinct Marietta River had its headwaters on the south side of the divide at New Martinsville, West Va. It flowed ~~weath~~west, following the line of the present Ohio to Little Hocking. There the courses of the ancient and modern rivers diverged, the Marietta eventually turned westward near Gallipolis and entered the Teays near present

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Beaver, Ohio.]

[The largest western tributary of the Teays flowed north in the present Great Miami valley. This River, called the Ancient Cincinnati, had three main tributaries: the ancient Manchester, Licking and Kentucky Rivers. The preglacial Manchester headed on the west side of a divide in the present Ohio valley, near Manchester, Ohio, and along its course it joined the Ancient Licking, which then flowed through its present course, but continued north, through the valley of Mill Creek, at present Cincinnati. Well above their ~~junction~~ junction entered the preglacial Kentucky River, which, flowing north had arrived at the present Ohio through approximately the bed it still occupies, and continued north-east UP the Ohio and Great Miami channels in reverse of the flow of those streams today. North of the future site of the city of Cincinnati the Manchester and Kentucky met to form the Ancient Cincinnati River, which then flowed due north to enter the Teays somewhere in the Great Basin near the Ohio-Indiana line which now gives rise to the Great Miami, and to tributaries of the modern Wabash and Maumee rivers.]

Father west, in the Ohio valley, the preglacial rivers followed much more nearly the pattern seen to-day. Just where the preglacial Ohio had its headwaters is a matter of dispute; but there was an ancient divide at Madison, Indiana, and this is a likely point at rainfall may have begun to drain west rather than north; the preglacial Ohio ran west from the neighborhood of Madison, with only a few deviations, in a valley which approximates the present one.

The ancient Ohio continued west, receiving its southern tributary, the Green River, and a few miles beyond this junction it met the ancient Wabash, which still occupies its approximate preglacial valley.

After joining the Wabash the ancient Ohio ran south-west in its present valley to a point near the modern town of Golconda, Illinois. There it received the Cumberland River, but instead of following its present course, it turned due west and occupied a great depression across southern Illinois, which, which, still visible, is called the Cache River Sag. Roughly parallel, five to fifteen miles south, and flowing toward the southwest, the preglacial Tennessee river flowed in what is approximately the course of the present Ohio, west to the site of the city of Cairo, Illinois, where it joined the ancient Ohio. This junction was at about the place where the Mississippi and the Ohio now meet; but in preglacial times these two joined far to the south, for the Mississippi then occupied a channel west of its present course. Geologists believe that the ancient Ohio and Mississippi united at some point below the modern town of Helena, Arkansas, some two hundred miles south of the present junction

Thus, the approximate line of the modern Ohio was sketched in through part of its upper course, was generally well defined below the present Falls, and was even indicated at a few points in its middle valley before the glaciers approached.

Sometime in comparatively recent geological history--possible a couple of hundred thousand years ago, probably much later, winters began to lengthen, , average annual temperatures fell, and the ice cap came creeping southward from the polar region. [The glacial age lasted thousands of years.] As temperatures fluctuated, the ice advanced and retreated; (there was not one invasion, but many.) At their maximum the glaciers drove deepest into the United States, at the lower end of the Ohio Valley; they fell short of the river, by twenty or thirty miles, in southern Illinois, missed it farther in southwestern Indiana, and South-eastern Ohio, but actually reached and oc-

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occasionally crossed the present line of the Ohio into Kentucky ~~through~~ a fifty mile stretch, on either side of the present Indiana-Ohio state boundary.

Obviously, the great masses of ice that ground down to, ~~across~~ or very near, the present line of the Ohio were bound to have a cataclysmic effect. They filled and blocked all rivers that ran north toward their margin; (they pushed along incalculable quantities of gravel, rock and soil to fill completely the valley of the ancient Teay's River and they blocked the valleys of the Marietta and Cincinnati rivers.) Since the farthest-south line of the glaciers approximated the line of the Ohio, which, as has been noted, had been already sketched in, by preglacial drainage, there is no difficulty in visualizing the beginnings of the present river. The vast amount of water still draining north through the old north-bound tributaries joined the rainwater falling constantly, and the water melting from the edge of the glacier, to the north. This vast flood broke through old divides where necessary, followed established drainage where available, and the modern Ohio was the result.

By the time the cycle of cold weather was over, and the icecap finally retreated forever, at least, we hope it has, the present drainage was established. The Kanawha, Sandy, Kentucky, Green, Cumberland, and Tennessee flowed north into the new Ohio through their old courses and new, or partly new rivers came down from the north to add their waters. The Ohio system, as we know it, was established.

Even after the final retreat of the glaciers the climate of the Ohio valley must have left much to be desired. Thousands of years would pass before the ice cap shrank to even approximately its present area, and for centuries after it was established the Ohio must have been frozen over during a large part of the year. Long

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after this was no longer true, the northern tributaries certainly continued to contribute ice water even during the warmest summer months. The refrigerating effect of the slowly retreating ice chilled and fogged the air the year round--even though the climate was growing progressively warmer.

Warmest places near the Ohio were the spring-dotted valleys back from the main channel. They were first to be frequented by the reptiles, and that comparative innovation upon the face of the earth, the mammals, which wandered in from the warmer lands to the south, where they had spent the glacial age.

Such springs, their waters gathering underground, partook of a bit of the heat beneath the earth's surface. When they happened to ~~re~~ emerge in high-walled valleys their warmth was nurtured somewhat by protection from the frigid north winds, and an unusual accession of grasses and edible leaves resulted. Sometimes, too, along the Ohio, the underground seepage that supplied the springs flowed over salt ~~be~~ bearing rock or sea water silt which had been deposited by the Paleozoic seas. Thus the water acquired a salt flavor which which gave it a further attraction--especially to the mammals, which required additional minerals to supplant those easily gained by their sea reptile ancestors, , but which they, no longer constantly immersed in salt water, had to seek out. Gradually, and first in these warm-spring valleys, the Ohio region became the haunt of a (varied and exotic animal life, examples of which were preserved for the amazement of modern man in that natural pickling vat, the Big Bone Lick which lay a short distance from the Ohio River in present North Central Kentucky. Mastodon, arctic elephant, peccary, giant elk, --the bones of all these and

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those and probably also, of tapir and giant sloth, were still strewn about the Lick in historic times. Animals and reptiles even earlier extinct had also visited the place occasionally.

Primitive man followed fairly close after the receding glaciers in this region--at least, no one has as yet succeeded in proving that he arrived earlier. Finding what shelter his necessarily rugged physique required under rock shelves projecting from water worn cliffs, he existed in a state possibly so benighted that that he had not yet even developed a fear ~~that~~ of the possible returns of the spirits of his departed associates, and hence, did not hesitate to eat their lifeless bodies when appetite and necessity suggested such action.

Unfortunately, the evidence of first tenancy of more primitive man in the Ohio Valley is much less substantial than is that, even of the long-extinct primitive vertebrates of hundreds of thousands of years before. As far as is known, man arrived in America too late for his frail remains to receive immortality through preservation in rock, and his bones were too frail long to survive the elements around the salt licks.. Not until he developed some hope of a life after death and began to try to secure his own remains against the ravages of time for possible use in another world does his way of life begin to make itself discernible.

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The Newberry Library · Chicago 10 · Illinois

The Reference Department

August 7, 1951

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Ben C. Bowman

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Randall & Ryan - History of
Ohio. Chapter 7

The Indian Tribes of Ohio.

p. 155 - Indians in Ohio long
before white men.

(Indians were black-haired
and copper-colored.) So named
by Columbus because he thought
he had discovered India.

p. 157 - "The ethnologist placed
him about midway between
extreme barbarism and semi-
civilization, in the Transition
period from the flint to the
stone age, for he chipped
out flint instruments and
wrought polished stone imple-
ments for use in his domestic
and for weapons in war
and the chase. Sir John
Lubbock would place the
Indian in the Neo-lithic
age, for he had not learn^{ed}
the use of metals."

became a famous interpreter and ambassador among the Indians for Champlain and his French countrymen. His wanderings were extraordinary, extending to the Chesapeake Bay, the Great Lakes and the Mississippi.

Champlain, possessed of religious zeal as well as adventurous ambition a few years after ~~his~~ ^{his} settlement on the St. Lawrence had invited the Recollects, — French Recollet, — a reformed branch of the Franciscan Monks, to join his explorations and establish Missions among the savages who were "living like brute beasts, without law, without religion, and without God." The Gray Friars — as the Recollects were called — landed in 1615. They soon found the field too vast for their order, and the Jesuits were brought to their aid. This latter society, the most marvelous auxiliary of the Roman

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(Catholic Church for the propaga-
tion of Christianity, in all the
heathen portions of the world,
established its order, at Quebec
in 1625, and sent its preachers
and Teachers wherever it was
possible for them to penetrate
among the copper-colored nations
of the New World."

Mounds and Mound Builders
History of Ohio - Ryan & Randall

Vol 1 - By Emelius O. Randall

(Daniel J. Randall on others)

Remains ^{of various kinds} found in many parts
of U. S., but mostly in Ohio.

Near Newark in Licking Valley

p. 38 - ~~"They are the result~~

By Prof. J. W.
Foster

"no one, I think, can view
the complicated system of works
here displayed, and stretching
away for miles, without arriving at
the conclusion that they are the
result of an infinite amount of
toil, expended under the direction
of a governing mind, and having
in view a definite aim. At
this day, with our iron imple-
ments, with our labor-saving ma-
chines, and the aid of horse

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power to accompany such a task would require the labor of many thousand men continued for many months. These are the work of a people who had fixed habitations; and who, deriving their support, in part, at least, from the soil, could devote their surplus labor to the rearing of such a structure. I migratory people, dependdnt upon the unee certainties of the chase for a living, would not have the time, nor would there be the motive , to engage in such a stupendous undertaking.

p. 15-8 - "While all retained certain characteristics in common, the separate nations differed in tribal customs, moral and mental status, social habits, political and religious ideas, language, legendary lore, and in sedentary or nomadic proclivities. Their shifting nature, crude systems of centralization, continual wars, temporary confederacies, alliances and dispersions, merging of bands and mingling of clans, defy the historian, and confound the scientist."

p. 15-9 - "These people prior to the invasion of the European, had no written language. The only native Indian alphabet is the Cherokee, a syllabary invented early in the nineteenth century by a half-blood member of that tribe, and so well adapted to its purpose

3.

that it attained a general use among the Cherokees. Within more recent years, Tribesmen with the aid of American scholars have reduced to written form the language of the Shawnees, Senecas, Dakotas, Chippewas, Creeks, Choctaws and other nations, and periodicals are now issued in several of the Indian Tongues. p. 159- "A few tribes, in early times, made attempts at recording something of their history and native traditions by means of pictographs, rude primitive art drawings on the rocks, bark of trees, and skins of animals. Thus wrought Hawaiiha:

"From his pouch he took his ^{colors}
Took his paints of different colors,
On the smooth bark of a birch tree
Painted many shapes and figures,
And each figure had a meaning,
Each some word or thought suggested."

4.

Of all the Indian Tribes, the Algonquin was the most numerous. Roughly speaking, they extended from the Carolinas to the Mississippi river, and northward into Canada. The Iroquois were surrounded by these Algonquians.

In very early times Ohio was largely occupied by the Eries, but these were practically exterminated by the ~~Indians~~ Iroquois. Indians. Other Tribes in Ohio were Delawares, Mingoes, Inscarawos, ^{Wyandots}, Shawnees, and others.

There were no ^{native} Indians in what is now West Virginia, at the time of our first settlements.

Mr. Harrison bitterly denied the Iroquoisan invasion of western Ohio. However, Randall p 177 and Ryan's history says Mr. Harrison was mistaken, and Schoolcraft agrees with him.

Randall and Ryan

History of Ohio. Vol 1

p. 72-3 -

(Mound Builders)

"Thus much for the mounds and village sites, upon which volumes have been written by the painstaking archaeologist. Many other tumuli and town centers deserve mention for some peculiar characteristic, or unique, interesting feature. But we have already devoted too much space to the theme. We have done so, because in their remains and relics rest the sole sources of our knowledge of the vanished race that built and lies buried in these earthen structures. They left no written records. Those prehistoric people were speechless ~~except~~ save in their monuments and the mementos they contain. True it has been claimed that inscribed tablets have been found in these mounds, evidencing that the Mound Builder had a written language, a subject fully set

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forth by Col. Charles Whittlesey, in an article on "Archaeological Frauds," in the Western Reserve Historical Society Publications. Some of these such as the "Holy Stone," taken from one of the mounds at Newark, and the "Cincinnati Tablet," removed from a mound once standing in the precincts of that city, attracted extraordinary attention, and elicited the serious study of scholars of national fame. The first, having Hebrew verses engraved upon it, was proven to be a fraud, having been prepared and intruded into its mound lodgment only a short time before it was "discovered." The Cincinnati Tablet was undoubtedly genuine as to its place of exhumation and its antiquity but no one has ever been able to determine that the "inscriptions" carved thereon are other than mere fanciful and meaningless lines. Several other alleged "records" have been "unearthed" in the

Ohio mounds, but in every instance these so-called "hieroglyphics" have been proven to be modern intrusions, or deceptions or unintelligible scrawls. It is undoubtedly the unanimous conclusion of all authoritative archaeologists that thus far no reliable evidence has been discovered that the Mound Builder had a written language even of the crudest form. But if the Mound Builder was "an unlettered, small-knowing soul, he was like all primitive people, a religious being. He had his faith, his sanctuaries, and undoubtedly his ceremonial worship. In Ohio, was his greatest spiritual emblem, altar or temple.

HISTORY OF OHIO

--

The Rise and Progress of an American State

By

Emilius O. Randall and Daniel J. Ryan

Volume One

By

Emilius O. Randall.

The Century History Company
New York.
1912.

Mr. Huff: -

Copy

3. ✓ p. 73-80 - Begin on p. 73,
at bottom paragraph.

4. ✓ p. 219-226 (to middle of p.
226)

2. ✓ p. 317-324 to end of
Chapter.

This must all be completed
before I go home, as I have
to mail this book back to
Chicago.

Completed 8/1

Pages 317-327. The French and Indian War.

In their trans-river invasions the savage warriors from Ohio spread consternation and destruction along the Paths they trod, committing murder and perpetrating arson and rapine. These Wanton raids, many of which are related in Kercheval's "History of the Ohio Valley" have furnished material for innumerable stories of border adventure and warfare. One, in particular, the incidents of which were in the Ohio country, should be briefly re-told.

On the Great Kanawha and its tributaries were established some of the earliest settlements of the Ohio Basin by white men other than the French. On the (then) New River formed at the base of the most westerly stretch of the Alleghanies was a community of a dozen cabins, called from its locator, Draper's Meadows. Mary Draper, daughter of the chief settler, was the heroine of the neighborhood. Her experiences, almost unparalleled in frontier romance, are explicitly set forth by her great grandson, John P. Hale, in his little volume on "Trans-Alleghany" pioneers."

Mary Draper "could stand and jump straight up nearly as high as her head; she could stand on the ground beside her horse and leap into the saddle, unaided," and she could perform many other feats equally surprising and unusual. Her husband, a sturdy youth, of the same settlement, was William Ingles. For five years the young couple thrived in their primitive home, to which had come two little sons, Thomas and George. In the summer of 1755, the day previous to the one on which Braddock plunged to his defeat, on the Monongahela, a band of Ohio Shawnees from the Scioto stealthily approached and surrounded the little bunch of cabins that constituted the Draper's Meadows. Every

Every member of the little colony was either killed, wounded, or borne away captive. William Ingles, fortunately absent in the fields, escaped; but his wife, Mary and the two little sons were made prisoners, as was Mrs. John Draper, Mary's sister-in-law, who was seriously wounded in the arm. The baby of Mrs. Draper was brained against the end of one of the cabin logs by the Indians, who conducted their depredations by firing the cabins and then starting for their Scioto villages, leading the horses they had stolen, loaded with plunder. Mary Ingles and her sister-in-law, Bettie Draper, were permitted to ride the captured horses; the latter woman with a shattered arm; the other about to become a mother. On the night of their third day out says Mr. Hale, "Mrs. Ingles, far from human habitation, in the wide forest, unbounded by walls, with only the bosom of mother earth for a couch, and covered by the green ~~leaves~~ and the blue canopy of heaven, with a curtain of black darkness around her, gave birth to an infant daughter." Owing to her perfect physical condition, her robust out door life and training, she passed ~~thx~~ through the ordeal amid such strange surroundings, with almost as little suffering and loss of time as one of the Indian squaws might have done.

Next morning she was able to travel and resumed the journey, carrying the little stranger, a veritable child of the forest, in her arms on horseback. The party of captors and captives followed down the New River, along the Bluestone River, crossed Flat Top mountain and descended Paint Creek to the Great Kanawha. Reaching the Ohio the Indian band followed its course to their towns at the mouth of the Scioto, which they reached just one month after leaving the scene of

Pages 317-321.

the massacre and capture at Draper's Meadows. At the Scioto town much feasting, dancing and jollifying was indulged in as a celebration of the success of the expedition. All the prisoners were compelled to "run the gauntlet" except Mrs. Ingles, who, on account of her weakened condition, which she bore with rare bravery and cheerfulness, was exempted. Bettie Draper, in spite of her broken and painful arm, was required to pass the dreadful ordeal of running as best she could, down the line between two rows of Indians who, amid laughter and yells, beat her with clubs and sticks, and buffeted her from side to side. Then came the awful moment of apportioning the captives. Mrs. Bettie Draper was taken to an Indian village in the vicinity of (the present) Chillicothe on the Scioto; Mary Ingles and her baby were retained at the Scioto Shawnee town; Thomas Ingles, aged four, was carried to Detroit; his little brother George, aged two, was borne away to an unknown locality in the interior. Some French traders, appearing at the Shawnee town where Mary and her baby were held captive, sold the Indians a quantity of check shirting, and Mrs. Ingles, an expert with the needle, was put to work making check shirts a most popular garment with the Indian men; "when a shirt would be finished and delivered to its owner he would stick it on the end of a pole and run through the town yelling 'heap good white squaw.'".

Mary Ingles is often claimed as the "first white woman in Ohio," but that is clearly erroneous. We have already given the story of Mary Harris, of "White Woman's Town" and it is more than likely that many white women preceded her to Ohio, either as captives, or possible as voluntary migrants. But the story of Mary Ingles outstrips that of all others recorded for romantic incidents and almost incredible experiences. She was not only the popular

Pages 317-324.

seamstress of the Shawnees of the Scioto; through her deftness and apparent eagerness to work for her captors she became valuable as a salt maker, one who was skilful in boiling the water of the salt spring and extracting the salt. On one occasion, with her babe, she was conducted by an Indian salt-procuring party to the Big Bone Lick in Boone County, Kentucky, one hundred and fifty miles below the Scioto and three miles inland from the Ohio. With this party was another captive, an old Dutch woman to whom Mary Ingles divulged her secret hope of escape and return to her Virginia home. They planned to go together. After many misgivings and heart rendings Mary determined to leave her babe with her Indian captors. There was no other alternative: To take the little one was certain death for both; Left with the squaws, it would probably be cared for. Should the mother escape, the little one might, later, be rescued. The two fugitive women slipped away; and each carrying only a blanket and a tomahawk they followed stealthily, amid the trees and brush, up the southern branch of the Ohio. There were no roads; no guides; they knew neither routes, distance, or points of compass. They must keep the Ohio in sight till they reached the Great Kanawha. Hundreds of miles of wilderness lay between them and their destination, and this interval was inhabited only by Indians and wild beasts. Never was such a journey undertaken and traveled. They slowly crept through the forests, waded the creeks, or picked their way across on rocks and fallen trees. At times they had to make long detours, to cross streams or evade Indian paths in which they might be discovered. Without means of securing game, they subsisted on walnuts, hickory-nuts, wild grapes, paw-paws and berries; often their meals were solely made of bark, leaves and shrubs. Their clothes were worn to shreds, and their faces became thin and wan with hunger. But on they toiled by day, sleeping,

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one hardly imagines how, at night. After passing the point opposite the mouth of the Scioto, the scene of their captivity, they found an old Indian pony, strayed from his owner. This wandering "critter" was a valuable find. They could now take turns riding, and still make progress while resting their weary bodies. After many days they reached the Big Sandy river, now the dividing line between West Virginia and Kentucky. This they attempted to cross by leading the ~~xx~~ critter" over the drift-wood that clogged the stream. But the pony's foot slipped between the logs, leaving him astride some tree trunks, from which predicament the helpless women could not extricate him. He was left to his fate; while feeble, footsore, and well nigh famished, the fugitives pushed on afoot. They reached the Great Kanawha and turned inland from the Ohio. Their steps were directed homeward; but many a long mile was yet to be traversed, and the home stretch was to be the supreme test of their courage and endurance

Lack of food and exposure "turned the head" of the old Dutch woman and in a fit of mental aberration she viciously attacked Mary Ingles, and but for the great tact and springhtliness of the latter the assault might have ended in tragedy. The mental balance of the Dutch woman returned and together the journey was resumed. But the weather was growing cold; they had long since worn out their mossasins their clothes were in rags and tatters. At night they lay down under shelving rocks or in hollow logs, or on leaves and moss. But "they walked, climbed, crept and crawled through brush and thorn, vines and briers, over and around hugh rocks, clambered under or over fallen timber and over slippery banks;" scaled hills and followed rusing torrents and tortuous ways:

"What will not woman, gentle woman dare,
When strong affection stirs her spirit up?"

Again the old Dutch woman lapsed into a crazed fever, and threatened to kill Mrs. Ingles with cannibalistic intent. The latter, humoring the insanity of her companion, proposed to "draw cuts" to decide who should be sacrificed to become the food of the other. The lot fell to Mrs. Ingles: She tried to escape by promising the Dutch woman large rewards when they would have reached their journey's end. But with the crazed and famished Dutch woman the pangs of hunger were more potent than the hope of future gain, and she undertook then and there to kill her victim. She violently seized Mrs. Ingles, and the contest became a struggle for life or death. But Mary Ingles, younger and more active, succeeded in eluding the grasp of her murderous adversary. She fled, although almost dead from exhaustion, leaving the older woman to her fate. She pursued her journey until finally she reached a settler's cabin, the sight of whose inmates so ver-welmed her with emotions of joy and relief that she fainted and fell, insensible upon the ground. She was tenderly raised and conveyed to the cabin, and there slowly nursed and fed until strength returned and she could be carried on horse back to her home, or rather, the desolate site of her former habitation. She had not seen a fire, nor tasted food save nuts, berries and roots, or known shelter for forty days. Yet MIRABILE DICTU, she had in that time, traveled more than seven hundred miles through a howling wilderness. We cannot give all the details of the dangers and hardships and perilous incidents through which this woman passed. Six years later Mrs. Bettie Draper, who had lived all this time among the Shawnees, mostly in the villages of the Scioto, was ransomed by her husband.

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As to the children of Mary Ingles; the little baby born during her mother's flight and left at the Big Bone Lick, was never more heard from. Little George perished in captivity about the time of Mrs. Draper's ransom. Thomas, after a captivity of over twelve years, was discovered in a Shawnee village on the Scioto, by a trading friend of his parents and finally ransomed at a cost of some two hundred and fifty dollars. He knew no parents but the Indian captors who had adopted him. He knew no language but the Indian tongue. He was loth to leave his wigwam home and indeed, attempted to escape from his ransomer and flee back to his savage friends and playmates. After his restoration to his parents and reconciliation to his new life he had a most remarkable career, becoming personally known to or associated with many distinguished contemporaries, among whom were Jefferson, Madison, Monroe, Patrick Henry, William Wirt, and others equally prominent. Such, all too briefly told, is the story of Mary Ingles, who died at Ingles Ferry in 1815, in her eighty-fourth year, retaining to the last her marvelous physical vigor and strength of mind. Only two years before her death she attended a religious meeting thirty miles from home, to which she went, and from which she returned on horseback. "Her step was then still elastic, her figure erect, and her complexion florid and healthy, though her hair was white as snow."

The Serpent Mound, the greatest effigy structure of the mound builders in America, is a huge earthen bas-relief representing a serpent resting his curving folds upon the summit of a bluff that rises a hundred feet above Brush Creek, in Adams County. This bluff, the spur of an elevated ridge, projects abruptly into the valley which, with its flanking hills, forms an open arena or amphitheatre some two miles in diameter. Upon the slightly inclined crest of this high ridge lies, in graceful and gigantic undulations, the great serpent, so located that it may be seen in its majestic length and snake splendor from afar and near in the plains below. For exhibition purposes no finer situation could have been found in Ohio. Moreover, this rugged bluff, with its beetling brow, was just such a spot, suggests one writer as the superstitious man of the primitive age would look upon with peculiar awe, as if it might be the abiding place of some great Manitou; a place to inspire the sentiment of wonder and of worship." The serpent, beginning with its tip end, starts in a triple coil of the tail on the most marked elevation of the ridge and extends along down the lowering crest in beautiful folds, curving gracefully to right and left and swerving deftly over a depression in the center of his path and winding in easy and natural convolutions down the narrowing ridge, with with head and neck stretched out serpent-like and pointed to the west; the head is apparently turned upon its right side with the great mouth wide open, the extremities of the jaws, the upper or northern one being the longer, united by a concave bank, immediately in front of which is a large oval, or egg-shaped hollow eighty-six feet long and thirty feet wide at its greater inside transverse, formed by the artificial embankment from two to three feet high, and about twenty feet wide at its base. The head of the serpent across the point of union of the jaws is thirty feet wide, the jaws and connecting

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crescent are five feet high. The entire length of the serpent , following the convolutions, is thirteen hundred and thirty-five feet. Its width at the largest portion of the body, is twenty feet. At the tail the width is no more than three feet. Here the height is from three to four feet which increases towards the center of the body to a height of five or six feet. Such is the size of the enormous earthen reptile as it has lain, basking in the suns or shivering in the snows of many centuries. The effect the sight of it produces from close inspection or distant view, can scarcely be imagined or described. Professor Putnam, to whom is due the credit of the restoration and preservation of the mound, says in his account of his first visit: "The graceful curves throughout the whole length of this singular effigy give it a strange, life-like appearance; as if a huge serpent, slowly uncoiling itself and creeping silently and stealthily along the crest of the hill was about to seize the oval within its extended jaws. Late in the afternoon, when the lights and shades are brought out in strong relief , the effect is, indeed, strange and weird; and this effect is heightened still more when the full moon lights up the scene and the stillness is broken by the '~~whoo, whoo, hoo-hoo~~ whoo, whoo, hoo-hoo' of the unseen bird of night. Reclining in one of the huge folds of this gigantic serpent, as the last rays of the sun, gleaming from the distant hill tops, cast their long shadows over the valley, I mused on the probabilities of the past; and there seemed to come to me a picture as of a distant time, of a people with strange customs, and with it came the demand for an interpretation of this mystery. The unknown must become known." Examinations into the various sections of the serpent demonstrated that nothing was buried therein. The Mound was ingeniously constructed in layers of different natural materials; there being stone at the base, covered

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with yellow clay, over which came a stratum of "dark soil" and then the final topping of sod.

We cannot go into any extended consideration of this fascinating and awe-inspiring relic of the past. It is the teaching of ethnology, that primitive man in all races, first worshiped inanimate nature, the trees, rocks, sun and stars; then he advanced a stage and worshipped nature in her animate forms, and of these the serpent was foremost, the "mysterious stranger in the grass, who overcame, with honey words the fabled mother of us all, and who, to the astonished gaze of the primitive race, over-came by god-like power man, as well as the strongest beast of the field."

While the explorer found in the serpent no secret of its ago or purpose, much was revealed as to the mound builders in the small mounds and isolated sub-surface burials on the hill summit not far from the serpentine structure. Here Professor Putnam found inhumations, the most ancient of any discovered in Ohio, as proven by their relative placement in the strata of the various clays and subsequent coverings by other soils and vegetation deposits and layers, the formation of which must have been due to nature, the slow work of which required "centuries of time" to thus cast its coverings over the artificial work of ancient man.

Besides such testimony as that just given by Professor Putnam, the certainty that the works of the Ohio Mound Builders are very ancient is proven by many ways. By the testimony of the primitive articles and implements found in the mounds and graves; by the testimony of the creeks and rivers in the changes of their courses--shifting of bed currents, since the mounds were built upon their banks and by the great trees that have grown upon these mounds, some of the_m

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as we have noted, being six hundred years old, and in many cases, second or third growths. Hence, from archaeological, chemical, geological and botanical testimony, , scholars conclude these earthen works are at least hundreds of years old, and perhaps thousands. They were unquestionably completed and abandoned before the Columbian discoveries of America. No European articles are ~~found~~ found in any of the mounds, except where in some instances, there are European "intrusions" ; injections into the mound of historic burials, sometimes Indian interments with accompanying modern ornaments or implements.

And still the query arises, who were the Mound Builders?

And still the query is unsolved, and insolvable. Until a generation ago the general opinion of the archaeologists was that the Mound Builders were a distinct and separate race from the American Indian, and that the skilful and ingenious architects of these earthen structures "fled the field" before the Indian came or possibly was driven out by the invading and conquering red men.

The later, more thorough and scientific study of the mounds and their contents, have led the archaeologists to revise their former theory, and they now mainly agree that the Mound Builder was the ancestor, or progenitor of the American Indian, the remoteness of the relation-ship, however, being undetermined. The Indian progenitor theory is supported by the similarity of the artifacts found in the prehistoric mounds to the implements made by the historic Indian. But the reply to the undoubted resemblance is that the first products of the primitive man's handiwork are the same the world over. The peace and war stone implements exhumed by Schlieman from the ruins of Troy cannot be distinguished, when

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placed side by side, from those found in the mounds of Ohio. Not a few writers, in favor of the Indian theory, point to the claim that certain Indian tribes were known to erect mounds, and the Cherokees, Mandans and Nachez are especially cited. The chroniclers who accompanied De Soto in his journey (1540) from Florida to the Mississippi noted that the Cherokees built mounds, upon the summits of which they located their dwellings. The Mandans of the west are said to have lived in circular, earth lodges, partly under ground; hence the appellation applied to them, "ground-house Indians." Like-wise the Nachez, in the territory of the lower Mississippi, "raised mounds of earth upon which to erect their dwellings and temples." Many scholars who have studied the innumerable effigy mounds of Wisconsin, attribute those monuments, though their age is unknown, to the Winnebago tribe of Indians, whose eight clans had for their totems the bear, wolf, deer, elk, fish, snake, Etc., though the totem figures are not the only ones reproduced in the earth structures. But, whatever may be the inferences of relationship between the Mound Builders and the Indians elsewhere, the Ohio mounds suggest meagre, if any, cultural similarity to the Ohio Indians, or the tribes of any other sections. Nor had the Ohio tribes any tradition, much less knowledge, of the builders of the Mounds that could throw any light upon the obscurity of the subject.

If this Indian theory be correct, it must be admitted that the American historic Indian who was discovered by the invading European must have been a degenerate and unworthy descendant of his distant forbear, the Mound Builder. "A broad chasm is to be spanned before we can link the Mound Builders to the American Indian for the American Indian, in his best historic periods, never display

ed an architectural talent, an artistic ingenuity, or a trait of industry at all comparable to those characteristics so unquestionably the possession of the Mound Builder.

Volumes have been written upon the origin and racial identity of the Mound Builder. Arguments have been put forth to the effect ~~th~~ that he was the lost tribes of Israel; that he came in the twilight of ancient history from Japan, China, and other oriental race centers; that he was the lineal descendant of the Toltecs; that he later emigrated from North to South America and displayed in those wonderful temples the constructive powers he inherited from his mound building ancestors; reversely, that the Mound Builder was the descendant of the Toltecs; and from Mexico ascended the Mississippi Valley and dotted the great basin and its tributary, the Ohio Valley, with his countless monuments of earth; again, that he was the kin of the Aztecs, perhaps a branch of that war-like and art-loving people; again, that the prehistoric American was the descendant of the South American Indian, and so on, until speculation and conjecture have been exhausted. But all in vain. The Mound Builder's identity, the time of his entry and his exit: the duration of his stay, all belong to the realms of the unknown, nor will that unknown ever become the known; the veil will never be lifted--oblivion will never yield the secret.

"Thou~~s~~ unrelenting Past.

Strong are the barriers round thy dark domain-

And fetters, sure and fast,
Hold all that enter thy unbreathing reign.

"Far in thy realm withdrawn,
Old Empires sit in sullenness and gloom;
And glorious ages, gone,
Lie deep within the shadows of thy womb."

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"The Canadian fur Trade had been made a monopoly by being confined to companies organized and chartered in France; companies forming a corporation "trust" and none but those holding stock or being properly authorized could buy and sell in peltries. This "closed shop" policy of the monopolists produced a large class of romantic rovers, called coureurs de bois, wood rangers, bush whackers, who wandered far and wide through the forests, ~~collecting~~ conducting illegal traffic with the tribes. The first one of these according to the records was Etienne Bouli. He set the example of adopting the Indian mode of life in order to ingratiate himself into the favor and confidence of the tribesmen. He was a trader and wood ranger on his own account and

HISTORY OF OHIO

The Rise and Progress of an American State.

B y

Emilius O. Randall and Daniel J. Ryan

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Volume One

By

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The Century Histpry Company,

New York

1912.

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(That treaty terminated what was known as King George's war, waged on the European continent between England, France, and other nations. It also involved the English and French in America, in which there was some sea and considerable border-land fighting, the Colonists taking Louisburg from the French. By the Treaty of Aix la Chapelle, much to the dissatisfaction of the New Englanders, the boundary disputes concerning the French and English possessions in America were left unsettled, and for the future action of a joint commission. A sort of ante-bellum STATU-QUO was recognized which not only permitted the contest for the Ohio country to continue, but increased the efforts of each claimant.

If the Treaty of Aix la Chapelle did not, in any way, allay the rivalry between France and England in America, a treaty made the summer of that same year (1748) at Lancaster, Pennsylvania, had much to do with the situation. This treaty was entered into by Commissioners of Pennsylvania and Virginia and representatives of the Six Nations, Delawares, Shawnees, Nanticokes and Miamis, the latter including Twightwee deputies from Pickawillany. The Miamis expressed themselves as particularly desirous of securing the friendship and alliance of their English brothers, and requested that a "road," friendly relationship, be opened from their Miami towns to the English settlements and that many English traders be sent among them. In the signed treaty the Miami chiefs agreed not to injure or defraud any of the subjects of Great Britain, "but at all times readily do justice and perform to them (English) all acts and offices of friend-ship and good will." At the conferences resulting in the above treaty, the Provincial Council report of the report of the proceedings says "the Commissioner gave a handsome entertainment to the Deputies

of the Tightwees and the Indians who conducted them from the Ohio."

The activities of the Pennsylvania and Virginia colonists ~~who~~ in the Logstown negotiations and the Ohio Land Company organization thoroughly aroused the French authorities at Quebec. It was their next move, and it was promptly made. In the spring of 1749 Marquis de la Gallissoniere, Governor of Canada, directed Captain Bienville de Celeron a capable and courageous officer, with proper escort, to proceed to the Ohio, descend it, and by suitable formalities, preempt the territory for France, and order all intruding English to retire from the French possessions. This expedition of Celeron was conducted with characteristic French ~~extremely~~ theatrical ceremony. The detachment under Celeron ~~was~~ consisted of eight subaltern officers, six cadets, an armorer, twenty soldiers, one hundred and eighty Canadians, thirty Iroquois, and Twenty-five Abenaki Indians. Celeron's chief assistants were De Contrecoeur, and Coulon de Villiers, prominent officers, of whom we shall see later on. The diplomat of this military company was one Phillipe Thomas Joncaire (John Coeur), Sieur de Chabert, a French officer, resident among the Seneca Indians, to which tribe his mother, it was said, belonged. Joncaire had a trading post at Niagara and commanded large means. He spoke eloquently the dialects of the Iroquois, with whom he exerted a most remarkable influence, being given by them the Indian name "Nitachinon". He was a bitter and unscrupulous opponent of the English and a favorite negotiator and interpreter for the French in their dealings with the Indians. The Chaplain ~~was~~ Father Pierre Jean de Bonnechamps, who styled himself a "Jesuite Mathematicien." He was also the sailing master of the expedition; made a map of the course followed, and kept a daily record, entitled "brief notes of the most important occurrences." The original manuscript of this journal now rests in the Archives of Marine, Paris. It is reproduced in the Jesuit Relations. De Celeron also kept a journal of the entire voyage. Both

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these reports of Celeron and Bonnechamps have been published and from them we obtain our information.

The flotilla, consisting of twenty birch bark canoes, embarked from La Chine on June 15, 1749. It formed a bizarre but picturesque outfit, the French soldiers and Canadians, in their gay costumes and semi-medieval armour, half-naked, copper-skinned savages, with their barbarian weapons, the flying banners of France, all crowded in the frail, white birch canoes that floated on the blue waters of the river like tiny paper shells, filled with variegated and animated figures; it must have seemed like a TABLEUX VIVANT, rather than an army going forth to wrest an empire from the indomitable English. The little fleet pushed its way up the St. Lawrence, across Ontario to Niagara, around the roaring falls of which they shouldered their canoes, re-embarking on the waters of Lake Erie. They crept along the lake shore to the mouth of Chautauqua Creek which they ascended, partly by portages ^{haddled} to the lake of that name; "Chatakouin" Celeron calls it, which they paddled to its outlet in Conewango Creek, Chanongon, in Celeron's journal, and "Kananougon" on Bonnechamp's map, which scurried the little fleet into the broader current of the Allegheny. They had reached the Ohio. At this point, now known as Warren, Pa. a halt was made and at "the foot of a red oak on the south bank of the river Oyo (Ohio) at the confluence of the Chanongon," writes Celeron, "I buried a plate of lead." This plate, one of several similarly interred, on which was engraved in French an inscription which translated reads as follows:

"In the year 1749, of the reign of Louis the 15th, King of France, we Celeron, commander of detachment sent by Monsieur the Marquis de la Galissoniere, Governor General of New France, to re-establish tranquility in some Indian villages of these cantons, have buried this plate of lead at the confluence of the Ohio and the Chautauqua this

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29th day of July, near the River Ohio, otherwise Belle Riviere, as a monument of the renewal of the possession we have taken of the said River Ohio, and of all those which empty into it, and of all the lands on both sides as far as the sources of the said rivers, as enjoyed, or ought to have been enjoyed by the Kings of France, preceding, and as they have there maintained themselves by arms and by treaties, especially those of Ryswick, Utrecht, and Aix la Chapelle."

As an additional clincher, a tin sheet was tacked upon the tree setting forth a "PROCES VERBAL" bearing the arms of France and certifying that a plate had been there buried, &c. This PROCES VERBAL was worded thus:

"In the year 1749 we, Celoron, Chevalier of the Royal and military order of St. Louis, commander of a detachment sent by order of the Marquis of Galissoniere, Governor General of Canada, to the Ohio, in presence of the principal officers of our detachment, have buried (Here was inserted the place of deposit) a leaden plate, and in this same place have affixed to a tree the Arms of the King. In testimony whereof we have drawn up and signed with the officers the present Proces Verbal, at our camp the (day of the month) 1749."

Mr. Marshall, of the Buffalo Historical society, in his comments on the Journal of Celeron, calls attention to the fact that Celeron in his plate, speaks of the Allegheny as the Ohio, or "La Belle Riviere". This, the commentator states, "is in accordance with the usage of all early French writers since the discovery of the river by La Salle."

The same custom prevailed among the Senecas whose territory touched the Alleghany, which they considered "as the Ohio proper," calling it O-hee-yah, meaning "beautiful river". In the Cayuga and Mohawk dialects the name is O-hee-yo; in the Onondaga and Tuscarawa, O-hee-yee; Oneida, O-hee, all signifying "fine or fair river." It was given other names by other tribes, such as Adigo, Attiga, and similarly sounding synonyms.

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Having thus literally buried and "nailed down" or more literally speaking, tacked up the title of France, the band of Medieval Gauls and Western savages, drawn up in military array, shouted "vives" for their King, and then, re-entering their canoes, resumed their journey. They were now well into their Indian country and stopped at the various villages to meet and placate the aborigines, whom they suavely greeted, making them presents and pledging them in "Onontio's milk", or French brandy.

As Celeron proceeded cautiously down the river he sent Joncaire ahead, as an avant-coureur, to announce the coming of the French and give assurances of the friendliness of their approach. They stopped at the village of the mouth of "Riviere aux Bocufs," now French Creek, known to the English as Venango, and later, an important point. A few miles below Venango the second plate was buried, with all the French fur belows. Passing the forks, or site of Shannopin's Town they rowed on to Chiningu, or Logstown. They found the village the largest on the river, with eighty cabins, harboring Iroquois, Shawnees, Loups, even Nipissings, Abenakis and Ottawas. Celeron found here several English traders whom he ordered away, sending by them to Hamilton, Colonial Governor of Pennsylvania, a letter to the effect that "he was surprised to find English traders on French territory, it being in contravention of solemn treaties, and hoped the Governor would forgive their trespassing in the future." Celeron made a speech to the Logstown negroes but they treated it with contempt, as they were friendly to the English. Celeron pushed on, burying a third plate on the north bank of Wheeling Creek, at the juncture with the Ohio. At the mouth of the Muskingum the fourth plate was sunk with cheers, songs, and a volley. It was subsequently found, and is now in the custody of the Antiquarian Society of Worcester, Massachusetts. The fifth lead title was buried ^{at} the

foot of an elm on the south bank of the Ohio, and on the east bank of the Chinondaista, the eighteenth of August, 1849." The Chinondaista, "river of the woods", was the Great Kanawha. This plate was also subsequently found. From this point, Joncaire was sent forward "with two chiefs from the Sault St. Louis and two Abenakis," to propitiate the inhabitants of "St. Yotoc", a village they were now approaching. As Bonnechamps calls the place "Sinhiato" on his map, it is identified as Scioto, the village that was at the mouth of that river, a village known as Shawneetown, though Celeron reports finding there representatives of "nearly all nations of the upper country."

This river, generally known as the Scioto, like many rivers in the early times, had an embarrassing plurality of Indian names. The centrality of its location, and its utility as a water-way between Lake Erie and the Ohio River, gave this river great prominence with many of the tribes, each one of which gave it its own tribal designation. The Wyandot name was Scionto probably from Oughscanoto, the word for deer, which favorite game of the Indian, frequented in great numbers the river thus named; the Mohawk name for deer was Oskennonton or Scaento; in Onondaga it was Skanonto. Other forms of the name applied to the Scioto, as noted by Mr. Hanna, included Souyote, Sonneoto, Sonontio, Centio teaux, St. Yotoc, Chianotho and Sikader, "besides the name by which it was designated on Bellin's map of 1744, Chianouske." It was, however, known chiefly as the Scioto, meaning deer river. Caleb Atwater, in his "History of Ohio" (1838) has another unauthenticated version of the origin of the name, Scioto, saying the river was so called from the Indian word, Seeyo-tah, meaning "great legs;" because of the numerous branches of the Scioto; "on the east the Little Scioto, Olentangy, Gahannah or Big Walnut, Little Walnut and Salt Creeks; on the west the Rush Creek, Mill Creek, Boke's Creek, Darby, Deer and Paint Creeks, and these are all "longlegs for their size."

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After the exchange of the usual courtesies with the people of "Sinhioto" Celoron's fleet passed on to the mouth of the Great Miami, named by the explorers, "Riviere a la Roche." The sixth and last "nota bene" was here sunk, and the bark gondolas of the little navy turned their ~~power~~ prows northward and ascended the Miami, to the mouth of Pickawillany Creek; later known as ~~m~~Laramie Creek, then the site of Pickawillany stockade, and the village of a Piankashaw band of Miami Indians whose chief, because of his unusually gawdy dress, was known to the French as "La Demoiselle". The English called him "Old Britain," as he was friendly to the British.

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THE CENTURY HISTORY COMPANY

New York

1912.

CHAPTER VII.

The Indian Tribes of Ohio.

Between the Miami settlements on the rivers of that name and the Delawares on the rivers in eastern Ohio, lay the Scioto Valley. This, from time immemorial, was the favorite ground of the heroic and historic Shawnees.

The Shawnees, as we proceed, will command much of our attention. They too, were of Algonquin stock and were called Satanas by the Iroquois, Chaouanons by the French, and Shawanees, Shawanos, Shawnees and similarly spelled names by the English. We shall employ the simplest form, Shawnee. The RELATIONS make frequent mention of this tribe, showing its members were in widely separated parts of the country, previous to 1700. We have already noted that the Iroquois, who hated and not a little, feared them, , warned (1669) La Salle of the ferocity of the Shawnees , then located on the upper Ohio. Ten years later (1680), on their return from the Illinois to their homes, it is recorded that the warriors of the Five Nations played havoc with the Shawnees in the settlements of the latter in southern Ohio. The Shawnees were doubtless among the tribes met by by Captain John Smith and his colony, on the banks of the James. One of the first definite mentions of them is is by De Laet in 1632, who places them at that date, on the Delaware. Marquette speaks of meeting them during his missionary travels in the far north-west. They were a party to the famous Penn Treaty held under the Great Elm in 1682, and for many years thereafter were the custodian of a parchment copy of that treaty, thus evidencing their prominence in that event: "The only treaty," says Voltaire, "never ratified by an oath and never broken;" for "not a drop of Quaker blood was ever shed by an Indian," is the testimony of Bancroft. Restless and fearless, wary, war-like and nomadic, they were the vargrants of the trackless forests the Aboriginal

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American Arabs, ever seeking new fields for conquest and opportunity. "At the period when Western Virginia began to see the light of dawning civilization, they (Shawnees) were the possessors of that wilderness garden, the Scioto Valley, occupying the territory as far west as the little Miami and head rivers, having been invited thither by the Wyandots, at the instigation of the French. Wanderers, as are all savages, this tribe, of all their family or race, bears off the palm for restlessness, as well as undying hostility to the whites. From the waters of the northern lakes to the sandy beach washed by the temperate tides of the Mexican Gulf--from the Valley of the Susquehanna to the gloomy cotton-wood forests of the Mississippi--in forests grand and gloomy, with the stately growth of ages--in the prairie blossoming with beauty, and fragrant with the breath of a thousand ~~sweet~~ sweets--by mountain torrents or shaded ~~springs~~, or wide-spread plains--the Shawnees sought the turkey, the deer and the bison; and almost from the landing of the whites at Jamestown, his favorite game was the cunning and avaricious pale face."

The Shawnee realized and reveled in his prowess; proud to a superlative degree, haughty and sagacious, he regarded himself as superior to his fellow-stock, in all the natural and acquired qualities of the Indian. The Shawnee boasted in a tradition, that the Master of Life, the Creator Himself, the originator of all peoples, was an Indian. He made the Shawnees before any other human race. They, the Shawnees, ~~x~~ sprang from his brain. He gave them all the knowledge he, himself possessed, and placed them upon the great island (America) and all other red people descended from the Shawnees. After the Creator had made ~~h~~ the Shawnees he made the French and English out of his breast, the Dutch out of his feet, and the 'Long Knives' (Americans) out of his hands." All these inferior races of men he made and placed

beyond the "Stinking Lake;" that is, the Atlantic Ocean. A sifting of the varied statements, more or less reliable, leads to the conclusion that ~~at~~ at the beginning of historic times in America, the Shawnees, a populous and aggressive tribe, were chiefly located in the Valleys of the Tennessee and the Cumberland, whence bands of them wandered in all directions. They took permanent residence in Ohio, first settling along the Scioto, and later in the Miami Valley, in the early part of the eighteenth century. These Ohio Shawnees, it is generally claimed, were ekigrants from the Carolinas, Georgia and Florida, having been expelled from the sunny South by the Seminoles, Cherokees, and other southern tribes to whom the querulous and imperious disposition of the Shawnees had become unbearable. Certain it is that the Shawnees, for a hundred ~~years~~ and fifty years maintained a settlement known as Shawnee-town, at the mouth of the Scioto. Many are the poetic myths and symbolic traditions associated with the Shawnees. One of the historians of Pickaway County, Mr. Alfred Williams, cites the Shawnee account of the origin of the Piqua tribe, a small subdivision of the nation living on the Upper Scioto. Once upon a time the whole Shawnee tribe were assembled at a solemn religious feast. They were all seated around a large fire which having nearly burnt down, a great puffing and blowing was suddenly heard among the ashes, when, behold-- A man of majestic form and God-like mien issued forth from the ashes." This was the progenitor of the Piqua tribe. Mr. Williams fittingly observes: "This Indian tradition certainly equals in interest and dignity any of those related of the gods and heroes of ancient Greece, and indicates that the race possessed a poetic fancy joined to such religious conceptions as would, in course of time, have produced a sublime and beautiful mythology."

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We have thus mentooned these Indian tribes, or representatives of tribes inhabiting Ohio at the beginning of the eighteenth century and have designated in the main, the localities they occupied at that time; these relative positions will be more or less changed as our history proceeds. There were no native Ohio Indian tribes; that is, all were migrants from other portions of the country. The extent of their numbers at the time in question, is difficult to accurately ascertain. From statements of early authorities it is reckoned that the Indian population of Ohio must have ranged from twelve to fifteen thousand, as the total force of fighting braves numbered from twenty-five hundred to three thousand, of whom the Miamis numbered nearly a third. These figures probably did not vary greatly at any time until Ohio became a state.

Many readers have been misled by the often quoted statement of Schoolcraft ~~that~~ in his extenzive work on the Indians, wherein he says: "From soma data that have been employed, it is doubtful whether an area of less than fifty thousand acres, left in the forest state, is more than sufficient to sustain, by the chase, a single hunter." According to this premise, the area of Ohio would have supported scarcely more than five hundred Indians. But Schoolcraft's assertin presupposes the hunter to have been an abject savage, living solely on wild beasts by the chase. The Ohio Indian, at the time under consideration, was much above the lowest stage of primitive man. He was, at worst, only a semi-savage; for he cultivated fields of corn called maize, and to a slight extent, other products of the soil, and Professor Foster, in his "Prehistoric Races" claims that the product of a single acre, in maize, would furnish rations to sustain, in their simple life, from one hundred and twenty to two

hundred and forty able bodied men. The French population of Canada, at this same date, was about fifteen thousand, while the combined colonists of New England and New York, numbered ten times that many; and the English colonists, in toto, were between three and four hundred thousand.

Such was the Ohio Indian, about the year 1700. But it must not be forgotten that the Iroquois claimed, with other territory, possessions of Ohio by right of conquest. They had conquered all the tribes represented in Ohio, regarding the Delawares and the Shawnees thereon as mere "tenants" and the other tribes as occupants, by intrusion or sufferance..

This question of the supremacy of the Iroquois Confederacy over the Ohio tribes, and other nations farther west and south, as noted by Rufus King, in his concise History of Ohio, published in the American Commonwealth series, led to serious international disputes between France and England, and also to interesting "political-historical controversies" among historical students. As Mr. King states, Governors Thomas Pownall, Massachusetts, Cadwallader Colden, New York and De Witt Clinton, New York, also Sir William Johnson and Benjamin Franklin, regarded the rights of the Five Nations to all the hunting grounds of the Ohio Valley "as fairly established by their conquest in subduing the Shawnees, Delawares, Twightwees, (Miami), and Illinois, as they stood possessed thereof at the peace of Ryswick in 1697". DeWitt Clinton, not only one of the ~~most~~ accomplished and scholarly students of his time, delivered a discourse before the New York Historical Society in December, 1811, in which he thoroughly reviews the history of the Iroquois confederacy and briefly recites the record of their conquests. Of these "Romans of the Western World, who

composed a Federal Republic," Mr. Clinton says, "It is well authenticated that since that memorable era," the American invasion by the Europeans--they, (the Iroquois) exterminated the nations of the Eries or Erigas, on the south side of Lake Erie. They nearly extirpated the Andastes and the Chaouanons (Shawnees); they conquered the Hurons and drove them and their allies, the Ottowas, among the Sioux, on the head-waters of the Mississippi, where they separated themselves in bands, and proclaimed wherever they went, the terror of the Iroquois. They also subdued the Illinois, the Miamis, the Algonquins, the Delawares, the Shawnees, and several tribes of the Abenakis. In a word, the confederates were, with few exceptions, the conquerors and masters of all the Indian nations east of the Mississippi." Mr. Clinton further shows that "By the 15th Article of the Treaty of Utrecht, concluded in 1713, it was stipulated 'that the subjects of France inhabiting Canada, and others, shall hereafter give no hindrance or molestation to the Five Nations or cantons subject to the Dominion of Great Britain.' Mr. Clinton then observes: "As between France and England the Confederates were, therefore, to be considered as subjects of the latter, and of course the British Dominion was co-extensive with the rightful territory of the Five cantons, it then became the policy of France to diminish and that of England, to enlarge this territory. But notwithstanding the confusion that has grown out of these clashing interests and contradictory representations, it is not, perhaps, very far from the truth, to pronounce that the Five Nations were entitled by patrimony or conquest, to all the territory in the United States and Canada not occupied by the Creeks, the Cherokees, and the other southern Indians, by the Sioux, the Kinistenaux, and the Chippewas; and by the English and French as far west as the Mississippi and Lake Winnipeg, as far north-west as the waters which unite this lake and

Hudson's Bay, and as far north as Hudson's Bay and Labrador."

HISTORY OF OHIO.

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THE CENTURY HISTORY COMPANY

New York.

1912.

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CHAPTER VIII

Indian Titles to Ohio.

As a companion scenic event to the journey of the Mohawk chiefs to London and the ceremonial presentation of the plumed and painted warriors to the Queen's Court, Sir Alexander Spotswood, Governor of Virginia (in 1716) led his rollicking cavalcade of sixty persons, "gentlemen, rangers, Indians and servants," from Williamsburg, across the Blue Ridge to the banks of the Shenandoah River, which they styled the "Euphrates!" There they took possession of the "Valley of Virginia" in the name of their King, burying in a bottle the written record of their claim and the proceedings attending it. The occasion was hilariously celebrated by the imbibing of copious draughts of "Virginia wine, both red and white, Irish usquebaugh, brandy, shrub, two kinds of rum, champagne, canary, cherry, punch and cider." Certainly, their exploration was well drunk.. The gentry of the party perpetuated the memory and results of their transmontane trip by the creation of the famous order of the "Knights of the Golden Horseshoe."

In the year 1742, John Howard was commissioned by Governor Sir Francis Wyatt, of Virginia, "to make discoveries westward." With four or five others, one being John Peter Salley, who was the journalist of the party, the Virginia voyager set out from the branches of the James River and portaged across to the New River. Here they constructed a boat of wythe frames, covered with buffalo hides. In this they floated down stream until checked by the impassable falls. Cutting across land they found a branch of the stream, just left, that bore them on to the Ohio. Thence, on their buffalo hide convoy they were carried to the Mississippi, down which the current swept them "a great way till they were surprised by about ninety men, French,

Indians, and Negroes," who made the adventurous party captives, conducting them to, and confining them in prison at New Orleans. It was several days before they effected their release or escape and returned to Virginia. But it was an early English inspection of the lower Ohio and Mississippi.

The buffalo skin journey of Howard and the champagne stimulated expedition of Spotswood illustrate the indomitable character and convivial temperament of the Virginia Pioneer. Such men were destined to lead in the conquest of an empire.

In the treaty of peace, concluded at Utrecht, 1713, between the warring nations of Europe, the immense region of the Mississippi Valley was confirmed to France as against Spain and England; and a distinct article of the treaty specified ~~that~~ the recognition of the English over the Five Nations whom "France should not molest." But the Iroquois, jealous of their independance were not likely to regard themselves as too severely bound by a treaty to which they were not a party.

Another Indian-English council was held at Albany in 1726, when the Colonial Governor of New York told the sachems of the Five Nations that under the "deed" of 1701, the English could not protect the Long House from the French, but urged the tribes to "submit and give up all their hunting country to the King of England and sign a deed for it", that England could then defend them against the French and secure for them a quiet enjoyment of their own lands." Shylock was no shrewder in his bond deal with Bassanio and Antonio

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Chapter V.

LA SALLE DISCOVERS THE OHIO.

While the French explorers and missionaries were venturing on toward what they supposed would be the verge of the continent, and were attracting the friendly attention of the astonished natives with spectacular ceremonies, a dreadful tragedy was being enacted in the Huron country. This was the Western portion of the peninsula between Lakes Huron and Ontario. It was the dwelling-land of the Hurons, equally known as the Wyandots. They were the old time enemies of the Iroquois. A small nation, the allies and kindred of the Hurons were the Petuns, commonly called the Tobacco Tribe because of their custom of cultivating the nicotian leaf, which they bartered extensively with other tribes. This tribe immediately joined the ~~Wy~~ Wyandots on the south-west. Next to the Petuns, and east of the Hurons on the north-eastern end of Lake Erie and along the roaring gorge of the Niagara River lived the Neuter Nation, so called because they sought to remain passive in the war between the ~~Iroquois and the~~ Iroquois and the Hurons.

In the year 1649, "in the dead of winter" the Iroquois warriors invaded the Huron territory and with the fury of a hurricane, swept down upon their towns:

"In their faces stern defiance,
In their hearts the feuds of ages,
The hereditary hatred,
The ancestral threat of vengeance."

The Iroquois burned the palisades and huts of the Hurons, destroying some fifteen villages, and slaughtering the inhabitants with indescribable cruelty. Many of the Hurons were carried off as captives, numerous ^{bands} who could escape, fled to the islands of Lake Huron, and to the regions of Lakes Michigan and Superior, some of

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them finding refuge ,with tribes as distant as the Sioux, the Ottowas, the Iowas, and the Winnebagoes. Not a few sought and received protection in the French Canadian settlements. It was literally the dispersion of a nation, and the Hurons were thereafter wanderers on the face of the earth. A few years later, the Tobacco Tribe and the Neuter Nation met the same fate of the Wyandots. The ^{str}det~~sur~~vation of these three tribes by the Iroquois was complete , and the conquering Five Nations then commanded Canada, north of Lake Erie.

Drunk with human~~d~~ blood and frenzied by their victories in the north, the irresistible Iroquois now turned fiercely upon their next-door neighbors and hitherto friends , the Erigas or Eries, styled by the French the Cat Nation--Nation du Chat--from the custom the Eries had of wearing the skin of ^{a species} panther or wildcat, an animal about the ^{size} of a fox that frequented the land of the Eries. The early Jesuit RELATIONS speak of the Eries ~~as~~ the Riquehronnons. The territory of this tribe lay immediately south of Lake Erie and extended from the Genessee River--the frontier of the Five Nations--across the northern portion of Ohio to the Miami River on the West. How far south their settlement reached is not definitely known, but probably more, or less aparsely to the Ohio River. This Erie country, the RELATIONS report , was a land of "unusual fertility with a climate neither too cold nor too warm." The history of this nation, previous to their being found in the location just designated, is involved in obscurity. The first glimpse we get of the Eries, indeed about all we learn of them, is from the Jesuits, who seem to have had no mission among the Eries but concerning whom they they obtained their information from the Iroquois. As Champlain, himself, relates, the Eries were visited by the famous Brulé in the summer of 1615. This visit was for the purpose of getting the Eries to aid the French against the Iwoquois.

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In this journey, it is, claimed, Brule' landed on the southern shore of Lake Erie, and if so, was probably the first white man to stand upon the soil of Ohio. The Eries doubtless came into the northern Ohio from the west, being driven thither by their victorious enemies. The Eries were a populous and brave tribe. They had many permanent and strongly protected towns and villages, sheltering, perhaps fifteen thousand people; and mustering, according to the Jesuits, as reported by the Iroquois,--who would be very likely, however, in this case, to exaggerate,--a force of four thousand warriors. At any rate, the Eries were peculiarly skilled with the bow and the arrow and were known as "far-famed archers" who fought like the wildcats from which they were named. The Senecas, whose territory the Eries touched, and with whom they had been on friendly terms, smoked the pipe of peace with the Eries, while the other four tribes of the Five Nations were stealthily preparing for war. This was an oft-played act of treacherous diplomacy on the part of the Iroquois.

It was in 1655, that the Iroquois invaded the land of the Eries. It was a war to the knife, as briefly told in the RELATIONS. As near as may be inferred from the meagre record of the Jesuits, the Iroquois embarked on canoes on Lake Erie and upon their landings,--presumably near site of Erie, Pa.--the Eries,--those who were directly engaged in the strife,--retreated into the interior forests and finally took a stand in their chief town called Rique', "at the place of the Panther," which was fortified by palisades of felled trees. It was a desperate and bloody siege. The Iroquois had the advantage, in having fire arms, but the Eries could discharge six or seven volleys of poisoned arrows upon the assaulters before the latter could reload and fire again. The Iroquois lifted their canoes, bottom up over their

heads and shoulders, thus using them as shields to protect them from the continuous shower of poisoned darts. Finally the besiegers, thus run the RELATIONS, planted their canoes on end against the palisades, mounted the cross-bars like ladders, scaled the tree-made barricades and over-powered the brave defenders. The butchery was frightful, and the brutality of the victors is too awful to related. The pitiless Iroquois "wrought such carnage ^{among} ~~among~~ women and children, the blood ran knee-deep in certain places." Squaws and pappooses were slaughtered by the hundred with fiendish ingenuity and delight. The vanquished Eries fled south and west, large numbers of them were absorbed in the tribes of the conquerors. Indeed, it was the policy of the Five Nations to replenish their losses in war by merging, into their tribes, the young braves captured by the enemy.

It was the absolute destruction of the Eries, who, says one author, "melted away like a dream," for the Cat Nation no longer appears as such in Indian history, and no memorial of their race exists save the lake which bears their name." A brilliant historical writer on Indian lore closes a lecture before the Buffalo Historical Society with this quotation touching the disappearance of the Eries:

"Ye say they have all passed away,
That noble race, and brave,
That their light canoes have vanished
From off the crested wave.
That, mid the forests where they roamed
There rings no hunter's shout,
But their name is on our waters,
And ye may not wash it out."

The unchecked power of the Long House now practically encircled Lake Erie. This Erie-Iroquois warfare is, so far as we have

been able to learn, the first historic incident of importance occurring within the subsequent confines of our State. The event is, at least our introduction to the Indian contest for supremacy in the Ohio country. Thus the Great Nations, the Hurons, Neuters and Eries, not reckoning the Tobacco Tribe, had been annihilated. Three of the Great Nations named had a population estimated to be equal to that of the Iroquois; and the Six Nations destroyed by the Long House in the space of six years, numbered in all, not less than sixty thousand people. But it must be remembered these so-called "Nations" were, in reality, nothing more than mere aggregations of villages and scattered families with no authorized controlling government or power. They were purely voluntary associations, influenced, or directed by the more or less self-constituted chiefs or leaders. We shall speak further of this later on. The Iroquois, therefore, had an over-whelming advantage in their perfected and perpetuated organization and sagacious leadership. Their warfare was a science against which their enemies struggled without system or premeditation.

Directly south of the Long House, lay the Andastes or Conestogas. They comprised several small tribes on and near the Susquehanna, which name is also applied to them. The Andastes were along the valleys of the Allegheny and Upper Ohio. The Cat Nation dispersed, the Iroquois turned their arms against the Andastes, but the latter were scattered, and almost unconquerable. They kept up a brave resistance for many years, and it was not until 1672 that their destruction was consummated.

We cannot follow the conquering career of the Iroquois, fascinating as the subject certainly would prove to be. Merely may we mention EN PASSANT that, while they were successfully warring with the Hurons on the north-west, the Eries on the west, and the Andastes on the south, they were, in the decade 1662-72, like-wise carrying their victor-

ious arms to the north-~~east~~^a, compelling the ~~Adirondacks~~^{Adirondacks} to make ~~ing~~
~~ignominious~~ terms of peace and so intimidating them that the latter,
 ever after, refrained from entering the territory of the Iroquois.

During this same period the restless people of the Long House
 invaded the New England colonies and made war on the tribes of the
 Massachusetts, Pawtuckets, Pennacooks, Kennebecks, Pokomtakukes, Qua-
 baugs, Nipmucks and Nashaways. This war broke up many of the settlements
 of the tribes named; and the retreating tribesmen were compelled to
 fall back upon the borders of the ~~English~~ plantations and seek pro-
 tection from the colonists.

Amid these wars among the tribes, the French furtraders and explor-
 ers, and the Jesuits were undaunted. With tireless energy and fear-
 less persistency, they continued their perilous journeyings to the
 north-west, by way of the Ottawa River. With reluctance we pass over
 the recitals of these notable accounts, so thrillingly told at first
 hand ~~by~~ the Jesuit RELATIONS, so faithfully summarized in Shea's "His-
 tory of the Catholic Missions," and so graphically portrayed by the
 brilliant pen of Parkman. The time had come for a grand play, and Talon
 the Intendant of New France, prepared to make it. In 1670, he sent Saint-
 Lusson to the Sault St. Marie, long before known, as we have seen, to
 the explorers and missionaries. It was the key point in the Great
 Lakes region. The Jesuits had journeyed there many years before and
 the famous Father Marquette had already (1668), founded there a mission
 for the conversion of the Indian tribes in that vicinity. Through mes-
 sengers sent broad cast, Saint-Lusson, an adept in Indian dialects,
 with a party of fifteen associates, soldiers and priests, including the
 interpreter Nicolas Perrot and the explorer, Louis Joliet, had request-
 ed the presence of representaatives of the Indian tribes. They assembled
 in various numbers from ~~xxx~~ the Pottawattomies, Miamis, Sacs,

Winnebagoes, Menomonies, Crees, Monsonis, Amikoues, Nipissings, and many more, fourteen tribes in all. This motley throng of several hundred forest savages assembled in their various scant costumes and gawdy adornments, to the natural music of the rippling waters of the rapids,

"With their weapons and their war gear,
Painted like the leaves of autumn,
Painted like the sky of morning,
Wildly glaring at each other."

These swarmed about the Mission fort on the little hill where a large cross, first blessed by the Jesuits, was raised and fastened in the ground. The Frenchmen sang their triumphant hymn:

"The banners of Heaven's King advance,
The mystery of the cross shines forth."

Then, near the cross, was reared a post bearing a metal plate inscribed with the French royal arms. A prayer was offered for the King. Then Saint-Lusson advanced, and holding his sword aloft in one hand and raising a sod of earth with the other, he formally, in the name of God and France, proclaimed possession of "Lakes Huron and Superior, and all countries, rivers, lakes, and streams contiguous and adjacent thereunto, both those that have been discovered and those which may be discovered hereafter, in all their length and breadth, bounded on one side by the seas of the north and west, and on the other by the South Sea:" &c. The Frenchmen fired a salute, and "the yelps of the astonished Indians mingled with the din." Little did those simple children of the forest realize that they were applauding a pageantry that precluded the doom of their race. Six centuries before, William the Norman Conqueror landed in Britain; and as the free-booter leaped upon the shore he stumbled and fell, but with French wit, which the

Normans had picked up in their Gallie sojourn, he seized a handful of the soil and springing to his feet, holding the clod of England on high, exclaimed, "See, by the grace of God, I already have the country in my grasp." From this latter incident, and the one just related above, it would seem that the Latins were a close second to the Anglo-Saxons, in the art of land grabbing with spectacular accompaniments. But the Angle-Saxon, according to the results of history, has the longer and tighter grip.

While the furtraders and the wood runners were tramping the forests in search of peltries, and the missionaries were setting up their alters at Indian centers and breaking the forest silence with the chanting of mass and the singing of hymns, the explorers were tracing the rivers and lakes, and dreaming of vast empires yet unentered, and of that ignus fatuus, the north-west passage that should open to them ~~not~~ the wealth of the Orient.

The Ohio, thus far, was a fluvius **incognitus**. Rumors of its beauty and extent had ~~offend~~reached the French settlements on the St. Lawrence. It remained for La Salle to be its discoverer. His full name was René Robert Cavelier, Sieur de la Salle. Nature had formed him in her strongest mold, endowing him with powerful physique and courtly bearing. One with so striking an appearance and a name so euphonous would naturally be expected to distinguish himself in some unusual way, and he does not disappoint us. He was born in the year 1643, in the city of Rouen, where just two centuries before, the ill-fated patriot-martyr, Joan-of-Arc met her tragic death at the stake.

At an early age, La Salle joined the Jesuits and was by them educated, but his restless temperament was ill-suited to the rigid religious life of that society, and he abandoned it in early manhood for a wider and more worldly career. From youth he had an unquenchable thirst for adventure and "an intense longing for action and

achievement." An elder brother, Abbe' Jean Cavelier, was a priest of the Saint Sulpice order, and had emigrated to Canada. Thither, in 1666, Robert joined him. The Sulpitians had acquired proprietary and feudal rights in the Canadian country, and established a seminary at Montreal, which town they had also founded. These Sulpitian priests bestowed their lands upon settlers who were thus induced to aid in building up a strong-hold that would offer a refuge from hostile Indians ; for Montreal was the outpost on the frontier of the Iroquois country, and it was from Montreal that the French voyagers took their departure up the Ottawa River.

The Sulpitians gratuitously granted La Salle a tract of land some seven miles above Montreal, at the entrance of the famous Rapids, through whose boiling waters steamers now slowly glide amid the excitement of the deck crowding passengers. This site and the rapids was named La ^aShine, in derision of the early dream of La Salle that by sailing up the St. Lawrence and continuously west, on and on, he would reach the goal of all trade and fortune seekers, China.

La Salle entered enthusiastically upon the improvement of his new estate, and urged other pioneers to unite with him. But "his thoughts flew far beyond, across the wild and lonely world that stretched toward the sunset." Among the many bands of Indians whose friendship he ~~courted and~~ courted were some Senecas, who told him of a river called the "Oyo", the Ohio--rising in their country and flowing into the sea. La Salle took this to be the Vermillion Sea, or the Gulf of California, and he resolved to embark upon a search "to unpathed waters, undreamed seas." La Salle was amply equipped by nature for such an undertaking. He had "the cravings of deep ambition and the hunger of an unsatiated intellect." No obstacle daunted him--he was the per-

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sonification of daring. He had become acquainted with Indian life and character and had acquired somewhat of the native tongues. The French governor of Canada, Courcelle and his Intendant, Talon, readily gave La Salle requisite authority to proceed in his bold undertaking--indeed all that these officials did give him for the expedition was authority; for he was to defray his own expenses. He sold his La Chine holdings, and with the funds thus obtained bought four canoes with necessary supplies, and hired fourteen men as an escort.

Meanwhile the Sulpitians decided to send forth a party to establish missions in the north-west, as the Jesuits had done. This party, having the conversion of the Indians for its purpose, was headed by the Sulpitian priests, Dollier de Casson, usually known as Dollier, and Brehan de Galinée, the latter a priest of much scholarship, a writer, a surveyor, and a map maker. They procured three ^{Ca-} ~~canoes~~ canoes and employed seven men as oarsmen. This party was united to that of La Salle, though the motives and destinations of the two companies ^{were different.} ~~were different.~~ The combined expedition, comprising twenty-four men in seven canoes, bade farewell to the foaming and roaring rapids and started upon their voyage, guided by a party of two Senecas in two other canoes. Galinée wrote a complete account of the Sulpitian expedition, which includes La Salle's journey to the point where he and his companions parted ~~from~~ in company from the priests. As stated by Galinée, after leaving La Chine, the flotilla reached Irondequoit Bay on the south shore of Lake Ontario. At this point a band of Seneca Indians invited the voyagers to one of their chief villages some twenty miles south of Lake Ontario, and about the same distance east of the Genesee River. This village was known in the Seneca dialect as Gaosaehgaah in Mohawk as Gannagaro. La Salle accepted the invitation, thereby hoping to secure guides who could direct him to the Ohio. He was accompanied by Gallinée, the reporter of the party.

Dollier and most of the others remained behind on the Lake Shore to guard the canoes. La Salle and companions spent ~~spent~~ four or five weeks at the Seneca village, but failed to get guides. No Seneca would risk the dangers of the trip. They warned La Salle against venturing into the region of the Toaguenha, or the land of the Shawnees, "who were very bad people who would kill the French in the night." The Shawnees, at this time, were located in Tennessee and Kentucky, and along the Ohio River, especially at the mouths of the Miami and the Scioto, and were at enmity with the Iroquois. Later we shall see much of these Shawnee people. Moreover, the Senecas claimed the explorers would run great risks "along the Ohio River" of meeting the Ontastois--probably the Andastee on the Alleghany--"who would ~~mere~~ ^{sure} ly break our heads." La Salle, Gallinée, and those with them rejoined Dollier on the lake shore; and the entire party proceeded to the extreme western point of Ontario, now known as Burlington Bay. They started over the portage to Grand River, headed for Lake Erie when they an Iroquois village called Otinawatawa. During their stay at this village Galinée relates that their Iroquois hosts brought in two captive Indians, a Nez Percez and a "Chaouanon." The generous captors presented the Nex Percez for a guide to the Sulpitians, and the Chaouanon to La Salle for the same purpose. Chaouanon was the French name for Shawnee. This Shawnee said he could guide La Salle to the Ohio, which could be reached in six weeks.

It was in the last days of September that La Salle, Galinee and company arrived at Otinawatawa. They were delighted with their progress, and the securing of guides, and were about to set out on their Western journey when unexpectedly two Frenchmen arrived at the Iroquois settlement from the West. They were Louis Joliet and a companion, the former already famous as an explorer, fur trader and guide.

Joliet was returning from the Lake Superior region, where he had been, at the request of Talon, in search of the copper mines known to exist there. Joliet, on his return, instead of following the Ottawa River route from Montreal, , as he had gone, had paddled his way back over the waters of Lakes Huron, St.Clair, and Erie, "the discovery of which water-ways, alone, would have given his name a place in history," for he has the reputation of being the first European to plow the waves of Lake Erie, though there certainly must have been many others long before him. From Lake Erie he ascended the Grand River to the portage for Lake Ontario, and at Otinawatawa, met the party we have just followed from La Chine. Joliet explained to his French friends the direction of the long watercourse he had just covered.

After due deliberation, the Sulpitians decided to continue on to the northwest, along the route so recently traversed by Joliet. They would establish missions in the far off regions of the Great Lakez. La Salle's purpose, on the contrary, was the discovery of the Ohio, and he would therefore, part company with the priests. As a farewell ceremony, Dollier said mass, while his colleagues with La Salle and companions, received the sacrament. This religious service over, the two parties separated. The Sulpitians proceeded along the northern shore of Lake Erie, passed through the river and lake of StClair across Lake Huron, called by the French the Mer Douce, or fresh water sea, and thence pushed on to the Sault St.Marie, only to find that the Indian Mission business had been pre-empted by the zealous Jesuits, who had practically assumed a monopoly of Indian conversion, as the incorporated merchants had created a monopoly of the fur trade. The Sulpitian party was obliged to waive all missionary attempts and with no results from their expedition--save that Galinée preserved data for a map of the country traversed, and wrote an account of the journey--they

returned by the northern route of Georgian Bay, Lake Nipissing, and the Ottawa River, arriving in Montreal in June, 1670.

Whither went La Salle?

One of the deplorable lapses of history is the disappearance of La Salle for two years, or more following his separation from DOLLIER and GALINÉE at Otinnawatawa, on September 30, 1669. For some twenty years, from his arrival in Montreal to his tragic assassination at the mouth of the Mississippi, La Salle is a fascinating figure in the annals of American exploration and discovery. It was his habit to take notes and make charts descriptive of ~~his~~ journeys and discoveries, and his memoranda furnished subsequent writers material for many a valuable and romantic volume. But the papers covering his first voyage, the one of all others that would ~~have~~ most interest the student of Ohio History was lost or destroyed, and that loss has created the opportunity for much curious speculation and no little acrimonious discussion. Preserved contemporary writings do not satisfactorily supply the omission. The Jesuit RELATIONS IN all of their voluminous and detailed extent, do not so much as mention the name of La Salle. He was a Separatist from their society. He cooperatively affiliated with their would-be emulators, the Sulpitians, and enrolled his name high in the hall of fame among the founders of Colonial France and thus obtained an enviable glory which the Jesuits did not seek to enlarge. The one to whom we are mainly indebted for publicity of what literature exists on the subject is Pierre Margry, a distinguished historian, who was born in Paris, in 1818, and there died in 1894. At the age of twenty-four years M. Margry became Curator of the archives of the Ministry of Marine and was officially intrusted with the task of studying the colonial history of France in America a study he enthusiastically pursued for fifty years until his death.

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He produced many volumes , the result of painstaking research. He unearthed all data discoverable concerning La Salle and especially sought to solve the riddle of the Ohio route. He published Galinée's account of the Sulpitian expedition which, as we have seen, faithfully carried La Salle from La Chine to his leave taking at Otinawatawa.

During the period in question, in all probability, La Salle was tracing the course of the Ohio and paddling his canoe on the current of tributary streams. His own record is gone, but following the laws of legal testimony, in the absence of primary evidence, we introduce secondary, the next best at hand. In 1674, and again, in 1678, on errands we shall hereafter mention, made brief visits to Paris. While there on the second visit, he had "ten or twelve conversations" with a friend , supposed to have been the Abbé Rena^udot, who soon thereafter anonymously wrote a History of Monsieur de la Salle, which Margry published in his French discoveries. This recital of La Salle contains a detailed statement of his route to the Ohio, and thereon. As reported, however, the conversational "history" presents some grammatical and many geographical confusions. So many, indeed, that La Salle's exact route is left in doubt, and various theories have been spun from the indefinite and contradictory text. Parkman, who gave careful examination to this subject, gives the "substance" of that part of the conversation that interests us as follows: "After leaving the priests , La Salle went to Onandaga,"--the Mohawk capital, "where we are left to infer that he succeeded better in getting a guide than he had before done among the Senecas. Thence, he made his way to a point six or seven leagues from Lake Erie, where he reached a branch of the Ohio, and descending it, followed the river as far as the rapids of Louisville, or as has been maintained, beyond the Mississippi. His men now refused to go further, and abandoned him, escaping to the English and Dutch; whereupon, La Salle

retraced his steps alone." The word Louisville, of course, is not employed in the French report, as published by Margry, but is inferred from the allusion to the "rapids" or "falls." There is strong evidence, however, that aside from the "conversation" and an almost unanimous concensus of opinion among historical writers and critics that La Salle discovered the Ohio on a journey begun in the autumn of 1669. It is also generally admitted that, on this journey, he did not go as far as the Mississippi. But, by what route he reached the Ohio, and to just what extent he followed it, are questions that probably never will be settled. If he took his start from the Iroquois country, having returned to it after leaving Galinée, he had many routes from which to select, all of which were subsequently employed by the pioneer navigators. At Gannagaro, La Salle was but six days travel from the Genesee, which was but thirty miles distant from the Olighiny-Sipou, as the Iroquois called the headwater of the Ohio. This, or some other approach to the Alleghany from the Iroquois country was the most natural one for La Salle to take, and is pleaded by many historical writers. Or, he could have returned to Lake Ontario, from the Western extremity of which he might have made the portage to Grand River, thence into Lake Erie, skirting its eastern end, for he could not have crossed the tempestuous lake in canoes, -- to the south side he had many ways to the Ohio, each of which has advocates who have respectively led La Salle to the mouth of the Cuyahoga, thence ^{over} ~~at~~ the portage to the Tuscrawas and the Muskingum, letting him enter the Ohio, at the site of Marietta; or he could have pushed on to the Sandusky, which by portage connections would have carried him to the Scioto; or, still hugging the Erie southern shore he would have found the mouth of the Maumee and be switching to the Auglaize he could have crossed to the Big Miami; or, he could have pushed up the Mau mee, crossed to the headwaters of the Wabash, and therefrom, entered the Ohio.

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The Wabash was, in the earliest times, , called by the French Ouabache , and one of its Indian names was Ouabous-Kiaou; both these names were applied to the Ohio, and this fact adds further confusion to the discussion of La Salle's journey.

The Maumee-Wabash route has not a few claimants, among whom one of the most emphatic is Dr. Charles E. Slocum, author of several books on Ohio history. Dr. Slocum's views on the La Salle discovery are set forth in the publication (1903) of the Ohio State Archaeological and Historical Society. He takes issue with Parkman and from "a very liberal translation" of the "conversation" published by Margry, he confidently pilots La Salle up the Maumee, across the portage to the headwaters of the Wabash , and thence to the Ohio. In reply to the latter theory is the convincing argument in favor of the probable route of La Salle by the late Edward L. Taylor, Sr., also presented in the publications (1905-1910) of the Ohio State Archaeological and Historical Society. Mr. Taylor, a life-long student of Ohio history and a most accurate and authoritative writer upon that subject, after critically examining the source materials bearing on this question, decides that "La Salle, after departing with the priests on Grand River, follows the course of that stream to Lake Erie that passed the head of Niagara (Onnghiara) thence along the south side of Lake Erie to Chautauqua Lake, thence to the waters of the Alleghany and the Ohio. This was surely the best, and by far the most direct route to the country of the Ohio or its headwaters and precisely where he desired to go." Repudiating the very liberal translation of " of La Salle's "conversation" made by Dr. Slocum in order to fit it to the Maumee-Wabash route , Mr. Taylor thinks "the country between the outlet of Lake Chautauqua and the Alleghany was suitable for the description of the country which is described in the original text", as produced by Margry and reprinted, as to the

part in dispute, by Parkman.

An important class of witnesses, not to be ignored in this case, is that of the cartographers, or map makers, contemporary with La Salle. Their testimony confirms his route down the Ohio from the Alleghany. Justin Winsor reproduces many of the earliest maps of North America in his "Narrative and Critical History of America." No maps previous to 1669 indicate the Ohio River, which first appears in an anonymous drawing of the "basin of the Great Lakes", made about 1672, and sometimes called La Salle's map. But in Joliet's map of 1672-4, the Ohio River is delineated; and along its course the notation "Riviere par ou descendit le sieur de La Salle au sortie du Lac Erie, pour allee dans Le Mexique;" "River by which Sieur de La Salle descended in going from Lake Erie to Mexico.

While his exact route may remain undetermined, there seems to be little doubt that La Salle was the first European to discover and navigate the waters of the Ohio. To this effect, we have not only the "conversations" before considered, but La Salle's own assertion, in a memorial by him addressed to Frontenac in 1677, wherein La Salle says that that in the year 1667 and following, he made many voyages at great expense, during which he discovered, for the first time, much country south of the Great Lakes and among others, the great river Ohio." A "Minute of Instructions to Marquis Duquesne," issued to that official by the French Ministry in 1752, relating to the Ohio country, states: "The Ohio River, otherwise called the Beautiful River, and its tributaries, belong indisputably to France by virtue of the discovery by ~~Le Sieur de~~ La Salle." Moreover, the (1755) New York Colonial Documents contain private instructions from Versailles to M. de Vaudreuil, Governor of Canada, which testify

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"It is only since the last war that the English have set up claims to the territory on the Beautiful River, the possession whereof had never been disputed to the French, who have always resorted to that river ever since it was discovered by Sieur de La Salle."

The latest word thus far, in this controversy is that of Chas. A. Hanna in his exhaustive and ^{scholarly} ~~scholarly~~ volumes, "The Wilderness Trail," just (1911) published. Mr. Hanna, in a somewhat extended recital of his reasons, annuls all routes claimed for La Salle, with the decision that he was not the discoverer of the Ohio River at all. Mr. Hanna discredits the "conversations" published by Margry; doubts the genuineness of La Salle's alleged Memorial to Frontenac, and thinks the statement as to La Salle's route, inscribed on Joliet's map was written thereon many years later than the date of the map, and was a species of forgery. After lengthy examination of the of the pleadings in favor of La Salle, Mr. Hanna decrees: "The evidence as to La Salle having explored any other tributary of the Ohio than (possibly) the Wabash bears so many marks of having been fabricated after 1684, for the purpose of strengthening the French claims to the Ohio Valley, and it seems to me to write only a question of time when that evidence must be declared to be wholly false." And he further concludes: "The first white traveler in the Ohio Valley was probably Arnold Viele, the Dutch trader from Albany, who reached the Ohio in 1692, and spent the year 1693 on its waters."

But to the mind of the present writer the arguments ^r ~~re~~lied upon by Mr. Hanna are mainly negative, and leave La Salle's claim still unrefuted, with the preponderance of evidence decidedly in his favor, and the judgment of Parkman still unreversed that "La Salle discovered the Ohio."

HISTORY OF OHIO.

THE RISE AND PROGRESS OF AN AMERICAN STATE

By

Emilius O. Randall and Daniel J. Ryan.

Volume One

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THE CENTURY HISTORY COMPANY

New York

1912.

CHAPTER XIV.

CAPTURE OF FORT DUQUESNE.

The Shawnees now "took up the hatchet" and went upon the war path with great vigor and fierceness. They were bold and cruel warriors, and from their settlements on the banks of the Scioto and Miami Rivers they would cross the Ohio, ascend the Valleys of the Great Kanawha and the Big Sandy, penetrate the mountain ranges of western Virginia, advancing a ^{even} distance of ~~even~~ five hundred miles to the dividing summits, from whose elevations they would descend upon the English settlements situated upon the tributaries of the Atlantic rivers. For it must be borne in mind that at this time, the outbreak of the French and Indian war, the English western settlements had but sparsely reached the sources of the Potomac, the Shenandoah, James or Roanoke rivers, and these regions were exposed during the continuation of the war to the frequent invasions of the hostile Indians north-west of the Ohio River. In these expeditions, many of which are related in detail in Kercheval's History of the Virginia Valley, the savage warriors from Ohio spread consternation, through their acts of rapine and murder, along the ^haths they followed.

In the fall of 1757, a band of Shawnees from their Scioto towns proceeded to the head-waters of the Roanoke and exterminated an entire white settlement. To punish the perpetrators of this assault and prevent further raids of a similar nature, Governor Dinwiddie placed Colonel (Andrew Lewis, of Botetourt County, at the head of a body of Virginia troops, with instructions to proceed to the Ohio River, cross over to the Scioto towns, chastise the Shawnees and on his return build a fort on the Virginia side, at the mouth of the Big Sandy. Colonel Lewis, a brave and energetic soldier, who served under Braddock, and was one of the few officers that escaped from

the Monongahela carnage, promptly proceeded from Salem across New River to the Big Sandy, down the course of which he followed to its mouth at the Ohio. But the time was ill-chosen, and the conditions unpropitious. It was late in the fall (1757), sufficient provisions had not been provided; hunger and want fell upon the soldiers which the wild game of the woods could not entirely dispel; the little army, exhausted and discouraged, was compelled to trudge slowly back amid the cold and snow of winter. Nothing had been accomplished, and the fruitless and hazardous march and counter-march through the mountains was afterwards known as the "Sandy Creek Voyage".

While the Ohio Shawnees, undaunted and revengeful, abetted, aided, and often accompanied by French-Canadian officers, were continuing their irruptive raids from southern Ohio into Virginia, the Delawares from Eastern Ohio, and western Pennsylvania, were conducting similar inroads upon the Pennsylvania frontier.

One of the most interesting and faithful records of the Indian situation in the Ohio country, during the period of the French and Indian war, is obtained from a very complete account of the captivity of Captain James Smith, written by himself. This frontier hero and author, well versed in wood craft and inured to all the hardships of Indian warfare, was a native of Pennsylvania. At the age of 18, while engaged as one of the tree fellers in opening the wagon road for Braddock's expedition, he was waylaid by Delaware and Canasataugus--as Smith in his journal spells Canastoga--Indians, and carried prisoner to Fort Du Quesne, at which point he witnessed the sortie of the French and Indians to entrap Braddock, and where he also saw their return with the bloody spoils of the victory and massacre. His captivity continued for five years², during which he passed through what he styled as the title of his account, "Remarkable Occurrences", all of which he subsequently related in an autobiographical work -2-

published in 1799.

After Braddock's defeat, the Indian captors conveyed Smith to their towns in the Ohio country; first to one called Tillihas, on the west branch of the Muskingum. This village was inhabited by the Delawares, Caughnawagas and Mohicans. Here amid grotesque and painful ceremonies, he was adopted into the Caughnawaga tribe, a remnant of "an ancient tribe of the Mohawks in the interest of the French." And now, during the entire period of the French and Indian war, with his fellow tribesmen, he was wandering about through the wilderness and Indian settlements of Ohio, and his life and experiences afford graphic descriptions, not only of the character and habits of the red men, but also offer glimpses of the movements of the tribes relative to the war then being waged east and south of the Ohio River. One of Smith's portrayals is that of a war dance, in a Muskingum River town by Captain "Pluggy" a Mohawk chief and his band, "who were to start next day to war, to the frontier of Virginia." After picturing the dance, Smith adds "The next morning the company all collected at one place, with their heads and faces painted with various colors and packs upon their backs; they marched off, all silent except the commander who, in the front, sang the "traveling song." Just as the last warriors in the departing line passed the end of the town, they began to fire their guns in their slow manner, from the front to the rear, , which discharge was accompanied with shouts and yells, from all quarters. Later, Smith notes the return of Pluggy and his warriors and reports: "They brought with them a considerable number of scalps and prisoners from the south branch of the Potomac."

Smith, with his band of Indian brothers, was continually on the move; now on the Ohio, then the Muskingum; and, in turn the

Cuyahoga, the Sandusky, the Scioto on the shores of Erie, the banks of the Big Beaver, Maumee and Olentangy; and he visited the towns or temporary camps of the Ottawas, Wyandots, Caughnawagas, Ojibways, Mohawks, Delawares, Pottawat^uomies, and others, for at this time struggling parties of many tribes, both east and west of Ohio, were drifting about, driven from place to place by the disturbing elements of the war. Smith does not distinctly mention the Miamis and the Shawnees, though he must have seen more or less of those prominent Ohio nations. While in the winter camp on Lake Erie, betwixt Canesa~~dooharie~~ Creek, later Black River, and the Cuyahoga, he writes, "The hunters held a council and concluded that they must have horses to carry their loads, and they would go to war, even in this inclement season, in order to bring in horses. Then they began to go through their common ceremony."

Proctorville O
DEC 7th 1947

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Dear Mr Lambert,

I received 16 of the Photos
I am sending, some Steam Boat
Photos to the Ashland Sunday
Independent with their history.
I will mail this week Photo of the
Golden City Destroyed by fire
March 25 1892 at Memphis;
I have a full history of Commodore
Wash Henshall that you can get
from this Paper, soon as you return
Capt Henshall's photo I will send
it in. Best wishes

Capt Ellis C Mac

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Same p. 253 - Proposal to
put the B. & O. R.R.
over almost same site
as C. & O. now is.