THE SUMMER MEETING.

The Summer Meeting consisted in an excursion to the Coke Regions of Connellsville, Pa.

On Tuesday, July 25th, the following invitation was sent to the members of the Institute and their friends:

PROF. N. W. LORD,
HON. ANTHONY HOWEULS, Pres't.
MASSILLON, O.

MASSILLON,
O.

ROBERT M. HASELTINE, Sec'y-Treas.
COLUMBUS, O.

OHIO INSTITUTE OF MINING ENGINEERS.
SUMMER EXCURSION.
AUGUST 2 to 6, INCLUSIVE. 1892.

THE FINAL ANNOUNCEMENT, PROGRAMME AND INVITATION.

COLUMBUS, OHIO, July 25, 1892.

Dear Sir:

The Summer Excursion of the Ohio Institute of Mining Engineers to the Connellsville Coke regions will take place August 2d to 6th, inclusive.

The train will leave the Union Depot in this city, over the Baltimore and Ohio railroad at 7:20 a.m., standard time, arriving at Zanesville at 9:20 a.m. On the arrival of the train, Mr. A. O. Jones, President of the Zanesville Board of Trade has arranged for an engine to take the party to the American Encaustic Tile Works, the largest plant of the kind in the United States. This will be a treat that no one can afford to miss.

The excursionists will return to Zanesville for dinner.

At 1:22 p.m., they will renew their journey over the B. & O. R. R., arriving at Connellsville at 11:10, (Eastern time), where they will spend the night. The scenery along the route is said to be simply grand.

NOTE. — Arrangements for supper on the route has not been made as yet.

The order of visits while in the Coke Regions will be:

Thursday, August 4th: Leisenring No. 3. Leisenring No. 1. Trotters' Shaft. Going to Uniontown at 8:50 p. m., for the night.

Friday, August 5th: Oliver Nos. 1 and 2. Redstone. Leith. Lamont. Staying at Uniontown over night. Saturday return home.

Tickets from Columbus to Uniontown and return, good until August 15th, $6.25. Tickets will also be placed on sale at Zanesville and Bellaire.

Should any desire to remain longer their tickets will enable them to do so.

On Wednesday, August 3d, the train will leave Connellsville at 7:35 a. m., arriving at Mt. Pleasant at 8:20, where the Standard Mine of the Frick Coke Co., will be visited. This is the largest and finest plant in the coke regions. It is noted for its very solid and massive work and large output. Brickwork is substituted for timber around the shaft bottom. It is lit by electricity and supplies 907 ovens with coal. This mine is under the management of Mr. Robert Ramsey.

At 11 o'clock a. m. the party will take the train for Wheeler, two miles from Connellsville, to visit the Morrell Mine, which is under the management of Mr. Isaac Taylor. It is a large mine, opened up on rather antiquated lines, though of late years they have adopted the three heading system with split air currents.

They will next visit the Hill Farm Mine, one mile from the B. & O., at Dunbar, superintended by Frank A. Hill, which is noted for the sad calamity of two years ago. Returning to Connellsville for the night.

Thursday morning, the party will first visit Leisenring No. 3, which is under the management of Hon. Austin King.

This is the deepest shaft in the Coke regions and is lit by electricity. It is located three-quarters of a mile from street car line, or it can be reached by train at 8:10 a. m. from Leisenring No. 1, which will be visited next. This is a large mine under the management of Mr. John A. Esser. It is said to exhibit what can be done in the way of improving a mine that was opened on the lines of twelve years ago. Their rope haulage is another feature. It is also lit by electricity.

The Trotter Mine, which is under the supervision of Mr. John Snedden, located at Trotters, on a spur of the B. & O. It is one of the largest mines in operation in the region. Has rope haulers, is lit by electric light and the coal is mined on the panel system.

At 6:50 p. m. the party will leave for Uniontown, where they will spend the night.

On Friday, August 5th, the party will first visit Oliver Nos. 1 and 2, located on the B. & O. at Red Stone Junction. These are new mines being developed by the Hon. Fred. C. Keighley, and next to Leisenring No. 3, are the deepest in the region. Steel heading frames are being used. They also are the first to adopt the five heading system.
Red Stone is one of the largest slope mines in the coke regions. It is troubled with soft bottom and to protect the mine it is necessary to leave very large pillars. Mr. S. E. Wadsworth has supervision.

Leith, on the B. & O. near Uniontown, managed by Henry Whyel, supplies 284 coke ovens.

Lamont Nos. 1 and 2 have the name of being the finest slope mines in the coke regions. Five hundred and twenty-four ovens are connected with this plant.

The excursionists will remain in Uniontown over night.

If a sufficient number desire, arrangements will be made to spend a few hours at one of the large rolling mills on our return.

This will be the finest excursion for sight seeing ever offered the members of the Institute. You cannot afford to miss it. A number of ladies have already signified their intention of going. If you will be accompanied by any, please report them at once in order that suitable accommodations may be secured. If you are going, reply at once so that your Secretary can provide for your wants along the route, which he cannot do until it is known how many are going.

You are cordially invited.

R. M. HASELTINE, Sec'y-Treas.

On the morning of August 2nd, the excursion party left Columbus in a special coach which was attached to the regular train over the B. & O. Railway. Col. W. E. Reppert, City Passenger Agent for the company, accompanied the party to see that they received every attention possible while on the journey. The first halt was made at Zanesville, O., where the excursion was met by Mr. A. O. Jones, President of the Zanesville Board of Trade, Mr. Geo. A. Stanberry, General Superintendent, and Mr. Langenbeck, the chief chemist of the American Encaustic Tiling Co., Limited, and other prominent citizens of Zanesville. Here the car was detached from the regular train.

Through the courtesy of the officers of the Cleveland, Canton & Southern R. R., the members of the association and the ladies of their party were taken directly on their arrival from Columbus, over their tracks to the gates of the works of the American Encaustic Tiling Co., situated a few miles to the north of the city of Zanesville, where they were welcomed by the General Superintendent, Mr. Stanberry and his assistants.

A survey of the process of manufacture was found particularly easy in this model plant from the fact that the material in
the course of manufacture, passed directly from one end to the other of a straight line of buildings, entering one end as crude clay directly from the mines and pits and leaving the other as finished tile.

Accordingly the first building entered was the "raw stock house" consisting of two long rows of masonry bins, into which the various raw materials are directly delivered from the railway. Between these up and down the full length of the building lies a track carrying a platform scale which is thus easily moved before each bin for weighing off the charges of clays for the respective mixture.

The members of the association expressed interest in seeing the great variety of clays used in this industry greater than in any other branch of clay industry; the most ferruginous and manganiferous being as indispensible as the pure kaolins and a highly fusible boulder clay having as important a role as the most refractory fire-clay. This scope in the necessary raw material brought the recollection of deposits, to the minds of many members, which may be of service for this work, and promises of samples were made the chemist from several quarters.

The truck containing the weighed charge of clay is elevated to the upper story of the "ship-house," where the company followed to watch the mixing and washing of the charges in the "blungers" and the separation of sand and grains of pyritifer in the sifters, to the thickening of the purified "slip" to solid homogeneous clay in the filter presses.

Some of the gentlemen having had experience with the troublesome wear of plunger pumps in the draining of mines of sand and clay bearing water, were interested in seeing that a similar condition, yet of a tenfold more troublesome character, namely of forcing the "slip" which is rich in ground minerals and clay, into the filter presses, was not done with pumps but by compressed air.

The course of clay was then followed in its passage from the filter presses through the dry kilns and its reduction to powder in the "grinding-house," to its final resting in one of the many
cemented chambers, each holding a different colored clay in the “clay stock house.” From this the tile presser takes the now finished material for his ware. The presses turning out mechanically the various shaped tile, elicited much interest in the rapid accomplishment of what formerly was laboriously done on hand-presses, but few of which are now in the factory.

The drying, placing the ware in seggars, setting the kilns and firing (with crude petroleum), each came in for its quota of attention as did also the sorting of the floor tile and the glazing of those intended for mural decoration. Then the finished product was admired in the ware-house.

A row of buildings parallel to those inspected are for the necessary accessories to manufacture, storage and disposal of ware: shipping rooms, packing house, cooper shop, carpenter shop, the chemical laboratory, studio of the modeler and the seggar factory.

It was of special interest to many of the members, that those agencies of power-transmission, which miners are finding of estimable value in their work, namely compressed air and electricity, were in the active employ here in full recognition of their respective advantages, and many expressed their interest and approval of the control of a manufacturing plant by systematic, mechanical and chemical observation and experiment.

An acquaintance of miners with the manufacture of wares from the natural product coming under their observation, cannot but develop into relations of mutual helpfulness.

After the inspection, the officers of the company turned the association over to the care of Mr. A. O. Jones and the staff of citizens on his committee and bade them “God-speed” on their journey.

The excursion party then returned to Zanesville where, through the kindness of our friends, arrangements for dinner had been made at the Clarendon Hotel. At 1:30 P. M. the excursion car having been attached to the regular Pittsburgh train on the B. & O. Railway, after expressing to President Jones and the kind friends our deep appreciation of the many courtesies shown us during the short stay in their thriving city, we bade them
good-bye and were soon whirling along on our journey to Connellsville, which was reached by 11 o'clock that night. Hotel accommodations having been previously arranged for, all were soon safely quartered for the night.

On Wednesday morning the 3d, the excursionists were joined by the Hon. Frederick C. Keighley, Ex-Inspector of Mines and now General Manager of the Oliver Works at Uniontown, and the Hon. Austin King, Ex-District Inspector of Mines in Ohio and Pennsylvania and now Superintendent at Leisenring No. 3. These gentlemen assumed the duties of escort. Through the kindness of Col. W. E. Reppert arrangements were made for trains to the various points of interest as arranged in the programme. The excursionist's car was attached to the regular morning train and taken to Mt. Pleasant, where we were met by Superintendent Robert Ramsey with an engine and taken to the Standard mine of the H. C. Frick Coke Co. It is a shaft 303 feet in depth from the surface and 330 feet from the upper landing. The coal is hoisted by two 30x48 inch engines working on the first motion attached to two cone shaped drums 10 feet in diameter at the small and 12 feet at the large end. The mine cars hold about 2½ tons each. At the top they are forced from the cage by the empty car which is driven forward by a steam engine designed for the purpose and known as the Ramsey Pusher. At the bottom of the shaft the loaded car in advancing, forces the empty one from the cage. On each side of the shaft bottom for several hundred feet the roof has been taken down to a height of 12 or 15 feet and lined with brick. This, the mule stable and the pump room, are lighted by electricity which produced a beautiful effect on entering the mine. The mine was not running on the day of our visit, hence the interior was not examined. The clean orderly appearance about the works, especially the grounds around the top more nearly resembled a nicely kept home than a coal mine. This attracted the visitor's attention and was the subject of frequent comment as it bore a striking contrast to the piles of old iron, rows of dilapidated cars and scattered prop piles, to which they were accustomed and which they had been taught were indispensible in the industry. The Standard is re-
garded as one of the largest and most substantial mines in the region and has a capacity of 3100 tons in 8$\frac{1}{2}$ hours. The entire output is consumed in the 907 ovens which are attached to the mine.

At noon the party boarded their car and returned to Connellsville for dinner, all feeling they had spent a profitable forenoon for which they were under deep and lasting obligations to Mr. Robert Ramsey and his corps of assistants. After dinner the party re-entered their car and were taken to Wheeler to visit the Morrell mine over which Mr. Isaac Taylor has general charge. This is a slope opened on the margin of the basin and descending at an angle of 8 to 10 feet per hundred, that being the pitch of the vein at this point. The slope has a double track and the trains ascend and descend in rotation. This mine was opened on lines of operating 12 years ago. The appearance on the outside bore a striking contrast to the one visited in the morning. The excursionists scattered around the works, each one investigating whatever branch of the industry was most interesting to him. A large number descended the manway and examined the method of mining, this being the first mine found in active operation. The double entry system adopted when first opened has been changed to the 3 entry system; this prevents the frequent cutting of the air currents by moving trains beside giving additional pillar support to the mine. The rooms are driven twelve feet in width with a twelve foot pillar separating them, the custom of the region. The miners all use safety lamps of the Clanny make and mine the coal standing in an upright position as one would clay. Owing to the softness of the coal, little or no skill is required, hence the employment of so much unskilled labor. No doors were found on the entries in this mine, the air being distributed by means of overcasts. Taking the age of the mine into consideration, it was in good order and from appearances it was well managed. After looking the plant over, the party boarded their train and were taken to Dunbar, a thriving village in the valley. The Hill Farm mine which was the objective point lay on the hill fully a mile away. The ladies who up to this time had been in the fore rank and some of the older gentle-
men concluded to see the town while the remainder climbed the hill to examine the scene of the mining horror of two years ago. The path let us past the Mahoning slope through which the rescuers tunnelled in the hope of reaching the entombed miners. A walk of a few minutes brought us to the mouth of the mine which has become famous as the scene of one of the most disastrous mining horrors in the history of the industry. The mine was found idle, but in anticipation of our visit, the mine boss and a number of the miners were there to receive us. The buildings, machinery and openings were examined and the details of the horror eagerly inquired into. The mouth of the slope and stone walls exhibited the evidences of the fire which for days poured out of it like a volcano. After thoroughly examining the outside, the mine boss attached the rope to a trip of mine cars and kindly invited us to descend and examine the mine. The air at the slope mouth was so extremely hot that the majority politely declined the proffered favor. Enough to comfortably fill two cars however, embraced the opportunity and we were soon rolling down the slope.

As soon as we had gained our sight it was seen that the coal on the roof and sides had been coked by the fire; this hung from the roof in long cones like huge icicles. The sides were also lined with these cones which glittered in the lamp light, presenting a sight of picturesque grandeur rarely encountered in mining. We descended to the parting of the level from which they were then taking their coal. The heat seemed to increase as we descended and although we were near the point where we would be in the cool air current, it was unanimously agreed to return to the surface, the work of only a few minutes. All were drenched with perspiration and many quaint remarks were heard as to their hopes of the future world. After expressing our thanks to our guide and the mine boss for the courtesies they had so kindly extended to us, we joined our party on the train and returned to Connellsville to spend the night.

On Thursday morning the 4th, we crossed the river to New Haven, where we boarded an electric street car which by a circuitous route climbed the side of the valley at a grade which
seemed an impossibility. A ride of about four miles brought us to Leisenring No. 3, over which our genial friend and member Hon. Austin King superintends. This is a shaft mine 540 feet in depth, the deepest one in the coke regions. The equipment is of the latest and most approved pattern and first class in every particular. The Ramsey pusher is used for unloading the cages at the top as at the Standard mine. The engines, pumps, etc., are of ample size to perform the work required of them. The engine room was ceiled and oiled; the floor was layed with oil cloth and presented such an appearance of cleanliness as to cause the visitors to hesitate upon entering. Batteries containing 504 ovens are connected with this mine which one of the members familiar with the manufacture of coke pronounced as the finest constructed and of the best pattern of any yet seen. On entering the mine, we found that the bottom was patterned after the Standard, except the arch way around the bottom, which here is of heavy timber and whitewashed. The space is lighted by electricity, and presented a very clean and pleasing appearance. An excavation about 15 feet square has been made in the coal on one side of the main entry near the bottom. This has been ceiled and whitewashed, providing for a lamp room in which about 300 safety lamps are kept when the mine is not working. This room is in charge of a man employed expressly to fill and clean these lamps and see that they are in perfect order when delivered to the miners on entering the mine. Lamps were handed out freely to our party which now divided into groups and in charges of guides proceeded to examine the mine, which was found to be worked on the same plan as those already visited. The neck of the rooms after being exhausted are barred across with timber and marked with danger signals to prevent any one from attempting to climb on top of the fall as they certainly would encounter light carburetted hydrogen gas (fire-damp) in the vacant space. To those unfamiliar with this element of danger, our guide gave frequent exhibitions as we passed along the high dry entries. On returning to the surface, we found that our host, Mr. King, had prepared a nice lunch which was spread on some improvised tables in the carpenter's shop.
After thoroughly enjoying this repast, Secretary-Treasurer Haseltine called on our esteemed member, Jacob G. Chamberlain, who made some appropriate remarks in his usual happy strain of thought. Our host, Mr. King, responded in a neat speech. Vice President, Prof. Lord, followed in a few happy thoughts. Mr. J. W. Bryant of Herriman, Tenn., Mr. L. S. Johnson of Louisa, Ky., the Hon. W. B. Hearn, Editor of the Cadiz Republican, Capt. J. L. Morris, the poet laureate of the Institute, Secretary Haseltine and others made short speeches in which the features of the trip that were of the greatest interest to all were briefly discussed. All feeling well satisfied with their forenoon's entertainment, we proceeded toward Leisenring No. 1. On the route we passed through the mining village of Leisenring, the neatness of which is worthy of special mention. The town was layed out regularly with wide streets. The houses were of frame, two stories high and built double. To each there was a garden containing about an acre of land enclosed by a neat fence which was whitewashed. It can be said of all the mines owned by the H. C. Frick Co., that their miners are provided with better homes and are surrounded by more of the comforts of life than any seen on our trip or within our acquaintance. A walk of two miles brought us to mine No. 1. The outside was found to be well arranged for the conducting of business, and the same disposition to neatness which we had seen at the other mines was also found here. We descended on the cage to examine the rope haulage plant. At the bottom of the shaft, in a room formed by removing the coal, the engines were located. This room was floored and was lighted by electricity. The walls were whitewashed and ornamented with pictures and other works of art. In unoccupied spaces, miniature parks made of wood and paper gave it more the appearance of a pleasure resort than simply an engine room for hauling coal. Mr. John A. Esser, the manager had arranged seats in the mine cars and the excursionists were treated to a ride into the working places of the mine. The coal in this, as well as at No. 3 and Trotters lies in the center of the basin; it therefore runs level. On returning to the surface, the Trotter mine was next visited. This is a shaft
opening and rigged very much as No. 1. Several of the party descended while others contented themselves with examining outside. Mr. Jno. Snedden, the Superintendent, kindly showed us around. Four hundred and sixty ovens are connected with the works which have the appearance of having more age than the two last visited. Another neat village, the streets of which are lined with shade trees, surrounds this mine. After a short stay here, we returned to Connellsville for supper, after which we boarded our special car which had been attached to the regular train and went to Uniontown, the county seat of Fayette County, where we were to spend the night.

On Friday morning our special train being in readiness, the party was taken to the Lamont Slope No. 2. The outside alone was examined and was found to differ only in minor details from those previously visited. The coal was drawn up the slope in trains consisting of six or eight cars, which were provided with drop bottoms. When the train landed on the trestle the bottoms were opened and the coal was discharged into the bins below without disconnecting the cars from the rope. The slope is provided with a double track, over which the coal which supplies 524 ovens was handled with great rapidity. The party now resumed their journey to the Oliver mines. On the way the train took the Stewart Iron Company's siding to allow the morning train to pass. Here Mr. Van Duzen, the Superintendent, and formerly an Ohio man joined us for the day. On arriving at the Oliver mines Nos. 1 and 2, we were met by Superintendent F. C. Keighley, also a Buckeye, who kindly took us in charge. These are new shaft mines 415 feet in depth opened during the year, hence the workings are not extensive. The hoisting tower of No. 1 is of steel and presents a very substantial and neat appearance. The coal is dumped into bins, from which it is drawn into larries to supply the 300 ovens. These are built in batteries and are double, the railroad cars being loaded from the coke yards on each side. The plant was very compactly built and well arranged for the economic production of coke. At the time of our visit considerable trouble was being experienced in securing a sufficient supply of suitable water for the ovens. The
company had recently purchased a gas line at an expense of $30,000 and were erecting pumps on the bank of the river at Connellsville, 18 miles distant, with a view of securing a sufficient supply of pure water for their works. The mine is being opened on lines in accord with the most advanced methods of operating a mine which generates fire-damp. For a radius of 100 feet with the shaft for a center no coal has been removed except in driving the entries, these being securely timbered. From this line, the work is being opened on the five heading system, the first in the region. The rooms are worked by the rule in the district. The compact and substantial manner in which these works have been planned show the master hand of Superintendent Keighley. After a thorough inspection of the works, the excursionists returned to Uniontown for dinner, after which a short run brought us to the Leithe, a shaft mine 285 feet in depth opened in 1880 and operated to supply 280 ovens. The coal is brought to the shaft bottom by a rope haulage system which was carefully examined by several of the party who pronounced it very complete. Mr. Henry Wyle, the Superintendent, very kindly showed us around. The party then went to Redstone, the last mine on the list. It is a slope opened like the rest on the pitch of the coal which here has a declination of 3 feet per hundred and supplies 421 ovens. Mr. S. E. Wadsworth, the Superintendent, who by the way was an Ohio man, born near Columbus, had prepared to show us through the mine, but as the miners and mules were coming out on our arrival, and the excursionists being thoroughly tired out, we politely declined his proffered kindness and after examining the outside works we returned to Uniontown, all feeling well repaid for the trip. No accident or incident occurred to mar the pleasure of the party in any way, and the excursion was a success in every particular. The excursionists are under lasting obligations to Col. W. E. Reppert, General Passenger Agent at Columbus, and to Col. A. E. Stonick, Master of Transportation, and the employes of the B. & O. Railway, both at Connellsville and Uniontown for the many favors granted during their visit. We wish further to extend our heartfelt thanks to Hon. Austin King, Hon. F. C.
Keighley, Mine Inspector Duncan, Mr. Van Duzen and the Superintendents and Managers of the mines visited, for their kind assistance in showing us the many points of interest, and thus making our visit to the coke regions one of great pleasure and of profit.

After supper the party began to disband, some going to Pittsburgh to visit the mills and factories, some to other portions of the coke regions, while others remained over night to make further inspections of the mines.

The Connellsville coal field is described as resembling in shape that of a flat bottomed canoe, the length of which from east to west is about 35 miles. The width at the ends are about one mile. From these toward the center, it gradually widens to a breadth of five or six miles. Along the center of the field the vein lies very level, and when opened here is reached by a shaft. This is the case at the Standard, Leisenring Nos. 1 and 2, Trotters, Oliver Nos. 1 and 2 and the Leithe of those we visited, but as the vein approaches the boundaries, it rises with remarkable uniformity at an angle of about 10 feet per 100 until it nearly or quite comes to the surface. We were told that it was by the out crops that the vein was first discovered. It is where the coal out crops that the vein is mined by a slope, the declination of which conforms to the pitch of the vein. This is the case at Morrell, Dunbar, Lamont and Redstone. At the latter the vein is said to pitch but 3 feet per 100, the slightest descent that we observed on the tour; while in the former it was about the first named figure and had been driven in this manner for nearly one mile with no signs of flattening off. This uniformity of the pitch being the subject of frequent comment by the visitors.

The vein has an average thickness of from 7 to 9 feet, which appears to run with remarkable uniformity. There are no seams, partings, sulphur or any other impurities apparent in it. It is very tender in its fiber and is easily mined, requiring no undermining or blasting to bring it down. The miners that we observed at work invariably stood erect and dug it as they would ordinary brick clay. It is loaded out as it comes down without any assorting and goes to the ovens without any further prepara-
tion. Lumps as large as a water bucket appeared to be a rarity. We were told that the smaller the coal the more easily it cokes, and that the docking rule was for sending out large lumps, as they choked the spout in the larries, thus retarding the work of charging the ovens. In conducting the mines the doubly entry system appears to be giving way to the three entry system. The rooms are driven 12 feet in width, leaving a like thickness for pillar. These are drawn back as soon as the room has been driven up the required distance. Thus they reclaim all the coal. The value of which is more thoroughly appreciated than in the coal fields of Ohio. The coal, on being removed from the mine is dumped into large bins, from the bottom of which it is drawn into larries holding about 140 bushels. It is then taken to the ovens. These as a rule hold 6 tons of coal and produce from 4 to 4½ tons of coke every 36 hours. It is generally estimated in the region that 1½ tons of coal will produce one ton of coke. The mines that were visited are ventilated by fans ranging in diameter from 15 to 25 feet. In ventilating the mines the air currents are subdivided a number of times, the flow in each current being controlled by regulators, and the current kept constant by the use of overcasts. Mr. King at Leisenring No. 3 has designed one of iron which can readily be taken down and moved to another point. Another noticeable feature was the use of lime and whitewash on the partings, in manways, lodge rooms, and in some instances the roof of the entry was given a coat, all of which contributes to give the mine a neat appearance, at the same time sweetening the air. On the whole much greater attention is given toward making the surroundings inviting than in the mines of the State of Ohio.

The Hon. W. B. Hearn, of The Cadiz Republican, accompanied the party. His account of the trip is here given with a view of illustrating the light from which a newspaper editor viewed the great coke industry.