

GEOLOGICAL AND TOPOGRAPHICAL SURVEY
OF
HAMILTON AND MADISON COUNTIES,
INDIANA.

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1884.

HAMILTON COUNTY.

In giving names to the counties of Indiana the Legislature has generally aimed to perpetuate the memory of some illustrious patriot, hero, statesman, or scholar. In following this rule seventy-eight of the ninety-two counties of the State are so named. Hamilton county was named in honor of Alexander Hamilton, the statesman and financier who led the infant government of the United States out of the mire of an almost hopeless indebtedness. It was organized by an act of the Legislature in the month of January, 1823. The county is an exact square, being twenty miles long on each of its four boundary lines, and consequently embraces an area of four hundred square miles. It is bounded on the north by Tipton county, on the east by Madison, on the south by Marion and Hancock, and on the west by Boone and Clinton counties. It includes nine Congressional townships—three each numbered 18, 19 and 20 N. in ranges 3, 4 and 5 E., and two tiers of sections on the east from each township, in range 6; and a like number of sections on the south from each range in township 17. For civil purposes Hamilton county is divided into nine townships, lying in three tiers, named from west to east as follows: northern tier—Adams, Jackson and White River; middle tier—Washington, Noblesville and Wayne; southern tier—Clay, Delaware and Fall Creek. Of these Washington is the largest, embracing fifty-six square miles, and Clay the smallest, covering only thirty square miles.

HISTORY.

The territory embraced in Hamilton county was originally the home and hunting-ground of the Delaware tribe of Indians, and was ceded to the United States by the treaty of St. Mary's, October, 1818. One of the principal villages of that tribe was located on the south side of White River, a short distance above the great bend, in section 3, township 19, range 5. It was known by the early white traders as Strawtown, its Indian name is lost. In the war of 1812 it was occupied for some time by a squadron of Kentucky cavalry, which was placed there for the defense of the old men, women and children, while the warriors were serving as scouts and guides in General Harrison's army.

After the war of 1812 had closed, the two Conners, John and William, settled on White River as Indian traders. William Conner's first location was on the east side of the river near what is now the Marion county line, but this he soon abandoned for a more eligible situation about four miles below the present site of Noblesville. This was the point known as "Conner's Trading Post." John Conner formerly kept a trading post at Connersville, of which town he was the proprietor, but subsequently located on the west side of White River, a little below the mouth of Cicero Creek, where he built the first water mill in the "New Purchase." This mill has so completely disappeared that its location can hardly be identified. His son, William Conner, subsequently built a mill at the stone rapids, five miles above Noblesville, which remains to the present time, a valuable piece of machinery, and is kept in good order. It is the only mill on White River between the Madison county line and Martinsville, in Morgan county. In the spring of 1819, the three Finch brothers, John, Solomon and Isaac, with their families, settled on the horse-shoe prairie, two miles below Noblesville. These were soon after joined by William Bush and Thaddeus Baxter, together with their families. These constituted the first permanent white settlement, for cultivating the soil, made in the county. In the year 1821 a school was taught in this settlement by Miss Sarah Finch. In the year 1820, General John D. Stephenson, Judge Colborn and some others settled on the present site of Noblesville.

Under an act of the Legislature, Hamilton county was organized in January, 1823, by the appointment of John D. Stephenson, clerk, and William P. Warwick, sheriff, of the county, by whom an election was ordered for the other county officers. The county seat had not yet been established, and the first court was held in the autumn of that year at the residence of Wm. Conner, at which Hon. W. W. Wick presided and John Finch and Wm. C. Blackmore were the associate judges, then demanded by the statute of the State. At this term of the court, which was in session but two days, Daniel B. Wick, acting as prosecuting attorney, organized the first grand jury of the county.

The increase of population in Hamilton county has been very uniform. In 1830, the census shows a population of 1,787; in 1840 it is 9,855; in 1850, 12,684; in 1860, 17,310; in 1870, 20,882, and in 1880 there was a population numbering 24,801. A very large per cent. of this population is engaged in farming, and but 324 out of 24,801 are of foreign birth. This is a smaller per cent. of foreign population than is shown in any other county of the State, except Orange. It is but 1.3 per cent. of the whole population. Noblesville, which was established as the county seat late in the year 1823, had, in 1880, a population of 2,221. It has a handsome and substantial court house, several respectable church edifices, and a commodious school building. The private residences are generally neat and substantial, and some of them elegant structures; and the business houses are respectable, both in size and display of merchandise. The county sustains two weekly newspapers, published here, the Republican Ledger and the Independent. Besides the county seat, there are sixteen smaller towns distributed over the county, the largest of which are Cicero, Arcadia and Westfield.

Hamilton county has three railroads, the oldest of which is the Indianapolis, Peru & Chicago R. R., now operated jointly by the Wabash, St. Louis & Pacific and the Chicago, St. Louis & Pittsburgh railroads. A local road is now running trains from Noblesville to Anderson, and the Indianapolis division of the Louisville, New Albany & Chicago traverses the southwestern part of the county.

There are no large manufacturing establishments in the county, and the farms are generally of medium size and principally devoted to grain farming, which has proved fairly profitable, as the air of thrift everywhere amply testifies.

TOPOGRAPHY AND DRAINAGE.

Hamilton county occupies a position near the summit of drainage between the streams that flow directly into the Wabash and those that are tributary to it through White River, and is, therefore, one of the level counties of the State. While this is true of the county generally, there are portions of it that present a quite undulating surface. This is especially true of that section of it lying directly east of Noblesville and drained by Stony Creek. While the ascent is nowhere abrupt, yet the ridges sometimes reach an elevation of 150 feet above the bed of White River. This region of rolling land extends north to White River, but south, between Stony Creek and Fall Creek there is a considerable plain of level summit land. The northern tier of townships are chiefly level, the streams running in superficial channels. The western part of the county, south of the centre, is more broken, having frequent ridges or mound-like elevations, which, on examination, prove to be deposits of gravel from glacial action, and are of great value in the construction of roads.

The drainage of Hamilton county is effected through White River and its tributaries. From a point in section 33, town 20, range 5, White River flows in a general southwesterly course to its mouth; but from its source in Randolph county to this point its general course is nearly due west. It enters the county from the east, five miles from the northeast corner, and leaves it, crossing the southern line nine miles from the southwest corner of the county. In its whole course through the county, the river is skirted on one side or the other by large plains of second bottom or terrace land, and frequently there are large scopes of first bottom, which, however, are often subject to overflow in time of freshets. The principal tributaries of White River, whose mouths are in this county, are Stony Creek, from the east, and Cox's Creek, Cicero Creek and Duck Creek, from the west and north. The southeast corner of the county is drained by Fall Creek and its tributaries, Mud Creek and Sand Creek; and the drainage of the southwest corner of the county is effected through Eagle Creek and Williams' Creek. All these are tributaries of White River, having their mouths in Marion county. Stony Creek rises in Madison county, and flowing in a southwesterly direction it joins White River one mile south of Noblesville. It has generally a brisk current and, by its numerous tributaries, it drains a region of excellent farming land, which was originally heavily timbered with sugar tree, beech, ash, white oak, black walnut and yellow poplar. In the vicinity of White River, near the Madison county line, there is a region covered with a valuable growth of white oak timber, but the Noblesville & Anderson railroad has brought it within the reach of market and it is rapidly disappearing. The soil in this Stony Creek country is a rich vegetable loam, lying on a compact clay subsoil, forming a region of excellent farming land. Near the head of some of the northern branches of Stony Creek, there were originally a few small wet prairies, but they are now drained and in cultivation. South of this section, the land drained by the tributaries of Fall Creek is more level, and much of it is the "black land," covered with burr oak, elm and hickory timber. On this land the improvements are not so far advanced as on the drier soil, but drainage will ultimately make of this an excellent farming country.

Duck Creek rises in the northwest part of Madison county and running about nine miles through the northeastern part of Hamilton county, it enters White River near the great bend. In its upper course it is a surface stream and rather sluggish, but as it nears its mouth its channel is sunk deeper and its current becomes more rapid. It drains a section of very rich soil, but most of it will require both open ditches and subsoil tiling to render it fit for profitable farming. This it is receiving quite rapidly, converting a region of marshes into farms which in productiveness are not excelled by the best bottom land. Cicero Creek, which furnishes the drainage for one hundred and fifty square miles of the northwestern part of Hamilton

county, is a peculiar stream, not merely on account of its classical name, but for its individual characteristics as well. The legend of its name runs in this wise: The naming of the smaller streams was a part of the duty of the surveyor of the public lands. In the year 1820, Dr. William B. Laughlin was employed in the lineal survey of township 19, range 4, the lines of which frequently crossed this creek. Now, Dr. Laughlin was an educated Scotchman—a literary and medical graduate of the University of Edinburg, and almost insanely fond of the classics; but like many other fine scholars, he was not a notable success in his profession and was now in the employ of the Government as a surveyor. His oldest son, whose name was Cicero, was attached to his company of surveyors. A heavy rain had swelled the streams and made it difficult to cross them. The backwoods expedient for making a foot bridge by felling a tree across the creek was resorted to, and Cicero Laughlin, in crossing, missed his footing and fell in. He was with difficulty rescued in a nearly drowned condition. From this incident Dr. Laughlin called the stream Cicero's Creek; but in process of time the sign of the possessive case, or as the doctor would say the genitive, was dropped and the stream is now known as Cicero Creek.

But the topographical peculiarities of this stream are the relatively small size of the channel, compared with the great breadth of territory drained by it, and its remarkably curved general course. It rises in what was originally a wet prairie, which is now well drained, located near the northwest corner of the county. From thence it takes a generally northeast course through sloughs and marshes (now converted into public ditches), till it arrives at a point near the town of Tipton, the county seat of Tipton county. Here it makes an abrupt curve to the right and pursuing a southerly course, it re-enters Hamilton county a little east of Buena Vista, and continuing this general direction it forms a junction with White River about a mile below Noblesville. The principal tributaries of Cicero Creek are Hinkle Creek and Little Cicero. Hinkle Creek is chiefly notable for its heavy drift deposit and numerous gravel hills. This feature is especially noticeable near its source in sections 12, 13 and 21, in township 19, range 3, and in sections 7 and 18, in range 4 and the same township. These gravel hills sometimes rise to the height of fifty or seventy-five feet and the enclosed valley was originally a broad lagoon or swampy jungle. One of these occupying more than a square mile of territory, was known among the earlier settlers as "The Big Dismal." These marshes are now nearly all drained and in cultivation, and their luxuriant crops with the surrounding cordon of gravel hills make a romantic farm scene. The gravel knolls are themselves very productive, having three or four feet of sandy loam covering the imbedded gravel. In section 13 above named, on the farm of Milton Tomlinson, there occurs a large chalybeate spring which has made a considerable deposit of bog iron ore. The spring itself, as is generally the case with these chalybeate fountains, is a natural artesian

well, being a flow of water from beneath the lower blue clay through a natural fissure. Most of the wet prairies and bogs of this region are produced in this manner, as is demonstrated when ditches are cut through them. This theory is confirmed by several borings recently made through this clay in vicinity of Westfield, all of which produced flowing fountains. This is but three miles south of the Dismal. Hinkle, in the greater part of its length, drains a country of deep drift with an undulating surface of very productive soil.

Little Cicero Creek, like the parent stream, is noted for its great length and the remarkable curve that it sweeps. It rises in several public ditches in the vicinity of Sheridan and flows through a very level country in a northeasterly direction. For a distance of four miles, or nearly to Boxley, it flows between the banks of an artificial ditch, and all its tributaries are ditches. Several of these are fed by copious springs of chalybeate water, rising perpendicularly through the bed of compact blue clay underlying the slough which the ditch drains. Two of the largest of these are on the farm of Mr. John Underwood, half a mile northeast of Sheridan. They are strongly impregnated with iron and contain also magnesia and soda. For dyspepsia and other forms of impaired digestion and diseases of general debility, these springs will have valuable medicinal qualities.

This remarkable curve which Little Cicero Creek makes is accounted for by the range of gravel hills on Hinkle Creek, extending down to the town line at Westfield and westward to the elevated land drained by Eagle Creek; thus cutting off the direct drainage of the northwestern part of the county towards White River, and compelling it to make the circuit of these gravel hills, through the depression on the northern margin of the county, which is really a broad valley of erosion from which the material of the gravel hills of Hinkle Creek has been scooped out by glacial agency.

The northern half of township 18 and the southern half of township 19, range 3, are drained by Eagle Creek, and maintain the general character of heavy drift deposit which marks the land in the vicinity of that stream in its course through Marion county below. The same may be said of the country drained by Williams' Creek and the other small streams, immediately tributary to White River, which drain the southwestern corner of the county. None of the streams in this region have cut through the drift, nor have any borings here reached the rock in place, but the general configuration of the country indicates a great depth of drift in the southwestern quarter of the county.

The alluvium, or first bottom lands along White River are not so wide as they are below on this stream, yet many fine stretches of bottom from one-fourth to one-half a mile wide, extending for two or three miles along the river are found in several places. Many of these are subject to overflow in time of spring freshets, yet they are generally cultivated with a

fair degree of safety, and yield heavy crops, especially of corn, for the overflow being backwater, leaves a deposit that renders them very fertile. A few fine sections of terrace or second bottom land, were observed, though they are neither so large nor so well defined as they are below the Marion county line. That on which Noblesville stands is perhaps, the largest and best defined piece of second bottom in the county.

Hamilton county has a soil of good natural fertility, and nearly every acre in the county can be plowed. When the system of drainage now in progress is completed, no county in the State will excel Hamilton in productiveness, and but few will be more healthy. The supply of water, of a fair degree of purity is abundant everywhere, though springs of a good quality of water and durable, are not very common, but water, in a bed of gravel beneath twenty feet or more of clay, can be obtained almost everywhere, in quantities sufficient for domestic use and stock-water. I have already spoken of the flowing wells at Westfield. It is probable that borings reaching below the blue clay will give flowing wells in many places throughout the western section of the county.

GEOLOGY.

The line between the Silurian and Devonian formations crosses the northeastern part of this county, cutting off some thirty or forty square miles, under which lie Upper Silurian rocks belonging to the Niagara group. West of this is a belt of Pendleton sandstone outcropping from four to six miles wide. The remainder of the county lies on the Corniferous limestone, one of the lower members of the Devonian formation. This has a surface exposure only in a few places, being generally concealed under a heavy drift deposit. The Niagara limestone shows itself in the bed and bluffs of White River at intervals for three miles below the county line. It is rather a lead colored shale than a well formed rock, though some strata appear quite hard in the quarry; but clay stone, colored with proto-sulphide of iron, entering largely into its composition, is entirely unreliable for any building purposes, except furnaces and fire-places. Exposed to the air, it directly crumbles down and becomes a mass of blue clay. But if immediately from the quarry it is exposed to a high heat it assumes a red color, and becomes hard and quite durable. It may not be amiss, here, to say to persons selecting building stone that a blue colored stone, that is not crystalline in its structure is never reliable, however hard it may be. The Niagara limestone furnishes no trustworthy building material in this county.

The Pendleton sandstone, under which the Niagara dips to the west, has some strange features. Its geological relations and fossiliferous and lithological character will have a more particular notice in the description of its outcrop at Pendleton, in the report of Madison county, elsewhere

in this volume. This stone appears occasionally along Stony Creek for a distance of five miles below the county line. In most places the lower members of the overlying Corniferous limestone are exposed directly above the sandstone. Seeing that this sandstone is seldom more than twenty feet thick, its surface outcrop for a distance of five miles can be accounted for only by the fact that the direction of Stony Creek is nearly that of the dip of the rock, and the descent per mile about the same as the dip. In section 26, township 19, range 5, a quarry of this sandstone was opened in 1836, for the purpose of procuring stone to build a lock at Noblesville, on the Central Canal, then in progress of construction as part of our great internal improvement system. Nearly one hundred wagon loads of this peculiar sandstone were taken out of this quarry, and several blocks which were rejected, as unfit for dressing, are lying at the quarry. The exposure of forty-eight years has made no impression on them, thus attesting the durability of this rock. The strata at this point present a varying thickness, from ten inches to two feet. The overlying Corniferous limestone is thinly stratified.

This Pendleton sandstone appears in the bed of White River half a mile above Strawtown, but no quarry of it has been opened to determine its value. Near the mouth of Duck Creek, north of White River, the Corniferous limestone shows itself in the bed and banks of that creek, and stone for walling wells, and such neighborhood uses, has been taken out in several places, but no quarries have been regularly opened by which the value of this rock can be determined with certainty.

At Conner's Mill, five miles above Noblesville, stone shows itself in the bed of the river and forms distinct rapids in the stream. The exposed rock appears to be the transition from the Pendleton sandstone to the Corniferous limestone. No attempt has been made to utilize this rock for any purpose. The outcrops of rock in Hamilton county are quite barren of fossils. The Niagara shales have yielded nothing in their imperfect exposures in the upper sections of White River. A few fragmentary trilobites were observed imbedded in the debris of the Pendleton sandstone lying around the old quarry on Stony Creek, but all were too imperfect to determine the species. A few fragments of crinoid stems were detected in the Corniferous limestone near the mouth of Duck Creek.

ROAD MATERIAL.

Deposits of gravel, suitable for making roads, are abundant in the southern half of the county, and in certain localities in the northern section, beds of excellent gravel for road making may be obtained with but little search. This is especially true of the region around Deming (in township 19, range 4). A fine range of gravel hills extends north from Sheridan, along the county line. In many places in the northern part of

the county, beds of sand will be found replacing the gravel beds of the southern section. This is sometimes used as a substitute for gravel, and though inferior to the coarser material, it is a great improvement on a "mud road." It may not be out of place here to say that if a road-bed be well tile drained the amount of gravel necessary to make a good road will be greatly reduced.

ARCHAEOLOGY.

The only point of interest to the antiquarian in Hamilton county, is Strawtown and its vicinity. It is situated in section 3, town 19, N. range 5 E., and is in the concave of the great bend of White River. At, and above this point, that stream formed the line between the hunting ground of the Delaware Indians south of it, and the Miamis north. West of the great bend of White River the boundary was an undefined line extending west to the vicinity of Thorntown, thence running south to the territories of the Piankashaws, Wyandottes and Shawnees. Strawtown was for years the principal northern village of the Delawares, and home of their war chief. It is said to have been the most populous of the Delaware towns, in the first decade of the present century; this is confirmed by the large district of bottom land cultivated by the squaws when the whites first visited this locality, as well as by the extensive burying ground, on which the river is now encroaching, and exposing the bones of the red men at every freshet. The state of hostility which existed between the Delawares and the Miamis previous to the battle of Tippecanoe in 1811, elsewhere alluded to, growing out of the assumed right of the Delawares to sell certain districts of their lands to the whites without the consent of the confederated tribes, rendered Strawtown an insecure abode on account of the frequent incursions of the more warlike Miamis, who were their immediate neighbors. On this account Governor Harrison garrisoned Strawtown in the fall and winter of 1811 by a squadron of mounted riflemen, and in the spring of 1812 assisted in removing the old men, the women and children to their old home in Delaware county, Ohio, he having enlisted the warriors as scouts and guides in his campaign on the Maumee.

But Strawtown has an antiquity evidently higher than the days of the Delaware Indians. The mound builders have left their foot-prints in this vicinity by the numerous relics of the Stone age that have been picked up by the present inhabitants. A little west of the present village there is a burial mound about six feet high; it has been plowed over for a number of years, so that not only its height has been reduced, but its base rendered so indistinct that its diameter can not be accurately measured; it is, however, between seventy and eighty feet. It was opened in 1882

by Judge Overman, of Tipton, and four skeletons were found lying on the original surface of the ground, with their heads together and their feet directed to the cardinal points of the compass.

At a distance of 150 yards southeast of this mound is a circular embankment, now about three feet high, and twelve feet on the base. It has a ditch on the outside, which evidently furnished a portion of the earth for the embankment. The diameter of the circle, measured from the bottom of the ditch on each side, is 315 feet. There is a doubt as to what period this work should be referred. A tradition among the "old settlers" claims that the remains of palisades that once formed a stockade, were standing on the embankment when the early immigrants settled here. This tradition is strengthened by the fact that in 1810 a stockade was built by the Delaware Indians somewhere near this spot, as a protection against their Miami neighbors north of White River. Moreover, it was not the custom of the mound builders to make a ditch on the outside of their embankments. On the other hand, the regularity of the work, and the perfect form of the circle, is hardly compatible with the idea that this is the work of modern savages. It is possible that the circle dates back to the period of the mound builders, and that the Delawares took advantage of it to build their stockade on, and made the ditch to strengthen their palisades. The ditch has been filled, and the embankment reduced much by cultivation.

MISCELLANEOUS NOTES.

With the exception of a few small prairies, already alluded to, the whole surface of this county was originally covered with a dense forest much of which was valuable timber. But the necessity of removing it to prepare the ground for cultivation resulted in the destruction of vast quantities that would now be more valuable than the land on which it grew. In the south half of the county the valuable timber consisted chiefly of black walnut, white oak, wild cherry, and the different species of ash. Of these the trees were remarkable for their great size and height. On the black summit land of the northern townships the valuable timber was chiefly burr oak, of which the trees were numerous and large. A heavy growth of water elm (*Ulmus Americana*) covered this whole region and was originally considered a waste product of the soil, but recently it has become valuable in the manufacture of flour barrels. One tree of this species, which is the monarch of the forest, stands in the Fair Ground at Arcadia. It measures, three feet from the ground, twenty-three feet six inches in circumference, and is one hundred and fifteen feet high, with eighty feet spread of top.

MADISON COUNTY.

This county, like most of those in northern Indiana, is a regular parallelogram, but is peculiar in the fact that it is twice as long as it is wide, being thirty miles long from north to south, and but fifteen miles wide from east to west. It consequently covers an area of four hundred and fifty square miles. It is bounded on the north by Grant county, on the east by Delaware and Henry, on the south by Hancock, and on the west by Hamilton and Tipton counties. It embraces four whole Congressional townships and fourteen fractional townships. For civil purposes Madison county is divided into fourteen townships, arranged in five irregular tiers from east to west. Beginning at the north we have

First tier—Duck Creek, Boone and Van Buren.

Second tier—Pipe Creek and Monroe.

Third tier—Jackson, Lafayette and Richland.

Fourth tier—Stony Creek, Anderson and Union.

Fifth tier—Greene, Fall Creek and Adams.

Of these Monroe is the largest and Union the smallest. Anderson City, the county seat, is located on the south bank of White River, three miles south and two miles east of the centre of the county. It occupies the site of an Indian village which was destroyed in the war of 1812. It is beautifully situated on an undulating plain or series of low hills rising irregularly from the river to the general upland level of the country. In 1880 it had a population of 3,126.

The county is just now finishing a commodious, elegant and substantial court-house, and the city can claim a good supply of public buildings for school and church purposes. Summitville in Van Buren township, Alexandria in Monroe, Elwood and Frankton in Pipe Creek, Hamilton and Perkinsville in Jackson, Fishersburg in Stony Creek, Chesterfield in Union, New Columbus and Markleville in Adams, Huntsville and Pendleton in Fall Creek, and Alfont in Greene township, are all of them respectable country villages, and several of them towns of considerable size and importance. The section north of White River, being level and somewhat swampy, settled slowly. In 1834 there were but sixty-four polls assessed north of White River, but the construction of the Bee Line, the Pan-Handle, the Cincinnati, Wabash & Michigan, and the Muncie, Lafayette & St. Louis railroads through the county has rapidly increased the population.

EARLY HISTORY.

Madison is one of the "New Purchase" counties on which the Indian title was extinguished by the treaty of St. Mary's, in October, 1818, but lying north of the line of travel from the older settlements on White-Water, it gained population slower than did the counties south of this. It was

organized as a separate county in 1823, having been previously attached to Marion for judicial purposes. The first court in Madison county was held at Pendleton, which was the temporary county seat. It was convened in November, 1823, Hon. W. W. Wick presiding judge, and Adam Winsel and Samuel Holliday associates, and Calvin Fletcher circuit prosecutor. At this early day the principal settlement in the county was in the vicinity of Pendleton, and on this account it was made the temporary seat of justice, though no buildings were erected for the accommodation of the courts, these being held in private houses; Moses Cox, clerk, and Samuel Corry, sheriff, keeping their offices in their private log cabins.

Early in the spring of 1824, a crime of atrocious cruelty, and of sufficient importance to demand the interference of the general government, occurred in this county. The Delaware Indians had been removed beyond the Mississippi in the spring of 1821, and white immigration coming in slowly the wild game had increased rapidly. This induced a band of Seneca Indians, from their reservation in Ohio, to come into this region temporarily for the purpose of hunting and trapping. Of these, Ludlow and Mingo, two peaceable Seneca Indians had established their camp a short distance northeast of where the village of New Columbus is now located. With them were three women and four children. They had made a successful winter's work and had accumulated a stock of furs of considerable value. When this group of Indians were seated around their camp-fire, Thomas Harper, Andrew Sawyer, James Hudson, John Bridges, Sen., and John Bridges, Jr., five white men, came to the camp, professing to be hunting stray horses. They requested Ludlow and Mingo to assist them in the search, which was assented to. They divided into two companies, led by the two Indians, and entered the thick woods. They had gone but a short distance when Harper, walking behind Ludlow, shot him dead. Hudson, hearing the report of Harper's rifle, fired on Mingo, and he too fell dead. The band of assassins then returned to the camp and shot the squaws and the children, and robbed the camp of everything valuable.

Harper made his escape and was never heard of afterwards. He was probably pursued and killed by the other Indians then in that vicinity. The other four were arrested and confined in a log house at Pendleton, heavily ironed and strongly guarded. This murder aroused the Indians hunting in that region as well as the Miamis north of White River, who sympathized with them, and spread a panic among the cabins of the white settlers. John Johnson, the Indian agent for the Senecas residing at Piqua, Ohio, and William Conner, acting agent for the Miamis, instantly came to the scene of disturbance and quieted the Indians by assuring them that the murderers should be promptly and properly punished for their crime. Johnson immediately sent an account of the murder to Washington, and the Department appointed James Noble, at that time one of our Senators,

to lead in the prosecution of the case. A special session of the court was convened, Judge Wick presiding. Hon. James Noble, Calvin Fletcher, Philip Sweetser and Samuel Mason appeared for the State. The prisoners were defended by Charles H. Test, James Rariden, Martin M. Ray, William B. Morris and Lot Bloomfield, Esqs.

Though the court was convened in a rude log cabin, yet the Court of the Queen's Bench could not have been conducted with more gravity and formality than was this first criminal court of Madison county. A backwoods jury, in their moccasins and hunting shirts, patiently listened to the same bloody recital day after day, as each case came up for trial, and gave close attention as the array of legal talent waded through the intricacies of the law and the quirks and tricks of sophistry common to the criminal lawyer; and at the conclusion of each case brought in a verdict of "guilty," varying the monotony only in the case of John Bridges, Jr., who was commended to the Executive clemency on account of his youth and his testimony on which, chiefly, the others were convicted. A deep feeling of indignation was aroused among the spectators by the diabolical plot of cold-blooded murder and robbery as it was brought out in the testimony, yet no attempt at violence was made, nor a hint at Lynch law heard; and even the "red men" who were present, many of whom understood English, behaved with the utmost decorum, and appeared to be deeply interested in the proceedings. The sentence of death by hanging was duly executed on Hunter, Sawyer and the elder Bridges, and John Bridges, Jr., who was but sixteen years of age was reprieved by Governor James Brown Ray, on the scaffold. The hanging took place at the foot of the hill, a few yards east of the railroad bridge, and near what is now the roadside. The execution was public, and was witnessed by almost the entire population of Madison and the neighboring counties, including a number of Indians, who expressed themselves entirely satisfied with the white man's mode of administering justice. This piece of history is of more than local interest. So far as my reading informs me, it is the only instance since the formation of the United States government where white men were hung for killing Indians.

TOPOGRAPHY AND DRAINAGE.

That section of Madison county lying east and south of the Bee Line railroad, and drained by Fall Creek and its tributaries, has an undulating surface, in some places almost hilly, the elevations consisting generally of beds of gravel and bowlders, marking indelibly the foot-prints of glacial action. This is especially true of a belt three or four miles wide, extending from Lick Creek, three miles southwest of Pendleton, in a north-eastern direction, along the southern side of the prairie, crossing White River at Anderson and following the course of Killbuck Creek to the line

of Delaware county. These gravel hills have generally a sufficient covering of a sandy, clay loam, to secure to them a high degree of fertility. At some points, however, on the south of Prairie Creek, the gravel is hardly covered at all, and the surface sustains only a dwarfed and stunted growth of oak and black hickory timber. But such gravel knobs are local and rare. These gravel ridges sustained the earliest settlements of the county and still confirm the correctness of the pioneer's judgment of their fertility. The valleys between them abound with numerous springs, some of which are hardly excelled in volume and purity of water, by any in the State. Northwest of this belt the country is generally level, the smaller streams lying almost on the surface. Gravel banks are so rarely found that in many places there is a difficulty in procuring good gravel for the construction of roads.

The drainage of Madison county is effected through White River, Fall Creek, Pipe Creek, Killbuck Creek, Duck Creek, Stony Creek, Lick Creek and Prairie Creek. Besides Killbuck, White River receives no tributaries of any considerable size in this county. This is accounted for by the fact that Fall Creek and Pipe Creek, which enter White River below the county line, run at an acute angle with White River, and but a little distance from it on either side. Lick Creek joins Fall Creek near the southwest corner of the county. It is a long stream, rising in Henry county, and flows across the south end of Madison county parallel with Fall Creek, and at no point more than four miles from it. Prairie Creek was originally the slough of a wet prairie extending from Fall Creek, at Pendleton, nearly to White River, a short distance below Anderson. It is now drained by a ditch nearly eight miles long, which is known as Prairie Creek. Six miles of it drains to Fall Creek and two miles to White River. The original prairie, which is from half a mile to two miles wide, is now chiefly dried and in cultivation, pasture or meadow. Fall Creek is notable for a cascade, or perpendicular fall of ten feet, over a ledge of sandstone. It furnishes an excellent water power which is now utilized in propelling a large flouring mill. Pipe Creek rises in Delaware county and flows through a comparatively level country in a southwesterly direction, and joins White River a mile below the western line of the county. Killbuck enters White River opposite to Anderson. It drains the central and eastern parts of the county, which is a pleasant undulating country with generally a very fertile soil.

Duck Creek, in the northwestern corner of the county, and Stony Creek, between White River and Fall Creek, rise in marshy districts in Madison county, and empty into White River, in Hamilton county. They are surface streams in their upper course, if indeed it be proper to call them streams, as they are made of several public ditches, converging into a common ditch of a larger size. Township 22, on the north line of the county, stretching across three ranges, has no drainage except by public

ditches. These are made from ten to twelve feet wide and generally five feet deep, so as to give ample outlet to the tile drains that are being used everywhere. In this manner what was once deemed waste land is now being converted into the best quality of tillable soil, exceedingly productive and almost indefinitely durable.

This county was originally almost entirely shaded with a heavy forest of oak, ash, walnut, beech, sugar tree, hickory, elm, etc., but much of it has disappeared.

GEOLOGY.

The greater part of Madison county is covered with a deep deposit of glacial drift, but the few streams which cut through it and reveal the rock in place, indicate that the eastern and northern parts of the county rest on rocks of the Upper Silurian age, but in the southwestern corner, embracing Greene, and parts of Fall Creek and Stony Creek townships, the underlying rock is Devonian. The falls of Fall Creek, at Pendleton, furnishes the boldest and most remarkable outcrop of rock in the county. The ledge forming the cataract is composed of heavily stratified sandstone of a peculiar structure. It consists entirely of quartz crystals of pretty uniform size, and but feebly held together, sometimes by a cement of peroxide of iron, but more frequently by no visible force, and therefore much disposed to crumble; yet it has a wonderful power to resist the action of water. The ledge over which the water falls at Pendleton has scarcely undergone any change since the white man first became acquainted with it, sixty years ago. The great ice floods of the last two winters broke through the sandstone floor which received the falling water, and exposed the Niagara shale below, which is now being rapidly excavated, and will, unless arrested, ultimately undermine the falls. This occurrence revealed the lower margin of the sandstone; its upper surface had already been exposed in the quarry of the Bee Line railroad, where the junction with the overlying limestone had been reached. This evidently belongs to the Devonian age, and to the Corniferous period of that age. The Pendleton sandstone, therefore, lies in the debatable ground between the closing Silurian age and the dawning Devonian time; and the mixed condition of its fossils clearly indicates its neutral ground. Its brachiopods and corals are Devonian, while its univalves and articulates are of Silurian types.

This Pendleton sandstone has been generally overlooked by geologists, or at most, been regarded as an accidental occurrence. But Hall, Dana, and other eastern geologists, as well as Lyell and Verneuil, from beyond the Atlantic, have located the Oriskany sandstone in exactly this position, and assigned to it lithological characteristics and fossils, which very accurately describe the Pendleton sandstone. West of the Appalachian region the Oriskany sandstone has been identified in the State surveys of Illinois, Michigan and Missouri. In 1854, in attempting to trace the out-

lines of the several formations comprised in the geology of Indiana, I followed the outcrop of this peculiar sandstone from the old millstone quarries on Sand Creek, by Greensburg, the forks of Clifty, crossing Little Flatrock near Milroy, appearing again at Pendleton, and on Stony Creek, in Hamilton county, crossing White River at Strawtown, and the Wabash a few miles below Logansport, and was lost under the drift beyond. In all this distance it forms as distinct a line of demarkation between the Silurian and Devonian formations, as does the Genesee slate between the Devonian and Carboniferous ages. The best marked exposure of this rock in the State is this at Pendleton, though the entire exposure does not exceed twenty feet in thickness, including several Calcareous strata at the base of the overlying Corniferous limestone. It is a very durable building rock, but is difficult to quarry, having no lines of cleavage, and its very sharp grit cuts the tools severely in dressing it. Its feeble cohesion forbids the method of quarrying by means of blasting, though this method is in use here now.

The Calcareous strata overlying the sandstone appear in the bed of the stream at Huntsville, a mile above Pendleton, on Fall Creek. The sandstone makes a very fair outcrop at Fishersburg, near the Hamilton county line, but its thickness at this point could not be ascertained, as its base is not exposed; the fossils observed here were all of them corals of the Favosite family. While the Pendleton exposure of this sandstone abounds in very perfect siliceous petrifications, casts, or moulds, yet but a few species are represented. We collected here the following:

Favosites—several undetermined species, *Pleurotomaria lucina*, *Conocardium trigonale*, *Strophodonta demissa*, *Tentaculites* Spec.(?), *Phragmoceras nestor* (Niagara—near Anderson), *Phacops rana*, *Heliophyllum* Spec.(?), *Stromatopora densum*, *Turbo shumardi*, *Naticopsis humilis*, *Spirifera gregaria*, *Loxonema* Spec.(?), *Pleurotomaria* Spec.(?)

The Corniferous limestone which outcrops at Foster's Branch, four miles below Pendleton, and at a point near the county line, might be quarried to advantage, especially the outcrop at Foster's Branch. The rock at this point is compact, crystalline limestone, and will prove a durable material for foundations, cellar walls, etc. Fossils are very rare in this rock. I observed only a few detached joints of crinoid stems and an imbedded fragment of a favosite.

The Niagara limestone appears at several points along White River, in its course through this county, but quarries have been worked profitably only at a point a short distance below Anderson (Sec. 11, T. 19, R. 7). At all the outcrops of stone on the river, which we observed, there is a deposit of clay shale from five to ten feet thick overlying the workable strata of rock. Add to this fact that in the process of quarrying occasionally a stratum occurs too shaly to be marketable, and its removal from the quarry is a matter of expense instead of profit. Notwithstanding

these obstacles much good building stone has been raised from these quarries, for use in the city and the adjacent country, as well as for transportation by rail to other points. The strata are from ten to twelve inches thick. In the prairie about two miles southwest of Anderson (Sec. 23, T. 19, R. 7) the drainage ditches encountered limestone of an excellent quality, from which the overlying shale has been removed by the glacial agency. If the ditch was deepened by blasting, so as to secure drainage to the works, and a switch from the railroad constructed into it, a quarry of great value might be opened here.

Limestone, of a fair quality, appears at three points on Pipe Creek. Near Frankton a quarry has been opened for town and neighborhood supply, but at present it is not being actively worked. Two miles northeast of Frankton, in Sec. 33, T. 21, R. 7, a quarry is worked for local supply. A large amount of stone of a fair quality has been removed from this quarry and much more is stripped and ready to be raised. The stripping is quite heavy, and there is considerable waste from unmarketable strata in the quarry. Near Alexandria stone appears in Pipe Creek and in Mud Creek, a tributary from the north. At neither point has a quarry been regularly opened, though stone has been taken from the Mud Creek exposure to some extent, and surface appearances indicate that a good quality of rock for ordinary uses might be obtained here with but little expense, as the stripping is comparatively light, and its convenient distance from town and from two railroads promises a profitable working of this quarry.

GLACIAL AGE.

The Ice age has left distinct foot-prints on the southeastern section of Madison county. A line drawn from near the northeast corner of Richland township to Anderson and continued in the same direction down the valley of Prairie Creek by Pendleton to the southern line of the county, will traverse a region of valleys of erosion between hills of washed gravel deposited by currents from beneath the dissolving glacier, while the finer and lighter materials were carried forward to form the clay surface of the counties south. The most distinct remains of a lateral morain that I have seen anywhere is in the piles of gravel and bowlders that skirt the southeastern side of the glacial river bed which stretches from White River to Fall Creek in what is now known as the Prairie.

This valley of erosion has an average width of about a mile and is sunk some thirty feet below the general level of the country, while the gravel along the southeast side is piled up from forty to fifty feet high. The valley crosses Fall Creek and continues somewhat narrowed to Lick Creek near the Hancock county line. At the point of crossing Fall Creek bowlders of granite, gneiss and trap rock are profusely distributed over several hundred acres of land. Southeast of this line gravel hills are abundant

and the soil generally is a sandy loam. North and west of this gravel beds are rare, and as the northern line of the county is approached they entirely disappear. Sand banks are occasionally found and this is substituted for gravel in the construction of roads. Gravel is, however, occasionally found in this section of the county where nothing on the surface indicates it. * Water for domestic purposes and for stock is easily procured by wells from twenty to thirty feet deep, and in the Fall Creek regions springs are numerous.

ARCHÆOLOGY.

The most remarkable relics of a pre-historic race, and, perhaps, the best preserved works of that race to be found in the State, or perhaps in the United States, are in Madison county. They consist of two groups of earth-works, located on a high bluff south of White River, three miles east of Anderson city. They were formerly known, in the neighborhood, as the "Old Fort," but now are generally called "The Mounds," neither of which appellations are strictly correct. These works have been described in detail in the eighth volume of the Geological Reports of Indiana (1878), and I do not choose to repeat the details here.

In general terms, I will say that these works consist of two groups situated three-fourths of a mile apart. The first, or southwestern group, consists of seven embankments and a low mound. Four of these are perfect circles, three have a gateway through the embankment and two have a distinct ditch on the inside of the embankment. Two are irregular ellipses in shape, or, rather, they are two circles of unequal size, so joined that the distance from centre to centre will be equal to the radius of the smaller circle. They have each a well defined ditch inside of the embankment. Of these one is nearly double the size of the other and the larger one has a low mound at the junction of the two circles. The great circle, which appears in some respects to have been the type of all the others, is situated at the east and north of the group. It consists of a circular embankment of compact clay, 380 feet in diameter and nine feet above the level of the earth on the outside. It has a base of sixty-three feet and a level summit of ten feet. Inside of the embankment is a ditch ten feet deep and sixty feet wide at the surface. The central area is 138 feet in diameter and in its centre is a truncated or flat-topped mound thirty feet in diameter and four feet high. Looking a little west of south from this centre is a gateway thirty feet wide, where neither the embankment nor ditch closes. On the central mound of this great circle a slight excavation revealed ashes, charcoal and calcined bones. The same evidence of fire was found in the central mound of the double circle before described. In none of the minor works do the embankments exceed four feet high, nor the circles 180 feet in diameter. The other group is located near the northeast corner of section 16 and on the summit of a

bluff of White River seventy-five feet high. It consists of three principal works, the largest of which is an embankment and ditch of an irregular elliptical form with its axis directed to the southeast, which is the smaller end of the ellipse. At this end is a gateway nine feet in width, the external opening of which is guarded by two small mounds, one on either side, at present about four feet high. The dimensions of this work measured through its longest axis, is 296 feet, and its greatest width, 160 feet. The embankment is thirty feet wide on its base and from four to five feet high. The ditch is eight feet wide but in many places nearly filled. The central area shows no sign of any mound or other artificial work. This work, with the exception of the gateway and guarding mounds, is in a primitive forest, but these last are rapidly disappearing under the influence of cultivation. Near this is a work of nearly the same shape but of less than half the size. It is constructed on the same plan, except the sentinel mounds at the gateway. A plain circle in a cultivated field near by completes this group. It is 150 feet in diameter, without gateway or any other appendage. The embankment is represented by the early settlers to have been three feet high originally, but is now rapidly disappearing under the action of the plow.

That these wonderful relics belong to a race of men who used no metal tools is inferred from the numerous stone implements collected in this vicinity and the absence of anything metallic, even copper ornament. It would be in vain to conjecture the age of these works. It is true large forest trees are now growing on them, but this can carry us back but two or three centuries at most, and this, probably, is but an inconsiderable fraction of their age. If these walls had been built of stone, we might, in the action of weather on it, have an index of its age, but banks and mounds of clay in a sheltering forest leave no marks to count the passing centuries. The object and purpose for which these works were constructed is a problem almost as difficult to solve as their age.

Many of the pre-historic earth works in Indiana were for military defense. The Winchester embankment enclosing thirty-one acres, with its central lookout mound, is evidently of this character; as is also the stone works at the mouth of Fourteen Mile Creek, in Clark county. But these works have no military features about them. They are too small to accommodate a military force, and the uniform ditch on the inside of the embankment forbids the idea of military defense. They were probably intended for the exhibition of public ceremonies, either civil, theatrical, or religious. The fact that two of the largest works in the lower group, show ashes, coals and fragments of bones near the surface on their central mound, would suggest the idea of sacrifice, and tend to confirm the suspicion of a religious use. But this is a mere conjecture, and, perhaps, no evidence will ever be obtained that will carry us beyond this.

Whatever may have been their use, these works were not constructed

by sparsely scattered savages who lived by the chase, nor by nomadic tribes that lived a pastoral life. The country must have been densely populated by a race inured to labor, and skilled in the art of design. The symmetry of form, and the skill manifested in constructing curved embankments and ditches with a uniform slope, attest this. When we consider the rude tools with which they must have worked, and the quantity of compact clay removed, we begin to comprehend the magnitude of the labor performed. Another question as puzzling as any of these is: Where are the remains of the people who constructed these works? There are no burial mounds in this vicinity, and more than a solitary skeleton in a gravel pit here and there, has not been discovered. How did they dispose of their dead? Did they cremate them, or, has time destroyed even their bones?

But I wish to propose a matter more practical than these speculations. These works are, as yet, in a state of perfect preservation, covered by the primitive forest, but they may pass into other hands, and the greed of gain may remove the forest, and the plow may, in a few years, obliterate the last trace of the labor of our mysterious predecessors. Steps should be taken at once to preserve these works as a memento of the past, to excite the wonder of future centuries. How this should be done, I would not dictate. If the State would purchase it for a public park, and secure it, as the Tippecanoe battle ground is now secured, these vestiges of past centuries and of a lost race may be preserved. In behalf of science I earnestly appeal to the public to secure these works from the destruction that may come on them any day, while they remain the property of private owners.

A mound of an elliptical shape, eighty feet long and fifty feet wide, was examined in section 5, township 18, range 7. It is in a cultivated field, and is, at present, about six feet high, but is being rapidly reduced by cultivation. Stone axes and flint arrow points are frequently found in this vicinity. No excavation of the mound has been made.

NATURAL HISTORY.

The territory comprised in Madison county was once a favorite hunting ground of the red men. In addition to the wild animals common to a forest-covered country of this latitude, it was a special resort of the beaver, the otter and the muskrat, the furs of which were so highly prized by the primitive trappers. Remains of beaver dams are yet visible in what was once the broad sluggish sloughs near the heads of Stony Creek, Pipe Creek and Duck Creek. But the game and fur animals have long since disappeared, and scarcely a squirrel remains as a reminder of this paradise of the hunter. The fish that once abounded in all the streams in this county, following the forest game, have nearly disappeared from the waters.

The flora of this region was originally rich and varied, but cultivation and free pasturage have left but a narrow range for the botanist. The gravel hills south of Prairie Creek, however, will be found rich in rare plants, the study of which will well repay the scientist. The season of my visit was too late for the favorable study of this field, the greater part of the plants having passed their blooming. On this account, I did not attempt a collection of the rare plants found here.

There are several natural groves of chestnut trees (*Castanea vesca*) found growing in the vicinity of the ancient earth-works near Anderson. Whether these have any connection with the antique remains I have no means of determining, but the fact that chestnut, as a forest tree, is not elsewhere found within a hundred miles of this location, is suggestive of a connection at least.

GENERAL SECTION OF HAMILTON AND MADISON COUNTIES.

Quaternary Age.

Alluvium	10 to 40 feet.
Glacial drift.	10 to 100 feet.

Devonian Age.

Corniferous limestone	50 to 60 feet.
Oriskany sandstone.	12 to 15 feet.

Upper Silurian Age.

Niagara group.	40 feet.
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