LONG before Colonel Edwin L. Drake drilled his famous well in Titusville in 1859, people living in northwestern Pennsylvania were familiar with petroleum and used it. As white settlers moved into the region and located along Oil Creek, which ran between what is now Titusville and Oil City, they began collecting petroleum from little springs either in the bank or in the actual bed of the stream; or, making an excavation in the low marshy ground, which immediately filled with water and oil, they skimmed off the oil. Whenever they found a spring in the bed of Oil Creek, they constructed a dam of loose stones a little higher than the surface of the water, ten to fifteen feet in diameter, around the place where the oil bubbled up. An eddy was thus created inside the wall which confined the floating oil, while the water flowed out freely between the loose stones. The oil was allowed to accumulate for

1 Read at a meeting of the Historical Society of Western Pennsylvania on March 25, 1941. Dr. Giddens is professor of history and political science in Allegheny College, Meadville, Pennsylvania, and author of The Birth of the Oil Industry (New York, 1938). Ed.

2 The early methods used to collect oil are described in the following: The Derrick's Hand-Book of Petroleum; a Complete Chronological and Statistical Review of Petroleum Developments from 1859 to 1899, 1:6 (Oil City, Pa., 1898); Fortescue Cuming, Sketches of a Tour to the Western Country, through the States of Ohio and Kentucky; a Voyage down the Ohio and Mississippi Rivers, and a Trip through the Mississippi Territory, and Part of West Florida, 84 (Pittsburgh, 1810).
several days, until it became an inch or more deep, when a piece of flannel or woolen cloth or a blanket was spread over the surface to absorb the oil; then it was wrung out by hand into a barrel or some other container. In this way a gallon and sometimes several gallons could be collected in a day. The output of most of the springs, however, was insufficient to warrant collecting it as a business.

The spring which yielded the greatest amount of oil and to which most of the eighteenth and early nineteenth observers refer was located in the middle of Oil Creek on the Hamilton McClintock farm about three miles above what is now Oil City. From it twenty to thirty barrels of pure oil could be obtained in a season.  

The inhabitants valued and used it exclusively as medicine. They found it beneficial and an infallible cure for headaches, toothache, sore breasts, rheumatism, lung diseases, constipation, cuts, burns, bruises, and all human ailments. Almost every family in the region kept a small supply of Seneca oil, as it was called, for emergencies; for ordinary purposes a pint bottle would last a year.

Possessing more enterprise and initiative than his neighbors, Nathaniel Carey, one of the first settlers on Oil Creek, often collected or purchased oil and peddled it about the country. Carey is said to have introduced petroleum into Pittsburgh, seventy or eighty miles distant, about 1790. His shipment consisted of two five-gallon kegs that were slung on each side of a horse. In exchange for oil, he secured the necessary provisions for his family. Later, raftsmen would bring a barrel or two down the Allegheny on a raft of lumber or logs; but the introduction of so much oil at one time literally flooded the market. A traveler in 1807 found that petroleum was selling at $1.50 and $2.00 a gallon in the Pittsburgh market. Some time ago the Historical Society of Western Pennsylvania acquired an interesting and important sketch of a scene on Oil Creek in

3 Thomas Ashe, Travels in America Performed in 1806, for the Purpose of Exploring the Rivers Alleghany, Monongahela, Ohio, and Mississippi, and Ascertaining the Product and Condition of Their Banks and Vicinity, 46 (London, 1808).
4 Thaddeus M. Harris, The Journal of a Tour into the Territory Northwest of the Alleghany Mountains, Made in the Spring of the Year 1803, 46 (Boston, 1805); Cuming, Sketches, 84.
5 Derrick's Hand-Book, 1:91; John E. Reynolds, In French Creek Valley, 72–73 (Meadville, Pa., 1938).
1810; the drawing is by J. Frank Waldo. In the background there is a log cabin and over to the left are some Indian huts. In the foreground there is a log raft on which are three hollowed-out logs and into these a Mr. Roy and his friend are pouring oil gathered from a near-by oil spring along Oil Creek; they are preparing to take it to Pittsburgh for sale. It is a valuable piece of evidence in the history of the early traffic in petroleum to Pittsburgh. By 1828 enough was known about petroleum to cause someone to advocate in a Pittsburgh newspaper that the city light the streets with it; the writer pointed out that the price was low; it could be collected with scarcely any labor; and it was running to waste on Oil Creek. Nothing came of the suggestion, however, and Pittsburgh continued to regard petroleum as an ointment.

Petroleum was first placed on the market as an illuminating material through the efforts of Samuel Kier of Pittsburgh. For years the salt wells of his father near Tarentum, on the Allegheny River about twenty miles above Pittsburgh, had yielded a small amount of petroleum. About 1846, however, his father drilled a salt well in which oil appeared in a greater quantity. Lewis Peterson, Jr., who managed his father's wells near the Kier wells, experienced the same trouble. In fact, more oil came from Peterson's wells than from Kier's. It was an unwelcome substance, a source of great annoyance, and it is said that Peterson offered a reward to anyone who could utilize it. Without any knowledge as to how it might be used, they allowed it to run off either into the old Pennsylvania Canal or onto the ground.

One day Peterson took a sample of the oil to the Hope Cotton Factory in Pittsburgh, and, by experimentation, the proprietor found it to be a better and cheaper lubricant for the finest cotton spindles than the best sperm oil. As a result, Peterson agreed to furnish two barrels a week, and for the next few years, the factory used the oil, unknown to anyone save the proprietor.

About 1849 Samuel Kier conceived the idea of bottling and selling the oil from his father's wells as medicine. According to the story, his wife had been ill with consumption and her physician prescribed "Ameri-


can Oil,” which seemed to help her. Kier compared it with the oil obtained from his father’s salt wells, and, inasmuch as they possessed the same odor, he concluded that they were identical. This experience and a knowledge of its long usage in western Pennsylvania led Kier to open an establishment in Pittsburgh where the oil was put up in half-pint bottles and wrapped in a descriptive circular telling of the wonderful curative properties of “Kier’s Petroleum, or Rock Oil.” Through agents, who traveled over the country, it was offered to the public. Despite the low price, Kier could not dispose of the two or three barrels produced by the wells; so he withdrew the salesmen and sold the oil through druggists. With a decline in sales and a supply of oil which exceeded the demand, Kier concluded that something leading toward a more general utilization of the oil must be done.

Having burned the crude oil at the Tarentum wells, Kier believed he might use the surplus if only some method could be found to eliminate the smoke and odor. He sent a man to England to learn the method of refining coal oil, but his agent returned empty-handed, for the British had covered up their operations so well that no idea of the process could be obtained. Samples of the oil were then submitted to J. C. Booth, a prominent chemist in Philadelphia, who, after an analysis, recommended that Kier offer the oil to a New York gutta-percha firm, which was seeking a proper solvent for this gum. Kier followed the advice, but the experiments proved unsatisfactory. Upon further reflection, Booth became convinced that by distilling the oil he could obtain an excellent illuminant. He furnished drawings, and Kier immediately erected a refinery containing a one-barrel still on Seventh Avenue above Grant Street in Pittsburgh. After much experimentation Kier devised a crude distillation process, and about 1850 he began to distill petroleum, becoming America’s pioneer oil refiner and industrialist. He named the new product “carbon oil,” and sold it for $1.50 a gallon.

Without a suitable lamp in which to burn carbon oil, Kier is reported to have offered $1,000 for a new one that would successfully burn his


illuminant; but none appeared. He therefore made some slight changes in the existing camphine lamps, so that they would burn his product without smoking and give off a strong and brilliant light. Since it was better and cheaper than existing illuminants, carbon oil soon came into general use in many places in western Pennsylvania, and Kier had to install a five-barrel still in order to supply the demand.

Afraid of explosion and fire, residents in the vicinity of the refinery complained to the authorities, and the city council gave Kier notice to move his refinery outside the city. Moving to Lawrenceville, a suburb of Pittsburgh, Kier continued his improvements in the quality of the oil and in the adaptability of the lamps. Subsequently he perfected but did not patent a four-pronged burner to fit any lamp, and it produced a steady flame with his oil; but the disagreeable odor still remained.

One day in 1857, A. C. Ferris, a New York business man, while visiting the drug store of Nevin, MacKeown & Company in Pittsburgh, saw in the basement a tin lamp burning carbon oil, which the firm of MacKeown & Finley had been distilling on a small scale from the Tarentum wells. Impressed by its possibilities, Ferris arranged to have MacKeown & Finley supply him with about 2,000 barrels of oil a year. His attention having been called to the fact that Kier distilled petroleum, Ferris also purchased and received a shipment from him in March, 1858. Upon testing it, Ferris wrote that “it is not as good and saleable a color as MacKeown and Finley’s, being a deep blue.” Furthermore, it had a very obnoxious odor. “In almost every instance where we have sold it,” Ferris wrote Kier, “we have had complaint of it, and a good deal of it returned upon our hands with expenses.” In order to improve the smell, Ferris advised Kier to run his hot oil into a cistern, allow it to cool, and expose it to the air. Ferris bought one hundred additional barrels from Kier during the spring, but the oil continued to be so unsatisfactory that no further purchases were made.

Ferris proceeded, with considerable effort and much expense, to experiment; he devised a lamp that would satisfactorily burn carbon oil; he refined the oil and improved its quality; he developed the market in

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10 Pittsburgh Dispatch, August 7, 1892.
New York; and soon this improved quality of illuminating oil from petroleum outran the sources of supply. The price jumped from 75¢ a gallon to $1.50 and then to $2, a price so high that it furnished an incentive to find petroleum, if possible, in greater quantities. Charles Lockhart of Pittsburgh and a friend in Tarentum formed a partnership in 1853, bought a salt well across the river from Tarentum that was producing petroleum, and sold the oil to Kier. Lewis Peterson, Jr., likewise concluded that he would improve the opportunity for getting oil. He and a friend decided to buy a salt well on the Humes farm not far from the Petersons’ property. The entire product from this well was sent to Baltimore for use at the carding mills. The income of Peterson and his friend from this well for 1858 was said to be about $10,000. All efforts to increase the supply of petroleum, however, met with indifferent success until Colonel Drake drilled his famous well at Titusville in August, 1859.

The significance of Drake’s discovery was that he had demonstrated in a practical way how petroleum could be secured in greater abundance, and his well served as a textbook for future drillers; he had tapped vast subterranean deposits of petroleum in the great basin of Oil Creek; and he was responsible for the establishment of a new industry which provided the world with a cheap, safe, and efficient illuminant. Not only that, but on the eve of a mighty industrial expansion, Drake had opened up a source of unexcelled lubricating oil, an item of utmost importance to the Machine Age. Neither Drake or anyone else at the time seemed to understand the importance of this historic event. Even newspaper editors failed to grasp the significance of what Drake had done. The New York Tribune did not mention the affair until September 13, 1859, and then it simply printed a short communication from a Titusville correspondent. The old Crawford Journal at Meadville, Pennsylvania, was the first newspaper in the oil region to report the strike. Buried away among local items on the inside page, without a caption, the paper carried, on the same day as the New York Tribune, a few lines about the event destined to be of supreme importance to the world. It was not until September 30 that any Pittsburgh newspaper mentioned the strike, and

12 Brooklyn Daily Eagle, November 6, 1881; Derrick’s Hand-Book, 1:1012-1020.
then the *Pittsburgh Gazette* printed a long letter from Titusville describing the well; about a month later the *Pittsburgh Post* devoted a few lines to the excitement created by Drake's well.

Within twenty-four hours after Drake struck oil, hundreds of people were milling around the well. An eyewitness wrote that the excitement in the succeeding days was fully equal to what he had seen in California at the time of the gold rush; everyone was wild to lease or buy land at any price and drill a well.\(^9\)

In the midst of all the excitement Drake made strenuous efforts to market his rich supply of oil. He immediately got in touch with S. M. Kier and W. MacKeown and started shipping them oil in September, 1859. A month later, Drake contracted with Kier to supply him with such quantities as he desired at sixty cents a gallon delivered in Pittsburgh.\(^14\) Kier promised to sell the oil in preference to any other that should come onto the market, but in case any other appeared in such quantities as to depreciate the value of Drake’s, the price paid by Kier was to be reduced. Under this arrangement, Drake shipped Kier almost $3,500 worth of oil from September, 1859, to January 1, 1860, and for the same period he shipped over $5,000 worth to MacKeown, with whom he had made similar arrangements.\(^15\)

In order to introduce his product and solicit other orders, Drake made a trip in February, 1860, to Erie, Chicago, Cincinnati, and Pittsburgh; but he found petroleum difficult to sell. While in Pittsburgh at the Scott House, Drake happened to meet George M. Mowbray, a chemist associated with Schieffelin Brothers & Company of New York. The meeting was fortunate, for Drake wanted to get his product on the market and Mowbray knew the value of petroleum. Once these two men had been introduced, they started a parley that did not break up until four o'clock in the morning. As a result of the two men consuming almost an entire box of choice Havanas during their conversation, they made an agreement for the marketing of oil. In connection with this effort to create a market for oil, it is important to point out that Charles Lockhart


\(^15\) Ledger of the Seneca Oil Company, Townsend Papers, Drake Museum.
of Pittsburgh, carrying samples of crude and refined oil, went abroad in May, 1860, and was the first to call the attention of Europeans to the value of petroleum.\(^{16}\)

In the meantime, salt manufacturers from Tarentum and capitalists from Pittsburgh had arrived in the oil region, and, like hundreds of others, were eager to invest in land and drill wells. One of the most important transactions in 1859 was the purchase of the Story farm, a few miles above Oil City, by a group of Pittsburghers; the farm, consisting of nearly five hundred acres, sold for $40,000. The owners, in turn, leased lots to different persons and soon had some producing wells. Discouraged by the low price of oil, they decided to change into a joint stock company and organized the Columbia Oil Company in May, 1861, with a capital of $200,000, divided into 10,000 shares.\(^{17}\) Andrew Carnegie was one of the heaviest stockholders, and the subsequent dividends from oil helped him to erect his new steel mills. Persuaded by his good friend, William Coleman, Carnegie accompanied him on a trip to the farm about 1862, and had a "most interesting excursion." The influx of people was so great that it was impossible for them to obtain ordinary shelter; they put up in a shanty and lived comfortably. Of those who came into the oil region, Carnegie said:

They were men above the average, men who had saved considerable sums and were able to venture something in the search of fortune. What surprised me was the good humor which prevailed everywhere. It was a vast picnic, full of amusing incidents. Everybody was in high glee; fortunes were supposedly within reach; everything was booming. On the tops of the derricks floated flags on which strange mottoes were displayed. I remember looking down toward the river and seeing two men working their treadles boring for oil upon the banks of the stream, and inscribed upon their flag was "Hell or China." They were going down, no matter how far.

The adaptability of the American was never better displayed than in this region. Order was soon evolved out of chaos. When we visited the place not long after we were serenaded by a brass band the players of which were made up of the new inhabitants along the creek. It would be safe to wager that a thousand Americans in a new land would organize themselves, establish schools, churches, newspapers, and brass bands—in short, provide themselves with all

\(^{16}\) *Titusville Morning Herald* (Titusville, Pa.), February 20, 1871; *Derrick's Handbook*, 1:991.

\(^{17}\) *Pittsburgh Evening Chronicle*, December 28, 1864; *Crawford Journal* (Meadville, Pa.), December 15, 1863; *Titusville Morning Herald*, August 1, 1868.
the appliances of civilization—and go ahead developing their country before an equal number of British would have discovered who among them was the highest in hereditary rank and had the best claims to leadership owing to his grandfather. There is but one rule among Americans—the tools to those who can use them.”

While at the farm, Coleman proposed to make a lake of oil by excavating a pool sufficient to hold 100,000 barrels, the waste to be made good every day by running streams of oil into it, and to hold it for the not far distant day when, as Coleman and Carnegie fully expected, the oil supply would cease. Coleman predicted that when the supply stopped, oil would bring $10 a barrel and then they would have $1,000,000 in the lake reserve. The suggestion was promptly acted upon, and after losing many thousands of barrels of oil waiting for the expected day, the reserve was abandoned owing to the seeming inexhaustibility of Mother Nature’s supply of oil.

The Columbia farm was one of the most beautiful and attractive places in the entire oil region. Under the direction of its superintendent, George Bolton, a model community, situated on a hillside, with neat and substantial dwellings for the workmen, had been developed. It was the show place of the oil region.

The development of the petroleum industry not only provided Pittsburgh capitalists with a new outlet, but, since Pittsburgh possessed marked advantages over other cities, it became the earliest important distributing and refining center. It had an abundance of labor, chemicals, cheap coal, large banking and credit facilities, and cheap transportation from the oil field by way of Oil Creek and the Allegheny River. Oil could be floated down stream for much less than the cost of freight by rail. It also had a favorable position with respect to the three great markets; refined oil could be shipped over the Pennsylvania Railroad to Philadelphia for the eastern trade; it could be shipped down the Ohio for the western trade; and it could be shipped south by water and rail. For a few years, therefore, Pittsburgh reigned supreme as the center of the oil trade. This was a most fortunate development for the city, for at the outbreak of the Civil War, the gloom of uncertainty disrupted and paralyzed all branches of trade and industry in Pittsburgh; mechanics

and laborers were thrown out of work; the iron and glass trade, which gave employment to thousands, languished; and the cotton factories, of vital importance to the city, stopped work. Business stagnation prevailed. And then along came the oil trade, which created new occupational groups, stimulated various branches of industry, and gave employment to all kinds of laborers.

The facilities for shipping oil from Oil Creek prior to 1862 were crude and inadequate, except when the water in Oil Creek was high enough to permit flatboating. Highwater stages averaged less than six months a year, and during the rest of the time oil had to be hauled to different shipping points. The nearest railroad stations to Titusville and the oil region in 1860 were Corry, Union Mills, and Garland, about twenty to twenty-five miles to the north. The Philadelphia & Erie Railroad, now the Pennsylvania, served all of these towns and connected them with the seaboard. The Atlantic & Great Western Railroad, now a part of the Erie system, whose tracks crossed the Philadelphia & Erie at Corry, also provided direct service to the eastern markets. Prior to 1862, about 6,000 teams were regularly engaged in hauling oil to these shipping points.

The only alternative to this expensive and slow method of transporting oil was the pond freshet, which lumbermen had used for years to raft logs down Oil Creek when the water was too low to permit navigation. To create the pond freshet there were at least seventeen sawmills with dams on the principal branches of Oil Creek, some of which were as much as ten miles above Titusville. Through a system of floodgates, the water could be held until a sufficient quantity had backed up; then it was let loose, thereby making a stage of water below sufficient to float logs down the creek. After the pond freshet passed, the cuts in the dams were closed, the water collected, and the mills resumed sawing and grinding until the next one. Because it was cheaper and quicker, though fully as hazardous as or more so than teaming, the oil men appropriated the idea of a pond freshet and usually carried their oil twice a week down the creek to Oil City.

19 *Pittsburgh Post*, August 27, 1863.
21 *Warren Mail* (Warren, Pa.), January 24, 1863; *Titusville Gazette and Oil Creek Reporter*, June 26, 1862.
A pond freshet afforded a most unusual sight, for there were from 150 to 200 flatboats, little and big, loaded with 10,000, 20,000, or 30,000 barrels of oil, either barreled or in bulk, floating along endways and sideways on a rushing flood and wildly fighting their way down Oil Creek, which was only twelve rods wide and very crooked as it wound its way through steep hills. It required all the skill and strength of some 500 boatmen to avoid collisions with other boats, rocks, and other obstructions. If the boats successfully passed these obstacles, they soon reached Oil City, where Oil Creek emptied into the Allegheny River. Usually the morning after a pond freshet the boatmen started to Pittsburgh with the oil in the same boats, or else they transferred it to larger and stronger barges, which quickly came into use on the river after the discovery of large quantities of oil.

As early as April, 1860, the steamer "Venango" carried the first load of petroleum to Pittsburgh, and within two years there were fifteen steamboats and towboats plying between Oil City and Pittsburgh, each having an average capacity of about 800 barrels. There were also about 100 flatboats engaged in the trade. The steamboats averaged about three trips a week when the river was in good navigating condition and the towboats two. It took three to four days to make the trip. The freight charges from Oil City to Pittsburgh ran from 25¢ to $3 a barrel; they depended upon the weather, the stage of water, the demand for oil, and whether oil was transported by steamer or bulk boat.

Early in the fall of 1861, Jacob Jay Vandergrift of Pittsburgh towed two large coal boats with 4,000 empty barrels to Oil City with his steamer, the "Red Fox." While delivering the barrels, Vandergrift bought 5,000 barrels of oil for future delivery; he returned home and formed a connection with Daniel Bushnell. As the two partners were trying to figure out a way to get the oil to Pittsburgh, the first boat to carry oil in bulk arrived from Oil City on October 30, 1861. Invented and patented by Richard Glyde of Pittsburgh, the flatboat carried over 160 barrels in bulk. Oil had been pumped directly from the wells into

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22 Creasford Journal, April 29, 1862; Warren Mail, April 19, 1862; Venango Spectator (Franklin, Pa.), April 11, 1860; Pittsburgh Gazette and Commercial Journal, April 15, 1862.


24 Pittsburgh Post, October 31, 1861. According to a notice in the Pittsburgh Gazette
the boat and thus the use of barrels had been eliminated; this innovation was destined to save well owners and dealers thousands of dollars. After inspecting this boat at Allegheny City, Vandergrift and Bushnell believed that this would be a cheap and feasible means for transporting oil; so they contracted with a boat builder to build twelve boats, eighty feet long, fourteen feet wide, and three feet deep, each with a capacity of 400 barrels. Upon their completion in the spring of 1862, Vandergrift and his partner inaugurated a highly profitable bulk-boat business.

Within a short time, Captain Vandergrift began buying interests in oil wells up Oil Creek. Since Mr. Bushnell preferred the less hazardous business of transportation, the two dissolved the partnership, and Vandergrift took up his residence at Oil City. Associated with W. H. Ewing of Pittsburgh, Vandergrift formed one or two companies for producing oil, and had moderate success. His interest now turned, however, to railroads and pipe lines.\(^{25}\) As a partner of George V. Forman, Vandergrift equipped and began operating a line of tank cars, "The Star Line," carrying oil from Pithole to Oil City. In order to secure business for the Oil City & Pithole Railroad, in which Vandergrift was a heavy stockholder, the two partners laid a pipe line from West Pithole to Pithole—four miles. This line, named "The Star Pipe Line," was the beginning of the great system which now operates under the name, National Transit Company.

The importance of the oil trade to Pittsburgh was early realized by some, for on August 23, 1860, the editor of the Pittsburgh Gazette wrote, "If the flow of oil continues in the wells that are now producing, Pittsburgh ought shortly to become one of the most important oil marts of the world—a thing that could hardly have been conjectured a short time ago." In the fall of 1860 and the spring of 1861, from 700 to 1,300 barrels of crude oil arrived daily at the Allegheny wharf. By the end of 1861, the oil trade began to assume boom proportions; thousands of barrels of oil could be seen upon the Allegheny wharf; the wharf was completely lined with bulk boats and flatboats; and an unbroken line of

\(^{and\ Commercial\ Journal,\ February\ 14,\ 1862,\ Glyde\ expected\ all\ persons\ shipping\ in\ bulk\ to\ pay\ him\ a\ percentage\ because\ he\ had\ patented\ this\ method\ of\ carrying\ oil.\)

\(^{25}\) Derrick's Hand-Book, 1:646.
barrels extended from Pitt Street to about midway between the old aqueduct and Mechanic's Street bridge. During 1862, 219,718 barrels of oil were brought to the wharf, 344,540 barrels in 1864, and 411,570 barrels in 1865, or about one half of all the crude oil from the Venango oil region. It was estimated in 1865 that the annual value of the oil brought to Pittsburgh amounted to $4,000,000. "Pittsburgh," according to one observer in 1865, "which used to be the Iron City, thinks now of little else than petroleum. Barrels of it swarm everywhere. . . . She has become one of the great distributing depots for the trade."

With the growth of the petroleum trade, buyers and sellers of oil became interested in establishing an exchange where producers, refiners, and dealers could meet, exchange news, hear reports of stock, of arrivals here and in the east, of shipments to Europe, of prices at Titusville and Oil City, and of the true condition of the supply and demand. The fluctuations in the market price during 1862 had such a ruinous effect upon the oil trade that in January, 1863, a group of oil men met at the office of Henry Harley for the purpose of organizing such an association. Josiah King was elected president, Captain W. H. Byram, vice president, and Robert Schmertz, treasurer. At a subsequent meeting on February 2, a constitution and by-laws were adopted; the organization accepted the offer of the Pittsburgh Board of Trade to meet in its rooms free of rent until July 1; and thus the Pittsburgh Oil Exchange came into existence. So far as the writer is able to determine, this was the first oil exchange in the world. Every day from eleven to one those engaged in the trade congregated at the Board of Trade where they bought and sold oil. "This institution," according to the editor of the Pittsburgh Post, was destined "at no very distant date to become one of the most prominent features of our city."

While the city enjoyed the profits from an immense trade in petroleum, it could not and did not escape the dangers involved in handling such an inflammable commodity. On July 30, 1861, Pittsburgh experienced its first fire due to petroleum; it was the most destructive con-

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26 Pittsburgh Post, December 18, 1861, February 18, 1863; Ordinances of the Select and Common Councils of the City of Pittsburgh, 1864, 47, 1865, 36; Pittsburgh Evening Chronicle, January 13, 1865, March 1, 1866.

27 Pittsburgh Post, January 15, 21, 31, February 3, 6, 9, May 12, 1863.
flagration the city had seen in years. Late in the afternoon four men, employed by the Cornplanter Oil Company, were assisting the city gauger in measuring some 2,500 barrels of oil in the basement of the Duquesne freight house on Liberty Street. Someone lit a gas burner and carelessly threw down the match, which ignited the gas and the fire was quickly communicated to the petroleum. Within five minutes the flames burst forth furiously, spread to every part of the immense building, and within a half-hour the entire depot, all of the oil and barrels, $10,000 worth of sugar, coffee, and dry goods, and ten freight cars had been consumed. The fire spread to small tenements on Exchange Alley and thence to dwellings on Penn Street. The aggregate loss amounted to $160,000.

The fire caused more anxiety in the community than anything ever had, for thousands of barrels of oil were stored in the city in houses, sheds, open lots, and cellars. Several hundred citizens, therefore, signed a petition asking the city council to take action to protect life and property. No ordinance was passed, however, until February, 1862, when the city made it unlawful to bring into Pittsburgh “Petroleum, Carbon Oil, Coal Oil in bulk, or other wise than in barrels” or similar vessels.

Moreover, the city prohibited the landing of any crude petroleum or carbon oil on the Monongahela wharf between Ferry Street and the Monongahela bridge. Agitation for legislation against storing oil within the city continued, so that in February, 1863, a special committee of the city council met with a committee of oil men to consider the problem. The oil men made an elaborate report upon the extent of the oil business in the city, admitted the necessity of some regulation regarding the storage of oil, and suggested that the ground on the Allegheny wharf between the St. Clair Street bridge and the Point be reserved for the use of the oil trade. On the other hand, the special committee believed that the trade should be removed from the city and suggested a depot beyond the limits of the Ninth Ward, but the oil men objected to the additional expense involved in handling and hauling oil. Afraid that such legislation would reduce, if not drive away, the oil trade, the council failed to take any action.

28 Pittsburgh Post, July 31, 1861.
29 Pittsburgh, Ordinances, 1862, 20.
Within a month or six weeks, the whole controversy was revived by a second fire, which broke out among some barrels of crude oil lying at the Allegheny wharf near the end of Marbury Street. It spread rapidly because the burning oil flowed down the river setting fire to bulk boats full of oil on both sides of the river from Marbury Street to the Point. Frantically, firemen and citizens began rolling barrels on the wharf into the river in order to save the buildings along the water front, but some person who had an interest in the oil pulled a gun and threatened to shoot the next person who moved a barrel. The fire spread to some tenements on Croghan Street and over twenty-two families lost everything.

The morning after the fire, citizens at the Point, in a state of feverish excitement, not only declared that they would not allow any more oil to be landed there, but actually cut loose from the wharf a pair of bulk boats which had come down subsequent to the fire. That night the city council met and the general sentiment was that something must be done or else the lower portion of the city would some day be completely destroyed by fire. The council, therefore, passed a resolution requiring the mayor and wharfmaster to enforce, strictly and promptly, the ordinance prohibiting the landing of oil in bulk within the city limits. Furthermore, the council directed the city solicitor to prepare an ordinance against the landing and storing of crude oil within the city, but no ordinance to this effect was passed.

The possible danger from fires starting in refineries had been greatly reduced, for in March, 1861, the city prohibited the "manufacturing, refining, clarifying, or deodorizing of coal oil, carbon or rock oil" within its limits. Therefore, the refineries were forced to locate in the suburbs.

The refining of crude oil was necessary before it could be extensively utilized. The chief difficulty everywhere in trying to sell petroleum had been its disagreeable odor, the impurities in the oil, and its dark, muddy color; it needed to be deodorized, decolored and purified, but in 1859 there were no petroleum refineries, except the small ones of Kier, Mackeown, and Ferris. Soon after the completion of the Drake well, however, refineries sprang up like mushrooms all along Oil Creek, the Alle-
The Allegheny River, at Union Mills, Corry, Erie, and Titusville. In 1859, there was only one refinery in Pittsburgh, and it was capable of refining only fifty barrels a week.

At the end of 1861, Pittsburgh had about thirty-five refineries in operation. "This trade," the Pittsburgh Post noted on December 18, 1861, "will ere long be a leading feature in our city and we should take every means to promote and encourage it." The largest dealer in refined oil at the time was S. M. Kier, and the quality of his carbon oil had steadily improved. According to the Pittsburgh Post, "The specimen of Premium No. 1 Carbon Oil we saw is beautiful; equal to anything we have ever seen, and far superior to most. Was almost as limpid as water, and has been deprived of the disagreeable odor usually distinguishable in carbon oil. It is exactly what it purports, a No. 1 article, and must find a ready sale."\(^{12}\)

The refining business continued to grow and by the summer of 1862, it was challenging the supremacy of Pittsburgh's iron and glass business. At the time, the best refinery in Pittsburgh, and perhaps in the United States, was the Brilliant Oil Works of Lockhart and Frew on the Allegheny River at the mouth of Negley's Run. Tanks, warehouses, dwellings, and refinery covered from four to five acres. Built of stone, with an iron roof, the refinery had every modern improvement and its refining capacity was 1,200 barrels a week. Other refineries lined the bank of the Allegheny from the ninth ward to Sharpsburg and for miles above. In 1865, Pittsburgh had a larger number of refineries than any other city, and some of the plants were the largest in the world. There were 58 refineries valued at $2,533,000; they refined annually 716,500 barrels of oil, employed 700 workmen, and had a pay roll that amounted to at least $500,000 a year.\(^{13}\) It was estimated that the entire petroleum trade, refined and crude, was now worth about $12,000,000 a year to Pittsburgh.

As the oil business developed in Pittsburgh, it provided a stimulus to all other branches of industry; coopers worked to capacity; the rolling

\(^{12}\) Pittsburgh Post, January 30, 1861.

\(^{13}\) Pittsburgh Gazette and Commercial Journal, July 29, 1862; Pittsburgh Evening Chronicle, February 6, April 10, 1865.
mills found a market for an immense amount of hoop iron; tanners made five- and ten-gallon cans for export; chemical laboratories ran to capacity in producing acid and alkali; machinists had more orders for steam engines and boilers than they could handle; coal dealers prospered because refiners were using huge quantities of coal; hotel keepers had a "full house" every night; the value of every kind of property increased; and many new and valuable buildings were erected. The glass manufacturers benefited largely from the trade in manufacturing lamps, globes, and chimneys; some plants were turning out four to five thousand lamps a week. In fact, the entire city, directly and indirectly, was engaged in the oil business.

The oil business also proved to be a source of considerable revenue for the city of Pittsburgh, for in October, 1861, the city levied a charge of one cent a barrel on all petroleum, carbon oil, or coal oil landed or placed on the Allegheny wharf, if it remained on the wharf longer than twenty-four hours and less than forty-eight; a half-cent a barrel was charged for each additional day thereafter. The rate was changed in February, 1862, to one cent a barrel for the first forty-eight hours and two cents for every twenty-four hours thereafter. In January, 1864, the city raised these rates one hundred percent. Finally, the rate was completely revised in the summer of 1865 so that it was two cents a barrel for the first three days, five cents for the fourth twenty-four hours, and ten for the fifth twenty-four. The ordinance also prohibited the keeping of barrels on the wharf longer than five days from the time of landing. As a result of this legislation, the city revenue from the Allegheny wharf jumped from $2,701.15 in 1860 to $18,602.74 in 1865. The growth of the oil business had been so great that the revenue derived from the Allegheny wharf in 1865 was only slightly below that of the Monongahela wharf, which had long been a source of revenue to the city. In addition to the funds secured from the Allegheny wharf Pittsburgh derived an income from every barrel of oil measured in the city by the city gauger; this revenue jumped from $2,249.24 in 1860 to $12,137.59 in 1865. In other words, the city of
Pittsburgh derived a total revenue of $30,840.33 from the oil business in 1865, or one-twentieth of all the city's revenue.  

This story of the rise of the petroleum industry in Pittsburgh ends with the wild and unprecedented era of speculation in oil lands and oil stocks that began in 1864 and affected the entire nation. The greater demands for petroleum, the magical flowing wells along Oil Creek, and the increasing confidence in the petroleum industry as a permanent thing materially aided in developing the boom, but a number of events occurring in 1864 speeded the movement toward a climax. One of the most important factors was the marked improvement in the price of oil. From $3 to $4 a barrel at the wells in January, 1864, the price steadily rose to $13.75 in July, the highest since 1860. This encouraged the drilling of new wells in old territory and "wildcatting" in the new. Secondly, the extraordinary career of John W. Steele, more familiarly known as "Coal Oil Johnny," called attention to the easy money-making possibilities in the oil region. Thirdly, the opening up of new territory further intensified the excitement. Little or no effort had been made prior to 1864 to drill anywhere except along Oil Creek. With so many producing wells on the creek and the supply exceeding the demand, operators had not found it necessary to seek any other locality. Furthermore, the early oil men had limited means and were reluctant to invest in lands other than those that had been tested and promised a return. But the striking of oil on Cherry Run, a small stream flowing into Oil Creek just above Oil City, in the summer of 1864 precipitated a mad scramble for land there. Lastly, the publicity relating to the huge profits derived by a few of the more successful oil companies acted as a powerful stimulant to the speculative movement. 

For example, the earnings of the Columbia Oil Company excited not only Pittsburghers but people everywhere; it was one of the most profitable of the early oil companies. During the last six months of 1863, the Columbia Oil Company paid its stockholders over $300,000 in a dividend amounting to more than $26 a share. On account

34 Pittsburgh, Ordinances, 1861, 18-19; 1862, 20; 1864, 44; 1865, 23. These volumes include the annual reports of the wharfmaster and of the city gauger.
of the extraordinary dividend, the stock of the company rapidly appreciated, and it was soon worth considerably more than par value on the market. To correct this situation, the capital stock was increased from $200,000 at $20 a share to $2,500,000 at $50 a share. In April, 1864, the company declared a dividend of $80,000, in May, $100,000, in June, $100,000. From its earnings for July, 1864, the company divided $100,000 among the stockholders and had 10,000 barrels of oil on hand, worth over $100,000; so it had made over $200,000 in one month!35 "We have just read the Third Annual Report of this pioneer and colossal corporation," said the editor of the *Pittsburgh Evening Chronicle* on January 30, 1865, "with the same feeling of interest and confidence that we ordinarily have in perusing State or National official documents . . . . The Report reads like a tale of enchantment. The company is the Aaron's rod which swallows all other rods, and those bewildered petroleumites who are inclined to doubt, wonder, or despond, have only to read over the Columbia's figures, take heart, and bore on."

Oil fever broke out in Pittsburgh during the summer of 1864; an extraordinary number of oil companies were organized and the demand for oil stock was great. "Indeed such is the rage for stocks of this character now here," wrote the editor of the *Pittsburgh Evening Chronicle* on August 26, 1864, "that sales are common in companies where the stock certificates have not yet been issued or the transfer books opened, and instances are not uncommon where stock has been sold at an advance of two hundred per cent before the company was organized." Stocks of such companies as the Lucesco, North American, Dazell, Allegheny & Pittsburgh, Iron City, Horse Neck, Stella, Federal, Whitley Creek, Acme, Fayette, and Story were in greatest demand. The Cherry Run and Pittsburgh Petroleum Company was so highly thought of that within three hours from the time the stock subscription books were opened on November 29 the entire amount of capital, $200,000, had been subscribed and scores of people who wanted stock were disappointed. The McClintock Farm & Oil City Company opened its books

35 *Crawford Journal*, December 15, 1863; *Pittsburgh Evening Chronicle*, December 28, 1864; *Oil City Register*, August 18, 1864.
at 10 A.M. on December 8, 1864, and by 1 P.M. $85,000 had been subscribed. "It is going off like hot cakes," exclaimed the editor of the *Pittsburgh Evening Chronicle*, "and it is not improbable that the books will close tonight." By the end of 1864, it was estimated that in the large cities of the United States over $326,000,000 had been invested in oil stocks; Philadelphia was first with $163,175,000, New York second with $134,045,000, and Pittsburgh third with $15,740,000.\textsuperscript{16}

As a result of the speculative craze in Pittsburgh, T. A. McClelland, an auctioneer, fitted up rooms in the Masonic Hall where buyers and sellers could congregate and each night he sold stocks at auction. There was always a large crowd present. Later, McClelland moved to Wilkins Hall and established the "People's Stock Exchange."\textsuperscript{17} Within a short time two other auction rooms were opened: Alex McIlwaine's, at 54 Fifth Street, and Charles A. Anderson's, at Central Hall, Dispatch Building. "These stock sales," according to the *Pittsburgh Evening Chronicle*, "are becoming an institution here, and the uninitiated would be surprised at the interest evinced in them."

The owner of the most important auction room and probably the "father of the modern oil stock exchange" was George A. Thurston.\textsuperscript{18} His exchange on Fourth Street was formally opened on November 11, 1864, and every night, though he charged twenty-five cents admission, the place was packed with excited buyers, sellers, and spectators; hundreds were turned away. The usual procedure was as follows: at eight o'clock Mr. Thurston would ascend the platform and take up a list of stocks for sale; he began at the top of the list and called out the name of a particular stock, repeating it twice, and then asked, "Are there any sellers?" Those in attendance having stock called out the quantity they desired to sell and the price wanted. Thus one man would cry out, "I will sell five hundred shares at $25." If the price was too high for buyers, there would be a pause, then someone would cry, "I will take 1,000 shares at $24.25." Another offered to take 500 at $24.25, and so on. Sometimes, however, the offer to sell would be immediately accepted.

\textsuperscript{16} *Pittsburgh Evening Chronicle*, November 29, December 8, 1864, January 16, 1865.
\textsuperscript{17} The rules according to which the People's Exchange was governed may be found in the *Pittsburgh Evening Chronicle*, March 2, 1865.
\textsuperscript{18} *Pittsburgh Evening Chronicle*, November 11, 12, 26, 30, 1864.
Thurston would then call for the names of the parties, which were given aloud, and were entered on the books. Thus everyone present knew precisely what each particular stock brought and sales were bona fide affairs. Occasionally a little incident would transpire to show that the sales were not altogether free from the influence of the "Bulls" and the "Bears." When parties wanted to run down a particular stock, they replied to the offers to sell by tendering ridiculously low prices, or by offering the stock themselves at a figure so far below what it ought to bring that nervous holders became frightened and they were glad to sell at any price.

The sales at Thurston's exchange on November 26, 1864, amounted to 23,657 shares. The stock greatest in demand was the Ritchie Oil Company, and although, the company had been organized only a few days before, its stock sold "like hot cakes." The public believed that it would pay seven percent a month, and some said ten. Sixteen thousand shares changed hands in one night and the buyers would have been willing to take more if more had been available. Stocks of Tarr, Story, and Cherry Run were also eagerly sought.

With the striking of the United States well on Pithole Creek in January, 1865, speculation increased tremendously everywhere, in the oil region and in the eastern financial centers. Attendance at the stock exchanges in Pittsburgh increased and bidding became more spirited than ever. Sales at the People's Exchange reached 18,000 to 20,000 shares an evening. Altogether seventy oil companies had been organized in Pittsburgh by March 1, 1865.39 To keep its readers fully informed about the latest developments, the Pittsburgh Post began running a special column in 1863 entitled "The Pittsburgh Oil Trade," and in 1865, the Pittsburgh Evening Chronicle did likewise, entitling its column, "The Oil Interest." Moreover, The Oil News and Mining Journal, a weekly published in Pittsburgh and devoted to the petroleum industry, made its appearance in 1865.

Even before the speculative boom had reached its peak late in 1865, many unseen forces, domestic and foreign, conspired to produce a severe depression throughout the oil region.40 As a result, hundreds of small wells were quickly abandoned in 1866, and the daily production fell off

39 Pittsburgh Evening Chronicle, March 1, 1865.
by half. The whole region was covered with abandoned derricks, and scores of small refineries began shutting down. A stagnation in business set in from which the oil field did not recover until after 1870.

Since it was completely dependent upon the Venango region, the petroleum business in Pittsburgh quickly declined. The sale of oil stock stopped; the stock exchanges either closed or opened only one or two nights a week. "If there was ever a time since the discovery of petroleum that oil stocks were flat," declared the Pittsburgh Evening Chronicle on April 10, 1865, "that time is just now." The amount of oil brought to the Allegheny wharf dropped from 411,570 barrels in 1865 to 753 in 1868. The revenue derived from using the Allegheny wharf fell from $18,602.74 in 1865 to $2,631.65 in 1869; and that derived from the city gauger fell from $12,137.59 in 1865 to $1,715.61 in 1868.

The oil region ultimately recovered from the depression, but Pittsburgh lost its supremacy as a refining center in 1866 to the neighboring city of Cleveland. The chief reason for Pittsburgh's loss of leadership in refining lay in the unfair discrimination by the Pennsylvania Railroad against the city.41 Started as a line from Harrisburg to Pittsburgh, the Pennsylvania was not connected with Philadelphia until 1858, when the first through train ran between Philadelphia and Pittsburgh. Even though it now had a direct rail connection with the seaboard, its lack of sufficient rolling stock to handle the freight caused long delays in shipments. As early as 1862 there was considerable agitation to revive the old canal in order to send oil to Philadelphia, but nothing came of it.42

In the succeeding year, a committee from the Pittsburgh Oil Exchange conferred with Pennsylvania Railroad officials to see if the latter could not offer better facilities for transporting oil. A public meeting of merchants and oil men was also held to hear Benjamin H. Latrobe, president of the Pittsburgh & Connellsville Railroad, and at the close of the meeting they adopted two resolutions; one urging Congressional aid

41 An excellent discussion of this question is to be found in Allan Nevins' John D. Rockefeller, 1:213–215, 282–287 (New York, 1940), and another in Rolland H. Maybee's Railroad Competition and the Oil Trade, 1855–1873, 232–238 (Mount Pleasant, Mich., 1940).
to complete the Pittsburgh & Connellsville, and another pointing out that facilities of the Pennsylvania were utterly inadequate to carry the freight.\footnote{Pittsburgh Post, February 21, 1863.}

Two years later, the Oil Exchange was still working on the problem. The Pennsylvania's indifference to Pittsburgh's oil business was primarily due to the fact that it wanted to haul the bulk of crude oil, not a short distance to Pittsburgh, but the long distance to Philadelphia and New York. It was not the branch line running north from Pittsburgh into the oil regions that interested Tom Scott, who was in charge of the Pennsylvania's traffic department. He did not care whether they carried any oil from the oil region to Pittsburgh. Instead, he was interested in the Philadelphia & Erie, a branch line of the Pennsylvania, which ran northwest from Philadelphia toward Erie. This railroad tapped the oil region at Corry, and there was stiff competition with the Erie and the Atlantic & Great Western to carry the oil to the seaboard. In order to compete, the Philadelphia & Erie was carrying refined oil from the oil region to Philadelphia as cheaply as from Pittsburgh, yet Pittsburgh was one hundred and fourteen miles nearer. In the second place, the Pennsylvania's indifference was due to the fact that it had acquired the Pittsburgh, Fort Wayne, and Chicago in 1869, giving the line a through route from Philadelphia to Chicago. This connection with the West provided the main line through Pittsburgh with all the freight it could carry, without adding oil shipments. Moreover, officers of the road willingly made low rates from Chicago in order to compete with other roads for the rich grain trade of the Mississippi Valley. On the other hand, Pittsburgh had to ship east over the Pennsylvania; it had no other outlet, and it had to pay the regular rates.

In August, 1867, refined oil shipments from Pittsburgh reached 80,000 barrels; this was the greatest shipment in Pittsburgh's history, no more than 50,000 barrels having been shipped in any other month. At that time, the Pennsylvania lowered its rate to about the same figure as the other roads. Immediately the other railroads lowered their rates, but the Pennsylvania's remained the same, and most of the refiners in Pittsburgh had to close. At the same time, the Erie and the New York Cen-
entral-Lake Shore System did their utmost to develop the oil business in Cleveland. Under the circumstances, John D. Rockefeller and other Cleveland refiners profited enormously from this situation, and Cleveland, with plenty of labor, capital, cheap coal, two railroads to the seashore, low uniform freight rates, and direct connections with the oil region, swiftly and surely forged ahead to become the greatest oil-refining center in the country.