



The Story of PITTSBURGH

Volume Number One

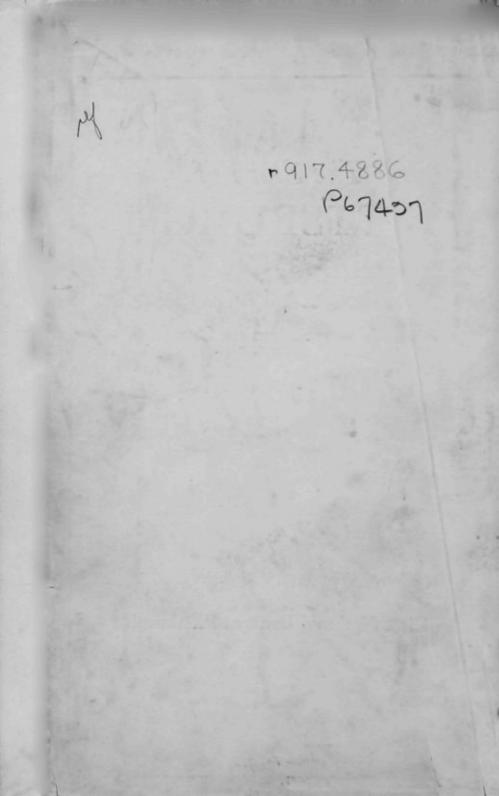
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First National Bank at Pittsburgh

August, 1919

PENNSYLVANIA DIVISION



An edition of 100 of which this is No._16 Presented to Carnegie Library Pittsburgh Pa. By Frank F. Brooks. 5603

This volume is a combination of a series of booklets published by the First National Bank at Pittsburgh, in exposition of our city's progress in business and culture.

It is fitting that this record be dedicated to the memory of the late beloved president of the First National Bank, Mr. Lawrence E. Sands, whose vision and work has made a very deep impression upon the general welfare of this community.

May we hope that this volume will be worthy of a place in your library, not only for your own pleasure and information, but also for any inspiration it may furnish for a future generation to maintain and enhance the fine traditions of the City of Pittsburgh, Pennsylvania.

> THE FIRST NATIONAL BANK AT PITTSBURGH, PITTSBURGH, PA.



Pittsburgh, Pennsylvania

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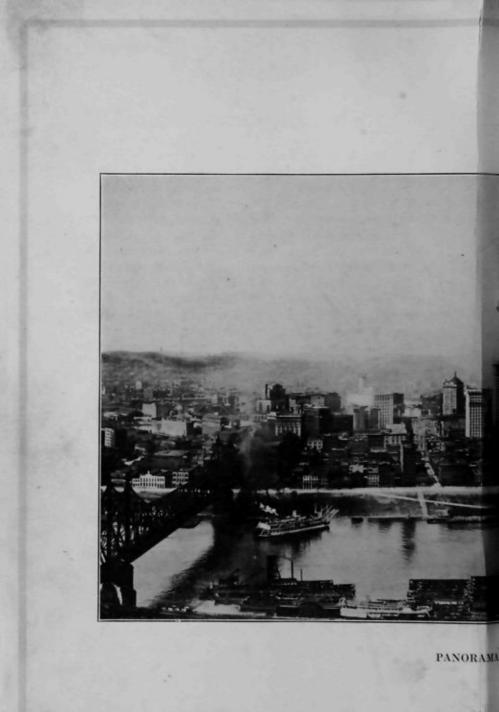
HIS is the first of a series of circulars which the First National Bank at Pittsburgh intends to issue with the intention of emphasizing the importance of this city as a commercial and financial metropolis. It is desired not only to speak of the past and present, but to take a look into the future, and to make that look an optimistic one. The world has just passed through the most destructive and the most portentous struggle in its history. The forces of evil and of reaction and of repression were signally defeated, and civilization was rescued from a fate which arbitrary despotism and irresponsible power had decreed for it. The future is in the hands of the victors, and if wise plans are followed, the world will be a better place to live in than it ever has been before.

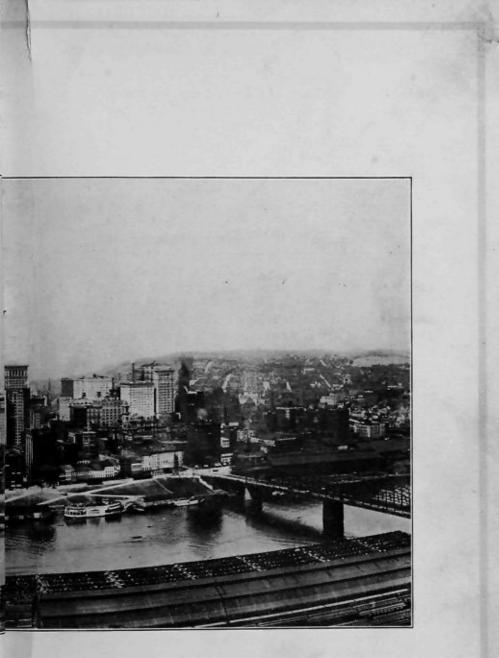
The part Pittsburgh played during the war was a most important one—in the production of munitions of war, and in the financial support of the United States Government. The part Pittsburgh will play in the future is no less important.

The abounding faith of Pittsburghers in their own city received convincing proof in the result of the bond election held on July 8, when numerous projects for the improvement and welfare of the city were all approved by the voters, not one of the propositions being defeated at the polls. The total issue voted was \$22,000,000, divided into 7 items, and one of which could be approved or disapproved without affecting any other. When the taxpayers are willing to spend money so lavishly on diverse projects, it is an incontrovertible sign that they thoroughly believe in their city.

The largest single item in this bond proposition was for \$6,000,000, for the purpose of building a subway in the downtown district, with the object of relieving traffic congestion. Nearly \$10,000,000 was approved in the aggregate for constructing, repaying and repairing streets, and in this item is included a project which will keep in

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TTSBURGH



mind the great victory of the world war, for it means the construction of a noble highway to be called the Boulevard of the Allies. Another roadway is to be carved on the side of Mount Washington, overlooking the Monongahela River. Other items include such useful and important measures as new sewer construction, development and improvement of parks and park roadways, extending the water supply system, extension of playgrounds and improvements to city homes, hospitals and bridges.

In this connection it is worth remembering that the assessed value of taxable property in the City of Pittsburgh reaches the great total of \$806,020,730, and that the city debt prior to the new bond issue, was \$32,500,631.

The purpose of these circulars is to cause a proper appreciation of the activities of Pittsburgh. To those who think of this city as an iron and steel center chiefly, the diversity of its interests will prove surprising. The products of this district are very numerous. The whole list is too long to enumerate, but a suggestion of the diversity of Pittsburgh's products is seen in the following alphabetical list to which we will refer again from time to time in future volumes we will issue:

Air brakes, air compressors, artificial limbs, astronomical instruments, agricultural implements, acids, asbestos insulation, amusement novelties, briquetting machinery, broom sewing machines, butchers' supplies, babbit metal, brass fittings, bath tubs, candy, coal, coke, conduits, cork, cigars, chemicals, chains, car couplers, cut gears, crucible steel, church lights and chandeliers, car-wheels, chow-chow, enameled ware, electrical equipment of every variety, filters, firebrick, fireproofing material, gas fixtures, hinges, hydraulic machinery, invalids' chairs, iron pipe, ice making machinery, iron fabricating machinery, lubricating and other oils, light locomotives, lamp chimneys, lard, lifting jacks, lamps, malleable iron, mine cars, mining machinery, nails, nut-locks, nuts and bolts, oil filters, oleo oil, oil well supplies, table and ornamental glassware, plumbers' supplies, pipe fittings, paints, pumps, pickles, pressed steel cars, pulleys, patent medicines, radium and vanadium products, railroad equipment of various kinds, rivets,

rubber hose, scales, switches and signals, soap, steel wire, steamboats, steel screws, steel rails, steam engines, steel bridges, steel roofing, shovels, safes, salt, tacks, tallow, typewriters, underground cables, wall paper, water heaters, window glass and glass making machinery, wire fencing, wrought iron pipe, wood-working machinery and white lead.

Some of these industries will be more particularly dealt with in later publications.

The First National Bank at Pittsburgh does for its customers everything which a strong and resourceful bank may do under the laws of the United States. Its officers are trained bankers with a wide experience, and its directors, representing many lines of activity and enterprise, are fully cognizant of the needs of business men.

Capital		-			5	-			\$4,000,000.00
Surplus.									1,400,000.00
Deposits.	 -		 					 	26,157,167.34
Resources.	 -		k						43,011,233.70

OFFICERS

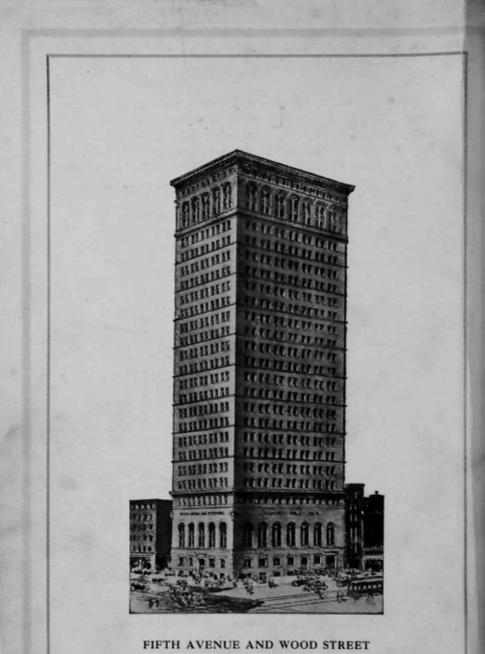
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FRANK F. BROOKS	Vice President
CLYDE C. TAYLOR	Cashier
THOS. B. HUDSON	Assistant Cashier
OSCAR WILSON	Assistant Cashier
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P. W. DAHINDEN Assistant Mai	nager Foreign Department-
J. PAUL FORD Assistant Ma	nager Foreign Department

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P W MOBGAN President East Pittsburgh National Bank
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LAWRENCE E. SANDSPresident



CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Two

IRON AND STEEL

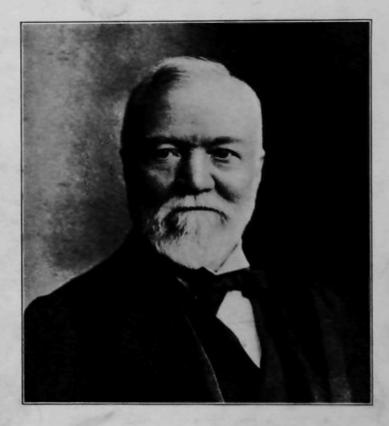


First National Bank at Pittsburgh

September, 1919

The Story of Pittsburgh Iron and Steel

HE recent death of Andrew Carnegie was perhaps a greater loss to Pittsburgh than to any other city in the World.



ANDREW CARNEGIE Pittsburgh's Greatest Philanthropist

NDREW CARNEGIE has aptly been described as "the steel king," and it must be acknowledged that if a citizen of a republic ever deserves a monarchical appellation, Mr. Carnegie did, judging by his achievements of industrial conquest, and the vast interests over which he ruled. His life will also be an incentive to action on the part of young men, for he fought his way up through innumerable obstacles, met with brilliant success, accumulated one of the largest fortunes of any age of the world, and set an excellent example for other opulent men, in his varied philanthropies and altruistic enterprises. Mr. Carnegie was born in Scotland, November 25, 1835, and died at his summer home in Lenox, Mass., August 11, 1919. He was 13 years of age when he came to Pittsburgh, with his parents. His first work was as a weaver's assistant in a cotton factory in Allegheny, and his second job, undertaken when he was between 15 and 16 years of age, was that of telegraph messenger boy in the Pittsburgh office of the Ohio Telegraph Co. Then he learned telegraphy, became an operator, and was among the first who learned to read "Morse" by sound. He received several promotions until he became superintendent of the Pittsburgh division. His first important step in manufacturing was forming a connection with Mr. Woodruff, the inventor of the sleeping car, in organizing the Woodruff Sleeping Car Co., gaining through this connection the nucleus of his fortune. which was increased by careful investments in oil lands.

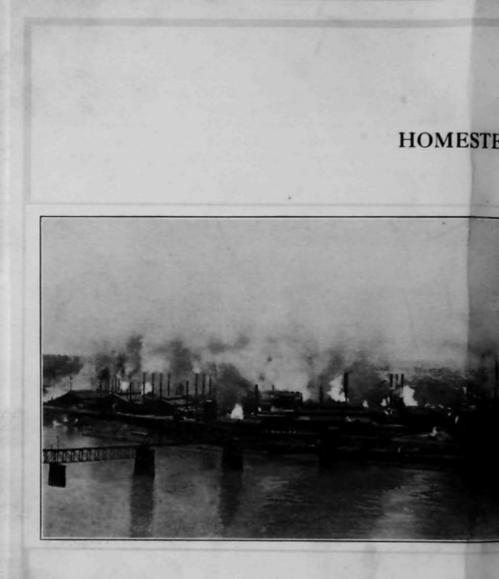
During the Civil War, Mr. Carnegie served as superintendent of military railways and Government telegraph lines in the East. After the war he went into the iron business, establishing the Keystone Bridge Works and Union Iron Works at Pittsburgh. A few years later he was the principal owner of the Homestead and Edgar Thomson Steel Works, and was the head of the firms of Carnegie, Phipps & Co., and Carnegie Brothers & Co. These interests were consolidated in 1899 in the Carnegie Steel Co., which became merged with the United States Steel Corporation in 1901. On this date Mr. Carnegie retired from business. He sold his interest in the Carnegie Steel Co. for \$303,450,000 in bonds of the United States Steel Corporation, besides receiving a large block of stock. Mr. Carnegie was not only an indefatigable worker himself, but he was quick to discern ability in others, and possessed a peculiar facility for attracting to himself promising young men of ability. He was always ready to give full credit to the work of his assistants. Not long before his death he remarked: "I have always been able to find men who could do some things better than I could do them."

It is not known exactly the amount of Mr. Carnegie's fortune, at the time of his death, but his benefactions during his lifetime were more than \$300,000,000. His will disposed of between \$25,000,000 and \$30,000,000, but provision had previously been made for his wife and daughter. The first of the long list of Carnegie Libraries was the one given to Allegheny. These institutions are now dotted all over this country and there are many in Great Britain, there being more than 3000 municipal buildings in use as Carnegie libraries. He gave \$24,000,000 to the Carnegie Institute of Pittsburgh and \$22,000,000 to the Carnegie Institute of Washington. The Carnegie Corporation of New York with a foundation of \$125,000,000, was formed to carry on various works in which he had been engaged. He gave \$5,000,000 to a fund for the benefit of employes of the Carnegie Steel Company; \$5,200,000 to establish branch libraries in the city of New York, \$1,000,000 to the St. Louis Public Library, and \$10,000,000 to Scotch universities. The various Hero funds, set apart for the reward of those who act on the impulse to help others at their own risk, is headed by \$5,000,000 to the Carnegie Hero Fund Commission of Pittsburgh, and there are funds of this character for numerous European countries, ranging from \$125,000 for Norway to \$1,150,000 for Great Britain. Then there is the Carnegie Dunfermline Trust, with \$3,500,000; the Hague Peace Temple, with \$1,500,000, and \$16,250,000 for the Foundation for the Advancement of Teaching in the United States, Canada and Newfoundland.

The Carnegie Institute of Technology, in Pittsburgh, was founded by Mr. Carnegie in 1900 and incorporated in 1912. The site for the buildings, in Schenley Park, was given by the City of Pittsburgh. The founder's original gift was \$1,000,000, but the demand for instruction made frequent extensions necessary, and Mr. Carnegie increased his original gift from time to time until at the beginning of 1914, he had given \$4,000,000 for buildings and \$7,000,000 as an endowment fund.

Statistics regarding the Carnegie Steel Company are impressive in their magnitude. They include the following:

Acreage covered by manufacturing properties	
and accessories	2,366
Number of employes.	40,000
Average monthly payroll	\$3,250,000
Gross tons of ore consumed per 24-hour	
day	45,000
Gross tons of coke consumed per 24-hour	
day	23,000
Gross tons of coal consumed per 24-hour day	
(including By-Products Coke Ovens).	12,000
Gross tons of limestone consumed per 24-hour	
day	12,000
Cubic feet of natural gas consumed per 24-	
hour day	100,000,000
Miles of standard gauge railroad track	260
Steam horse-power produced per 24-hour	
day	7,500,000
Electric horse-power hours per 24-hour day	2,110,000
Total production in gross tons for 24-hour	
day	116,500
Gross tons of finished materials produced per	
24-hour day	23,000
Gross tons of shipping capacity per 24-hour	
day	25,000
Annual capacity of blast furnaces in gross tons	
of 2240 pounds	
Pig iron	8,896,000
Spiegeleisen, Ferro-Manganese, etc.	108,000
	3,476,000
Basic open hearth ingots	6,355,000
Dasie open nearth ingots.	0,000,000



This plant covers 138.3 acres, and is situated Pittsburgh. Its annual capacity of Ing Other products of this plant are Univ Steel Railroad Ties, Steel

EEL WORKS

s ongahela River, at Munhall, eight miles from y D0 tons, and of Pig Iron 1,134,000 tons. ared Plates, Beams, Channels, Angles, Armor Plate, Castings, etc.

1.1.1.

Blooms, Billets and Slabs.	7,595,000
Flue Dust Briquettes	108,000
By-Product Coke (net tons)	450,000
By-Products from Coke Plant, in gallons	
Tar	3,960,000
Ammonia.	2,385,000
Sulphate of Ammonia	1,000,000
Benzol	660,000
Toluol	180,000
Solvent Naphtha	180,000
Xylol.	60,000

The Carnegie Steel Company formed the nucleus of the United States Steel Corporation, incorporated in 1901. The center illustration of this circular gives a panoramic view of the Homestead Steel Works, at Munhall, just outside the city limits of Pittsburgh. Other very large plants are the Edgar Thomson Steel Works, at Braddock. and the Duquesne Steel Works, at Duquesne. It is the opinion of experts that 65% of the iron and steel tonnage of the United States is produced in the metropolitan area of Pittsburgh. In the year 1918, the United States Steel Corporation shipped 13,849,483 tons of finished steel, employed 268,710 persons, and paid out \$452,663,524 in wages. Pittsburgh plants are estimated to have made an increase of fully one-third of their capacity during the war. and at present have over 100% of pre-war productive capacity. At the present time it is estimated that the Carnegie mills are operating at about 90% of their capacity, and independent producers are averaging about the same.

The United States Steel Corporation has an authorized capital of \$550,000,000 in common stock, of which \$508,-302,500 is outstanding, and \$400,000,000 in 7% preferred stock, of which \$360,281,100 is outstanding.

It is impossible to enumerate all the corporations and companies engaged in the iron and steel business, or say how much capital is employed therein, but some of the other large concerns in the Pittsburgh district are the following:

The Jones & Laughlin Steel Company has a capital

stock of \$30,000,000, and controls many corporations through stock ownership, including the Jones & Laughlin Ore Co., the Interstate Iron Co., and the Monongahela Connecting Railway. This company's plants are said to be worth \$200,000,000.

The Crucible Steel Company of America, is capitalized at \$25,000,000 in common stock and \$25,000,000 preferred, and controls, among other corporations, the Pittsburgh Crucible Steel Co., with \$5,000,000 capital.

The Pittsburgh Steel Company is capitalized at \$7,-000,000 in common and \$10,500,000 in preferred stock.

The Carbon Steel Company has a capital stock of \$3,000,000 common, \$1,500,000 6% second preferred and \$500,000 8% first preferred.

The Pittsburgh Rolls Corporation has \$2,500,000 common and \$500,000 7% preferred.

The Pressed Steel Car Co. has a capitalization of \$25,000,000, equally divided between common and preferred stock.

The Republic Iron and Steel Co., whose chief works are at Youngstown, O., in the Pittsburgh district, represents an investment of \$30,000,000 in common and \$25,-000,000 in preferred stock.

It is appropriate in this connection to note the fluctuations in the production of pig iron and steel during the war period, and how the steelmakers of the United States responded to the needs of the Nation when it entered on the great struggle. The American production of pig iron in 1913, was 30,966,152 tons. It was reduced during the following year to 23,322,244 tons, for the war, which broke out in August, 1914, at first paralyzed industries in this country. When the foreign demand for metal began to make itself felt, however, the production rose to 29,916,213 tons in 1915, and to 39,434,797 tons in 1916. In 1917, the production was 38,647,397, and in 1918 the output of pig iron was 38,500,000. It was in steel that the vigor of the American producers was most manifest. Steel production in 1913 was 32,321,618 tons, and this declined in 1914 to 24.206.276. In 1915, there was a jump to 32,151,036 tons,

in 1916 another leap to 42,773,680 tons, in 1917 to 43,500,-000 tons, while in 1918 the production reached the vast output of 44,700,000 tons. It is figured that during the period this country was at war, from April 6, 1917, to November 30, 1918, a period of approximately 20 months, the capacity of the rolling mills of the nation was, 68,000,-000 tons of iron and steel.

The steel works and blast furnaces of the Pittsburgh district give employment to approximately 90,000 men, and it is estimated that the total payroll of Pittsburgh is about \$2,000,000 a day or more.

Exports of iron and steel, as well as other manufactures and commodities, are facilitated by the Foreign Exchange Department of the First National Bank at Pittsburgh.

This institution has established direct banking connections in all parts of the World, which are a great convenience in the handling of documents pertaining to Foreign Commercial Transactions.

All branches of International Banking are completely covered by our facilities.

We issue drafts and make payments in all parts of the World.

We handle Trade and Bankers' Acceptances.

All languages are spoken in this department.

Officers of this institution are trained bankers with a wide experience, and its directors are successful men in a large variety of enterprises, affording a broad scope of business knowledge.

Capital Surplus Resources, over \$ 4,000,000.00 1,400,000.00 45,000,000.00



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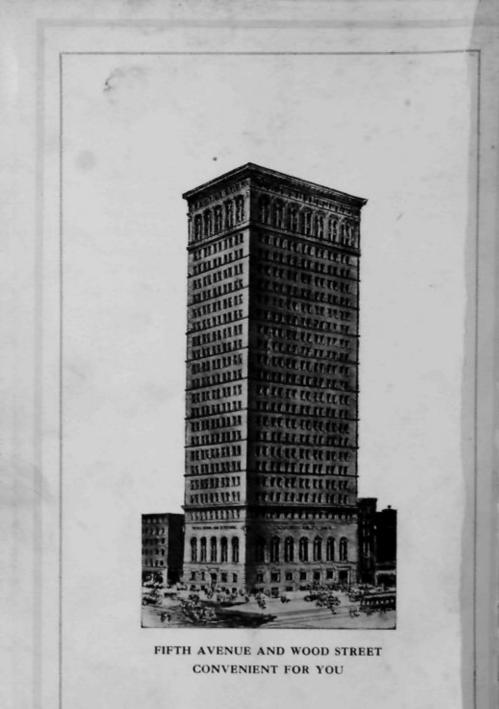
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Oscar Wilson	ssistant Cashier
WM. J. FRANK	
P. W. DAHINDEN Assistant Manager Fore	ign Department
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JOHN A. DONALDSON Vice President Pittsburgh Coal Company
J. ROGERS FLANNERY President Flannery Bolt Co., Pittsburgh, Pa.
WM. H. HEARNE Director La Belle Iron Works, Steubenville, O.
J. H. HILLMAN, JR. President J. H. Hillman & Sons Co., Pittsburgh, Pa.
D. T. LAYMAN, JR Henry Phipps Estate
HON. H. WALTON MITCHELL. Judge of Orphans Court
A. M. MORELAND
P. W. MORGAN President East Pittsburgh National Bank
WM. A. RENSHAWJohn A. Renshaw & Co., Pittsburgh, Pa.
LAWRENCE E. SANDS



The Story of PITTSBURGH

Volume One Number Three

IRON AND STEEL

(CONTINUED)



First National Bank at Pittsburgh

January, 1920



The Story of Pittsburgh Iron and Steel



HE interest in the publication of the recent booklet on Iron and Steel has been so widespread, and the demand for further information has been so general that the First National Bank at Pittsburgh feels obliged to continue its discussion of this subject, in its recital of the

"Story of Pittsburgh," before proceeding with other diversified products of this city and the community industrially and financially dependent upon this metropolis.

It is estimated that the normal annual value of the manufactured product of the Pittsburgh district reaches the large total of \$1,250,000,000. During the period in which the United States took part in the great world war, this was largely increased. This community in normal times gives employment to more than 110,000 men in its steel works and blast furnaces, and to probably 30,000 more in other industries enumerated under the head of "Iron and Steel." For the handling of materials—coke, iron ore and limestone—entering into the production of pig iron in the Pittsburgh district, 88,000 freight trains, with an average load of 3,400 gross tons apiece, are required every 12 months.

From statistics collected by the Pittsburgh Chamber of Commerce and the American Iron and Steel Institute these figures have been compiled: In the Pittsburgh district the output of pig iron in 1918 exceeded 11,000,000 tons, more than 30% of the entire production of the United States, and 1,000,000 tons more than the combined product of Canada, France, Sweden and Spain in the prewar period. The district's production of finished rolled iron and steel was 36% of the nation's total, and was distributed as follows:

Allegheny County, 6,881,129 tons; Shenango Valley, 1,082,790 tons; other Western Pennsylvania plants, 2,449,-461 tons. Other percentages of the total American production emanating from Pittsburgh are: steel cars, 50%; tin plate, 60%; crucible steel, 60%; pipe and tubing, 45%; vanadium, 90%; radium, 85%.

Pittsburgh leads the world in tonnage. In the prewar period the tonnage of Pittsburgh was figured at 175,000,000 tons, while during the war the volume of tonnage handled increased tremendously. By way of comparison, it is computed that the tonnage of the four largest maritime ports of the world—New York, London, Marseilles and Liverpool—was less than half that of Pittsburgh; the total for these four ports being placed at 84,376,000 tons, while the tonnage passing through the Suez Canal, a world-shipment route, was 26,000,000 tons.

The Pittsburgh district is the most important Steel foundry center in the United States, there being a larger tonnage of castings produced in this district than in any other industrial community.

Some of the important manufacturing corporations in the Iron and Steel industry, together with a brief enumeration of the numerous varieties of articles fashioned by them, and sold in all quarters of the globe, are alphabetically considered in this issue of "The Story of Pittsburgh."

ALLEGHENY STEEL COMPANY

The Allegheny Steel Company was organized in 1900, and began to operate in August, 1901, with about 300 employees. This number has gradually increased until about 3,000 are now employed for normal operation. The capital stock at the time of organization was \$300,000, and this has been increased to \$3,500,000, although the amount invested is much larger. For the first two or three years light steel sheets only were produced. Then a plate mill for the production of tank and structural steel plates was installed, and is producing at the rate of about 5,500 net tons monthly. The sheet mills now number 17 hot mills, with a production of 8,000 net tons monthly. A steel foundry was added in 1907, and this department has been enlarged until it has an output of about 600 tons of steel castings per month. In 1909 the Company took over the plant of the Reliance Tube Company and later enlarged the tube department, so that it now has a capacity of 2,000 tons of boiler tubes monthly. The Company specializes in its sheet steel department on electrical sheets, automobile and metal furniture sheets.

AMERICAN BRIDGE COMPANY

The American Bridge Company's plant at Ambridge, a few miles from Pittsburgh, on the Ohio River, is the largest bridge and structural plant in the world. Its product consists of steel bridges, buildings and miscellaneous structural materials; rolled structural shapes; fabricated ship steel; steel barges; steamboat hulls and other floating structures used in connection with inland and harbor transportation; forgings, steel, iron and brass castings; transmission towers, electric furnaces, rolling mill and bridge shop machinery, bolts, nuts and rivets. The yearly capacity of the bridge shops is 800,000 tons and of the rolling mills 250,000. The American Bridge Company was the pioneer in the fabrication of hull steel for ship construction, and had furnished fabricated ship steel for thirteen (13) ships prior to the outbreak of the war. The Company has rolling mills at Pencoyd, Pa., and fourteen (14) bridge shops, two of which are located at Chicago, and one each at Pittsburgh, Ambridge, Pencoyd, in the State of Pennsylvania, Trenton, N. J., Edge Moor, Del., Elmira, N. Y., Canton, O., Toledo, O., Detroit, Mich., Garv, Ind., Minneapolis, Minn. and St. Louis, Mo. The Company is capitalized at \$10,000,000 all common stock.

AMERICAN STEEL COMPANY

The American Steel Company was incorporated under the laws of Pennsylvania in 1904 and capitalized at \$3,000-000. Its tin plate mill is located at Waynesburg and its wire and nail mill at Ellwood City. About 2,000 workers are employed in the manufacture of tin plate, black sheets, wire, wire nails and other wire products. The Company produces annually 400,000 boxes of base tin plate, while the nail and wire mill tonnage is about 40,000 tons a year. The mills of this concern are electrically equipped throughout. The foreign shipments of the Company have increased enormously in the last few years, going to all parts of the world. It issues catalogues in Spanish, French and Portuguese, as well as in the English language. Additional buildings are now in process of erection which will double the capacity of both the Waynesburg and Ellwood City plants.

AMERICAN STEEL & WIRE COMPANY

In the Pittsburgh district of the American Steel & Wire Company, both Bessemer and open hearth ingots are produced. The ingots are rolled into blooms, slabs and billets. Blooms are shipped to other companies for further rolling into axles and other shapes and slabs for rolling into plates. Billets form the raw material for the company's own rod mills, in which they are rolled into wire rods, chiefly used for drawing into wire at its own plants, but a portion of this product is shipped to other companies for the same purpose, or for conversion into chain, rivets, bolts, etc. Much of this is coated with zinc ("galvanized") and the wire so coated is sold to other makers of barbed wire, woven fencing and poultry netting. Much of it is converted into these forms in the company's own plants. Wire which is not galvanized is cut into nails or formed into hoops. It is also converted into many other forms, such as bale ties, springs, wire rope, etc. Part of the steel made in Pittsburgh in the form of billets is rolled elsewhere into flat strips, which are further finished by cold rolling into what is known as cold-rolled flat steel, which is the raw material of an immense number of stamped and formed articles which are substituted for castings and forgings, and in which steel has become the substitute for brass and copper. A by-product of steel wire manufacture is sulphate of iron, which has many uses in the arts, as well as in the purification of city water supplies. The Company also smelts zinc ores, obtaining as products commercial spelter, used mainly for galvanizing wire, sheets and tubing, and sulphuric acid, which is indispensable in the process of manufacture of the three principal classes of steel productions just mentioned; also muriatic acid, which is used for a similar purpose, and zinc oxide, one of the most important pigments in the paint industry. The company has a capital stock of \$90,000,000, divided into \$40,000,000 preferred and \$50,000,000 common.

BRAEBURN STEEL COMPANY

The works of this Company are at Braeburn, Pa. The Company manufactures high-speed steel and other crucible grades; also alloy steel of many kinds. The Company has been producing crucible steels since 1897, and electric furnace steel since 1916. It has two crucible melting furnaces—one 24-pot and one 36-pot. It also has two 6-ton Heroult melting furnaces in which alloy steels of various kinds are manufactured. This Company is a Pennsylvania Corporation with an authorized capital of \$400,000.

CARBON STEEL COMPANY

The Carbon Steel Company, whose plant is at the foot of Thirty-Second Street, Pittsburgh, has for many years specialized on alloy steels and special analysis steels. It was one of the first concerns in this country to roll steel bars for the Allied armies, as it received, direct from one of the Allied governments, shortly after the outbreak of the world war, a very large order for 4.5" shells. Later came orders for a large tonnage of shell steel in rolled bars. Steel

was furnished by this Company for practically all of the Allied governments. During the war the entire output of the Forge Department was devoted to the manufacture of 75 m/m recuperator forgings. This is a very intricate forging of special analysis, and the company received many very favorable comments on its excellent quality and high production obtained. In plate production the principal item is special treatment and nickel steel plates for battleships, made of special alloy steels and capable of withstanding certain prescribed ballistic tests. Other items in the line of plates are special acid firebox steel, for practically all of the large railroad systems; five-ply plates for bank vaults and safes, and for jail purposes. This steel is a combination of layers of soft and hard steel, so constructed that it is soft enough to stand without breaking, severe shocks, such as sledge-hammer blows, and at the same time hard enough so that it cannot be burned by acetylene torches, nor sawed. During the war the production of the Carbon Steel Company's plate mill was devoted almost exclusively to the rolling of light armor or bullet-proof plates, such as were used in armoring the "tanks", so successfully used by the Allied governments. Rifle ranges were installed to conduct the tests on these plates, on the roofs of the mill buildings. About twentyfive marksmen were employed and about a million rounds of ammunition were required to conduct these tests. which were continued without interruption, by shifts of marksmen, from dawn until dark. Other important productions of the Company consist of high carbon steel sheets for agricultural implements, automobile parts and parts of electrical machinery, bars for automobile parts, such as gears, crank shafts, axle shafts, etc.; tool steel for a variety of purposes; billets for oil well tools, railroad forgings and for various kinds of hammer and drop forgings; forgings for railroad axles, crank pins, piston rods, driving rods, etc. The Company has established a reputation for Cunningham process forgings, extensively used by the most important railroads. This Company was incorporated in West Virginia on October 12, 1894, and has an authorized and outstanding capital stock of \$5,000,000.

CARNEGIE STEEL COMPANY

See Volume I, Number 2.

CLINTON IRON & STEEL COMPANY

Pig Iron is the product of the Clinton Iron & Steel Company, its principal business being in foundry iron, known to the trade as "Clinton" and "Hector". In addition to the foundry iron, however, it produces Basic, Malleable and Forge. This Company was chartered under the laws of Pennsylvania in July, 1899, and has a capital stock of \$300,000.

COLONIAL STEEL COMPANY

The Colonial Steel Company, whose works are at Monaca, a suburb of Pittsburgh on the Pittsburgh & Lake Erie Railroad, produces chiefly steels which are to be manufactured into tools or implements. These products include high speed and carbon tool steels for machine shop and metal cutting tools; hollow and solid bars for mining drills and rock drilling purposes; carbon tool steel bars for blacksmith and foundry use; hammers, chisels, wedges, etc.; tool steel bars for machine parts; tool steel sheets and circles for saws and knives; steel plates to be manufactured into plows, cultivators and harvesting machinery, bars and billets for the manufacture of oil well drilling tools; die blocks for drop-forging dies and trimming knives; special alloy steels for machine tool construction, and copper coated steel wire for telephone, telegraph and signal wire. This company was incorporated under the laws of Pennsylvania in June, 1901, and has a capital stock of \$2,000,000.

COLUMBIA STEEL & SHAFTING COMPANY

The Columbia Steel & Shafting Company, of Pittsburgh, manufactures cold finished steel bars, more commonly known in the trade as cold drawn and cold rolled steels. This material is used for shafting, machine construction and parts for automobiles, locomotives, agricultural implements, typewriters, cash registers, sewing machines, etc. The annual productive capacity of this industry is about 750,000 tons, of which this Company has a productive capacity of 150,000 tons. About 1,000 men are employed. While the Company is capitalized at only \$300,000, it has an invested capital of something over \$5,500,000, and was incorporated in September 1889.

CRUCIBLE STEEL COMPANY

The Crucible Steel Company of America was incorporated under the laws of New Jersey on July 21, 1900, and capitalized at \$50,000,000, equally divided between common and preferred stock, to manufacture and market Crucible and Open Hearth steel and iron. It controls many subsidiary companies, including the Pittsburgh Crucible Steel Company, with a capital of \$5,000,000. Its annual report for the year ending Aug. 31, 1919, showed gross profits of \$14,093,006; and net profits, after charges and appropriations, of \$9,574,208. Its property, in the balance sheet, is valued at \$85,168,741, and total assets are \$130,046,021. Its Pittsburgh plants are the Park Steel Company, Crescent Steel Company, LaBelle Steel Company, and Singer-Nimick & Company, Inc. The Anderson-DuPuy Company is located at McKees Rocks; the Pittsburgh-Crucible Steel Company at Midland, Pa., and the plants of the Crucible Fuel Company, at Crucible and Glassmere, Pa.

EDGEWATER STEEL COMPANY

The plant of the Edgewater Steel Company is located at Oakmont, a suburb of Pittsburgh on the Allegheny River, where a modern equipment is installed for the production of its specialties. All steel used in the various products of the Company is manufactured in the plant. The Company turns out steel tires for locomotives and railroad cars, and solid rolled steel wheels for freight and passenger cars. These manufactures are produced on special mills of the Company's own design, which involve many novel features. The Company also manufactures forgings, forging ingots, and a complete variety of steel castings. This Company was incorporated under the laws of Pennsylvania in August, 1914, with an authorized capital stock of \$2,000,000.

FIRTH-STERLING STEEL COMPANY

The Firth-Sterling Steel Company is affiliated with the famous old steel makers, Messrs. Thomas Firth & Sons, Limited, of Sheffield, England, who have been producing high-grade tool and die steels for the past 80 years. The Firth-Sterling mill is perhaps the only one in America with a Sheffield connection, given over exclusively to the making of fine steels. High quality, not tonnage, has been the policy of the management, and the growth of the Company is best indicated by the increased number of skilled men employed, rather than by tonnage figures. When the Firths joined the Pittsburgh interests in the old Sterling Steel Company, 23 years ago, there were 50 names on the payroll; they now employ 750 skilled workmen. Blue Chip, High Speed and other Firth-Sterling brands of tool and die steel are used in the most progressive shops throughout the United States. The works are at McKeesport. This Company was incorporated under the laws of Pennsylvania in July, 1889, and has a capital stock of \$1,500,000.

FLANNERY BOLT COMPANY

The Flannery Bolt Company's factory at Bridgeville, Pa., is the largest plant in the United States devoted exclusively to the manufacture of flexible staybolts. It is thoroughly equipped with automatic machinery, tools and storage facilities, and well planned for systematic and efficient production. The Company are the pioneers in the introduction of flexible staybolts to locomotive boiler practice, and manufacturers of the "Tate Flexible Staybolt", which has been standardized on 95% of the railroads of the United States within the last fifteen years, and is used in locomotive boilers by many railroads in foreign countries. The Company is a very large consumer of steel and staybolt irons. The general offices of the Flannery Bolt Company are in the Vanadium Building, Pittsburgh. This company was incorporated under the laws of Pennsylvania in February, 1904, and has an authorized capital stock of \$750,000.

FORT PITT MALLEABLE IRON COMPANY

The Fort Pitt Malleable Iron Company was incorporated under the laws of Pennsylvania on October 15, 1901 and has an authorized capital stock of \$750,000. Its plant is located at McKees Rocks, Pa., and is the largest plant in the world devoted exclusively to the manufacture of Malleable Railroad Car Castings.

FORT PITT STEEL CASTING COMPANY

The Fort Pitt Steel Casting Company of McKeesport was organized in 1906, under the laws of Pennsylvania, to specialize in the steel casting industry, devoting all its production to the manufacture of thin section, small, intricate steel castings, which cannot be successfully made by the open hearth steel process. The Company uses the side-blow converter, which gives a quality of steel with high physical properties. Principal products are the smaller castings used by rolling mills, electrical manufacturers, railways, car companies, truck, automobile, tractor, engine, mining machinery and various other manufactures. The Company employs about 500 men, their production in this specialty line being the largest in this field. The Company has a capital stock of \$400,000.

HUBBARD & COMPANY AND SUBSIDIARIES

The firm of Hubbard & Company dates from 1847, it having been established more than seven decades ago. The capital invested in the concern is \$2,500,000. John W. Hubbard is President; C. P. Seyler, Vice President and S. A. Rankin, Secretary and Treasurer. The Company's main works are at Sixty-Third Street and the Allegheny Valley Railway in Pittsburgh, where 1,200 persons are employed. The products of the Company include shovels, spades and scoops; railroad track tools, picks, mattocks, bars and sledges; galvanized pole line hardware and electrical construction specialties. The Pittsburgh works have an annual output of 150,000 dozen shovels, 3,500 tons of tools and 25,000 tons of galvanized electrical construction material. Its annual railroad traffic consists of 3,000 carloads, incoming and outgoing. The Company also controls by stock ownership, the following concerns: Russell Shovel Co., Aliquippa, Pa. with an output of 50,000 dozen shovels; Beall Brothers Co., Alton, Ill. with an output of 80,000 dozen shovels and 3,000 tons railroad track tools; Jackson Shovel & Tool Co., Montpelier, Ind., with an output of 50,000 dozen shovels; Hubbard Pressed Steel Co., Niles, O. with an output of 3,000 tons of washers and pressed steel specialties; Fulton Tool Works, Huntington, West Va., with an output of 1,000 tons of mining tools. Hubbard & Company has now under construction in Chicago, Ill., a plant to cost \$750,000, which will have a capacity of 20,000 tons of Galvanized Electrical Construction material, this extension of facilities having been found necessary to handle the rapidly growing western and southern business of this prosperous concern.

JONES & LAUGHLIN STEEL COMPANY

The Jones & Laughlin Steel Company was founded in 1853 and incorporated in 1902 under the laws of Pennsylvania. The Company is capitalized at \$30,000,000 and has a bonded debt of \$20,258,000. Its plants are located in the City of Pittsburgh, and at Woodlawn, Pa. These plants consist of coke ovens, blast furnaces, steel works, rolling mills, plate mills, wire mills, tin plate mills, tube mills, etc. The finished products of the Company include blooms, slabs, billets, skelp, sheet bars, structural shapes, plates, bars, fabricated structural steel, wire products, tin plate, railroad spikes, cold finished steel and tubular products. The Jones & Laughlin Steel Company owns, through subsidiary concerns, coal, ore and limestone properties, as well as railroads and steamships required in the transportation of materials and finished products. The Company's pig iron capacity is 2,100,000 gross tons per annum and its ingot capacity is 2,620,000 gross tons annually, while its finished products capacity is 2,325,000 net tons per annum.

LA BELLE IRON WORKS

The chief plant of the LaBelle Iron Works is located at Steubenville, Ohio, with others in the Pittsburgh vicinity and elsewhere. This corporation represents a capital investment of \$20,000,000, divided equally between common and preferred stock. It controls, through subsidiaries, its own iron ore supply, and largely its coal supply. It has also a by-product plant at which coke is manufactured. LaBelle products are varied, and among them may be enumerated pig iron, slabs, billets, sheet bars, universal plates, sheared plates, grooved plates, skelp, merchant pipe, line pipe, casing, tubing, black sheets, galvanized sheets, formed roofing and cut nails. The Company was originally established in 1852 and was incorporated under the laws of West Virginia in December, 1875.

LOCKHART IRON & STEEL COMPANY

The Lockhart Iron & Steel Company was incorporated in Pennsylvania on March 18, 1890, and is capitalized at \$1,000,000, and has about 1,000 employees. Its plant is at McKees Rocks, and it manufactures high-grade iron, principally by the old-fashioned puddling process, together with a special quality of steel bars.

MESTA MACHINE COMPANY

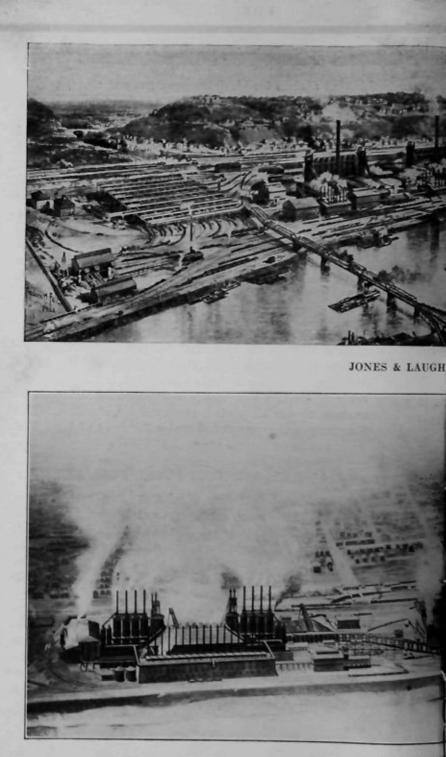
The works of the Mesta Machine Company are at West Homestead, on the Monongahela River, about six miles from Pittsburgh. The plant covers more than twenty acres, all of which are occupied by buildings, yards and equipments. The Company employs about 3,000 workmen, most of whom are skilled mechanics. All machinery is built within the plant from the raw materials, and the only limit as to size and weight of machinery built is that which the railroads can handle. Steel and iron castings weighing over 100 tons have been made in the foundries and finished in the machine shops. The Mesta Machine Company builds a more complete line of heavy machinery for iron and steel works than any other company in the United States. This line consists of gas and steam blowing engines for blast furnaces, gas and steam engines for rolling mills and power plants, rolling mills, forging presses, shears, etc.; cut and machine-molded gears and rolling mill pinions, and all the various kinds of rolls used in rolling mills. Mesta machinery can be seen in all of the large iron and steel plants, and in many of the power plants of the United States. The Company has also furnished some of the largest machinery used in the United States Government steel plants. Its products can also be seen in many of the iron and steel plants in Canada, Australia, India, England, France, Italy and Japan. The Company was incorporated under the laws of Pennsylvania on October 21, 1898, and has an authorized capital stock of \$2,000,000.

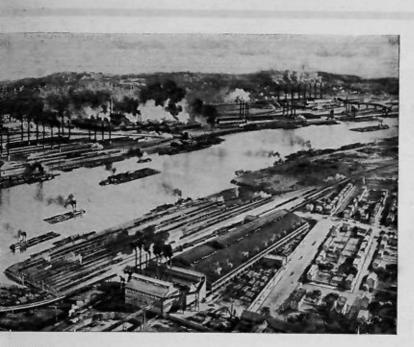
MONONGAHELA IRON & STEEL COMPANY

The plant of the Monongahela Iron & Steel Company is situated at Paden City, West Virginia, 42 miles below Wheeling. The Company makes what is known in the trade as melting bar, which is the base for a large percentage of the alloy steel produced by crucibles. This Company was incorporated under the laws of West Virginia and has a capital stock of \$900,000.

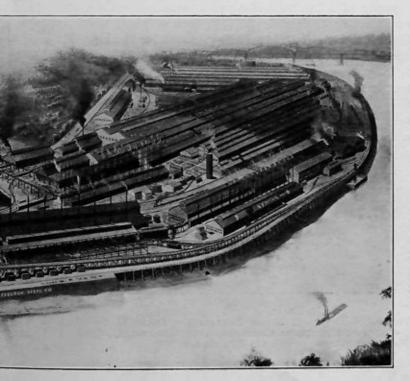
MORRIS & BAILEY STEEL COMPANY

The Morris & Bailey Steel Company manufactures cold rolled strip steel, at its works at Wilson, Pa., on the Monongahela Division of the Pennsylvania Railroad. This product is made from hot rolled bands, hoops and plates, and is largely used in making automobile parts, and manufacturing builders' hardware. It enters into the construction of typewriters, sewing machines, aeroplanes, bicycles, cash registers, cream separators, phonographs, buttons and buckles. This sort of steel is also made with a bright finish, suitable for nickle plating in any temper and from $\frac{1}{2}$ " to 30" wide in any thickness from .002" to $\frac{1}{2}$ ". This company was incorporated on June 15, 1893, under the Pennsylvania laws, and has a capital stock of \$150,000.





OMPANY



MPANY



MCKEESPORT TIN PLATE COMPANY ORIGINAL PLANT OF 10 MILLS, BUILT 1902-1903; CAPACITY, 400,000 BOXES PER ANNUM

MCKEESPORT TIN PLATE COMPANY

The McKeesport Tin Plate Company began operations in 1903 with a capacity for making 400,000 boxes of tin plates per annum, and has increased its business from time to time, from a ten-mill plant to a forty-four mill plant, which is now the largest tin plate plant in the world, with a capacity of 4,000,000 boxes per annum. The Company consumes approximately 250,000 tons of steel, which is first rolled into black plate and prepared for tinning. Its annual business is from \$20,000,000 to \$25,000,000. About 3,500 workmen are employed, with a payroll of approximately \$7,000,000 per annum. The present plant covers about twenty acres of ground. This Company was incorporated October 7, 1901, under the laws of Pennsylvania, and has an authorized capital stock of \$10,000,000.



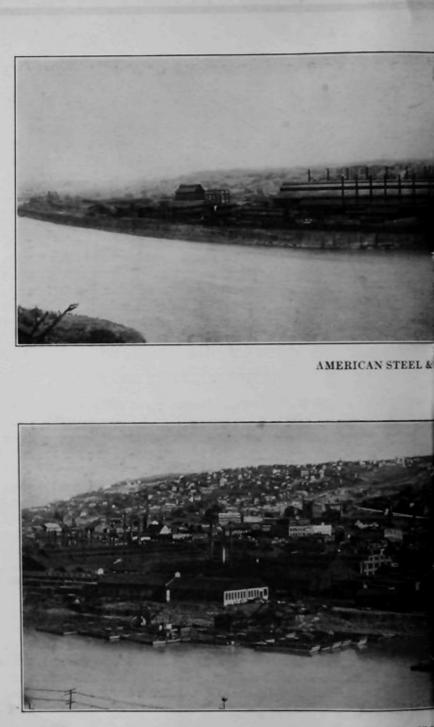
MCKEESPORT TIN PLATE COMPANY PRESENT PLANT OF 44 MILLS; LARGEST TIN PLATE PLANT IN THE WORLD; EXTENSIONS COMPLETED 1917; CAPACITY, 4,000,000 BOXES PER ANNUM

MCCULLOUGH-DALZELL CRUCIBLE COMPANY

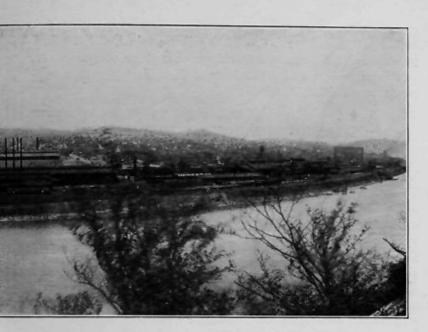
The McCullough-Dalzell Crucible Company of Pittsburgh was the first crucible company soliciting general business to locate west of the Allegheny Mountains. It. was organized in 1872 and incorporated in 1895 under the laws of Pennsylvania, with an authorized capital of \$150,000. The Company confines itself to the manufacture of goods containing plumbago, or graphite, and it imports its plumbago from the island of Ceylon, thereby insuring a uniform grade of material. The Company manufactures crucibles of all sizes and shapes for the melting of all grades of steel. and also all sizes for the melting of brass and other metals. including the precious metals. It also manufactures plumbago stopper heads for use in open hearth furnaces and all other furnaces of a similar nature. Its product includes all articles on the market containing plumbago, and its product is considered the standard.

NATIONAL TUBE COMPANY

The National Tube Company and affiliated Companies has an area of 2.200 acres covered by manufacturing properties and accessories. It has 25,000 employees, and an average monthly payroll of \$4,210,000. It owns 130 miles of standard gauge railroad track. The Company consumes per 24-hour day: 8,000 gross tons of ore; 4,600 gross tons of coke; 10,500 gross tons of coal, (including by-product coke ovens); 2.000 gross tons of limestone. Total production in gross tons per 24-hour day, 29,500; gross tons of finished materials produced per 24-hour day, 5,500. Steam horse-power-hours produced daily, 2,000,-000; electric horse-power-hours, produced daily, 670,000. The Company's annual capacity in gross tons of 2,240 pounds follows: Pig iron, 1,750,000; bessemer ingots, 1,550,000; basic open-hearth ingots, 600,000; blooms, billets and slabs, 1,900,000; by-product coke (net tons), 1,100,000; flue dust sinter, 138,000. By-products from coke plant are as follows: Tar, 11,050,000 gallons; ammonium liquor, 1,508,000 lbs. NH3; sulphate of ammonia,



OLIVER IRO



ANY, DONORA, PA.



COMPANY

15,000 net tons; benzol, 6,200,000 gallons; toluol, 470,000 gallons, solvent naptha, 275,000 gallons. The company was incorporated under the laws of New Jersey with a capital stock of \$85,000,000.

OLIVER IRON & STEEL COMPANY

The works of the Oliver Iron & Steel Company are located at Tenth and Muriel Streets, Pittsburgh. The Company was established in 1863. The Company manufactures a great variety of iron and steel products, among which may be enumerated bolts, nuts, rivets, lag screws, washers, threading furnished; United States standard and Whitworth screw railroad spikes; tie, upset and loop rods; picks, crowbars and digging bars; railroad, mining, blacksmith and track tools; track bolts; car and general forgings; pole line material; bar steel; concrete reinforcement bars; wagon irons and singletree trimmings. The company was incorporated under the laws of Pennsylvania on November 9, 1887, and has an authorized capital stock of \$1,600,000.

PITTSBURGH COLD ROLLED STEEL COMPANY

The Pittsburgh Cold-Rolled Steel Company is located at Verona, Pa., a few miles up the Allegheny River from Pittsburgh. It was incorporated in 1905, and has an invested capital of approximately \$300,000. The Company manufactures cold-rolled strip steel, low carbon, spring steel and tool steel.

PITTSBURGH IRON & STEEL FOUNDRIES CO.

The extensive foundries of this Company are located at Midland, Pa., it being a pioneer concern in what is now an industrial center. The Company is capitalized at \$600,000. It owns the Adamite patents, covering that alloy steel, which is used chiefly in the form of rolls, pinions, dies, etc., throughout the steel industry in this country and Canada. This product's remarkable resistance to wear and abrasion may be said to have revolutionized the mill conditions of the steel industry. The business was originally established in 1837 as the S. Jarvis Adams Co., which was incorporated in Pennsylvania on October 13, 1899. In October 1912, the name was changed to the Pittsburgh Iron & Steel Foundries Co.

PITTSBURGH MALLEABLE IRON COMPANY

The Pittsburgh Malleable Iron Company was organized in 1889, and in its foundry at Thirty-fourth Street, Pittsburgh, 300 men are employed, and its capacity is 500 tons of castings per month. At the foundry at Zanesville, O., the Zanesville Malleable Company employs 300 men, and its capacity is 500 tons per month. The product of both foundries is general malleable castings. Incorporated under the laws of Pennsylvania and has a capital stock of \$300,000.

PITTSBURGH ROLLS CORPORATION

The works of the Pittsburgh Rolls Corporation are at Forty-first and Forty-second Streets and the Allegheny Valley Railroad, in Pittsburgh. It is the successor of the Seaman, Sleeth Company, which was incorporated in August, 1896, and manufactures rolls exclusively; consisting of patent semi-steel, chill and sand rolls and pinions, steel rolls and pinions. The Company was incorporated in Virginia, July, 1917, and has an authorized capital stock of \$3,000,000.

PITTSBURGH STEEL COMPANY

The Pittsburgh Steel Company, with plants located on the Monongahela River at Monessen and Glassport, Penna., in the Pittsburgh District, is the largest independent manufacturer in the world of wire, nails and fencing. Products consist of: basic pig iron; basic Open Hearth steel ingots, blooms and billets; basic Open Hearth wire rods; bright nail and market wire, chain, rivet and bolt wire; annealed wire and baling wire; galvanized wire; bright wire nails, cement coated wire nails, galvanized wire nails and blued wire nails; barbed wire in various styles, both galvanized and painted; galvanized or polished fence staples and galvanized poultry netting staples; straightened and cut wire, and single loop bale ties; "Pittsburgh Perfect" electrically welded wire fencing in a complete line of designs and heights for all farm, ranch, poultry and garden purposes, including ornamental and plain lawn fencing, and "Columbia" hinge-joint fencing for all farm purposes; farm, Tawn and paddock gates, fence stretchers and single wire stretchers, fence tools and wire splicers.

The capacity of the Pittsburgh Steel Company's fence factories is over three hundred miles of fencing daily, and this product is not only used in enormous quantities in the United States of America, but has for years been heavily exported, with other products, and has achieved great popularity in all quarters of the civilized world.

Other important products are hoop steel, band steel, automobile and motorcycle rim stock, steel for cold rolling and cotton ties. The products of the Pittsburgh Steel Company, which are made of basic Open Hearth steel exclusively, and are produced entirely in their own furnaces and mills, from the ore to the finished material, are invariably of the highest quality and workmanship, emblemized in their trade name "Pittsburgh Perfect."

The Company was incorporated under the laws of Pennsylvania in July, 1901, and has a capital stock of \$17,500,000.

PRESSED STEEL CAR COMPANY

The Pressed Steel Car Company has two large plants in the Pittsburgh district, the larger one located at McKees Rocks and the other on the North Side, Pittsburgh. The Allegheny plant has a ground area of 26 acres, of which 13 acres are covered by buildings, and it has an annual capacity of 18,000 freight cars. The ground area at McKees Rocks is 159 acres, of which 44 acres are covered by buildings. The annual capacity of this plant is 24,000 freight cars, 400 passenger cars, 12,000 tons of rivets, 2,500 tons of car springs, 50,000 tons of car repair parts, 125,000 cast iron car wheels, 15,000 tons of malleable castings, 6,000 tons of steel castings, and 2,500 tons of grey iron castings. The Pittsburgh plants consume approximately 350,000 tons of steel and 50,000 tons of pig iron per year. The employees number from 4,000 to 5,500 and the payroll of these plants is about \$8,000,000 per year. The Company was incorporated under the laws of New Jersey on January 12, 1899.

REPUBLIC IRON & STEEL COMPANY

While most of its plants are located outside the Pittsburgh district, the Republic Iron & Steel Company may be mentioned since it has blast furnaces at New Castle and at Sharon, Pa. Its chief plants are at Youngstown, O., with blast furnaces, mills, bolt works, coal mines, ore mines and limestone properties in several States. It employs about 15,000 men, and its gross volume of business in 1918 was \$75,224,110. The Company was incorporated in New Jersey on May 3, 1899, and has an authorized capital of \$55,000,000.

STANDARD STEEL CAR COMPANY

The Standard Steel Car Co. was incorporated in 1902, under the laws of Pennsylvania, and has an authorized capital of \$5,000,000, of which \$4,000,000 is outstanding. The Company's plants are located at Butler and New Castle, Pa., and Hammond, Ind., and are equipped for the manufacture of steel and composite (steel and wood) cars, and automobiles. The Company controls the Middletown Car Company, and the Baltimore Car & Foundry Company.

SUPERIOR STEEL CORPORATION

The products of the Superior Steel Corporation, whose works are at Carnegie, Pa., consist of hot rolled strip steel and cold rolled strip steel. These steels are manufactured into many articles, such as automobile parts, sewing machines; adding machines, typewriters, bicycles, stoves, hardware, aeroplanes, cash registers, cream separators, telephones, cutlery, buttons, buckles, tubing, etc. The Company has a productive capacity of from 10,000 to 12,000 tons per month, and employs from 1,500 to 1,800 men. The Company was incorporated under the laws of Virginia on December 21, 1916, and has an authorized capital stock of \$17,000,000.

UNION DRAWN STEEL COMPANY

The Union Drawn Steel Co. was incorporated under the laws of Pennsylvania, with a capital stock of \$1,500,000. Its works are at Beaver Falls, Pa. and Gary, Ind. The Company produces rounds, flats, squares, hexagons, special shapes, bessemer, open hearth, crucible and cold die rolled steel.

UNION STEEL CASTING COMPANY

The Union Steel Casting Company operates two steel casting plants located side by side at Sixty-second Street and the Allegheny Valley Division of the Pennsylvania Railroad, Pittsburgh. In these plants there are five 25ton acid open hearth furnaces. The Company makes a specialty of steel castings of carbon and vanadium steel, such as engine frames, driving wheel centers and miscellaneous castings for locomotives; also for bank vaults, annealing equipment for rolling mills, and the like. Among the Company's products are forging ingots of carbon steel and alloy steels, such as vanadium, chrome vanadium, nickel, chrome nickel, etc. During the war the bulk of the output of the Union Steel Casting Company was devoted to steel castings and forging ingots required in the construction of locomotives for use on the American railways, both in this country and in France, and for the vessels of the United States Navy, Emergency Fleet, and other government work. The company was incorporated in Pennsylvania on April 27, 1899, and has an authorized capital stock of \$2,500,000.

WASHINGTON TIN PLATE COMPANY

The Washington Tin Plate Company's mill is located in Tylerdale, on the outskirts of Washington, Pa., and along the lines of the P. C. C. & St. L. R. R. with switching connections with the B. & O. R. R. The Mill is known as a 6 Mill Tin Plate Plant and is equipped with 6 Hot Mills, 6 Sheet and Pair Furnaces, 6 Cold Mills, 4 Annealing Furnaces, Pickling Apparatus and 11 Tinning Pots. The product placed on the market for sale is known as Coke Tin Plates, the mill having the capacity for a production of 600,000 Base Boxes per annum. Before reaching the stage of finished Coke Tin Plates, this product goes through various operations, producing from the Sheet Bars which are purchased, what is known as Hot Rolled Plates, Pickled and Annealed Plates, and Finished Black Plates. Each of these last three mentioned items is salable product, but the Company endeavors to confine its sales to Coke Tin Plates, which is the last stage of operation. The Company was incorporated in Pennsylvania on August 7, 1907, and has an authorized capital stock of \$600,000.

WEIRTON STEEL COMPANY

The Weirton Steel Company's works are at Weirton, W. Va. Its approximate production annually of iron and steel is as follows: Pig iron, 200,000 tons; Open Hearth Steel, 400,000 tons; Tin Plate, 200,000 tons; Cold Rolled Strip steel, 60,000 tons; Hot Rolled Strip steel, 120,000 tons. The Company was incorporated under the laws of West Virginia on April 1, 1905, as the Phillips Sheet & Tin Plate Company, the present name being adopted as of August 1, 1918. It has an authorized capital stock of \$30,000,000.

WEST PENN STEEL COMPANY

The West Penn Steel Company's plant is located at Brackenbridge, Pa. It produces Open Hearth sheet bars, and special steels for purposes requiring the highest grades of finish and quality. The Company's ingot capacity is about 150,000 tons annually. The company was incorporated in Pennsylvania in 1916, being a re-incorporation of a company of the same name incorporated in New Jersey in November, 1908. The authorized capital is \$1,050,000.

WITHEROW STEEL COMPANY

The works of the Witherow Steel Company are situated in Pittsburgh. The plant is devoted to the manufacture and distribution of concrete bars for reinforced concrete, an extensive mill being devoted to this particular article. The Company maintains a large staff of concrete engineers who make suggestions and designs for the use of reinforced concrete. The Company has offices in all the important cities of the United States, and is furnishing a large percentage of the reinforcing bars used in this country and abroad. Its plant is capable of producing 5,000 tons per month, and employs about 300 men. The Company was incorporated under the laws of Pennsylvania in 1913 and has an authorized capital stock of \$825,000. This booklet does not pretend to exhaust the subject of iron and steel as handled in the Pittsburgh District, nor to enumerate all the many different corporations and firms engaged in the industry. It is merely suggestive of the importance of the City in this vital industrial department.

The First National Bank at Pittsburgh prides itself on its resourcefulness in meeting the business requirements of its customers. Its officers have had a long experience in banking, and its directors are successful business and professional men with a wide view of commercial requirements. The Bank keeps in touch with financial developments at home and abroad, and is at all times ready to attend promptly to all details of Banking, in any portion of the Globe.

We submit on the following pages a partial list of our correspondents in the different parts of the world, which enables us to offer excellent service in connection with any banking transactions. Particular mention is made of the facilities of our Foreign Exchange Department, as follows:

FOREIGN EXCHANGE:

Drafts, Cheques, Money Orders and Bills of Exchange are bought and sold at current rates in dollars or foreign currencies.

COMMERCIAL CREDITS:

We issue Letters of Credit, drafts against which may be drawn at sight or time, to finance imports and exports.

Collections:

Cheques and drafts are accepted for collection payable in foreign currencies, and when necessary we make advances pending collection.

ACCEPTANCES:

For the purpose of financing imports, exports or domestic shipments, Acceptance Credits are granted maturing at thirty, sixty, or ninety days. Commodities stored in warehouses may also be financed under such Credits.

FOREIGN CREDIT INFORMATION:

We place at the disposal of our clients, the services of our Foreign Credit Department, and will gladly secure special reports either by mail or cable. Our friends and customers are invited to make use of these facilities and acquaint our foreign department with the products in which they are interested and the countries where they wish to develop business.

PRINCIPAL AMERICAN CORRESPONDENTS (IN RESERVE CENTERS)

AMERICAN EXCHANGE NATIONAL BANK. New York, N. Y.
NATIONAL CITY BANK
SEABOARD NATIONAL BANK
GUARANTY TRUST COMPANY New York, N. Y.
CONTINENTAL & COMMERCIAL NAT. BANK Chicago, Ill.
FIRST NATIONAL BANK
NATIONAL BANK OF COMMERCE
FIRST NATIONAL BANK
FIRST NATIONAL BANK
FIRST AND OLD DETROIT NATIONAL BANK. Detroit, Mich.
GIRARD NATIONAL BANK
CORN EXCHANGE NATIONAL BANK Philadelphia, Pa.
FIRST NATIONAL BANK Philadelphia, Pa.
AMERICAN NATIONAL BANK
BANK OF CALIFORNIA, N. A San Francisco, Cal.

PRINCIPAL FOREIGN CORRESPONDENTS

ENGLAND:

London County, Westminster & Parr's Bank, Ltd. Comptoir National d'Escompte de Paris, London. Cox & Co., London.

Barclays Bank, Ltd., London.

IRELAND:

Munster & Leinster Bank. Bank of Ireland Belfast Banking Co., Ltd.

FRANCE:

Comptoir National d'Escompte de Paris.

BELGIUM:

J. Mathieu et fils, Brussels. Bank of Antwerp, Antwerp.

HOLLAND:

Rotterdamsche Bankvereeniging.

SPAIN:

Banco Espanol del Rio de la Plata.

PORTUGAL:

Bank of Portugal.

SWITZERLAND:

Credit Suisse.

ITALY:

Banca Commerciale Italiana. Credito Italiano.

DENMARK:

Den Danske Landmandsbank.

SWEDEN:

Aktiebolaget Stockholms Handelsbank.

GERMANY:

Deutsche Bank.

GERMAN-AUSTRIA:

Credit Anstalt, Vienna

POLAND:

Bank Diskontowy Warszawski.

PRINCIPAL FOREIGN CORRESPONDENTS (Continued)

CZECHO-SLOVAKIA:

Zivnostenska Banka, Prague.

JUGO-SLAVIA:

Wiener Bank-Verein, Zagreb.

SERBIA:

Banque Franco-Serbe.

GREECE:

National Bank of Greece.

Bank of Athens.

Commercial Bank of Greece.

BULGARIA:

National Bank of Bulgaria.

ROUMANIA:

Banque Marmorosch Blank & Co.

TURKEY:

Bank of Athens, Constantinople.

SYRIA:

Banco di Roma.

EGYPT:

Comptoir National d'Escompte de Paris.

INDIA:

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Cox & Company.

CHINA:

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Chartered Bank of India, Australia & China.

Hong Kong & Shanghai Banking Corporation.

JAPAN:

Yokohama Specie Bank.

AUSTRALIA:

Commercial Bank of Australia, Ltd.

SOUTH AFRICA:

National Bank of South Africa.

CANADA:

Dominion Bank of Canada. Canadian Bank of Commerce.

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BOLIVIA:

Banco Mercantil.

BRAZIL:

Banco Hollandez da America do Sul, Rio de Janeiro.

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COSTA RICA:

Banco de Costa Rica.

CHILE:

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CUBA:

National Bank of Cuba.

ECUADOR:

Banco del Ecuador.

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Banco de Guatamala.

HONDURAS:

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URUGUAY:

Banco Comercial.

NICARAGUA:

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PERU:

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Banco Salvadoreno.

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Banco Caracas.

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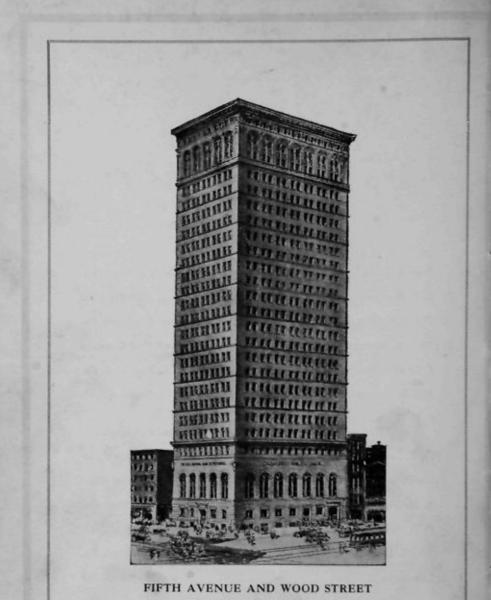
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CONVENIENT FOR YOU

First National Bank at Pittsburgh

CAPITAL		4				x			x			. 8	\$ 4,000,000.00
SURPLUS			x	*		×	1	,			k		1,600,000.00
Assets .	4				¥	*	x	1	i.	ï	x		45,000,000.00

The Story of PITTSBURGH

Volume One Number Four

COAL AND COKE



First National Bank at Pittsburgh

June, 1920



HENRY CLAY FRICK The Coke King of the World

The Story of Pittsburgh Coal and Coke

HE recent death of Henry Clay Frick was a great loss to the financial and industrial centers, not only of this country, but of other countries also. Mr. Frick was undoubtedly acknowledged to be the "Coke King of the World." It is a singular coincidence that the passing away of Andrew Carnegie, the "Steel King," should so soon be followed by the death of his one-time partner, Mr. Frick.

The two co-operated for many years, but were business opponents later in life. Mr. Frick was born at West Overton, Westmoreland County, Pa., on December 19, 1849, and was therefore about threescore and ten years old when he died. At the age of ten he was a boy on a farm, and he received very little education such as one gets in the schools, but his practical business education, obtained in the great world of industrial activity, was wide to an extraordinary degree. He did, however, enjoy a short term at Chester Military Academy, after a few years in the elementary school at West Overton, and he also spent a few months at Otterbein University, Ohio.

At the age of 16, Mr. Frick began his business career as a clerk in a dry goods store, and later went as bookkeeper to a mill owned by his grandfather, Abraham Overholt. He had an almost intuitive knowledge that the coke industry, then in its infancy, was destined to become one of vast importance, and he invested all his savings, and all the money he could borrow from his relatives, in coke ovens. He was successful as a coke operator from the very beginning, and in 1873, he and his partner owned 200 ovens. Then came the panic of that year, but notwithstanding the severe financial and industrial depression, he went on expanding his coke business. He not only succeeded in borrowing enough money to operate the ovens he already had, but to buy more.

After this, Mr. Frick's progress was rapid. The panic of 1873 really gave him his chance, enabling him, with his great faith in the future, to obtain large tracts of coal lands. No one else understood quite as well as Mr. Frick, the value of coking coal in the great steel industry, then beginning to make a rapid growth. At 30 years of age he was a millionaire. His business interests overflowed into many fields. He incorporated the H. C. Frick Coal and Coke Company, with a capital of \$2,000,000, and owned 3,000 acres of coal lands, with 1,026 coke ovens. In 1882, there was a consolidation of the business of Mr. Frick with that of Carnegie Brothers & Co., and he became chairman of that corporation in 1889. The Duquesne Steel Works were later acquired, consolidated into the Carnegie Steel Company, and Mr. Frick became chairman.

For many years—both before and after the organization of the United States Steel Corporation—Mr. Frick was one of the men of first magnitude who controlled the industrial policies of the United States. He usually exercised his power inconspicuously, but his compelling prominence cropped out from time to time. For instance, when the Interstate Commerce Commission published, in 1906, the names of the largest owners of railway stocks, Mr. Frick headed the list of individual owners; and in a list published in 1909, he was put down as the largest owner of Pennsylvania Railroad stock, the largest owner of Chicago and Northwestern, and one of the largest of Atchison, Norfolk and Western, and Baltimore and Ohio.

Mr. Frick was a devotee of art, and exercised unusual skill and judgment in making his collection, supported by ample means. His collection is said to have cost him between \$30,000,000 and \$40,000,000, and to be worth \$50,000,000 at present. It is easily rated as the finest private collection in the world. The supreme masterpiece of the collection is the portrait of Rembrandt by himself, painted near the close of the artist's life. This collection of paintings, together with the palatial Frick home in Fifth Avenue, New York, is left by Mr. Frick in his will to the city of New York, the transfer to be made on the death of his widow. It is in this particular disposition of his works of art, said Mr. Cortissoz, a distinguished critic, that Mr. Frick has done most to place his countrymen in his debt.

The pre-eminence of Pittsburgh as the Coal and Coke center of the world is undisputed. In the production of these industrial necessaries, the Pittsburgh District leads the world. One-fourth of the Coal and nearly one-half of the Coke produced in the United States are produced here. The industry dates back to 1760, two years after the buildof Fort Pitt, when the early settlers dug coal for fuel, just across the Monongahela River from "The Point." The Geological Survey pronounces Pittsburgh Coal to be one of the most valuable in heat units of any produced in the United States, and the output of the district exceeds 100,-000,000 tons annually. In the year 1918, the production of bituminous coal in the United States totalled 579,385,820 tons, of which Pennsylvania produced 178,550,741 tons. The output of Coke amounted to 56,478,372 tons, and of this total Pennsylvania made 26,723,645 tons, and most of this being produced in the Pittsburgh District. Connellsville reported for 1918, 37,061 Coke Ovens, and shipments of 16,138,590 tons. The high water mark of Connellsville Coke production was in 1916, when 38,362 ovens produced 21,645,502 tons. In that year, the State of Pennsylvania produced 31,279,695 tons, and the entire country 54,533,-585 tons of Coke.

Coal is not merely a black substance, more or less sooty and dirty to handle. It is not merely a fuel, the chief source of heat for manufacturing, transportation and domestic purposes. From coal, many charming colors are produced which enhance the beauty of fabrics, and from coal thousands of drugs are derived, for the use of the physician and chemist.

Bituminous coal is the backbone, so to speak, of the great industrial and commercial life of the world. While the use of coal dates back to the earliest times, its consumption in large quantities covers only a comparatively recent period. The Chinese made use of coal in the hoary ages of the past, and Greek writers tell of the knowledge of coal as fuel by people living on the north shore of the Mediterranean Sea as early as the fourth century before Christ. At the time of the Roman invasion of the British Isles, we learn that coal was taken from the outcrop with picks made of flint and hard oak.

The first discovery of coal in the New World by white men, is recorded by Father Hennepin, in his journal, as having been made on the banks of the Illinois River in 1679. At the time of the Revolutionary War, coal was shipped north from the Richmond district of Virginia. Anthracite coal was first used by a blacksmith in the eastern part of Pennsylvania in 1796, but was not successfully used in manufacturing until the year 1812, when it played an important part in the fuel supply.

As far back as 1684, William Penn was granted a charter to mine coal in the hills fronting Pittsburgh. In 1758, coal was discovered in what was soon afterward called "Coal Hill;" and in 1760, Thomas Hutchins visited Fort Pitt, and wrote about a "cole" mine on the west side of the Monongahela River.

The very earliest successful mining and use of coal in the United States took place within what is now the corporate limits of the City of Pittsburgh. One of the first mines was located on what is now Duquesne Heights, Nineteenth Ward, and was known as "Indian Pit." The first steam engine in Pittsburgh was built in 1794, and after this important event the use of coal increased very rapidly. Not only was coal first mined and used here, but the first coal ever exported was shipped from this district. In 1803 a company of French merchants built at Pittsburgh the ship "Louisiana," on board which they loaded 350 tons of Pittsburgh coal, "Which was sold for \$9 per ton." By the year 1817, navigation of the Ohio had developed to such an extent that regular shipments of coal were sent south, the chief markets being Cincinnati, Louisville and Maysville. In 1844, the first locks on the Monongahela River were completed, and in 1845, the raw coal of the Brier Hill seam was successfully used to smelt iron ores at the Clay Furnace, near Sharon, Pa.

PITTSBURGH COAL COMPANY

The Pittsburgh Coal Company is the owner and operator of seventy coal mines in the States of Pennsylvania, Ohio. Illinois and Kentucky, which have an annual capacity of 30,000,000 tons. Of these collieries, 60 are located in the heart of the Pittsburgh district, the most wonderful coal fields in the world, and are known as the Youghiogheny and Westmoreland fields. In this district, the Pittsburgh Coal Company is the owner of 152,745 acres of unmined coal, and within these properties lie the highest grade of gas, coking and steam coals.

The following analysis shows the high standard of the company's gas coal:

Moisture	0.50 % to 1.00 %
Volatile matter.	32.00 % to 34.00 %
Fixed carbon	
Ash	
Sulphur	0.75 % to 0.90 %
Phosphorus	0.005% to 0.010%
British Thermal Units.	

The company's mines in the Youghiogheny and Westmoreland field are joined by the company's own railway, called the Montour Railroad, 51 miles in length, of the best modern construction and equipment, and connections are made direct with Lake Erie ports, and to railways east west and south. The company possesses excellent facilities for loading coal into ocean vessels, for export shipments to South America and other countries, at the ports of New York, Baltimore and Philadelphia. At the ports on the Great Lakes, extensive and modern loading plants are operated. During the summer months, millions of tons of the Pittsburgh Coal Company's gas and steam coal are forwarded by the way of the Great Lakes to its docks on Lake Superior and Lake Michigan, from which it is distributed throughout Canada and the West and Northwest sections of the United States.

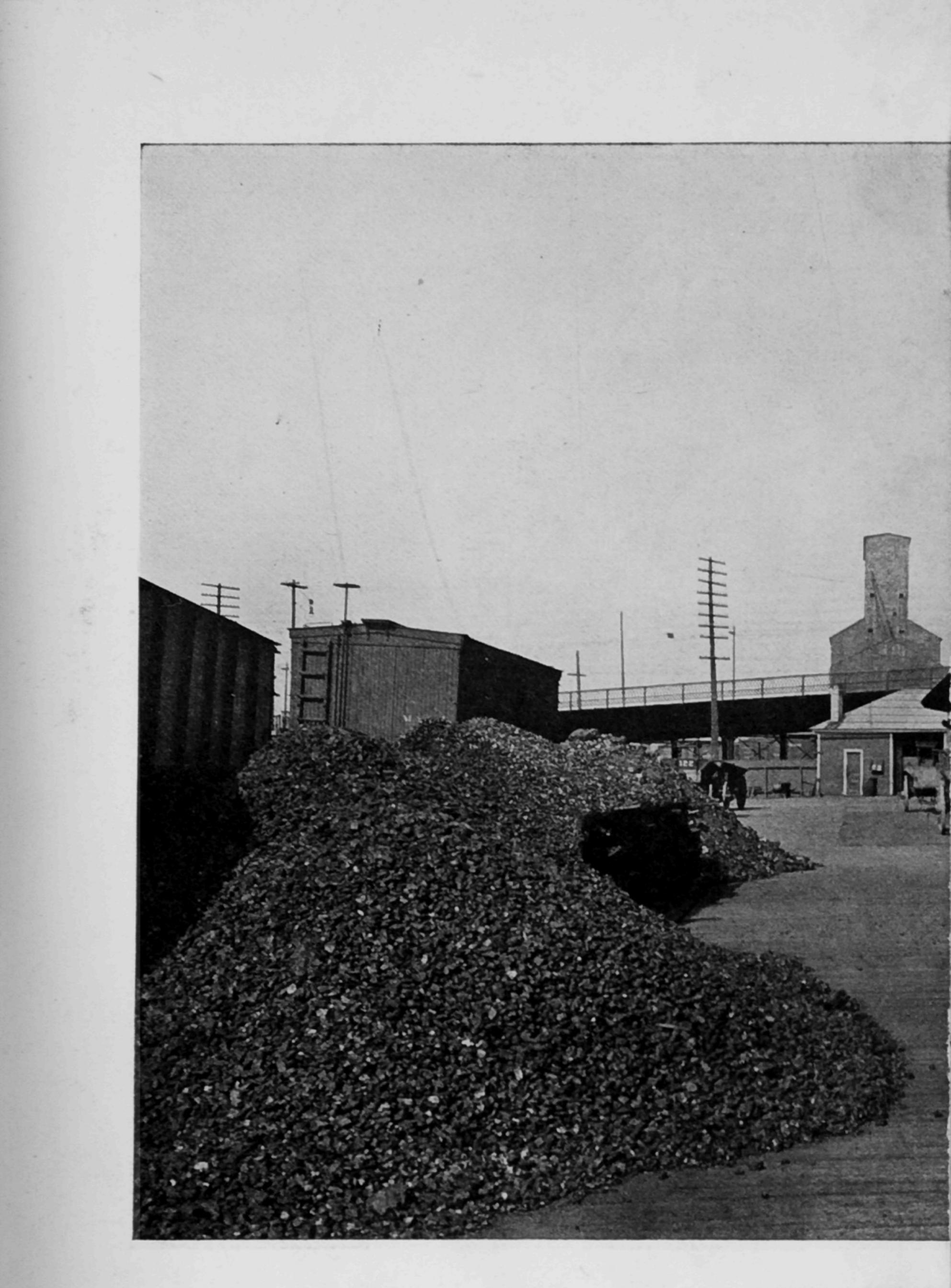
In all the large industrial centers of this country and the Dominion of Canada the company has established facilities to serve the users of coal, whether for steam, gas or domestic purposes. Many plants have been erected in the Northwest for distribution purposes, at an investment of \$8,750,000.

At Buenos Aires, Argentina, the Pittsburgh Coal Company has built a modern dock, with a large capacity for storing coal. The equipment of this dock is ample to meet all requirements, and consists of lighters for bunkering vessels, with machinery, revolving derricks, etc., for handling a general fuel business.

The Pittsburgh Coal Company has an authorized capital stock of \$80,000,000, half of which is common stock and half preferred. Of this capitalization, \$32,169,-200 common and \$36,000,000 preferred is outstanding. The common is paying 5% dividends annually and the preferred is paying 6%, which is cumulative.

HILLMAN COAL & COKE COMPANY

The Hillman Coal & Coke Company controls the operation of 23 mines, all of which, except one, are located in Western Pennsylvania. The only one not located in the Pittsburgh district is the Tunnelton Mine, at Tunnelton, West Virginia. The other 22 are the following: Patterson Mine, Elizabeth, Allegheny County; Ella Mine, Webster, Allegheny County; Naomi Mine, Fayette City, Fayette County; Edna No. 1, Adamsburg, Westmoreland County; Edna No. 2, Wendel, Westmoreland County; Jerome Nos. 1 and 2, at Jerome, Somerset County; Isabella, at Isabella, Fayette County; Griffin Nos. 1 and 2 at Masontown, Fayette County; Crystal, at Gans, Fayette County; Clarksville at Clarksville, Westmoreland County; Thompson No. 2 and Tower Hill Nos. 1 and 2 at Republic, Fayette County; Luzerne, at Luzerne, Fayette County; Belle



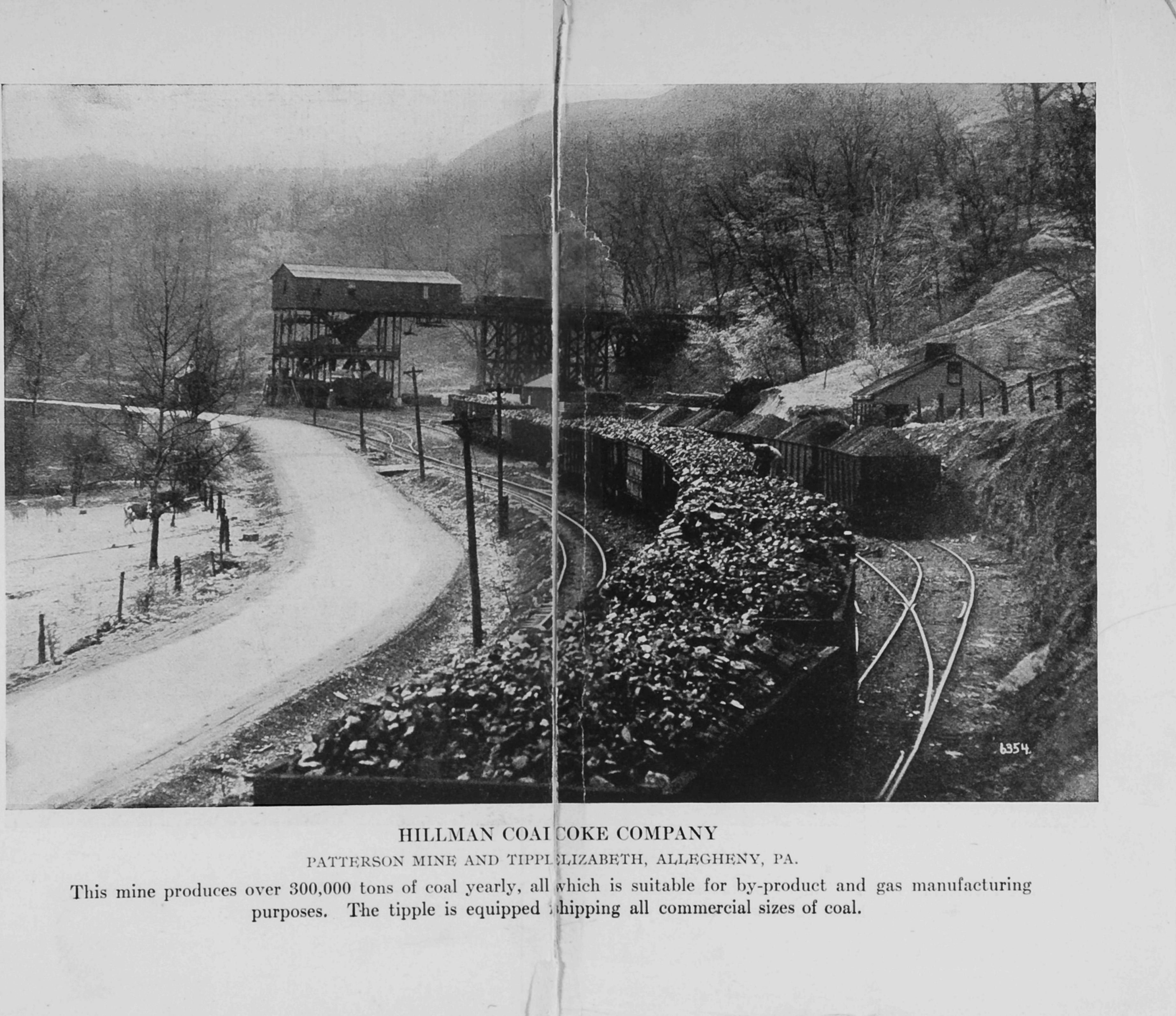
PITTSBURGH

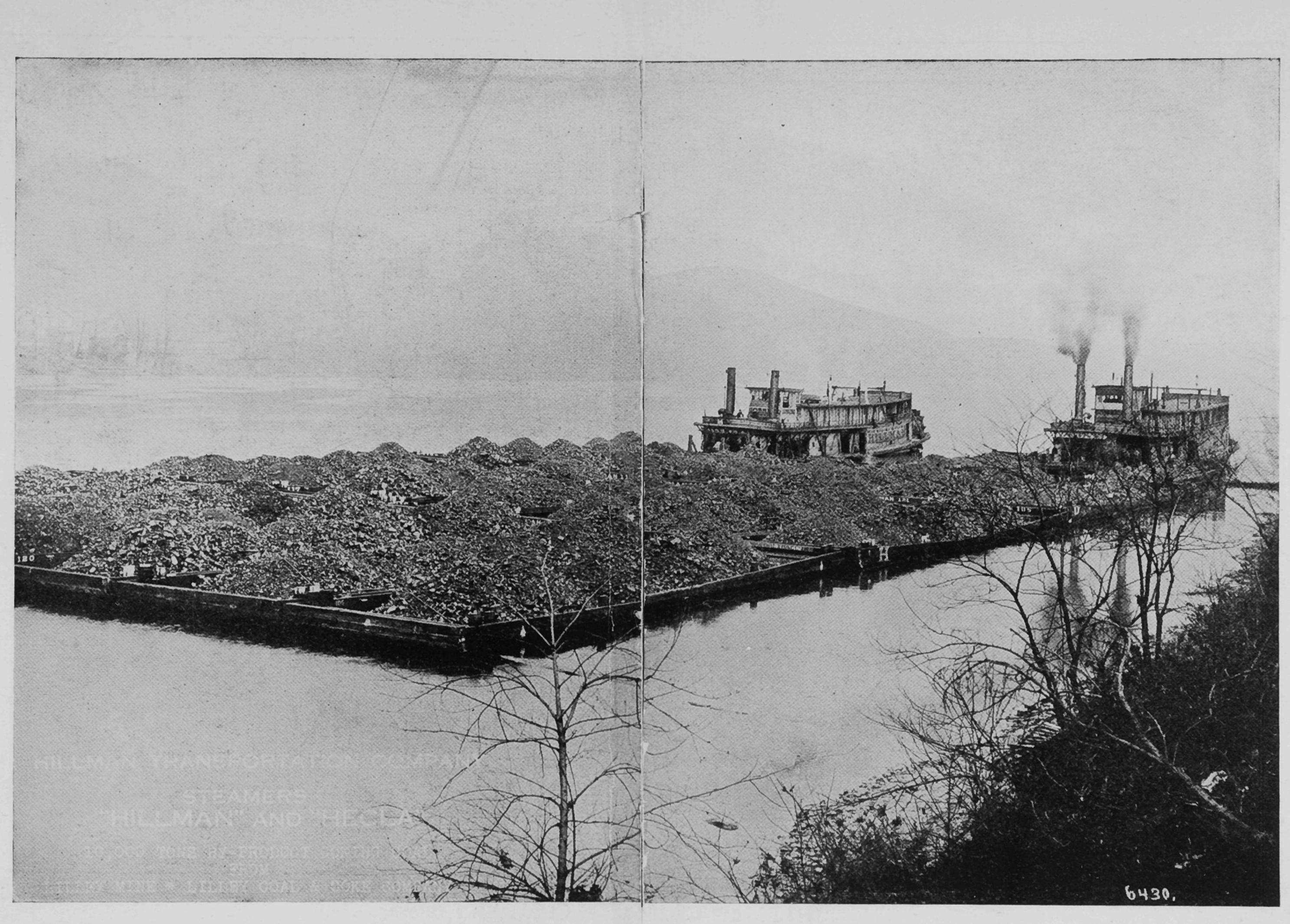
Representative Coal Yard of the Northwest. Many Minneapolis, Duluth, Super



AL COMPANY

orage Capacity of One Million Tons.





The Steamers "Hillman" and "Hecla" are here shown tog loaded barges on the Monongahela River. Each barge holds an amount of coal equivalent he contents of eight large railroad cars.

PART OF THE HIMAN RIVER FLEET

Vernon, at Belle Vernon, Fayette County; Oakmont, at Barking, Allegheny County; Diamond, at West Brownsville, Washington County; Pike at Brownsville, Fayette County; Huston Run, at Courtney, Washington County, and Blaine, at Lock No. 3, Allegheny County.

The combined annual capacity of these mines is, in round figures, 7,000,000 tons of coal and 1,500,000 tons of coke. Twenty of the Hillman mines are situated in the Pittsburgh, Connellsville and Irwin fields, with shipping facilities on the Pennsylvania, Baltimore and Ohio, Monongahela and New York Central Railroads. Seven of the mines are provided with river tipples, permitting shipments by way of the Monongahela, Allegheny and Ohio Rivers. Thus the company is able to ship by rail or water. Shipments from its mines in Somerset County, Pennsylvania, and Preston County, West Virginia, are made by the Baltimore and Ohio Railroad, east and west. The combined coal acreage of these mines, and of the company's undeveloped coal tracts, is more than 35,000 acres.

The coal produced at the two Jerome mines is low in volatile matter, averaging about 17%, and can be burned with much less unconsumed carbon than is the case with higher volatile coal, and is widely known to the trade as "Smokeless Coal." It is in great demand for steam purposes, especially in cities having anti-smoke ordinances. The Hillman Coal & Coke Company has about 14,000 acres of virgin coal surrounding the Jerome Mines. For use as bunkering coal, this product meets the severe Government requirements in every detail. It can be stored for long periods with absolutely no danger from spontaneous combustion. Hillman coal for gas-making purposes produces under the best practice from 10,500 to 11,000 cubic feet of gas per net ton of coal. Chemically, there is but slight variation in the seam of the Pittsburgh District coal, used for gas making purposes, and physically, the coal is of firm structure and does not slack readily.

The Hillman Coal & Coke Company is one of the largest shippers of coke in the Connellsville region, having a total of 1,166 beehive and 798 rectangular ovens, located at various plants, and producing annually about 1,500,000 tons of coke. This coke analyzes low in ash, sulphur and phosphorus, and is therefore extensively used in blast furnaces. The value of coke in the manufacture of low phosphorus pig iron depends on the percentage of phosphorus in the coke. As the manufacturers have to meet an analysis of .03 to .035% phosphorus in the pig iron, the phosphorus content of the coke must necessarily be very low.

The Hillman Coal & Coke Company exports coke chiefly to Mexico and South America for use in copper smelting, although some coke has been exported to Italy and France for use in foundries and the manufacture of pig iron. The Hillman coke is well suited to export purposes, since coke for export must contain the lowest percentage of ash consistent with proper structure. The ash content must not be excessive, for if it is, rail and ocean freights will impose a prohibitive cost upon the delivered product.

UNITED STATES STEEL SUBSIDIARIES

In the eighteenth annual report of the United States Steel Corporation, for the fiscal year ended December 31, 1919, the production of coke by its subsidiaries, which operate chiefly in the Pittsburgh district, is placed during the twelve months at 15,463,649 tons, of which 5,933,056 was produced in bee-hive and 9,530,593 in by-product ovens. These figures compare with 9,962,403 tons produced in bee-hive ovens, and 7,795,233 tons made in byproduct ovens in 1918, or a total of 17,577,636 in that year. Coal mined by the corporation in 1919 totalled 28,893,123 tons, against 31,748,135 in 1918. The total sum expended during the year 1919 on all its coal and coke properties was \$12,958,647.86.

Naturally enough, in the coal and coke center of the world, there are very many important corporations and firms engaged in the business of mining and selling these staple articles, indispensable in the world's manufactories. To enumerate them all is practically impossible in the space at our disposal, but a few may be named as representative of the industry, and arranged in alphabetical order:

Acme Coal & Coke Co.; American-Connellsville Coal & Coke Co.; American Fuel Co.; American Gas Coal Co.; Argentine Coal Co.; Armstrong Coal Co.; Arrow Coal Mining Co.; Atlas Coal Co.; Atlantic Coal Co.; Bellebridge Coal & Coke Co.; Ben Franklin Coal Co.; Berger-Aiken Coal Co.; Bertha Coal Co.; Bessemer Coal & Coke Co.; Bixler Coal & Coke Co.; Blaine Coal Co.; Blanchard Coal Co.; Bostaph Coal Co.; W. Harry Brown Coal and Coke; Bulger Block Coal Co.; Burgettstown Coal Co.; Canonsburg Gas Coal Co.; Carbon Center Coal Co.; Carnegie Coal Co.; Central Yough Coal Co.; Century Coal Co.; Champion Gas Coal Co.; Charleroi Gas Coal Co.; Chartiers Creek Coal Co.; Cherry Run Mining Co.; H. Chidester, Coal and Coke; Cleveland & Western Coal Co.; Clinton Block Coal Co.; Clyde Coal Co.; Colonization Coal, Coke & Power Co.; Commercial & By-Products Coal Co.; Commonwealth Fuel Co.; Consolidated Coal & Coke Co.; Consolidated Fuel Co.; Consumers Fuel Co.: Continental Coal & Coke Co.: Country Club Coal Co.; Creighton Coal Works; Crescent Coal Co.; Crucible Fuel Co.; Delmont Gas Coal Co.; Diamond Coal & Coke Co.; Duquesne Coal & Coke Co.; Eclipse Gas Coal Co.; Ellsworth Collieries Co.; Equitable Coke Co.; Eureka Coal Co.; Export Coal Co.; Fair Haven Coal Co.; Fairview Mining Co.; Fayette Coal Corporation; Ferguson Coal & Coke Co.; Forsythe Coal Co.; H. C. Frick Coke Co.; Fort Pitt Coal & Coke Co.; Four States Coal Co.; Fox Coal Co.; Frauenheim-Severns Fuel Co.; Gage Coal & Coke Co.; Georges Creek Coal Mining Co.; Goucher Mine Co.; Grant Fuel Co.; Greensburg-Connellsville Coal & Coke Co.; Harmon Creek Coal Co.; Hecla Coal & Coke Co.; Henderson Coal Co.; Hostetter-Connellsville Coal Co.; Jamison Coal & Coke Co.; Jenner-Quemahoning Coal Co.; Jones Coal Co.; Keystone Coal & Coke Co.: Fred G. Kirkbride & Co.; Latrobe-Connellsville Coal & Coke Co.; Lincoln Gas Coal Co.; Logansport Coal Co.; Masten Coal Co.; Meadow Lands

Coal Co.; Mercer Gas Coal Co.; Miners Block Coal Co.; Miners Co-Operative Coal Co.; Monessen Coal & Coke Co.; Montour & Lake Erie Coal Co.; Naomi Coal Co.; National Mining Co.; North Penn Coal Co.; Ohio River Coal Co.; Peoples Coal Co.; Pen-American Gas Coal Co.; Penn-Franklin Coal Co.; Penn-Pitt Coal & Coke Co.; Penn Smokeless Coal Co.; Penn York Coal & Coke Co.; Peters Creek Coal Co.; Pioneer Coal & Coke Co.; Pitt Gas Coal Co.; Pittsburgh Block Coal Co.; Pittsburgh-Cambridge Coal Co.; Pittsburgh-Connellsville Coal & Coke Co.; Pittsburgh, Great Lakes & Northwestern Coal Corporation: Pittsburgh Hanover Coal Co.; Pittsburgh Pocahontas High Grade Coal Co.; Pittsburgh Seam Coal Co.; Pittsburgh & Baltimore Coal Co.; Pittsburgh & Bessemer Coal Co.; Pittsburgh & Erie Coal Co.; Pluto Coal Co.; Producers Coal Corporation; Producers Fuel Co.; Poland Coal Co.; Quality Coal & Coke Co.; W. J. Rainey, Coal & Coke; Raridan & East Brady Coal Co.; Redbank Coal Co.; Reilly-Peabody Fuel Co.; Reliance Coal & Coke Co.; Richards Coal Mining Co.; Richland Coal Co.: Robbins Coal Co.: Sagamore Coal Co.: Saw Mill Run Coal Co.; Second Pool Coal Co.; Short Creek Coal Co.; W. B. Skelly Coal Co.; South Favette Coal Co.; Spring Valley Coal Co.; Springer Coal Co.; Squirrel Hill Coal Co.; Standard Coal Sales Co.; Star Fuel Coal Co.; Superba Coal & Coke Co.; Tasa Coal Co.; Taylor Run Coal Co.; Tri-State Coal & Coke Co.; Two Rivers Cannel Coal Co.; Union Coal & Coke Co.; Union Collieries Co.; Union Fuel Co.; United Fuel & Iron Co.; United States Coal & Coke Co.; Valley Camp Coal Co.; Vesta Coal Co.; Victoria Coal Co.; Victory Coal Co.. Vulcan Coal Co.; Walter-Wallingford Coal Co.; W. H; Warner & Co.; Warner Youghioghenv Coal Co.; Washington Gas Coal Co.; Waverly Coal & Coke Co.; Wavne Coal Co.; Weaver Coal Co., Inc.; West Penn By-Product Coal Co.; West Penn Fuel Co.; Westmoreland-Connellsville Coal & Coke Co.: Westmoreland Fuel Co.: Wilson-Beegle Coal Co.; Winfield Coal Co.; Woodruff Coal & Iron Co.; Youghahela Coal Co.; Youghiogheny Coal & Coke Co.; Youghiogheny Pittsburgh Coal Co.; Youghiogheny & Ohio Coal Co.; Zenith Coal Co.

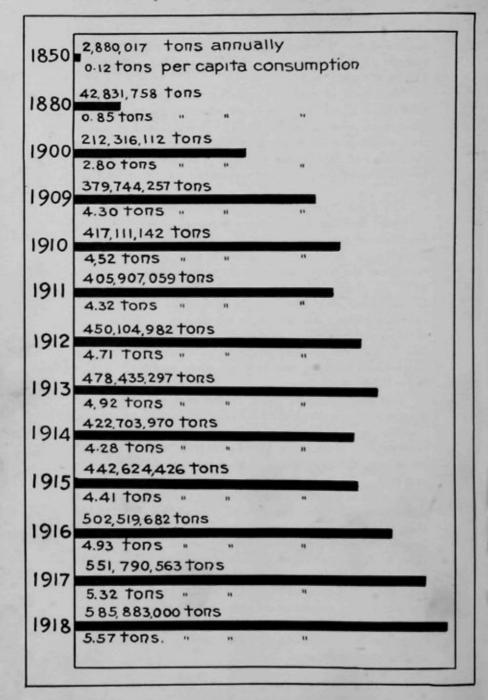
Accurately kept reports show that in the last 22 years, the vast total of 253,000,000 tons of coal were moved on the surface of the Monongahela River. In the year 1919, the amount of coal shipped on the Monongahela River was 14,400,000 tons.

Movement of coal and coke by water will be greatly stimulated when the ship canal which is to connect the Ohio River with Lake Erie shall be finished, as this waterway would provide connection with the Great Lakes and the Ohio and Mississippi Valleys. This great project has been discussed for years and awaits proper action by Congress.

The First National Bank at Pittsburgh possesses exceptional facilities for financing exports of coal and other products of the United States. The Foreign Exchange Department is directly connected with all commercial centers of the world, and handles promptly and economically all documents pertaining to Foreign Commercial transactions. We issue drafts and make payments all over the globe. All languages are spoken in this department, and translations of documents are made for customers. The officers and directors of this institution are experienced bankers and business men, and their advice is available at all times.

The great progress made in the coal business of the United States is graphically told in the diagram printed on another page, showing the total consumption and per capita consumption of coal from 1850 to 1918, inclusive. Seventy years ago, the production of coal totalled 2,880,017 tons annually, and only twelve-one hundredths of a ton was used on an average by every person in the country. Fifty years later, in 1900, the annual output was 212,316,112 tons, and the per capita consumption had increased to 2.8 tons. The next decade saw an expansion to 417,111,142 tons, while the per capita consumption increased to a little more than 41/2 tons. The output grew steadily year by year until 1918 showed 585,883,000 tons of coal mined and the per capita consumption rose to 5.57 tons. This was the heaviest year of the great European war, when every effort was being made to stimulate production to meet the unprecedented demand.

Consumption of Bituminous Coal, and Per Capita Consumption, in the United States, since 1850

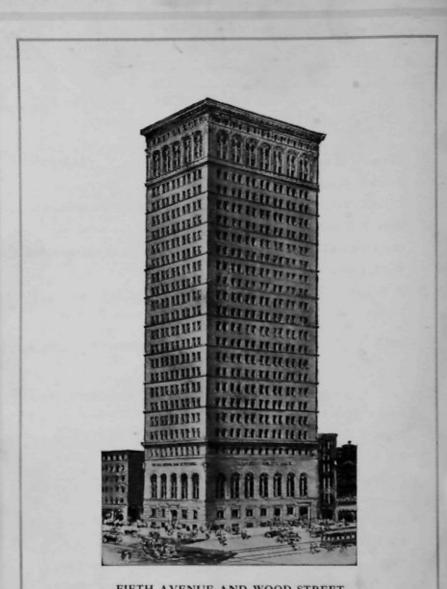


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First National Bank at Pittsburgh

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The Story of PITTSBURGH

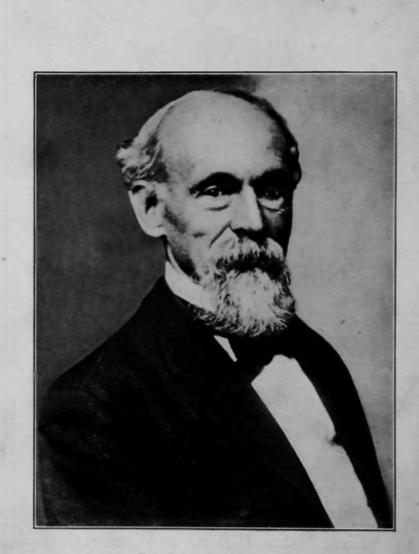
Volume One Number Five

GLASS



First National Bank at Pittsburgh

December, 1920



DR. JOHN A. BRASHEAR

The Story of Pittsburgh

GLASS

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HERE is scarcely a form of manufactured glass in which Pittsburgh does not take the lead, from window glass and lamp chimneys to optical glass and astronomical lenses.

Very large is the city's production of plate glass, window glass, pressed table ware and lamp chimneys. The finer manufactures in glass are represented by establishments which make diffracting prisms, used in lighthouses, lenses for telescopes, opera glasses, microscopes and rangefinders. Dr. John A. Brashear, who recently died, mourned by thousands who knew him personally, and to whom he was "Uncle John", enjoyed an international reputation as an astronomer and a maker of the finest telescopic lenses made anywhere in the world. His establishment was known the world over for the excellence of the lenses it produced.

The Encyclopedia Americana, the most recently published work of this character, speaking of Pittsburgh, says: "The total production of plate glass in the district in 1918 was nearly 60,000,000 square feet, which, if made into one sheet, would cover an area of 1377 acres, or make a pane of plate glass three miles high by one mile wide; and the ordinary window glass made here, would, if in one piece, be a pane nearly three times as large."

The invention of glass occurred at so early a date in the history of the world, as to be lost in obscurity. The method of its discovery is a matter of surmise. Obsidian, which is found in volcanic discharges, was the earliest form of transparent matter. It was used by the ancient Egyptians in the manufacture of various objects. The Romans and the early Mexicans also fashioned articles from obsidian. The celebrated Dr. Johnson tells what glass really is, in one of his delightful papers in The Rambler, saying:

"Who, when he first saw the sand and ashes by casual intenseness of heat melted into a metalline form, rugged with excrescences and clouded with impurities, would have imagined that in this shapeless lump lay concealed so many conveniences of life as would in time constitute a great part of the happiness of the world? Yet by some such fortuitous liquifaction was mankind taught to procure a body at once in a high degree solid and transparent, which might admit the light of the sun and exclude the violence of the wind, which might extend the sight of the philosopher to new ranges of existence, and charm him at one time with the unbounded extent of the material creation, and at another with the endless subordination of animal life, and what is yet of more importance, might supply the decay of nature and succor old age with subsidiary sight. Thus was the first artificer of glass employed, though without his own knowledge or expectation. He was facilitating and prolonging the enjoyment of light, enlarging the avenues of science, and conferring the highest and most lasting pleasure. He was enabling the student to contemplate nature and the beauty to behold herself."

The Egyptians practiced glass blowing more than 4000 years ago, while the invention of glass is sometimes ascribed to the Phoenicians. Glass found in the ruins of Mycenae show that the Greeks were familiar with the art of making glass at least 600 years before Christ. Pliny mentions Gaul (France) as one of the western countries practicing the art. Venice early became a famous glass producing center. There is documentary evidence of glass-making in that city in 1090, and for 500 years the city held a foremost place in its manufacture. In comparatively modern times glass-making extended to other countries. It became established as an industry in the United States early in the 17th century.

Pennsylvania has been a producer of glass from the early history of the colony, for William Penn wrote a letter in 1683, in which he alluded to glass works in his domain. A flint glass factory was established near Lancaster in

1769, and in 1771 a plant for making green bottles was established in Philadelphia. In 1797, a window glass factory was built in Pittsburgh, by Maj. Isaac Craig and James O'Hara, being probably the first factory in which coal was used as fuel, for as late as 1810 wood was used in all glass plants except those in or near Pittsburgh. In 1808, Thomas Bakewell and Robert Page completed a flint glass house in this city, and they were the first who successfully made flint glass in the United States. It is recorded that pot clay was hauled by wagons to Pittsburgh from Burlington, N. J., pearl ash and red lead were brought from Philadelphia, and saltpetre was hauled from the natural caves of Kentucky. The product of the Pittsburgh glass factories early received the approbation of consumers. Cut glass equal to the best quality produced in Europe was made by Messrs. Bakewell and Page. At the Paris Exposition in 1867, the first prize was awarded to an exhibit of pressed glassware, made by the O'Hara Glass Works. The abundance of coal in the vicinity of Pittsburgh, caused Pittsburgh to become the center of the glass making industry of the United States more than a century ago, and inexhaustible deposits of glass-making sand in the vicinity helped to maintain this leading position. Later the application of natural gas to glass-making served to make the position of Pittsburgh in the glassmaking industry more secure. Raw materials which enter into the composition of window glass are sand, known chemically as silica; limestone, or calcium carbonate; salt cake, or sodium sulphate; soda ash and nitrate of soda, and carbon, in the shape of anthracite coal. The supply of these ingredients is practically unlimited, with the exception of soda ash, the cost of which has increased to such an extent, that salt cake is used as a substitute.

Pittsburgh has always been a leader in the glass industry, and its future is brighter than ever. Fuel and raw materials are to be found in unlimited quantities within short distances. Great schools, such as the Carnegie Institute of Technology and the Mellon Institute, are devoting considerable time to research work for the benefit of the glass industry. What is needed, in addition, to complete the equipment of the city, are large sales palaces, such as are to be found in European manufacturing centers, for the display of glass and other manufactures, the whole year round. Such modern methods of display would attract buyers from all over the country and from foreign countries.

MANUFACTURE OF GLASS

It has been said by an eminent authority on the subject, that glass is a compound of various elements chemically combined, and yet it is not a true chemical compound, for the reason that it is not combined in definite proportions, as are many other chemical compounds. We may say, in short, that glass is but little more than vitrified sand. If we could obtain a temperature sufficiently high, we could make glass from sand alone. That this is not done in practice is because of the difficulty of getting a temperature sufficiently high to vitrify the sand, and also for the reason that we could not get vessels that would withstand the heat.

Nothing short of the intense heat of the electrical furnace will melt sand alone. So to make glass commercially we are obliged to use an alkali in connection with the sand to be able to flux or vitrify it in an ordinary temperature, or such as can be maintained with the ordinary fuel at our command. In practice we use an alkalipreferably, carbonate of soda or potash. In connection with these two materials we have to add for a base, either lime or the oxide of lead. We use the nitrate of soda because it also has high fluxing properties, and has a tendency to make the "batch," as we term it, boil; or, in other words, to set up a violent agitation which facilitates the melting. So we can say that ordinary glass is a double silicate of soda and lime; or, if we make the finer qualities, in which we use potash and lead, in that case it is a double silicate of potash and lead. So that sand, or, technically speaking, silicic acid, with lime and nitrate of soda, are the main constituents of ordinary glass; while sand and potash, with the oxide of lead, are the main constituents

of the finer qualities of glass. We find more or less iron in nearly all materials in use, and this substance is the glass-maker's constant enemy. So we use various decolorizing agents, principally oxide of manganese and nickel. In the case of the finer qualities of glass, where we wish to produce beautiful colors, we use various coloring agents such metallic substances as cobalt for making blue, with the oxide of manganese for producing pink and gold, and selenium for making rich ruby colors, as well as uranium and cadmium for producing topaz and orange colors.

In its nature glass is peculiar, differing from almost every other manufactured article. It is amorphous, having no line of cleavage, and, while crystalline in appearance, the laws of crystallization do not in any manner apply to it. To manufacture glass successfully and with uniform results, to make it commercially and meet the requirements of the trade, require constant vigilance on the part of the manufacturer, and sound judgment, founded on long experience. No manufacturer, no matter how much he knows himself as to how things should be done, and no matter how trustworthy he considers his men, is ever certain of results. When he fills his pots he can tell at what hour any particular pot of glass should be ready to work, but he can never be sure, because of the variable conditions to which the process is subjected. Moreover, when new pots are placed in the furnace, with walls from three to four inches thick, his "melt" will be much longer in preparation for working, than in the older pots whose walls may be worn down say to an inch in thickness. Then again, good glass may be spoiled by careless workmen "gathering" the glass when too hot or too cold. This produces streaky glass, or glass with blisters on it. Success in glassmaking can be obtained only approximately, and that by the exercise of constant vigilance and good judgment, and no manufacturer can say beforehand how much glass of a good quality he is going to be able to turn out in a given time.

The following are the principal manufacturers of glass in the Pittsburgh district:

PITTSBURGH PLATE GLASS COMPANY

The Pittsburgh Plate Glass Company, which was a consolidation of several independent plants, was incorporated in 1895. Its principal business is the manufacture of plate glass, which it sells over the world. The capacity of the company is about 50,000,000 feet of plate glass and 1,200,000 boxes of window glass per annum.

The company owns and operates plate glass factories at Creighton, Tarentum, Ford City and Charleroi in Pennsylvania, Kokomo, Ind., and Crystal City, Mo., and window glass factories at Mt. Vernon, Ohio, and Clarksburg, W. Va.

Plans were recently completed for the merger of the Columbia Chemical Company and the Patton Paint Company with the Pittsburgh Plate Glass Company, with a total authorized capitalization of \$37,500,000.

Acquisition of the chemical company was accomplished in order to insure to the glass company a supply of soda ash, while the glass company already had a controlling interest in the four paint and varnish companies comprising the Patton-Pitcairn interests, with no minority interests in any of the concerns. The consolidation gives the Pittsburgh Plate Glass Company assets of \$61,000,000 or \$23, 500,000 in excess of the capitalization.

The Pittsburgh Plate Glass Company has about 8,000 employes on the pay roll. The new organization is as follows: W. L. Clause, Chairman of the Board of Directors, Charles W. Brown, President, E. B. Raymond, Vice-President, H. S. Wherrett, Vice-President, Ludington Patton, Vice-President, H. A. Galt, Vice-President, C. R. Montgomery, Secretary, Edward Pitcairn, Treasurer, Clarence M. Brown, General Counsel, S. S. Lindsay, Comptroller, J. F. Cargill, Purchasing Agent, J. M. Belleville, Traffic Manager.

AMERICAN WINDOW GLASS MACHINE COMPANY

The American Window Glass Machine Company controls the American Window Glass Company, having acquired this control by the exchange of one share each of the Machine company for the common stock of the Window Glass Company. The latter leases on a royalty basis the patent rights owned by the Machine Company. The original company was incorporated under the laws of Pennsylvania in August, 1899, and was formed by the acquisition of 20 companies, which at that time produced 85% of the window glass manufactured in the United States.

The American Window Glass Machine Company was incorporated under the laws of New Jersey in 1903. It owns practically all of the stock of the American Window Glass Company, which is the largest manufacturer of window glass in the United States. Its capitalization consists of \$6,998,993 cumulative 7% preferred stock and \$12,997,993 common stock. There are no bonds or other funded debt. The company owns the exclusive rights in the United States to patents on machines for the manufacture of window glass, which rights are leased on a royalty basis to the American Window Glass Company. With the use of these machines window glass can be made more cheaply than by any other process. Through its subsidiary, the company is operating manufacturing plants in seven cities of Pennsylvania and Indiana. The Machine Company is paying 12% dividends on the common stock and 7% on the preferred. The company has been uniformly successful in defending its ownership of patents, there having been much litigation against concerns for using the machines without license. Courts have decided that such companies are liable for every foot of glass made, together with future royalties for the use of the machines.

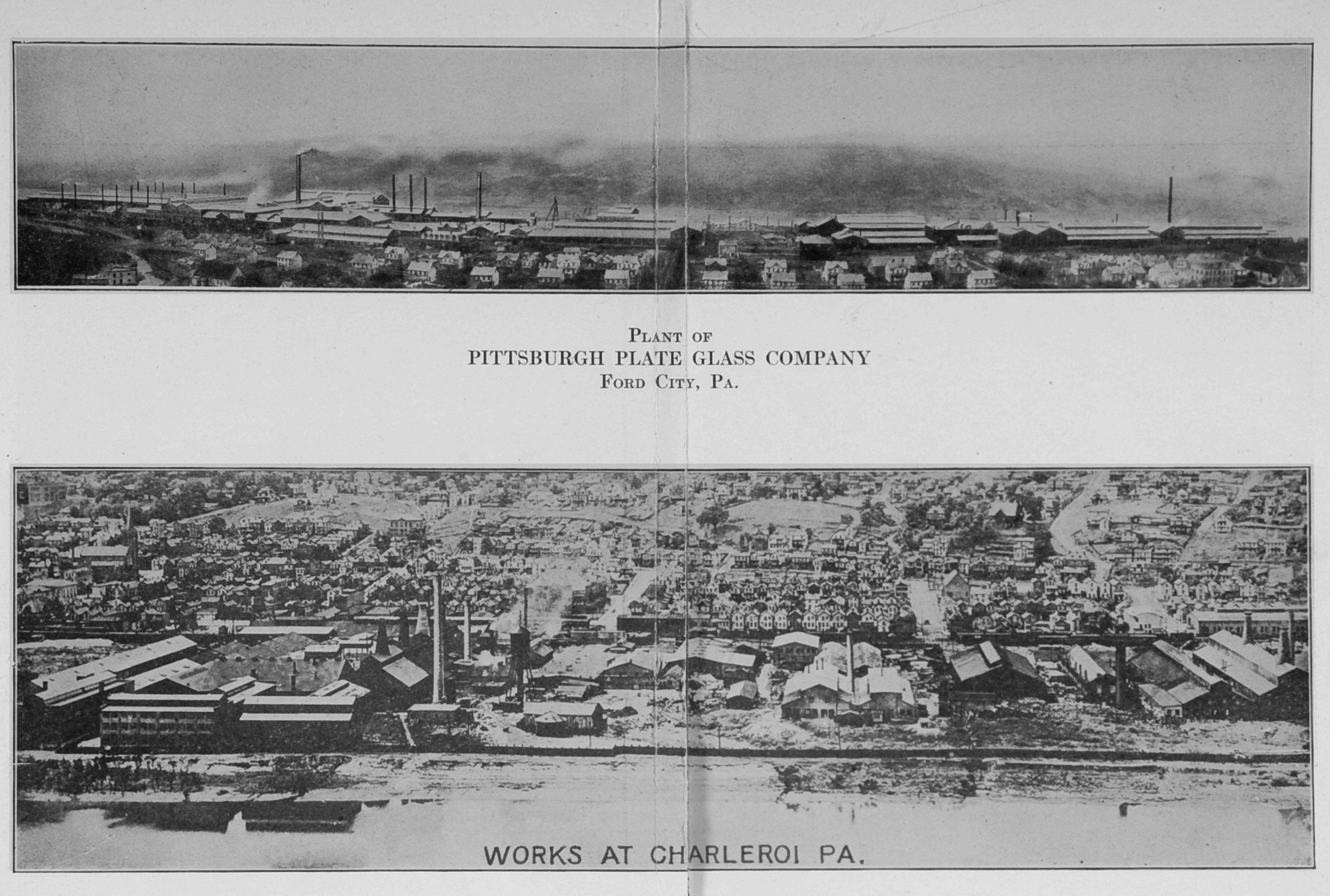
The American Window Glass Company blew glass by hand until 1903, when machines were adopted and installed for the mechanical drawing of window glass cylinders entirely abandoning the hand-blowing method. This improvement reduced the number of 41 hand-blowing plants to 6 machine-blowing plants. These are located at New Kensington, Jeannette, Belle Vernon, Monongahela City and Kane, all in Pennsylvania, and at Hartford City, Ind. The company inaugurated the "continuous tank" melting furnace in the window glass industry and now operates the largest glass-making furnaces in the world. Its products include single strength and double strength window glass; 16-oz. picture glass, photographic dry plates, X-Ray plates, 26-oz. glass, 29-oz. glass, 34-oz. and $\frac{3}{16}$ crystal sheet. During the recent war, the company supplied all the glass for the army cantonments, and produced and shipped as high as 2,000,000 circles a week for use as lenses in gas masks. The products of the American Window Glass Company are well known in all parts of the world.

UNITED STATES GLASS COMPANY

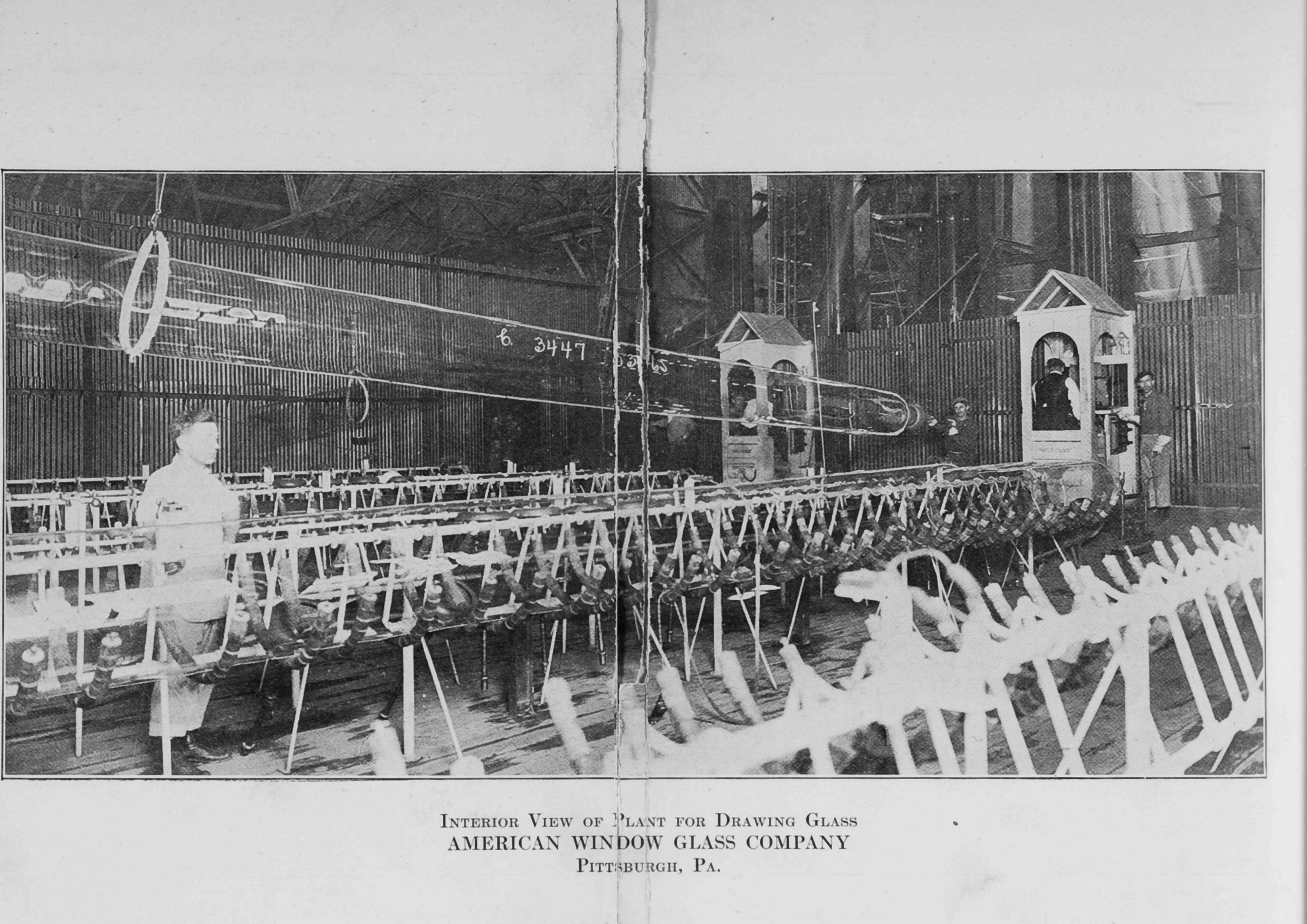
The United States Glass Company is a Pennsylvania Corporation, organized in 1891 by the taking over of what at that time were among the largest and most prominent concerns in their particular branch of manufacture. It was one of the very first of industrial mergers, the same being formed with the idea of being able to make considerable savings in the cost of producing and marketing the product. Only the most successful concerns were included at the time and the company started operations under very promising conditions.

The line produced is the largest of any concern in what is known as the pressed blown table glassware business, which does not mean that articles only for table and household uses are manufactured, but in reality the making of any article in glass which can be produced with the same or similiar equipment.

Its product includes all kinds of articles for home and business purposes, such as Sugar and Cream Sets, Berry Dishes, Salt Bottles, Goblets, Tumblers, Water Pitchers Oil Bottles, Vases, etc., both in plain Crystal as well as Etched, Cut and Decorated. Also special ware, such as Blanks for Cutting, Door and Furniture Knobs, Automo-



PLANT OF MACBETH-EVANS GLASS COMPANY CHARLEROI, PA.



bile Lenses, Confectioners and Druggists' Show Jars, Tobacco Jars, Glass Lamps, Soda Fountain Supplies, Battery Jars, Electric Instrument Covers, Jelly Tumblers, Pressed Lighting Glass such as Shades, Bowls for semiindirect illumination, etc.

It is estimated that including with the plain crystal lines, the various lines of etchings, cuttings and decorations, as well as shapes and designs, the company manufactures over 20,000 different articles.

The company operates nine producing plants, five in Pittsburgh, Pa., two in Glassport, Pa., one in Tiffin, Ohio, and one in Gas City, Indiana; also two general decorating shops and one special shop. It has a thoroughly experienced and efficient organization and employs approximately 3,000 people. Each plant has all the necessary equipment for the production of its particular line of ware, as well as the facilities for cutting, polishing, etching and decorating, where this work is done.

The principal offices of the company are in Pittsburgh, where large sales display rooms are maintained containing one sample of each piece of ware manufactured by the company. Branch sales display rooms are also maintained at New York, Baltimore, Boston, Chicago, Denver, Los Angeles, Philadelphia, San Francisco, London, England, Sydney, Australia, Mexico City, Mexico, and Havana, Cuba. The company further employs an efficient corps of traveling salesmen, some of whom cover South America, South Africa, and other distant points—so its ware is shipped over practically the entire world, and the company and its products are well regarded and favorably known wherever it does business.

MACBETH-EVANS GLASS COMPANY

The Macbeth-Evans Glass Company occupies the fourteenth floor of the Chamber of Commerce Building,

Pittsburgh, and is the largest manufacturer of illuminating and industrial glass in America. This company was incorporated in 1899, being formed by merging the George A. Macbeth Company and the Thomas Evans Company, the new company afterwards absorbing the American Lamp Chimney Company and a little later the Hogan-Evans Company. The widespread use of petroleum from the oil fields of Western Pennsylvania created a great demand for lamp chimneys and made the production of those chimneys a great industry in itself. In 1869 the firm of Thomas Evans & Company was established. This became the greatest manufacturer of chimneys in the world. They operated the Crescent Glass Works at Eighteenth and Josephine Streets, on the South Side. The production of this firm reached the enormous figure of 12,000,000 lamp chimneys a year, 4,000,000 of which were decorated. This production, laid in line, would reach 1500 miles, and built up as a 10-foot hollow square, it would form a chimney over 9 miles high. Three years later the George A. Macbeth Co. was established and the chief product of this firm was lead glass chimneys, for which a very great demand was established. These two concerns, as previously stated, were merged with their later acquisitions, and the new company took over the patents on the Owens Glass Blowing Machine, which made it possible to increase many fold the production of lamp chimneys and other articles. The most important feature in connection with the consolidation of these companies, aside from the purchase of the glass blowing machine, was the bringing together of the two men, Mr. George A. Macbeth and Mr. Thomas Evans, one the antithesis of the other in many respects, but both well grounded in the intricate processes of glass-making, one a man of great imagination and the other more conservative, but admirably fitted by reason of keen business instinct, to direct the financial affairs of the new company. The new company was capitalized at \$2,000,000 and grew very rapidly. One of its factories, located at Charleroi.

a short distance from Pittsburgh, is one of the largest in the world, employing several thousand persons. The company also operates factories at Elwood, Ind., Toledo, Ohio, Bethevan, Ind., as well as a factory in Pittsburgh.

It was at the Charleroi plant that many of the extraordinary things which have been done in glass, in recent years, were accomplished. Perhaps the most important of these things was the manufacture, for the first time in America, of the great lighthouse lenses used by the United States and other Governments in the lighthouses which protect the coasts and waterways. Some idea of the development of the glass industry can be formed from the fact that in this plant there are made seven different kinds of clear glass. Glass is made which can be subjected to very violent treatment, such as throwing it around without breaking. This glass is used in the steam gauges of large locomotives and in other places where a glass is required of sufficient toughness to resist great expansive forces. Special heat-resisting glass, used where it is subject to high temperatures, as in miners' safety lamps, is also made here. Other products include all kinds of illuminating and industrial glassware, lantern globes, street lighting globes, lighting fixture glassware, ship lights, railway signal glass, chemical glassware and automobile lenses. It is, however, impossible to enumerate the multitude of different articles manufactured by this company, as the latest estimate placed the number at over 6,000.

PITTSBURGH LAMP, BRASS & GLASS COMPANY

The Pittsburgh Lamp, Brass & Glass Company was incorporated in 1902 under the laws of New Jersey with an authorized capital of \$1,500,000, equally divided between preferred and common of the par value of \$100 a share. The company was formed by the consolidation of the Pittsburgh Lamp and Brass Company of Allegheny, Pa., the Kopp Glass and Lamp Co. of Swissvale, Pa., the



PLANT OF PITTSBURGH LAMP, BRASS AND GLASS COMPANY FACTORY NO. I, NORTH SIDE, PITTSBURGH, PA.

Fort Pitt Glass Co. of Pittsburgh, Pa., and Dithridge & Company of Pittsburgh, Pa.

They employ about 1200 working people, some of whom are highly skilled artists in their several lines. They produce electric, gas and oil lamps; lighting fixtures in great variety; a general line of glassware for lighting purposes, in clear, opaque and colored glass; decorated and etched glassware, and a varied line of signal glasses in different colors, for use in the navy and on railroads. The company's brass works are on the North Side, Pittsburgh, and it has factories at Swissvale and Jeannette, Pa. The president of the company is W. L. Curry; Nicholas Kopp is Vice President and General Manager; W. F. McNaugher, Secretary and Assistant General Manager, and H. L. Brooks, Treasurer.

C. L. FLACCUS GLASS COMPANY

The business of this concern was established by C. L. Flaccus in 1879 and incorporated in 1904, with a capital stock of \$500,000. This was increased in 1919 to \$750,000, Its plants are located in Tarentum, Pa., and California, Pa. In 1919 a consolidation was effected, in which the Imperial Glass Co. of Charleroi, was merged with the C. L. Flaccus Glass Co. The company maintains selling agencies and warehouses in New York, Philadelphia, Boston, Chicago, Cleveland and Detroit. Its product includes a general line of hand-blown and machine-made bottles and jars. The company was the first to manufacture wide-mouth bottles and jars by the machine process in 1892. It was also the first to introduce natural gas in the melting of glass. This was done in 1881. The company's general office is in the Empire Building, Pittsburgh. The officers are L. G. Flaccus, President; C. L. Flaccus, Jr., Vice President; J. C. Unverzagt, Treasurer and Secretary.

THE PHOENIX GLASS COMPANY

The Phoenix Glass Company was organized in 1880, by Andrew Howard, formerly connected with the Union Line of the Pennsylvania Railroad Company, with a capitalization of \$30,000. The company was reorganized in 1891, the capitalization being \$700,000. Its plant is located at Monaca, Beaver County, Pa., on the New York Central Lines, and occupies a space of about ten acres. The company was originally organized for the manufacture of specialties, but later made a very large line of lamp chimneys, and was the first company west of the Allegheny Mountains to produce opal glass and rich cut glass. They are now the largest exclusive manufacturers of illuminating glassware in the United States, to which they devote their entire efforts. The product consists of glass for electric, oil and gas illumination, from the cheapest to the very highest grade of ware for this purpose, embracing plain, etched, cut, and the richest decorated ware. The largest

proportion of the company's product is sold in the United States and Canada, but it is also exported to all countries of the World. Nine hundred persons are employed, the majority of whom are skilled workmen.

D. O. CUNNINGHAM GLASS COMPANY

The D. O. Cunningham Glass Company was established in 1849 and incorporated in 1898, under the laws of Pennsylvania. The capital is \$245,000, in shares of \$100 par, and the company has a surplus of \$65,000. Its plant occupies an entire city block on the South Side, Pittsburgh, and employs 250 people, in the production of soda bottles exclusively, by using O'Neil machinery. Its annual net sales are \$300,000, and its yearly capacity is 800,000 gross of bottles. The officers of the company are H. V. Cunningham, President; L. S. Cunningham, Sr., Treasurer; and William James, Secretary and General Manager.

The First National Bank at Pittsburgh is thoroughly equipped to handle promptly and economically all matters pertaining to the export business of glass and other commodities. It finances cargoes of merchandise destined to any part of the World. Its large resources enable it to handle business of this kind, however large or complicated.

All branches of International Banking are completely covered by our facilities.

We issue drafts and make payments in all parts of the World.

We handle Trade and Bankers' Acceptances.

All languages are spoken in our Foreign Department.

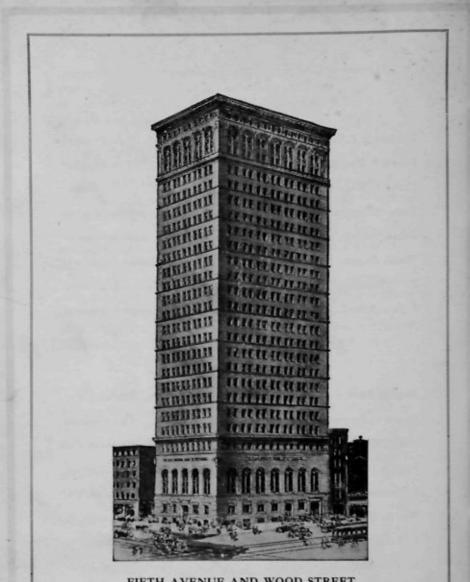
Officers of this institution are trained bankers with a wide experience, and its directors are successful men in a large variety of enterprises, affording a broad scope of business knowledge.

OFFICERS

LAWRENCE E. SANDS
FRANK F. BROOKS Vice President
CLYDE C. TAYLOR
THOS. B. HUDSON
OSCAR WILSON Assistant Cashier
WM. J. FRANK
P. W. DAHINDEN Assistant Manager Foreign Department
J. PAUL FORD Assistant Manager Foreign Department

DIRECTORS

JOHN A. BECK President, Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKS
WM. L. CURRY Manufacturer, Piitsburgh, Pa.
JOHN A. DONALDSON
J. ROGERS FLANNERY President, Flannery Bolt Co., Pittsburgh, Pa.
WM. H. HEARNE Director, La Belle Iron Works, Steubenville, O.
J. H. HILLMAN, JR. President, Hillman Coal & Coke Co., Pittsburgh, Pa.
D. T. LAYMAN, JR
A. M. MORELAND
P. W. MORGAN President, East Pittsburgh National Bank
WM. A. RENSHAWJohn A. Renshaw & Co., Pittsburgh, Pa.
LAWRENCE E. SANDS President



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

First National Bank at Pittsburgh

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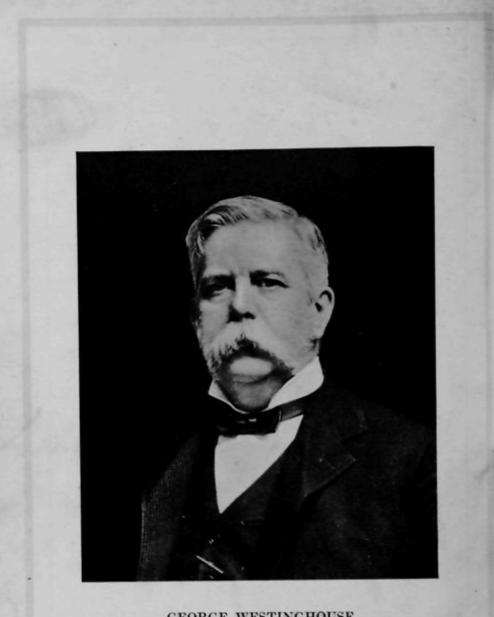
The Story of PITTSBURGH

Volume One Number Six

ELECTRICAL APPLIANCES

First National Bank at Pittsburgh

March, 1921



GEORGE WESTINGHOUSE

Founder of the world-wide Westinghouse interests

The Story of Pittsburgh ELECTRICAL APPLIANCES

5

HE name of George Westinghouse is known all over the world as one of the greatest inventors and captains of industry who ever lived. His fame was international long before he died, on March 12, 1914. He was one of the citizens who did most to build up the industries of this great industrial, commercial and financial center. He became one of the most famous and honored men not only of Pittsburgh or of the United States, but of the whole world, because the things he accomplished were of the greatest importance to mankind. He was justly called "the greatest living engineer" during the last few years of his life.

George Westinghouse, even as a boy, displayed much inventive genius. His father was an inventor and the son spent much of his time in the elder Westinghouse's machine shop. There is a report, and it very well can be believed, that he invented a rotary engine before he was 15 years of age. Certain it is that at the age of 24, he had not only invented, but secured the adoption by railroad companies of the airbrake which bears his name. This is the most important safety device ever invented for obviating danger of railway travel, and it is the chief agency which has transformed railways from their early condition to the present state of efficiency and safety.

George Westinghouse built the first ten great dynamos at Niagara, the dynamos for electric railways of New York and London, and he also developed steam turbines and the alternating current system of electricity. He was always his own master, never working for wages, but he did not begin with money, for he inherited none, nor was any given him in any form. His brains were his capital and from his own mind he developed idea after idea, industry after industry, until he found himself at the head of manufacturing establishments of great magnitude, which on the American continent and in countries across the oceans, employed 50,000 persons and capital amounting to \$200,000,000.

While Mr. Westinghouse was the inventor of very many useful appliances, it is his connection with electricity of which we would speak first. His name is daily heard on the floors of the stock exchanges of the world, for when a broker bids for "Westinghouse," everyone knows he is buying the stock of the Westinghouse Electric and Manufacturing Co., a great Pittsburgh concern, with ramifications all over the globe.

The Westinghouse Electric and Manufacturing Company was organized in 1886, with 200 employees. It now uses the services of 50,000 men and women, with a monthly payroll averaging over \$4,250,000. Since 1914, the capacity and output of the company's plants have about doubled, while the volume of sales, due to increased costs and prices, has almost quadrupled. The latest statement of the company said the amount of unfilled orders on the books exceeded \$95,000,000, showing an increase of about \$24,000,000 in five months. This statement also said:

"It is the opinion of your Board that the electrical manufacturing field never presented such possibilities for continued large business as at the present time. The increased cost of fuel and the demand for its conservation will result not only in the development of water powers, but also, it is believed, in the establishment of large central steam power stations located near the coal fields. The electrification of railroads has been demonstrated as the best solution of the pressing traffic problems in many congested districts and mountain sections, while the demand for the products of your Company for use in the marine field is rapidly increasing. There is also a great broadening use of electricity in the daily life of the people."

The capital stock of the Westinghouse Electric & Manufacturing Company consists of \$3,998,700.00 Preferred and \$70,813,950.00 Common, or a total of \$74,812,- 650.00, (par of which is \$50.00), on which quarterly dividends of \$1.00 a share or 8% per annum, are paid. The property and plant are valued at \$42,920,366.00. Its investments in stocks, bonds, debentures, etc., of other companies, are valued at close to \$12,000,000.00 and the latest balance sheet shows total current assets of \$118,290,-191.00.

The floor space used by the Company is more than 200 acres. Its power house capacity is 28,000 horsepower. Its daily coal consumption is 500 tons, and its average monthly shipments are 1,000 carloads. Section R, 1610 feet long and 70 feet wide, is one of the largest single areas in the world devoted to manufacturing purposes. Electrical apparatus made and installed by the Company is to be found in every civilized country, and ships equipped with Westinghouse electrical appliances are constantly traversing the oceans all over the globe. Vessels to the number of 370 are now in service or under construction bearing Westinghouse propelling machinery. The Company introduced the Alternating Current System into America, initiated the Polyphase Induction Motor, marketed the first successful single reduction railway motor, and made the first American direct-connected turbinegenerator. Generators are built from $\frac{1}{10}$ to 70,000 Kv-a; transformers from 3/4 to 23,000 Kv-a, and motors from 1/100 to 15,000 horsepower.

Mindful of the welfare of its employes, the Company operates for their benefit the largest industrial eating house in the world. It also builds houses and sells them to its employes on easy payments, and it maintains for their benefit a technical night school which affords a liberal course of study and fits them to take higher and more remunerative positions as their ability and knowledge develop.

The main plant of the Company is at East Pittsburgh, where electrical apparatus of all kinds is made. Here, too, is located the Pittsburgh Meter Company, a subsidiary, making water and gas meters. In Pittsburgh is the R. D. Nuttall Company, another subsidiary, producing gears, trolleys, and flexible couplings. Other plants with their products, are as follows:

South Philadelphia-Steam Turbines, marine gears and condensers.

East Springfield-Small motors, automotive and radio equipment.

Newark, N. J.-Meters, fans and rectifiers.

Attica, N. Y.-Stokers.

Cleveland-Castings.

Trafford City-Castings.

South Bend, Ind.—Illuminating fixtures. (George Cutter Works.)

Mansfield, O.-Electric heating apparatus and electrical appliances. (Westinghouse Electric Products Co.)

Brooklyn, N. Y.—Safety switches and panels. (Krantz Manufacturing Co.)

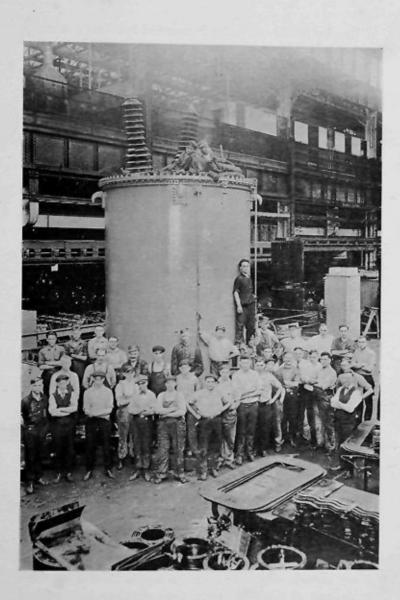
Bloomfield, N. J., Trenton, N. J., Milwaukee, Wis., Middleton, Conn., and New York City—Incandescent lamps under the name of the Westinghouse Lamp Co.

Bridgeport, Conn.—Electrical wiring devices. (Bryant Electric Co.)

In East Pittsburgh is the shop where large power transformers are made, and where the seven 275-ton passenger locomotives for the Chicago, Milwaukee & St. Paul Railway were built. It is nearly one-third of a mile in length and one of the longest aisles in the world devoted to manufacturing.

One of the remarkable features of the East Pittsburgh plant is the processing of raw materials which go into the making of the multitudinous articles comprising the finished product. In the copper shop, long strips of copper are cut to proper size for use in large motors and made to become parts of generators.

In one section where large furnaces are roaring, giant hammers are pounding and powerful machines are shaping raw materials, the blacksmith is working incessantly to convert rough forgings and castings so that they may serve as part of the steady flow of products from the Westinghouse plant. Here, in the blacksmith shop, the



Most powerful transformer in the world. Now installed in the Duquesne Light Company's station at Colfax, Pa.

visitor sees produced, motor frames and brackets and many other similar parts.

One of the most recent developments of the Westinghouse Company in the electrical field, was the discovery of a new insulating material. This, it was found, was capable of being moulded into plates, rods or tubes. Bakelite Midarta, as this substance is called, is now being used for hundreds of purposes in the industrial world. When the visitor visits the building devoted to this material, he will see Bakelite Midarta moulded into every conceivable shape for insulation material, for gear, ignition distributers and distributer arms, clutch bands for automobiles and tractors, airplane propellers and for many other purposes. A new plant has been purchased recently at Rochester, Pa., just in order to supply the demand for this Midarta. It is planned to use Bakelite Midarta exclusively for fan blades in the future.

If the visitor comes to the Works at East Pittsburgh, by means of an automobile, via the Lincoln Highway, he will obtain a good view of the Research Laboratories, set on a high hill, away from the noise, vibration and confusion that is attendant at a plant such as is located at East Pittsburgh. The Building, however, is convenient to the main works. This Laboratory is important and interesting because to Westinghouse Research, Industry owes a goodly part of its advancement in its growth, size and efficiency. Thousands of dollars are spent annually by the Company in an effort to keep in advance of Industry, sensing its needs and solving problems before the layman is aware of the existence of the problem itself.

New uses are constantly being discovered for electricity, and almost every day brings information of a new benefit being conferred on mankind by the wonderful power or property, or whatever it may be called. Three American Navy airmen, who were recently lost in the far northern wilderness of Canada, after their helpless balloon had descended near Moose Factory, were saved from freezing to death by electrically heated garments. Had it not been for these contrivances, when they were battling their way back to civilization on dog sledges, the three frozen corpses of Lieuts. Walter Hinton, Stephen A. Farrell and A. L. Kloor would be lying in the snow many miles beyond the nearest telegraph station of the Hudson Bay Company, instead of returning home in safety.

THE WESTINGHOUSE AIR BRAKE COMPANY

The Air Brake, universally famous as one of the greatest factors in the successful development of modern rail transportation, ranks as the first notable invention of the late George Westinghouse, hence, the Westinghouse Air Brake Company is the oldest of the many industrial enterprises which owe their existence to the genius of the renowned inventor-manufacturer, having been incorporated in 1869, under the laws of Pennsylvania with an authorized capital of \$500,000 of the par value of \$50 a share, and beginning operations the same year in a modest plant at Liberty Avenue and Twenty-fifth Street, Pittsburgh.

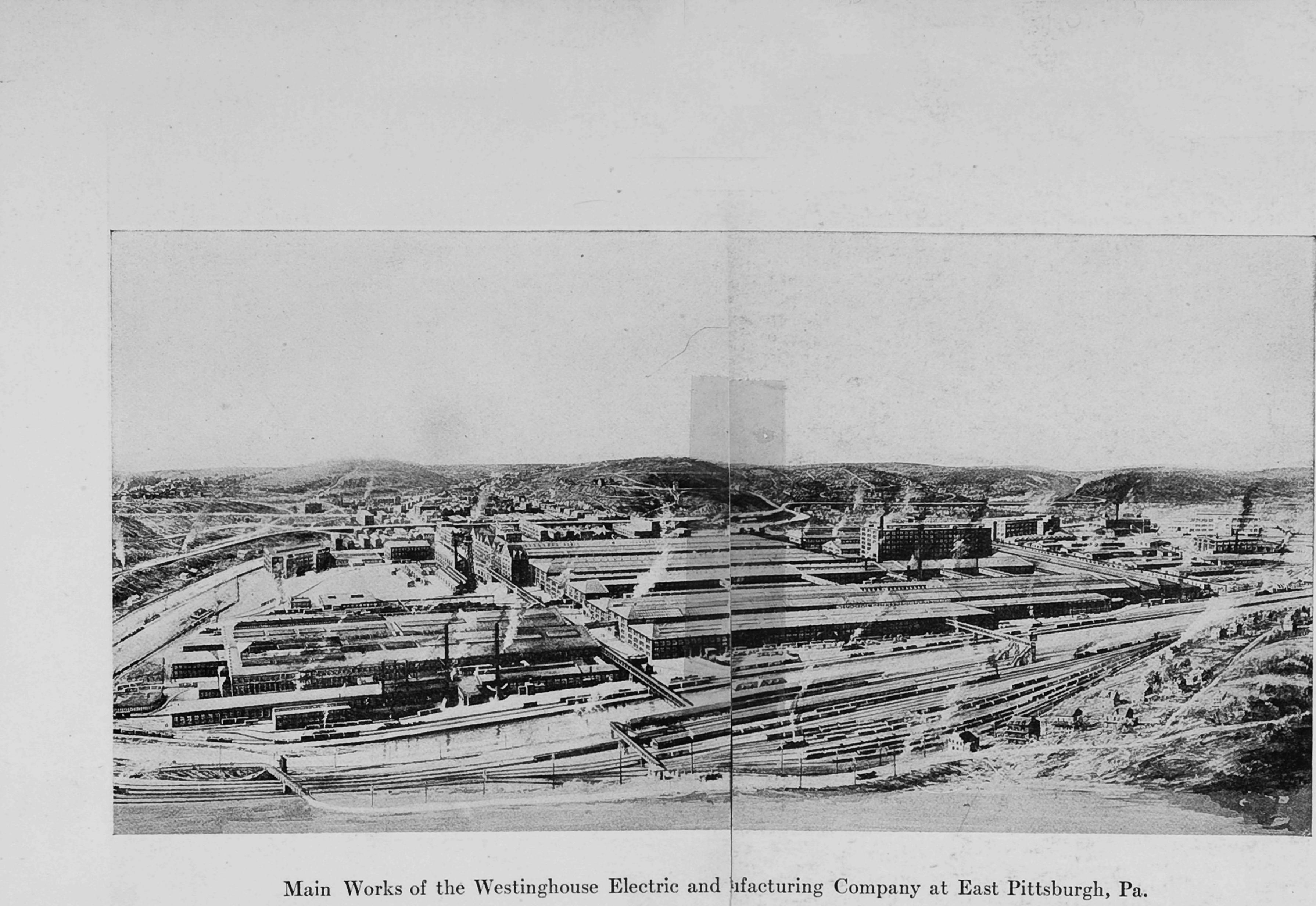
Contrary to popular tradition which accredits Mr. Westinghouse as having endured many discouraging hardships in attempting to market the Air Brake, the original facilities of the Company were from the beginning too limited to fill the orders that were received almost immediately after the first successful demonstrations, which took place on the Pan-handle Division of the Pittsburgh, Columbus, Cincinnati and St. Louis Railroad, between Pittsburgh and Steubenville, O., in 1868. Every addition was made to the first building that the site would accommodate, but in 1881, it became necessary to move the plant to larger quarters in Allegheny, now the North Side of Pittsburgh.

The first increase in the capital stock was made in 1872 when \$100,000 was added to the original \$500,000. A further rapid growth of business in the next few years, however, called for greater expansion, and on September 7, 1886, another increase in the capital stock was authorized, this time from \$600,000 to \$3,000,000. Two years, later in 1888, the need of larger capital was again felt, resulting in an increase of \$2,000,000, bringing the total to \$5,000,000.

By this time, the Air Brake had been introduced successfully on practically every mile of railroad in the United States and had also won recognition in almost every foreign country. The plant on the North Side was no longer adequate to handle the increasingly heavy volume of business and the company was forced to seek more commodious quarters. In order to get far enough away from the center of Pittsburgh, that sufficient room would be afforded for proper development, and at the same time to realize the advantage of the best transportation facilities. a site was selected in the Turtle Creek Valley, 14 miles east of Pittsburgh on the main line of the Pennsylvania Railroad. The plant was moved accordingly in 1890, and the town of Wilmerding was established to provide homes for as many of the employees as cared to live in the immediate vicinity.

The Company continued to enjoy a steady growth in its new location. In 1898, the capital stock was increased to \$11,000,000; in 1907, to \$14,000,000; in 1912, to \$20,000-000, and March 15, 1917, to \$30,000,000, which is the present capitalization. During this period of expansion, the Company developed or acquired control of a number of other industries, engaged in the railway supply business along lines having a natural or supplementary relationship, prominent among which are the Union Switch & Signal Company of Swissvale; the Locomotive Stoker Company, North Side, Pittsburgh; the American Brake Company of St. Louis, and the National Brake and Electric Company of Milwaukee. Companies are also operated in Canada, England, Australia, France, Italy, Germany and Russia. The most recent development of the Company brought into existence the Westinghouse Union Battery Company of Swissvale.

Although located at Wilmerding for more than thirty years, the Westinghouse Air Brake Company has always continued to be identified as a Pittsburgh industry and a large number of the 6,000 employees engaged at the Wilmerding plant reside in the several boroughs adjacent to the city on the eastern line, or in the city proper. Sales



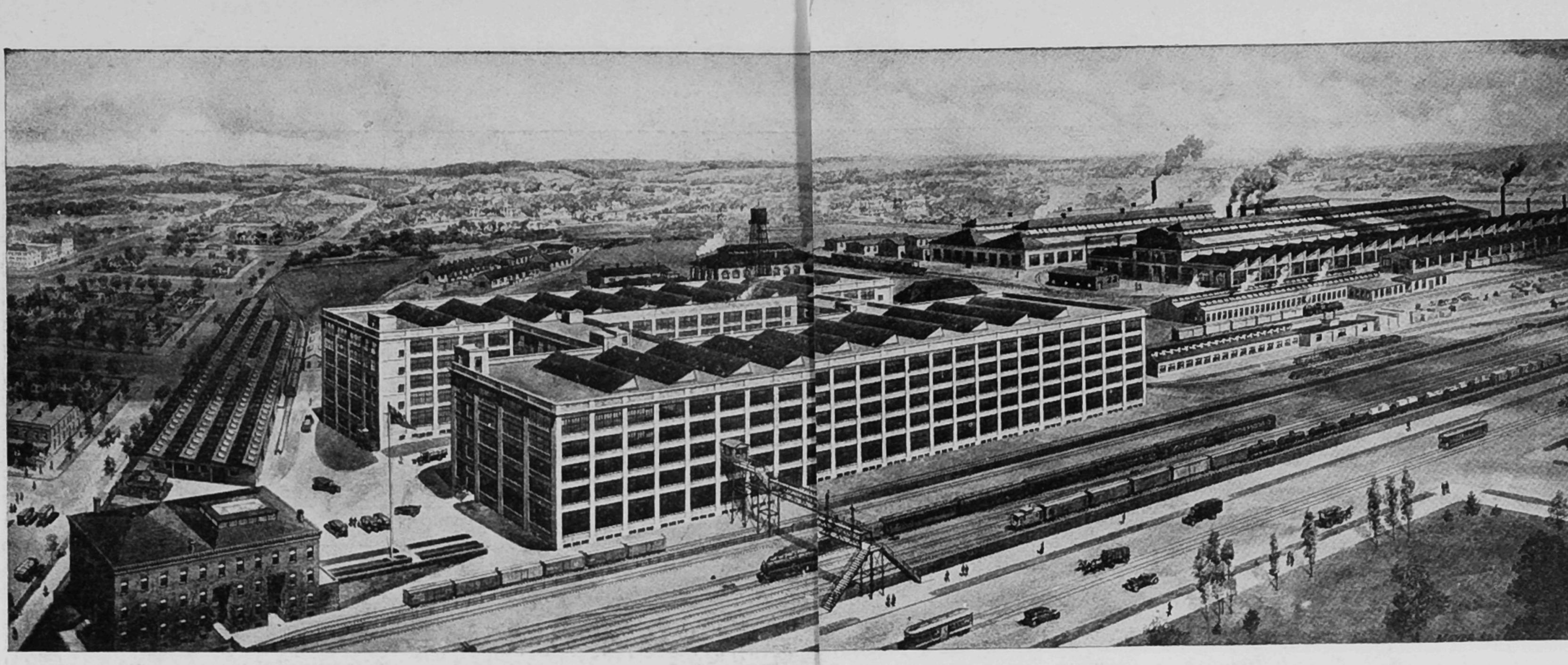
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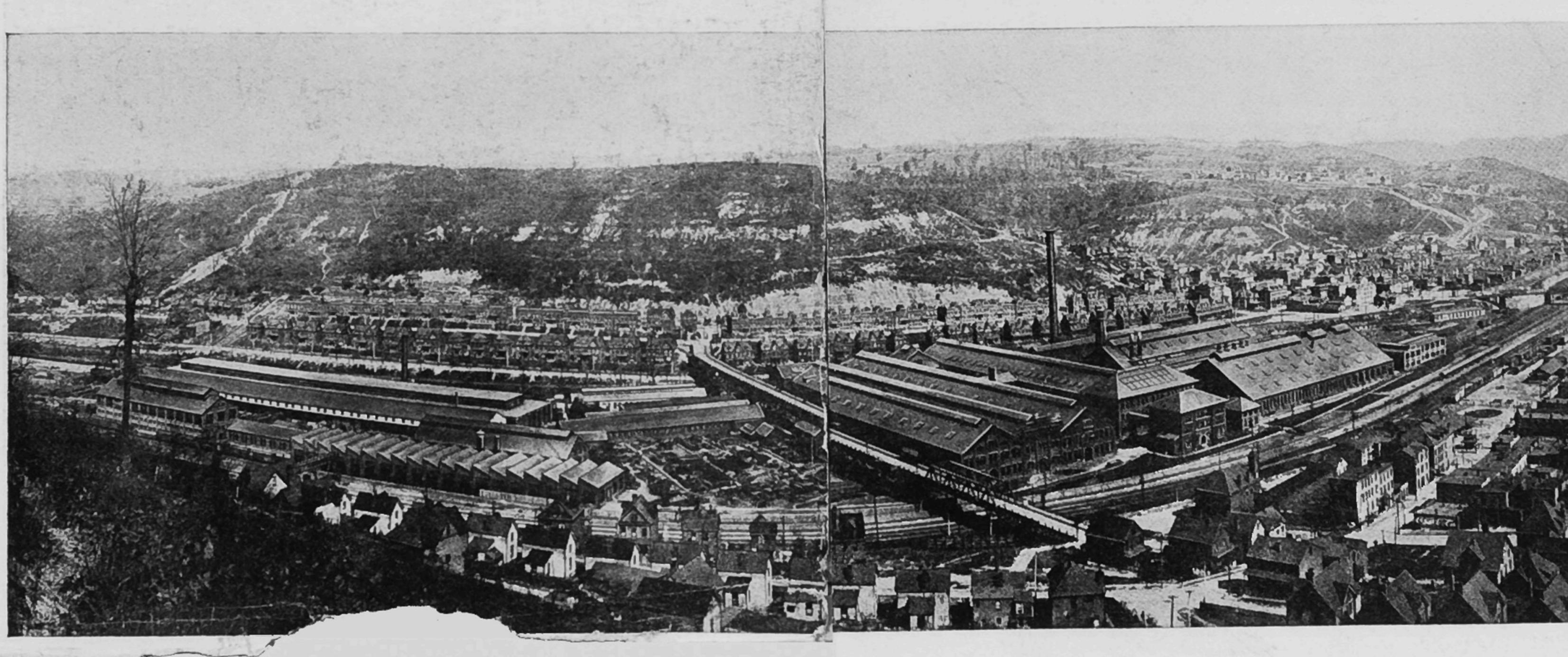




Section of the coil-winding department where coils large Westinghouse turbo-generators are wound C

La hand the later





Main Office and Works, The Union tch and Signal Company, Swissvale, Pa.

Vorks, Wilmerding, Pa.



offices and an export department are maintained in the Westinghouse Building at Penn and Seventh Avenues, Pittsburgh, Pa.

The officers of the Company are H. H. Westinghouse, Chairman of the Board of Directors; John F. Miller, Vice Chairman; A. L. Humphrey, President; W. S. Bartholomew, Vice President; Charles A. Rowan, Vice President and Controller; G. W. Wildin, General Manager; S. C. Mc-Conahey, Acting Vice President and Treasurer; Jeptha Newkirk, Assistant Treasurer; J. H. Eicher, Auditor; John I. Rankin, Assistant Auditor; H. C. Tener, Secretary; G. C. Dehne, Assistant Secretary; C. R. Ellicott, Assistant Secretary.

The Company's product includes complete Air Brake Apparatus for Steam and Electric Roads; Friction Draft Gear and Car Couplers for Steam Road Service; Automatic Car-Air and Electric Couplers for Electric Railways; Steam-Driven, Motor-Driven and Belt-Driven Air Compressors, Governors and Accessories for Industrial Service; Feed Water Pumps; Air Storage Reservoirs; Test Racks for Air Brake Maintenance; Leather and Composition Gaskets and Brake Cylinder Packing Cups.

The stock has been earning and paying a regular quarterly dividend of \$1.75 per share.

The Westinghouse Air Brake Company gives to the Pittsburgh District the distinction of having supplied by far the larger part of all Air Brake apparatus that is in use today on steam and electric roads throughout the world. The importance of the device in connection with modern transportation cannot be too strongly emphasized. Through its marvelous efficiency, it enables an engineman to maintain perfect control over a train of any speed, length and weight that the most powerful locomotive can haul. Before its invention, light trains and low speeds were the rule, due largely to a lack of adequate braking facilities. By making it possible to operate on a vastly larger scale, therefore, the Air Brake has played a vital part in the development and growth of the nation, which is admittedly a result of our great transportation systems.

Being an integral part of virtually every steam and

electric train and street car now in operation, which combine to carry annually many times as many passengers as there are people in the whole United States, the Westinghouse Air Brake has been said to have more "ultimate consumers" than any other manufactured product represented by a single industry.

THE UNION SWITCH AND SIGNAL COMPANY

On December 28, 1878, articles of association of the "Union Electric Signal Company" were filed in Hartford, Conn., the capital stock being \$500,000 (10,000 shares at \$50 per share). The basis for the formation of the Company were the patents of William Robinson, Oscar Gassett and I. Fisher, covering various electrical appliances for signaling and protecting trains in railroad service. The home office was located at Hartford and the branch office and factory at Boston. This was the first Company organized in the United States for the manufacture and installation of railroad signaling devices.

February 4, 1880, the capital stock was increased to \$1,000,000, and in the following year. George Westinghouse was elected a director and president of the Company. Shortly afterward, the board of directors authorized the sale of 10,000 shares of the Company's stock to Mr. Westinghouse, and also authorized the purchase from Mr. Westinghouse of 4102 shares of the stock of the Interlocking Switch and Signal Company of Harrisburg, Pa. At a meeting of the directors in Hartford on April 13, 1881, the name of the company was changed to "The Union Switch & Signal Company," and the capital stock was increased to \$1,500,000 to finance the purchase of the total assets and property of the Interlocking Switch and Signal Company. Later in the year the plants at Boston and Harrisburg were moved to Pittsburgh and consolidated at Garrison Alley and Duquesne Way.

The Union Switch & Signal Company was chartered under the laws of Pennsylvania in 1882. In taking over the interests of the Interlocking Switch and Signal Company, it had acquired the patents of H. Tilden and F. S. Guerber for Hydraulic Interlocking, the first installation of which was made at East St. Louis in 1882. This system gave Mr. Westinghouse the idea of using compressed air for switch and signal operation, the result being the Hydro-Pneumatic System wherein control was furnished by liquid under pressure, the operating power being compressed air. Later developments brought forth the Electro-Pneumatic System, which is in use today and in which the control is by electricity, the operating power compressed air.

Broadening its activities in 1884, the Company began the manufacture of electric lamps and electric lighting apparatus under the Stanley and Westinghouse patents. This business grew so rapidly that the Westinghouse Electric Company (now the Westinghouse Electric and Manufacturing Company) was organized to take it over. In 1886, the Electric Company bought the Garrison Alley property from the Union Switch & Signal Company, and the latter, seeking a new location, purchased the plant of the old Swissvale Car Works at Swissvale, eight miles east of Pittsburgh, whence it moved in 1887 and which site it still occupies.

The business and property of the National Switch and Signal Company were purchased in 1898. This purchase included the assets of the Johnson Railroad Signal Company which had previously been absorbed by the National Company.

In 1901, the Company completed the erection of a new plant at Swissvale. A portion of this plant was destroyed by fire in 1917, but was promptly rebuilt and today the industry boasts one of the most modern and best equipped factories in the Pittsburgh District, with a force of close to 5,000 employees.

The purchase of the total outstanding stock, amounting to approximately \$6,700,000, by the Westinghouse Air Brake Company, was consummated in March, 1917, but the Company still remains under separate management with the following officers: W. D. Uptegraff, Chairman of the Board of Directors; A. L. Humphrey, President; G. A. Blackmore, First Vice President; T. W. Siemon, Second Vice President; T. S. Grubbs, Third Vice President and Secretary and Treasurer; M. K. Garrett, Assistant Treasurer; S. S. Graham, Assistant Secretary; Charles A. Rowan, Controller; John I. Rankin, Auditor; W. H. Cheffey, Assistant Auditor.

The Company produces a complete line of signaling systems for all classes of steam and electric transportation, including the Westinghouse System of Electro-Pneumatic Block Signaling and Interlocking; Pneumatic, Electro-Pneumatic, Electric, Electro-Mechanical and purely mechanical appliances for railway protection; Automatic, Semi-Automatic and Manually Operated Block Signals; all kinds of Iron and Brass Foundry Castings for commercial purposes, and a wide variety of Automobile and Machine Forgings. District offices are maintained at New York, Chicago, St. Louis and San Francisco.

THE WESTINGHOUSE UNION BATTERY COMPANY

Pittsburgh has been prominently represented in the automobile battery industry since the organization in February, 1920, of the Westinghouse Union Battery Company as an offspring of the Westinghouse Air Brake Company. Though scarcely more than a year old, the new enterprise has made remarkable progress, having already gained nation-wide recognition in the battery field.

The product thus far has been limited to batteries for automotive starting, lighting and ignition, but storage batteries for house-lighting plants will be added shortly, to be followed in due course by signal system batteries, batteries for mine and industrial locomotives, for vehicles, for central station work, and in fact, for every purpose for which storage batteries are required.

The Company's plant is housed in the large five-story modern fire-proof buildings erected by the Union Switch & Signal Company at Swissvale for the production of aircraft motors during the war. Each separate floor in the buildings has been arranged to form a complete production unit. As the production reaches the maximum of existing units, an additional unit is thrown into operation. As soon as the present manufacturing facilities are fully utilized, an additional plant will be constructed on ground adjacent to the plant which is being held vacant for that purpose.



A procession of finished batteries Westinghouse Union Battery Company

The capacity of each production unit is limited only by the number of batteries that can pass over the finishing table, a photograph of which is shown herewith. A rigid system of inspection insures that each battery will be thoroughly tested at all of the various stages of construction from the moulding of the first "grid" to the final assembly at the finishing table. Thus, each battery as it goes to the shipping department bears an inspection tag signed by an inspector certifying that the battery meets the exacting specifications of the manufacturer. This tag remains on the battery and is so designed that it may be used by the automobile owner for recording the condition of the battery when he visits a service station for the free testing and filling service to which he is entitled.

Firm in its resolve to make and market a battery that would be a credit to Pittsburgh and uphold the standards developed by the parent Westinghouse organization during the past fifty years, the new Company brought together some of the foremost battery experts in the country, including P. E. Norris, Production Engineer, who has been prominently identified with battery manufacture for years; K. W. Gasche, Chemical Engineer, formerly with the Willard Storage Battery Company in a similar capacity, and T. H. Guild, Sales Manager, who has had wide experience in the marketing of automobiles and automobile accessories.

The active management of the Company is in the capable hands of Thomas R. Cook, a well-known figure in the electrical world, who was chosen as Vice President and General Manager. A. L. Humphrey is chairman of the Board of Directors, and D. F. Crawford, President.

Westinghouse Batteries are marketed through distributing organizations which control territories of sufficient size to interest men of large calibre and to insure adequate returns on capital invested. The Pittsburgh Service Company, with headquarters at Centre and Morewood Avenues, Pittsburgh, is the distributor for Western Pennsylvania and West Virginia. H. C. Mode, formerly connected with the Westinghouse Electric and Manufacturing Company, is President of the Service Company, and H. J. Collins, recently with the Westinghouse Air Brake and the Union Switch & Signal Companies, is Secretary and Treasurer.

Electrical apparatus forms a large proportion of the

export trade of the United States, which has attained unprecedented proportions in the last year or two.

The facilities afforded by the First National Bank at Pittsburgh, in promoting exports and imports, have aided very materially in the commercial expansion of the nation. In this branch of banking, as well as in all details of domestic finance, this institution offers expert service. Cargoes of merchandise on their way to any part of the world can be financed economically and satisfactorily by our trained specialists. Direct correspondents and ample resources permit this to be done.

Particular mention is made of the facilities of our Foreign Exchange Department, as follows:

FOREIGN EXCHANGE:

Drafts, Cheques, Money Orders and Bills of Exchange are bought and sold at current rates in dollars or foreign currencies.

COMMERCIAL CREDITS:

We issue Letters of Credit, drafts against which may be drawn at sight or time, to finance imports and exports. COLLECTIONS:

Cheques and drafts are accepted for collection payable in foreign currencies, and when necessary we make advances pending collection.

ACCEPTANCES:

For the purpose of financing imports, exports or domestic shipments, Acceptance Credits are granted maturing at thirty, sixty, or ninety days. Commodities stored in warehouses may also be financed under such Credits.

FOREIGN CREDIT INFORMATION:

We place at the disposal of our clients, the services of our Foreign Credit Department, and will gladly secure special reports either by mail or cable. Our friends and customers are invited to make use of these facilities and acquaint our foreign department with the products in which they are interested and the countries where they wish to develop business.

PRINCIPAL FOREIGN CORRESPONDENTS

EGYPT:

ENGLAND: London County, Westminster & Parr's Bank, Ltd. Barclays Bank, Ltd., London. Comptoir National d'Escompte de Paris, London. Cox & Co., London. IRELAND: Munster & Leinster Bank. Bank of reland Belfast Banking Co., Ltd. SCOTLAND: Union Bank of Scotland, Ltd. FRANCE: Comptoir National d'Escompte de Paris. BELGIUM: J. Mathieu et fils, Brussels. Bank of Antwerp, Antwerp. HOLLAND: Rotterdamsche Bankvereeniging. SPAIN: Banco Espanol del Rio de la Plata. PORTUGAL: Bank of Portugal. SWITZERLAND: Swiss Bank Corporation. ITALY: Banca Commerciale Italiana. Credito Italiano. DENMARK: Den Danske Landmandsbank. SWEDEN: Aktiebolaget Stockholms Handelsbank. NORWAY: Centralbanken for Norge. GERMANY: Deutsche Bank. GERMAN-AUSTRIA: Credit Anstalt, Vienna. POLAND: Bank Diskontowy Warszawski, Warsaw. Wiener Bank Verein, Krakau. CZECHO-SLOVAKIA: Zivnostenska Banka, Prague. Bohemian Union Bank. JUGO-SLAVIA: Wiener Bank-Verein, Zagreb. Banque Franco-Serbe. Bank of Jugo-Slavia, Ltd. SERBIA: Banque Franco-Serbe. GREECE: National Bank of Greece. Bank of Athens. **Commercial Bank of Greece.** BULGARIA: National Bank of Bulgaria. ROUMANIA: Banque Marmorosch Blank & Co. TURKEY: Bank of Athens, Constantinople. SYRIA: Banco di Roma.

Comptoir National d'Escompte de Paris. INDIA: National Bank of India. Cox & Company. CHINA: International Banking Corporation. Chartered Bank of India, Australia & China. Hong Kong & Shanghai Banking Corporation. JAPAN: Yokohama Specie Bank. AUSTRALIA: Commercial Bank of Australia, Ltd. SOUTH AFRICA: National Bank of South Africa. CANADA: Dominion Bank of Canada. Canadian Bank of Commerce. CENTRAL AND SOUTH AMERICA ARGENTINE: Banco Holandes de la America del Sud, Buenos Aires. First National Bank of Boston, **Buenos** Aires Branch. BOLIVIA: Banco Mercantil. BRAZIL: Banco Hollandez da America do Sul, Rio de Janei o. COLOMBIA: Mercantil Americano de Banco Colombia. COSTA RICA: Banco de Costa Rica. CHILE: Banco de Chile. CUBA: National Bank of Cuba. ECUADOR: Banco del Ecuador. GUATAMALA: Banco de Guatama'a. HONDURAS: Banco Atlantida. URUGUAY: Banco Comercial. NICARAGUA: National Bank of Nicaragua. PERU: Banco Mer antil Americano del Peru. PANAMA: International Banking Corporation. PHILIPPINE ISLANDS: Philippine National Bank. SAN SALVADORE: Banco Salvadoreno. VENEZUELA: Banco Caracas. Banco Mercantil Americano de Caracas.

OFFICERS

LAWRENCE E. SANDSPresident
FRANK F. BROOKS Vice President
CLYDE C. TAYLORCashier
THOS. B. HUDSON Assistant Cashier
OSCAR WILSON Assistant Cashier
WM. J. FRANK Manager Foreign Department
P. W. DAHINDEN Assistant Manager Foreign Department
J. PAUL FORD Assistant Manager Foreign Department

DIRECTORS

JOHN A. BECK President, Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKSVice President
WM. L. CURRY Manufacturer, Pittsburgh, Pa.
JOHN A. DONALDSON Vice President, Pittsburgh Coal Company
WM. H. HEARNE Director, La Belle Iron Works, Steubenville, O.
J. H. HILLMAN, JR. Chairman of the Board, Hillman Coal & Coke Co., Pittsburgh, Pa.
D. T. LAYMAN, JR Henry Phipps' Estate
A. M. MORELANDCapitalist
P. W. MORGAN President, East Pittsburgh National Bank
WM. A. RENSHAWJohn A. Renshaw & Co., Pittsburgh, Pa.
LAWRENCE E. SANDSPresident
ISAAC M. SCOTT President Wheeling Steel Corporation
JOHN M. WUSON Vice President National Supply Company



First National Bank at Pittsburgh

CAPITAL			 -	• •	*			\$4,000,000.00
SURPLUS	 	•			 1	•		2,000,000.00

The Story of PITTSBURGH

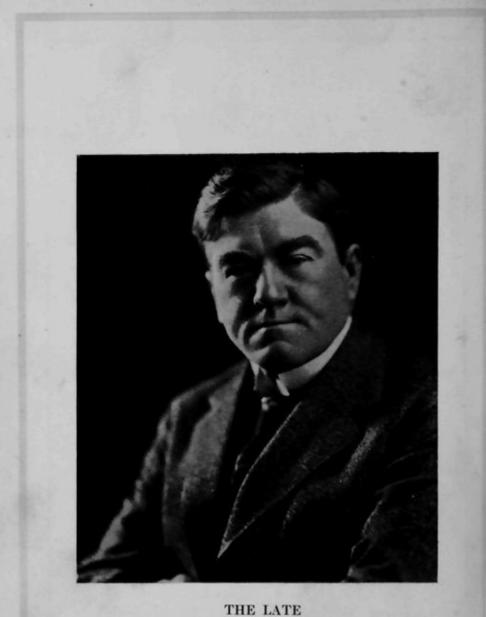
Volume One Number Seven

RADIUM



First National Bank at Pittsburgh

August, 1921



THE LATE JOSEPH M. FLANNERY

The Story of Pittsburgh RADIUM

8

HEN over one hundred thousand dollars is raised by popular subscription taken in all parts of the country, to pay for a thimbleful of Radium to be presented by the President of the United States, at the White House, to Madame Curie, the discoverer of Radium, as a gift from the women of America, there is interest in the story of how this material is obtained, why it has this value and what makes it of present and of future importance to the civilization of the world.

How the United States is the foremost Radium producing country, and Pittsburgh is the Radium center of the world, and how it owes this pre-eminence to the work of one man, Joseph M. Flannery, of Pittsburgh, as distinctly as France owes to Madame Curie, the honor of first making Radium known to the world, are details in the story of Radium that make an interesting chapter in the history of the development of the natural resources of the Americas. That Mr. Flannery gained much of the mining experience and no small part of the money he was able to put into his work for Radium, when he was developing the Vanadium deposits of the Peruvian Andes, is a detail that will be of present interest to Latin America and of permanent interest in the full story of how the greatest supply of Radium was made available for the benefit of the world.

In 1895, soon after the discovery of the X-rays, Professor Henri Becquerel, of the University of Paris, undertook an exhaustive study to learn whether some metals after exposure to sunlight would shine when brought into a dark room, and if they did, whether that light would act as the newly discovered X-rays, that had the power to pass through thick and light proof paper. By good fortune, Professor Becquerel used some Uranium for these studies. By accident, he found this Uranium was sending forth rays that had the power to act as the X-rays,—to penetrate thick and light proof paper, and after such penetration to affect a photographic plate as the sunlight did. He found that his Uranium did this whether or not it was first exposed to sunlight; in other words that the sunlight could not in any way be said to be the cause of these rays.

Uranium had been known to the world for over a hundred years. That it possessed this power to emit rays of this penetrating nature, was something as new as it was astonishing.

For years, Uranium had been used to color glass, especially the fine glasses that made much of the specialized handiwork of the glass makers of Bohemia.

Marie Sklodowski, of Poland, at this time was a student at the University of Paris doing post graduate work in physics and in chemistry under Professors Becquerel and Curie.

The extent and accuracy of her training and the precision and clarity of her mind and methods, won for her the professional respect and regard of her instructors.

Professor Becquerel and the scientific minds of the University of Paris and of Europe were so impressed with the importance of knowing what caused the strange rays Becquerel had found in his Uranium that special work was planned to discover the secret. Of them, he could learn only that they were electrical.

Marie Sklodowski was invited to undertake the study and investigation of the problem, by Professor Becquerel. She accepted and carried through to completion, what has since been described as one of the most comprehensive and conclusive scientific studies of the age.

With characteristic directness, she went first to the mines from which had been taken the ore that had given the Uranium to Professor Becquerel. This was called pitchblende; and, as was known to all the laboratories of Europe, it was a combination of most of the well known metals. At these mines, this pitchblende ore was thrown away after the Uranium had been taken from it. This refuse was examined, and found to give rays with four times the intensity of the rays that Professor Becquerel had first noticed. This suggested, if it did not force the conclusion, that there was an unknown something in this refuse.

The search for this small quantity of hitherto undiscovered material is one of the most remarkable pieces of scientific work in verification of a previous train of reasoning.

Three years before its completion, Professor Curie, of the Sorbonne, of Paris, who had made a name for himself as a daring and original worker, had won the love and the hand of Marie Sklodowski. Together, they worked at this problem through years of depression and even of poverty. It was only the courage of Madame Curie that sustained and carried through the task. She never lost faith; and, as Professor Curie publicly admitted, when he was for abandoning the effort, his wife's striving, dauntless spirit refused to even think of defeat.

The eventual discovery was made by the application of methods that mark the utmost refinement achieved by science for the measurement of small quantities.

In brief, and in non-technical language, this work was based upon the fact that dry air is not a conductor of electricity. By appropriate means, however, it can be broken up, so that it will be a conductor. The X-rays had demonstrated that they would break up the air through which they passed and make it a conductor of electricity. The rays that had just been detected as coming from Uranium proved that they can convert the air through which they passed into a feeble conductor of electricity, with more or less of completeness, according to their intensity.

By ingeniously devised and delicately adjusted electrical equipment, Madame Curie tested the extent to which each of the components into which she separated the refuse pitchblende ore she found at the mines, gave rays that made air a conductor of electricity. This gave her a measure of the unknown material that might be causing these rays, in the sample under examination.

By eliminating the weaker samples and concentrating her work and attention on those that manifested these rays in the greatest intensity, after thousands of these tests, and nearly three years of the most exacting effort, she found a material that was millions of times more intense in these rays than the Uranium in which Professor Becquerel had first, accidentally, detected them.

She called this material,-Radium.

For her years of work, self-sacrifice, and toil, with tons of ore, she had a few thousandths of a thimbleful of material. From this she was able, later, to obtain a pure white metal, which had an atomic weight of 226; which melted at 700 degrees Centigrade and which when exposed to the air quickly lost its metallic form by combining with other materials in the atmosphere to form salts. This was the pure Radium element.

With her Radium,—Madame Curie and her husband soon gave the scientific world the proof that Radium introduced a new conception into the fundamental problems of existence.

She proved that every three quarters of an hour the heat from a gram, (a thimbleful) of Radium is sufficient to change a quantity of water equal in weight to the Radium, from freezing to boiling point.

This was a fact that compelled and still holds the attention of the scientific world.

This is the fact that makes Radium the most interesting and the most important material in the earth.

Heat means energy, power, work. Heat and light may be obtained in many ways, but it is a new thing to find it being given off by a substance, as it is by Radium, year in and year out, without any apparent intermission or diminution and without the substance being in any way consumed or altered.

Before noting how the rays from Radium contribute to the life of today and what the heat from Radium holds of promise for the future, let us review the record of the



MADAME CURIE

This photograph shows Madame Curie at work in her laboratory at the College de France, which is known as Institute Curie. work that has made the United States the foremost Radium producing country of the world.

While Madame Curie, by discovering Radium, wrested from the earth a secret that will make an epoch in the ascent of man to knowledge and through knowledge to physical power and dominion over Nature, she produced very little Radium. This was no fault of hers. She was denied the ores with which to work. With the generosity that proves the true disciple of science, she gave all the little Radium she won, to the medical profession of Europe. A very small portion even found its way to New York City.

In 1911, Joseph M. Flannery, of Pittsburgh, after long and serious thought, determined that the United States and the world, should and must have a supply of Radium. He had demonstrated business ability and won financial success in improving and causing a great demand for an important part of the modern locomotive. He had won greater success, first by proving the merits of Vanadium as an alloy for steel; and then by one of the most dramatic and successful campaigns of education and salesmanship the steel world has known, secured its general use.

To his restless, striving, daring spirit, Radium offered a new appeal. Taking Vanadium from the summit of the Peruvian Andes, carrying it to the seacoast, shipping it the long way to Pittsburgh and preparing it for the steel mills, had taught him much of men and of methods that does not come into the experience of those that win success within State or National limits. He determined to apply all of his time and his talent to the production of Radium.

Withdrawing from all active participation in his Vanadium interests, he gave all his attention to a study of the Radium bearing ores that might be available to him.

The ores of Europe were out of the question. The Austrian Government had promptly made a monopoly of the ores that Madame Curie had found to contain Radium. The few deposits that were reported and found in other parts of the world were not of sufficient extent to justify serious consideration, and Mr. Flannery was interested in and determined to try for quantity production. In a desolate section of Southwestern Colorado and in Southwestern Utah there were large deposits of an ore called Carnotite. These cover a territory of about eight hundred square miles. The district in which the greater quantity of these ores was to be found is about sixty-five miles from any railroad and so mountainous that in many places there is a rise or fall in the local trails of two thousand feet in a mile.

Prior to the World War carnotite ores from these Colorado deposits were shipped abroad for French and German production of Radium on a small scale. The embargoes on shipping stopped this export completely, although it had been falling off in quantity.

With the decision that these Colorado fields must be the source from which to obtain his ores, Mr. Flannery gave every thought to ways and means. The ore fields are five thousand feet above the sea level. The region was uninhabited and there was little to attract even the prospector and less to hold the type of men that could hope to find a solution of the many different problems involved.

In the European ores with which Madame Curie had worked, there was about a gram of Radium in every five or six tons. In the Colorado ores, there is only one gram of Radium in every five or six hundred tons of ore, and in order to obtain each of these five or six hundred tons, it is frequently necessary to handle one hundred tons of worthless material.

The men that had worked with the European ores were so few, they could be counted easily. They were unwilling to work in the wilderness of Colorado. For the new conditions, Mr. Flannery trained new men.

Headquarters were established at a point central to the work as a whole. A concentration mill was built at a point that was convenient to the many ore claims that he bought and leased.

Burros were used to carry the ores from the deposits in the mountains to this mill, and to carry back to the miners the water and other supplies, for all of which they were dependent upon the general headquarters. Where the ore appeared on the surface and along the rim rocks,



One of the Radium Mines of the Standard Chemical Company, in the wilds of Colorado.

The Company has made a total of nearly three miles of tunnels such as this mining for Radium bearing ores. This Tunnel is about 165 feet from the surface of the ground. its extraction was comparatively easy, with small charges of dynamite. When as more frequently happens, the deposits are found under a heavy overload of other material, regular mining tunnels are run and dynamite charges used to break the rock and other material so that it may be carried to the surface. In size, the ore bodies vary from pockets containing a few pounds to deposits yielding as much as 1800 tons in very exceptional cases.

As there are often no indications leading to a deposit of ore, prospecting is done by drilling in what seem likely spots with jack hammers and with diamond drills. When there is not more than twenty-five feet of earth and other material over any ore, the jack hammer driven by compressed air is the cheapest method of working. To operate these hammers, portable gasoline compressors are used.

The extremely irregular nature of the ore bodies makes it difficult to follow a definite plan of mining. To meet these conditions, use is made of the diamond drill. As these drills bring to the surface specimens of the material through which the boring is made, the Standard Chemical Company has definite knowledge of about what ore may be found beneath any given area of the extensive claims to which it has title.

This detailed and expensive study of this region has proved of great value to the Government in connection with a thought that it might have been necessary to make the radium ore lands a Government monopoly.

At the Concentration Mill in the wilds of Colorado, five hundred tons of ore are reduced to a powdered form and sacked.

These sacks, weighing about 70 pounds, are transported by wagon, and where possible, by motor truck, the sixtyfive miles to Placerville, Colorado. There, a narrow gauge railroad takes it to the transcontinental railroad at Salida, Colorado.

From Salida, it travels the two thousand three hundred miles to Canonsburg, Pa., just outside of Pittsburgh, where the Company maintains its refining plant.

At the mill in Colorado, and in the operations pertaining to it, some three hundred men are kept busy. At the Canonsburg plant, two hundred men are necessary to carry through all the detailed work.

When this ore is taken up by the Colorado mill, there is only one part Radium for every four hundred million parts of the ore.

As this ore reaches the mill at Canonsburg, there is one hundred million parts of the ore for every one part of Radium.

The task of the Canonsburg men is to reduce this mass of ore to less than a quarter of a ton and to have the Radium that may be in the greater mass, in the small residue.

This is done with regularity and precision, notwithstanding that, to eliminate this one hundred million parts of undesirable material, this Canonsburg plant has to use ten thousand tons of distilled water, a thousand tons of coal and five hundred tons of chemicals.

What small quantity of Vanadium and Uranium there may be in this material, is saved while this reduction is being made.

The actual recovery of whatever Radium there may be in the tons of material handled at these two great concentration plants, is made elsewhere. When the material that reached Canonsburg from the mill in the West has been reduced to less than a quarter of a ton, this residue is sent to the Radium Research Laboratories of the Company in the City of Pittsburgh.

As it reaches this Laboratory, this material is in the form of radium barium chloride. By successive fractional crystallizations of the radium chloride, and at a later stage, of the bromide, most of the Radium is obtained in a salt containing over 95 per cent of pure Radium bromide. By further chemical treatment, the bromide is converted into the sulphate or the chloride, and in the therapeutic use of Radium, these two salts find the largest use.

The first Radium produced in the United States was obtained in these Radium Research Laboratories of the



The Largest Radium Conce

The Mill of the Standard Chemical Company of Pittsburgh, i Mill erected in America. It is located in Southwestern Colorau Through this Mill has passed all the Ore from which has bee world. The methods for extracting Radium from the low grade all the work that is done in this country for the extraction of Ra This Mill was erected by Joseph M. Flannery, of Pittsburgh i



Standard Chemical Company, of Pittsburgh.

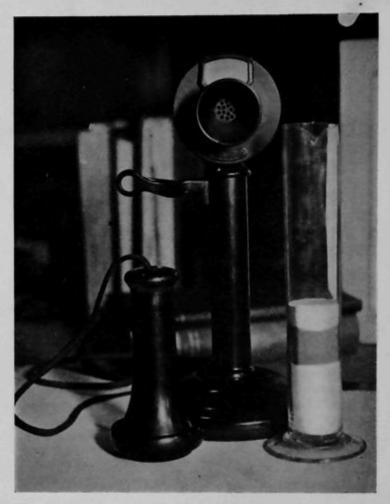
fter 500 tons of Ore has been reduced to less than a quarter of m it is brought to these Laboratories, and after treatment for four ecovered.

ches these Laboratories, it has been handled for a period of five dium Refining Plant just outside the City of Pittsburgh. Standard Chemical Company, in 1913. Since then, the

1913		 2.1 Grams
1914		 9.6
1915		 1.7 "
1916		 5.0 "
1917		 5.0 "
1918		 13.6 "
1919	· · · · · · · ·	 11.8 "
1920		18.5 ''
1921 to April		4.5 **

Total..... 71.8

Radium preparations in the United States are spoken of and measured in terms of Radium element. Until recently in European scientific circles. Radium has been referred to in the terms of Radium bromide. Crystalline radium bromide when pure, contains 53.6 per cent of Radium element. This fact and the method of measurement of Radium preparations in Europe prior to the adoption of the International Radium Standard, had not a little to do with the earlier unsatisfactory work with Radium. There was no common standard. The original method of measuring Radium consisted in comparing its activity with that of Uranium. During the fourteen years this system of measurement prevailed, scientific men spoke of Radium as "two million times more active than Uranium." Trained minds, of course, understood that what was meant was that the quantity of electrical energy emitted in the rays of the Radium, small though it was, was two million times greater than that contained in the rays from Uranium. Such a ratio of comparison was entirely unsuitable for use especially with small quantities, and about 1912, by common consent, Madame Curie was asked to prepare what would be an International Radium Standard. This is deposited at Paris. Duplicates are in the leading capitals of the world, and Radium preparations are now measured by comparing the electrical energy carried by the gamma rays from the preparation to be measured with the energy carried by the gamma rays of



What is Believed to be the Total World Supply of Radium.

Estimated at 140 Grams, or 5 Ounces.

The lower, White, portion of the Tube shows the total amount of Radium produced by the Standard Chemical Company of Pittsburgh.

The centre, dark portion shows the total portion of the world supply, refined by other American Producers.

The top, white portion, shows the total estimated portion of the whole world supply, refined in Europe.

The telephone receiver and tube are placed together in order to show relative dimensions and give an approximation of the volume of radium in the world. the International Standard or of some certified duplicate of it. In 1914, the United States Bureau of Standards at Washington, obtained a certified duplicate of the International Radium Standard and since then practically all quantities of Radium in this country have been measured by comparison with it.

For use by the medical profession, Radium is measured and sold by the Gram, i. e., a small thimbleful. The price of a Gram is \$120,000. The gram is divided into a thousand parts, each of which is called a milligram. These sell for \$120 each. The average physician who has Radium has from 50 to 250 milligrams. When each preparation has been made up in the special form designated by the physician, the purity of the Radium and the accuracy of detail of the container, is certified to by the Head of the Radium Research Laboratories of the Company. The preparation is then transmitted to the Bureau of Standards at Washington for comparison with the Government's duplicate of the International Radium Standard. With the official certificate of the Bureau of Standards, the preparation is then sent to the purchaser with the request that he examine and note that the seals of the United States Government are unbroken. This gives him the best of guarantees as to the Radium he has purchased from the Company.

Therapeutically, there has been a gradual and steady increase in the use of Radium since 1912. With this increased demand, the production of Radium has kept pace. The earlier, over enthusiastic statements of the value of Radium in the treatment of Cancer, have not been wholly confirmed and Radium is far from being the panacea in the treatment of diseases. Nevertheless, in the use of Radium, in certain types of advanced, inoperable cancer, gives palliation by the relief of pain and freeing from foul smelling discharges. This degree of palliation can be attained by no other treatment, and if used for this alone, Radium would be considered invaluable. In other types of cancerous growths, Radium has produced cures, and surgeons throughout the world are gradually admitting that Radium is a necessary adjunct in the treatment of cancer, giving in some cases more satisfactory results than any other method.

Because of this increasing demand for Radium on the part of the medical profession of this country and of the world, James C. Gray, the President and General Counsel of the Company, is determined not only that the Standard Chemical Company maintain its record as the greatest producer of Radium in the world, but to have it make available for the medical profession of the world an even greater quantity of the highest purity Radium.

Of the total available supply of Radium in the world, estimated to be about 140 grams, the Standard Chemical Company has produced, to April 1st of this year, 71.8 grams.

Of the total of 18.5 grams of high purity Radium produced by the Standard Chemical Company during 1920, Mr. Gray permitted only about one-eighteenth, or 1.2 grams, to be used for what may be said to be commercial purposes, i. e., luminous dials for Army and Navy Instruments of precision needed for night operations, and for watch and clock dials.

It is in the form of Radium Luminous Compound more popularly called Paint, that Radium is used in the industrial world. How such an expensive material as Radium may be used on the dials of comparatively inexpensive watches, has always been a point of interest to the general public.

Radium is used for this work, each watch dial containing a minute portion of real Radium, and the reason why this may be and is so, explains some of the wonder of Radium, and makes it easier for the average reader to understand how and why Radium in larger quantities is effective when brought into contact with diseased tissue when used by the medical profession.

The luminous material seen on watch and clock dials is a combination of a most minute portion of real radium and a specially prepared zinc sulphide. If one of these dials be examined by a good reading glass, in the dark, after the eyes of the examiner have been in darkness for about five minutes, the luminous material will be seen to be seething with scintillations or tiny flashes of light. These flashes are caused by the explosions of the atoms in the minute portion of real radium in the mixture. These atoms have been found to be so small that two hundred and fifty million of them would probably be required to cover one inch. As each atom explodes, a particle flies from it as a projectile from a gun. These particles are too small to be seen under the most powerful microscope. But scientists have found that when one of these particles is suddenly stopped by striking a crystal of zinc sulphide, the heat is sufficient to make a flash of light the eye can see. These are the flashes seen under a good reading glass. They occur at the rate of 200,000 a second on the average luminous dial on the average watch bought in commercial routine. It is the combined light of all the flashes of light seen under the reading glass that makes the light or glow that makes the dial visible in the dark without a reading glass.

The brightness and durability of a Radium luminous dial depends on the number of these tiny flashes per seconds. The more Radium, the more flashes and the brighter the dial. But every flash means a blow upon a crystal of zinc sulphide. These crystals cannot stand these blows indefinitely. They break down under them, and when this happens, there are no more flashes and the dial loses its glow. The zinc has failed, not the Radium. Only one twenty-fifth of one per cent of any quantity of Radium disintegrates or is lost in a year. From a gram of Radium, a small thimbleful, there are about 134 billion projectile-like particles every second. Crystals of zinc sulphide would break down very quickly if exposed to such a bombardment. By reducing the percentage of Radium until the number of these particles flying from the exploding atoms of the radium on each dial, was about 200,000 per second, it has been found that the dial would have a brightness easily visible in darkness and for a period of about five years. This means that the quantity of Radium on the average dial cannot be more than about one millionth of a gram, and it is only such a minute quantity that is on the average dial.

With this demonstration open to everyone that has or that may use a luminous dial watch for a few minutes a night, of what is accomplished by the rays from only a millionth of a gram of radium, and with only the weakest of the rays, it will be of interest to read how Doctor Robert Abbe, of New York City, one of the first physicians in America to use Radium and to prove its value to the medical profession, describes its action when applied by the trained physician, to cancer:

"Now, let us consider cancer small or large. With a small cancer we can see and study its effects, and we find on applying a little Radium to it, holding the radium over the cancer and letting it bombard it with its peculiar qualities or electrons, that with that bombardment, is carried something that reduces that malignant growth and devitalizes it, so the cells are reduced to their normal growth; in other words, we have cured the disease instead of simply removing it."

The use that Madame Curie has announced she will make of the Radium given her by the women of America reminds us of the importance of what Radium offers for the future of civilization, and why it is that Radium is the most interesting material in the world.

We have seen that Madame Curie and her husband proved to the scientific world that Radium is constantly giving out heat, in quantities millions of times greater than that obtainable from an equal quantity of coal. All of the powerful resources of the modern laboratory, extremes of heat and of cold, and of pressure, violent chemical reagents, the action of powerful explosives and the most intense electrical agencies, do not affect this emission of heat from Radium in the slightest degree.

Madame Curie wishes and hopes to find some new light upon the possibility of controlling this output of heat.

This can be accomplished best, as we now see it, by finding some possible method to control or to influence the breaking up of the atoms of Radium. For over a hundred years the scientific world adhered to the belief and taught that atoms are indestructible. Now it believes that it is the breaking up of these atoms that causes the astonishing output of energy Radium is making manifest. By gaining control of the breaking up of the atoms of Radium, there is reason to hope that we may find a way to solve this problem, not because Radium could be used as a source of future energy, but because Radium is so like many of the more plentiful materials of the earth, we may hope that by applying to them the knowledge gained with Radium, we may have available for the work and convenience of the world, sources of energy as much above those of the present day as the modern steam and electrical installations are superior to the muscular power of primitive man.

The First National Bank appreciates this opportunity of presenting the facts of Radium discovery and production, and of enlightening the public on the subject. Radium is a new product of the mineral world, and general knowledge of its production and its powers is not easily attainable nor clearly understood. An effort has been made in this booklet to present the subject in popular language, free of technical terms, and to make the properties of the wonderful substance as clear to the reader as possible.

The First National Bank at Pittsburgh is thoroughly equipped to handle promptly and economically all matters pertaining to the export business of every commodity. It finances cargoes of merchandise destined to any part of the World. Its large resources enable it to handle business of this kind, however large or complicated.

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CAIRO.

PEOPLES BUILDING.

PITTSBURGH, May 16 1921

We have examined the books and accounts of the First National Bank at Pittsburgh as of March 24, 1921, and certify that in our opinion the loans and investments, cash and other assets were conservatively stated, and the balance sheet of that date showed the true financial condition of the bank.

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OUR STEADY GROWTH TELLS ITS OWN STORY DEPOSITS

June 30, 1916	 	\$16,637,706.16
June 30, 1917	 	20,490,114.56
June 30, 1919	 	26,157,167.34
June 30, 1920		31,204,965.28
JUNE 30, 1921	6	28,919,080.48



First National Bank at Pittsburgh

CAPITAL	 	\$4,000,000.00
SURPLUS	 	2,000,000.00

The Story of V PITTSBURGH

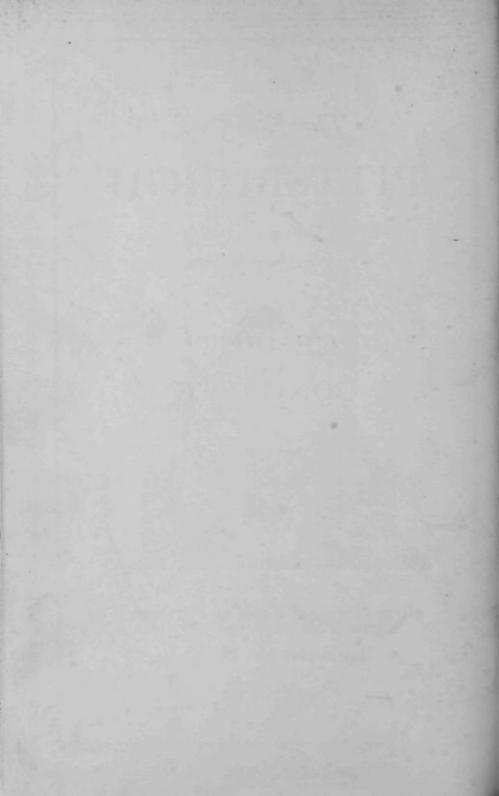
Volume One Number Eight

CEMENT AND CONCRETE



First National Bank at Pittsburgh

December, 1921



The Story of Pittsburgh CEMENT AND CONCRETE

8

HILE it is strictly true that the present time is a "concrete age," it is also true that concrete is by no means a modern discovery. The present extensive use is, however, a quite modern development. The word "concrete" comes from the Latin concretus, meaning "that which is grown together," and artificial stone, similar to our concrete, was in use by the Babylonians and early Egyptians, as well as by the Greeks and the Romans. Pliny says the columns which adorn the peristyle of the Egyptian labyrinth were made of this material. "Puzzolana," a volcanic earth, was used as a natural hydraulic cement by the Romans, who used it in building aqueducts, walls and roads. The pyramid of Ninus in the Eternal City was formed of a single block of this material. So also was the tomb of Porsena, which was 30 feet wide by 5 feet in height.

While there are many ancient examples of the use of factitious stone, it is nevertheless, true in a very exact sense, that this is really the "concrete age."

Roads, bridges, houses, industrial buildings, railroad and mine construction, water-power developments, a variety of products such as drain tile, roofing tile, sewer pipe, building block and much ornamental work are of concrete. It is almost the only material used for sidewalks and for foundations of all structures including permanent pavements.

Concrete is made of (a) sand or screenings, and (b) stone, pebbles or slag bound together into a hard, strong mass with (c) portland cement, the strongest binder of such materials in commercial use. Concrete utilizes a variety of sands, slag, pebbles, crushed stones and other materials for construction work, provides an economical, permanent, fire-resistive building material of wide application, produces a monolithic unit or structure and permits reinforcement with steel to produce additional strength.

A little more than half a century ago, nearly all of the portland cement used in America was imported. Since then, production in this country has increased from 170,000 sacks in 1890, to about 390 million sacks in 1920. There are four sacks to a "barrel." Comparatively little now is imported.

"PORTLAND" A DEFINING TERM APPLYING TO A VARIETY OF BRANDS

The first use of a material similar to cement for binding together fragments of stone cannot be traced as it extends beyond ancient-written history. But, as already noted, it is known that the Egyptians and Romans prepared a mortar which would harden under water. In 1824, Joseph Aspdin, a bricklayer of Leeds, England, patented an artificial cement which he called "portland" because of its resemblance in color to a building stone obtained from the Isle of Portland, off the coast of England. In the early days, cement was made by a mechanical or physical mixture of various materials or by heating a clavey limestone to a relatively low temperature. Today, different materials first are "mixed" mechanically and then "combined" chemically by intense heat. Cement so made, irrespective of brand, is known as "portland" cement to distinguish it from "natural," "puzzolan" and other cements now little used.

What is now the Universal Portland Cement Co. first made a puzzolan cement at the rate of 300 sacks a day. In 1900, it began the manufacture of portland cement and shipped that year 32,000 sacks. Today, the Pittsburgh plant alone has a producing capacity of 44,000 sacks a day while the company's total capacity is 160,000 sacks a day or 48 million sacks a year.

UNIVERSAL PORTLAND CEMENT CO.

Just as the available supply of limestone and coal required to convert iron ore into pig iron for the manufacture of steel has contributed toward making the Pittsburgh District the world's largest steel center, so has the available supply of the same materials enabled the Keystone State to take a leading position in the manufacture of cement. In the making of pig iron, one of the by-products is slag. For years, no wide uses for this were found. It was waste material. It cost money to get rid of it. But back in the 90's, it was discovered that the silica, alumina and lime found in blast-furnace slag, the principal chemical ingredients required in the manufacture of portland cement, could be used to make this modern material, and today large quantities of granulated slag are used by the Universal Portland Cement Co. in the steel centers of Pittsburgh, Chicago and Duluth.

INGREDIENTS OF PORTLAND CEMENT

Portland Cement consists principally of silica, alumina and lime obtained from (a) cement rock and limestone; (b) clay or shale and limestone; (c) clay and marl; or (d) blast-furnace slag and limestone. Any of these combinations in various proportions provide the required chemical constituents for portland cement. The important requisites for the manufacture of portland cement are:

- 1. The cement mixture must be composed of properly proportioned materials.
- 2. These raw materials must be finely ground and intimately mixed before burning.
- 3. The burning must be conducted at the proper temperature to obtain a chemical combination.
- After burning, the resulting clinker must be finely ground.

MATERIALS CAREFULLY PROPORTIONED AND CHEMICALLY COMBINED

Chemists analyze the materials, determine the amount of each to be used, set and seal interlocking automatic scales which in turn feed the materials to mills for grinding. Before mixing, the limestone and slag or other raw material must be crushed, dried and ground. Day in and day out, huge machines crunch hungrily their diet of stone and other materials and pass their mechanically-mixed grist along. At the same time, coal crushers, driers and grinders are at work preparing coal dust as finely ground as the rock dust. After the materials are ground, proportioned and mixed, they pass into rotary kilns. A modern cement kiln is a steel tube lined with fire brick. It is as long as a residence lot and more than large enough in diameter for a man to walk through. There are twenty such kilns in the Universal plant at Pittsburgh, set side by side in a building as long as an average city block. Into one end of each kiln goes a constant stream of powdered, mixed materials while into the other, forced along by compressed air, goes a stream of coal dust. Upon its entrance to the kiln, the powdered coal is ignited and travels through the long kiln hissing and burning as from an inferno. This burning produces a temperature of about 2800 degrees Fahrenheit which heats the materials to the point of incipient fusion and combines them chemically.

In this process, the powdered materials are burned into nodules of "clinker" ranging from the size of a small pea to that of a walnut. This "clinker" has no setting or binding qualities and can be kept indefinitely. To make it useful as cement, it again must be ground, this time so fine that 78% of it will pass a 200-mesh sieve, that is, a sieve containing 200 openings per linear inch or 40,000 openings per square inch.

While this fineness is considered one of the important qualities of portland cement, there are certain limits within which it must be confined in order to obtain best results in concrete. If not fine enough, the cement is not active, while if too fine, it becomes too quick in setting or too costly to produce commercially. In fact, the ground clinker sets too fast for commercial use. To retard this, a small proportion of gypsum is added.

The principal advantages of portland cement over other cements are in the uniformity of the product, in the strong binding qualities and in the nicety to which the setting time can be regulated.

Although the making of cement provides employment for many men, a large part of the work is done automatically. A visit to the Universal plant shows buildings that seem tenanted only by great machines going steadily about their tasks of drying, crushing, burning and powdering materials into cement every hour of every day the year around.

A trip to a Universal plant not only impresses the visitor with the large scale of manufacturing operations, but with the facilities for handling, sorting, cleaning and repairing The company has more than 25 million cloth sacks sacks. that are either at its plants or in the hands of customers. The charge for sacks, as all cement buyers know, is invoiced with the cement, but a full refund is given for every sack that is returned in good or repairable condition. If this charge were not refunded, it would have to enter into the cost of building. During the war, sacks cost as much as 35 cents and were invoiced with the cement at 25 cents each. At the present price of 10 cents a sack, the charge for sacks on a job requiring 20,000 sacks of cement would total \$2,000. The builder gets a large part of this \$2,000 backhe gets 10 cents back for every sack that is returned in good or repairable condition. That this right to return cloth sacks and obtain refunds therefor is a privilege that saves millions of dollars to the building public annually is better appreciated when it is recollected that there are nearly 400 million sacks of cement used in the United States each year.

The sacking of cement is an interesting process. The bags themselves are out of the ordinary in that the tops are tightly wired before being filled and that the filling is done through a self-closing vent in the bottom. This vent is slipped over a spout or nozzle, a lever is pulled, cement flows into the sack and it quickly swells much as a toy balloon. When exactly 94 pounds of cement have entered the bag, a scale automatically shuts off the flow. The bags are filled just as fast as the operator can slip them on and off the spout.

UNIVERSAL CEMENT A LOW-PRICED COMMODITY

About $1\frac{1}{2}$ tons of raw materials and $\frac{1}{4}$ ton of coal (a total of $1\frac{3}{4}$ tons) are required to make a ton of cement. These materials must be assembled, dried, ground, proportioned, mixed, burned at 2800 degrees Fahrenheit to a hard clinker and then reground to an impalpable powder. In this finished state, the cement must be handled carefully to guard against moisture, packed in cloth or paper sacks or handled in bulk and loaded into cars with provisions for protection while being shipped. That nearly two tons of raw materials are required to pass through all these stages to obtain a ton of cement and that cement, including the cost of packing but excluding cost of the package itself, still sells F.O.B. cars at the mill for about \$8.00 a ton, is another measure of the contribution that science has made to industrial progress.

COMPARISON OF CEMENT PRICES

There are two factors entering into the price the dealer or user pays for cement: Price at the mill and transportation charges from mill to point of use. The latter forms a relatively large part of the total price and obviously it is improper to compare a mill price at one time with a destination price at another time; it is improper to compare a price on cement delivered at destination by railroad with a price on cement delivered by truck at site of work; it is improper to compare a price which includes a charge for the container-usually a cloth sack, the cost of which is refunded when the sack is returned in good or repairable condition-with a price which does not include a charge for the package. To avoid this and to arrive at the true relation of cement prices on different dates, prices at the mill exclusive of charge for package are the only fair basis for comparison.

TRANSPORTATION A LARGE ITEM IN COST OF CEMENT

While the increases in freight rates are a matter of common knowledge, it is not generally appreciated that these charges on cement from point of production to point of use have increased from 100% to 175% or more *above* the rates in effect in 1914. These increases also add greatly to the cost of the $1\frac{3}{4}$ tons of coal and raw materials required in the manufacture of a ton of cement.

The effect of freight rates on the cost of transporting cement from mill to destination is shown in the following table:

Freight Rate Per Barrel of Cement

From Plant at Universal (near Pittsburgh) Pa.

		To	Pittsburgh	To Cleveland
January	1, 1916		\$0.06	\$0.24
January	1, 1918		.10	.28
July	1, 1918		.18	.37
January	1, 1921		.27	.53

TRANSPORTATION THE NECK OF THE BOTTLE

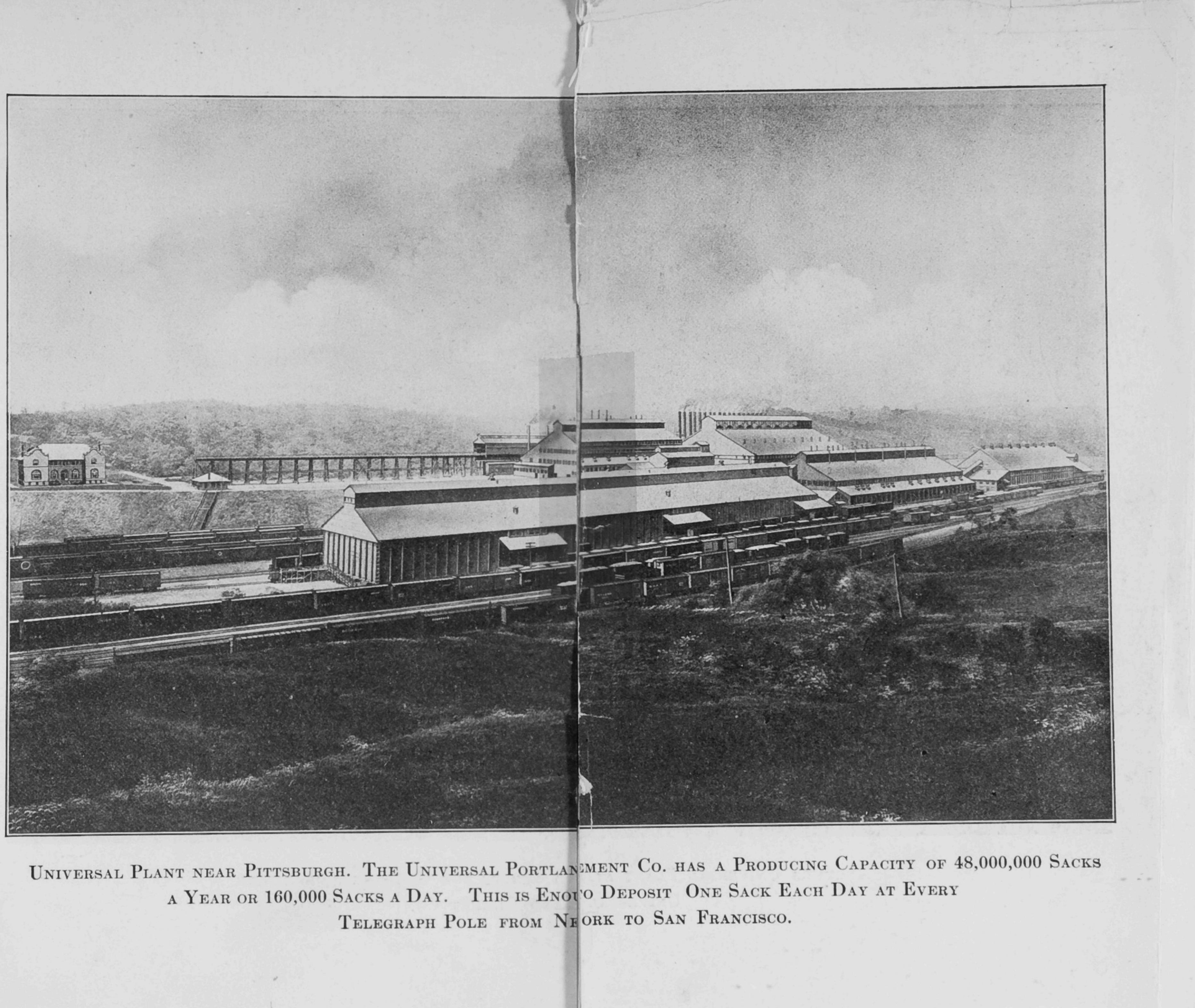
The traffic congestion in 1920, led some people to believe that there would not be enough cement to supply the needs of a large construction program. This was a mistaken impression based on past difficulties. The trouble during the period of heavy demand in 1920, was not lack of cement manufacturing capacity, but inability on the part of manufacturers to keep their plants operating at capacity. Curtailment of cement production was caused by strikes, scarcity of labor at cement plants, strikes in other lines of industry on which the cement plants are dependent, such as strikes in the gypsum plants and coal mines, and the general lack of transportation facilities including embargoes on the railroads. The ratio of cement production to manufacturing capacity for the entire year 1919, was only about 55%, and for 1920, less than 70%. The capacity of all cement mills in the United States is 560 million sacks or more annually. The most cement ever produced in a year was about 390 million sacks in 1920. That is to say, the country has never used, at least in any recent year, as much as 70% of its productive capacity.

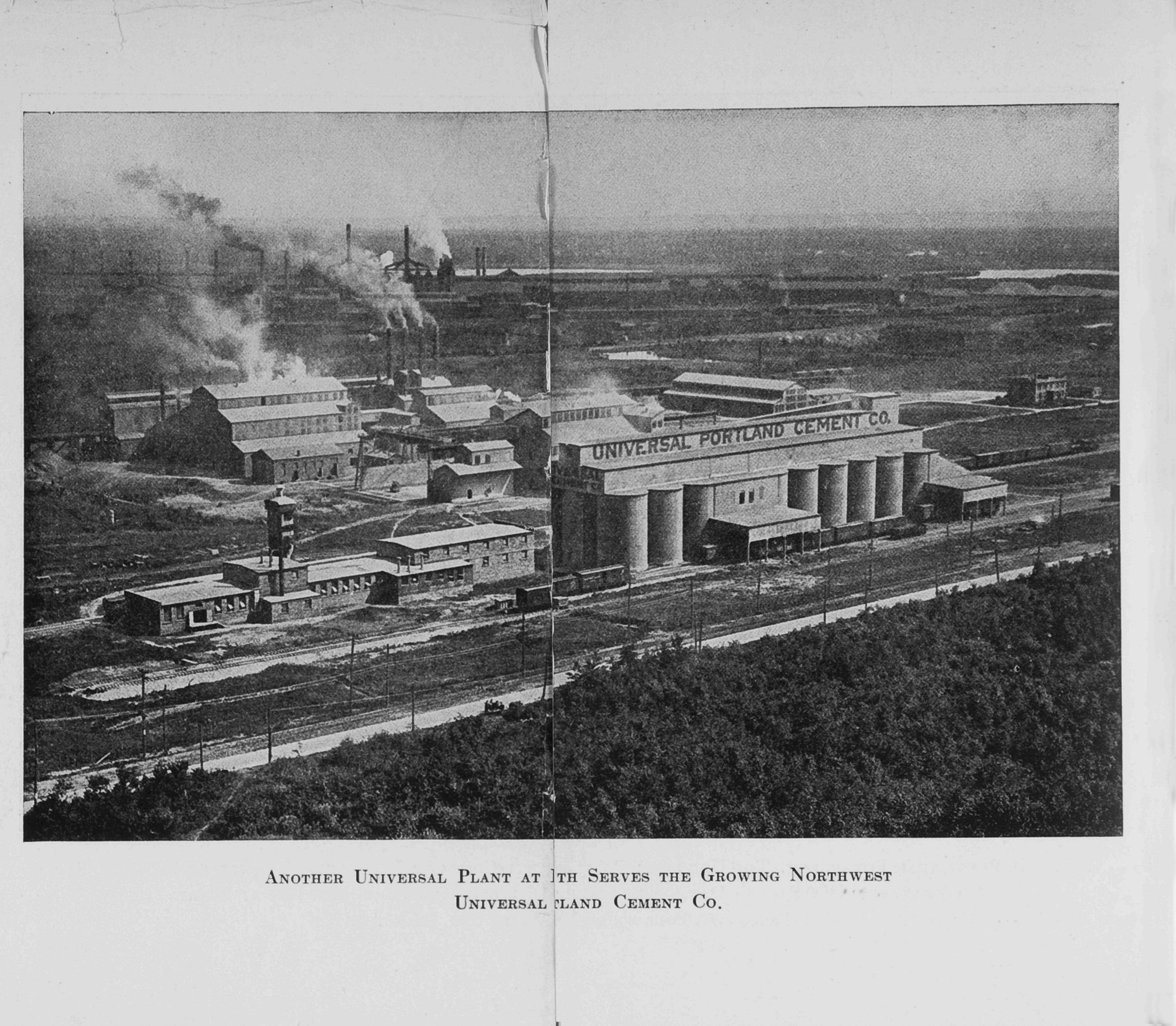
With adequate railroad facilities, there will be plenty of cement to supply the country's needs. But many people are too complacent about the transportation situation. As business quickens, as general commodities begin to move, as the season progresses and the demand for coal increases, and as farm products move to market, transportation facilities become taxed. The railroads, like most other concerns, are not equipped to handle nearly a full year's business in a few months. It is uneconomical. If too many people wait to order cement shipments until farmers turn loose their products and business in general quickens, it becomes difficult to obtain cars not only to transport cement and other materials from mill to market but to haul raw materials to the point of manufacture.

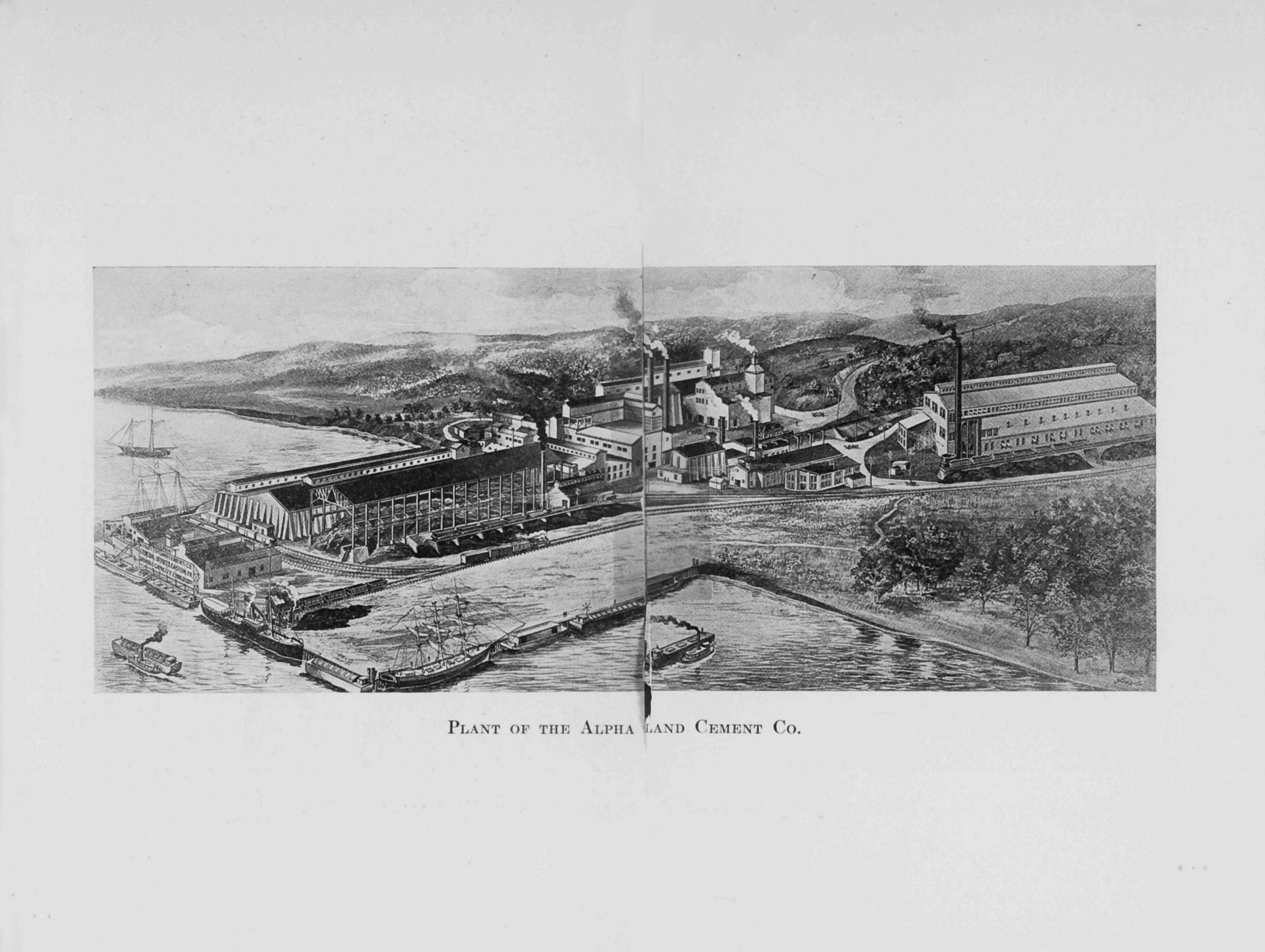
GOOD CARS REQUIRED FOR SHIPMENT

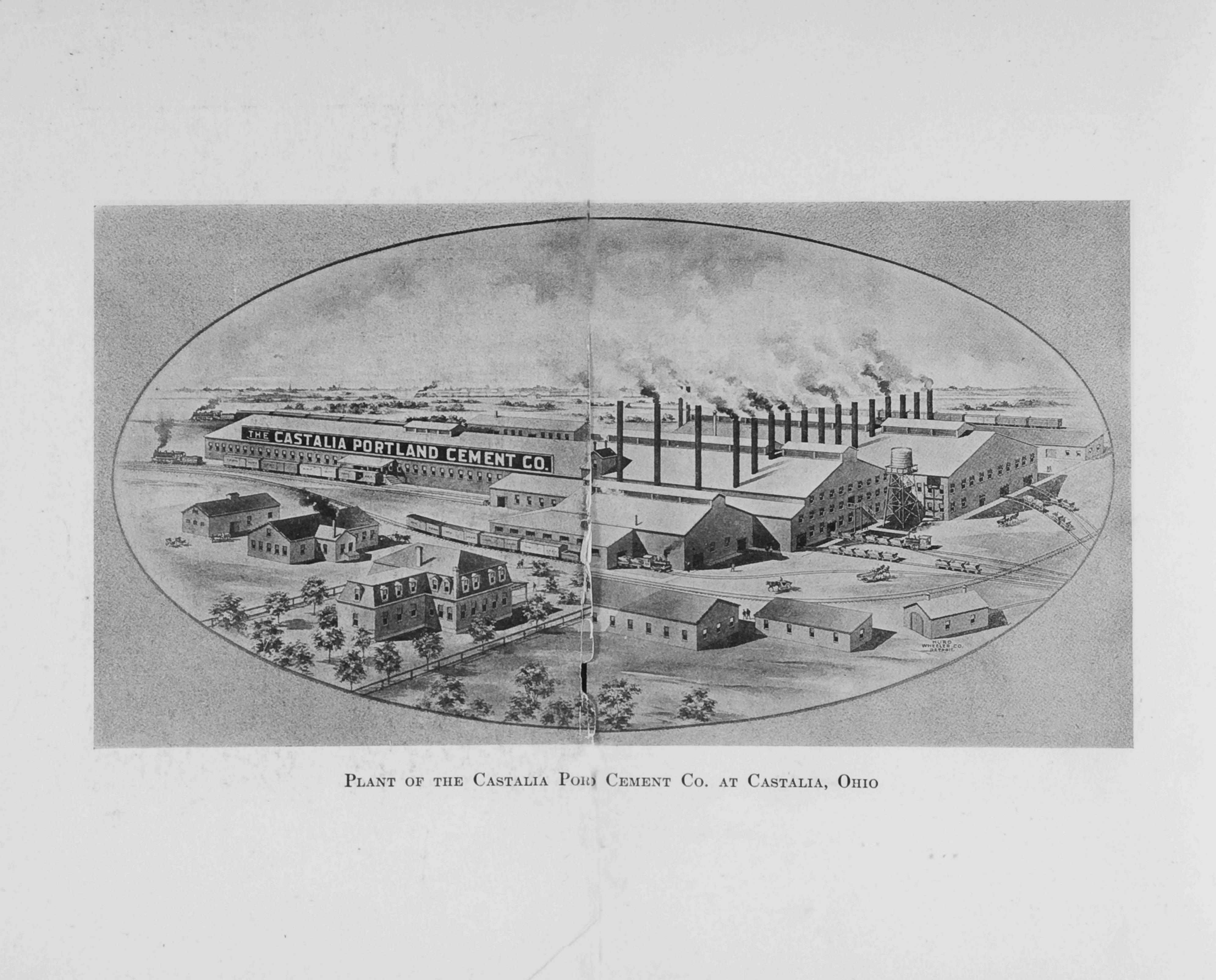
Cement, under ideal conditions, is shipped in box cars in good order, but in 1920 it was necessary to take what cars could be obtained regardless of expense and inconvenience. Use of restricted railroad cars, privately owned cars, furnished by customers and by cement companies, stock cars, open-top cars which require the use of tarpaulins to protect the contents and bad-order box cars have to be resorted to, as in 1920, when it is impossible to get enough good-order cars to supply the demand.

Another means adopted to keep Universal cement moving to its customers in 1920 was the use of motor trucks, involving, of course, additional expense to the company and to its customers. At the Universal plant near Chicago, there were loaded as many as 613 trucks in a single day or the equivalent of 120 box cars. This was at the rate of more than a truck a minute. In 1920, total shipments of cement by truck of the Universal Co. were nearly 10 million sacks. This saved about 12,000 railroad cars in a time of acute car shortage and furnished that much extra cement to the country's building program.



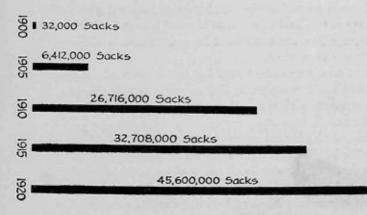






GROWTH IN SHIPMENTS OF UNIVERSAL CEMENT

Shipments of Universal cement have grown from a few thousand sacks in 1900 to over 45,000,000 sacks in 1920.



UNIVERSAL CEMENT IS UNIVERSALLY USED

Universal cement has been used extensively in many of the country's largest construction projects. In Pittsburgh, for example, a few of many include the Oliver Building, Kaufmann's Store, Kaufmann & Baer Store, Rosenbaum Store, Jenkins Arcade, William Penn Hotel, Union Arcade, buildings of Carnegie Institute of Technology, and such engineering works as the new Point Bridge, the Atherton Avenue Bridge and the Larimer Avenue Bridge, which is one of the world's longest concrete arches.

Students of the industrial and transportation situation in the Pittsburgh District know how indispensable the local rivers are to the city, and how important it is that they be kept in such shape as to be navigable practically all year. The Universal Portland Cement Co. has furnished in the past 10 years about four million sacks of cement for the construction of dams in the Allegheny, Monongahela and Ohio Rivers. Universal cement was used in the construction of Ohio River Dams Nos. 7, 9, 10, 11, 12, 14, 19, 20, 23, 24, 26 and 27, and is now being used in construction of Ohio River Dams 1¹/₂, 25, 30 and 32, of Allegheny River Dams Nos. 3 and 5, and of Monongahela River Dam No. 6.

CEMENT IS USED BUT NOT CONSUMED

There is an old saying that you cannot eat your cake and have it too, and this is true of most things. Practically all commodities are consumed in use. Food is consumed. Clothing is consumed.

But there is a product used but not consumed. Cement is used in making concrete, and concrete is permanent. It grows stronger with age. It cannot rust, rot, decay or burn. It endures.

Concrete highways connect city and country. Concrete forms the base of well-paved streets and alleys. A gridiron of hundreds of thousands of miles of concrete sidewalks in the United States makes walking easy. Railroads are large users of concrete. Modern buildings are of reinforced concrete. Concrete goes into many farm structures. Almost everything from chicken coops to skyscrapers rests on a concrete foundation.

Up to November 1, 1921, the Universal Portland Cement Co. has shipped a total of over 500 million sacks of portland cement. This would fill over 700 thousand box cars, making a train 5,000 miles long and requiring about 18,000 locomotives to move it. This is enough to build a system of concrete roads radiating from Pittsburgh to the capital of every state in the union.

Practically all this Universal cement-500 million sacksstill serves a useful purpose. It has not been consumed but has been transformed into houses, industrial buildings, improved highways, water-power developments and other valuable improvements that form additions to the permanent, taxable wealth of the country as well as tools for production of additional wealth.

Universal cement is used but not consumed.

The officers of the Universal Portland Cement Co. are: President, B. F. Affleck, Chicago; Secretary-Treasurer. T. J. Hyman, Chicago; General Sales Manager, Blaine S. Smith, Chicago; Eastern Sales Manager, W. S. Wing, Pittsburgh. Offices are maintained at Chicago, Pittsburgh, Minneapolis, Cleveland, Duluth, New York.

ALPHA PORTLAND CEMENT COMPANY

The Alpha Portland Cement Company was organized on the 8th day of April, 1895. A Charter was granted by the State of New Jersey on the 10th day of the same month and year and the first meeting of the Board of Directors was duly held on the 13th day of April, 1895.

The total amount of Capital Stock was then \$500,000.00 divided into 5,000 shares of a par value of \$100.00 per share with 100 shares outstanding. From this small beginning the Company gradually increased in size and importance. About the middle of 1895, the property of the Whitaker Cement Company was acquired. In the period beginning from December 1st, 1895, to November 30th, 1896, the first full year in which actual records of the production of cement by the company were kept, there was manufactured 834,176 sacks of Alpha. From that period on the company has enjoyed a steady growth, both in number of plants operated and in capital involved.

Not content with the additions made to the original units, the company purchased in 1902, the Martins Creek Portland Cement Company at Martins Creek, Pa., which had established a mill on the upper Delaware some seven miles above Easton. A second large plant was purchased in 1905, from the National Portland Cement Company, also located at Martins Creek. Reconstructing and improving both of these plants, the Alpha Company soon found itself among leaders in the industry.

Following the policy of not building new plants, but always buying and reconstructing old ones which had proved their merits and worth, the company acquired in the early part of 1909, the Buckhorn Portland Cement Company located near Manheim, W. Va. In the latter part of 1909, the Catskill Cement Company, located near Catskill, N. Y., was purchased, and in 1917, the plant of the Thos. Millen Co. at Jamesville, N. Y.

Still further units were acquired during the latter part of 1920, when three additional plants in the Middle West were purchased, namely, at LaSalle, Illinois, Bellevue, Michigan, and Ironton, Ohio. With the acquisition of these properties, the company now owns ten plants, strategically located with respect to distribution, and serving a territory extending from the Atlantic seaboard to the Mississippi.

As stated in another paragraph, the original capitalization of the company was \$500,000.00. At various times this was increased until the present capitalization is \$25,000,000.00, consisting of 250,000 shares of stock of the par value of \$100.00 each, divided into 230,000 shares of common and 20,000 shares of preferred. There is outstanding at the present time the entire preferred issue and 158,000 shares of the common.

The officers are as follows: President, G. S. Brown, Easton, Pa.; Vice Presidents, F. G. McKelvy, Easton, Pa., C. A. Irvin, Chicago; F. M. Coogan, Easton, Pa.; Secretary, R. S. Gerstell, Easton, Pa.; Treasurer, John J. Metthes, Easton, Pa.; Assistant Treasurer, F. G. Lyons, Easton, Pa.; Assistant Secretary and Assistant Treasurer, W. E. Viets, Chicago. The company maintains two general offices, the parent one being located at Easton, Pa. with a second at Chicago, Ill.

The total man-hours worked during the year of 1920, amounted to 6,033,439 hours. Using an average of 3,000 hours per man per year, we find that the average number of men employed at the plants amounted to 2,011. The total payroll for the same year amounted to \$3,030,306.34.

The Alpha Company manufactured during the year 1920, slightly in excess of 24,000,000 sacks of Portland Cement. This latter figure, however, does not begin to represent the true output of the works, which at full capacity could manufacture more than 32,000,000 sacks per year.

CASTALIA PORTLAND CEMENT COMPANY

The Castalia Portland Cement Company was organized in 1897, with a capital of \$150,000 which has been increased to \$750,000. Its plant is located at Castalia, Ohio, with its general offices in Pittsburgh.

Cement was first shipped from this plant twenty-three years ago. Many of the leading dealers in builders' supplies in the United States who placed their orders with this company at that time have been ordering regularly ever since. They are today great boosters of the famous "Tiger" brand cement. This is certainly the highest testimonial the company could ask for regarding the quality of its product. Cement manufactured by this company has been used in the construction of some of the most important work throughout the country.

Marl and clay are used in the manufacture of this cement which has always stood second to none in quality. It is made by what is known as the Wet Process. After the marl and clay pass through the grinding mills, the mixture goes to a system of correction tanks. The mix contained in these tanks is then accurately analyzed so as to assure the correct proportion of lime, alumina and silica required for the proper burning in the kilns. Owing to this method of controlling the raw mix, no other cement company turns out a more uniform cement as to fineness, color, crushing and tensile strength than the Castalia Portland Cement Company.

In the present manufacture of cement, the Castalia Company uses special machinery for grinding the raw materials which has been constructed especially for its own particular need. Pulverized coal is burned in the kilns finely ground by mills built especially for this purpose.

During the last three years this plant has been practically rebuilt and is now equipped throughout with the most modern up-to-date machinery. Every department is operated by electric power. This improvement has greatly increased its output, helping the company to overcome the difficulty it has experienced in the past years in not being able to produce sufficient cement to meet the increased demand.

The men in charge of the company's affairs have had a long, practical experience. The President has been identified with the cement industry for more than forty years, in fact, ever since Portland cement was manufactured in this country. At that time, the raw material was ground, then mixed in a pug mill and made into bricks, burned in vertical kilns, using coke as a fuel. Burr stones were used for grinding the clinker into a finished product. Horizontal revolving kilns are now used to burn the clinker and it is ground in large revolving tube mills with forged steel balls.

On account of the increasing demand for cement, both in the construction of new roads and building, the company is now doing a very prosperous business.

PORTLAND CEMENT OUTPUT

Production and shipments of Portland cement in the United States continued to increase during August, 1921, and according to available statistics scored new high records for that month. The August production exceeded the average for August, 1917-1921, by about 15 per cent. Production for the first eight months of 1921 was about 99 per cent of the quantity produced during the corresponding period of 1920 and exceeded the average for the first eight months of 1917 to 1921 by about 8.5 per cent.

As is usual in summer, the August shipments exceeded production, and the total for the eight months just ended was equivalent to more than 99 per cent of the record quantity shipped in the first eight months of 1920. The average for the same period during the five years 1917-1921 was exceeded by about 9.5 per cent.

Stocks of finished cement at mills at the end of August were approximately 33,120,000 sacks, compared with 33,764,000 sacks on January 1, 1921, and with the average of about 38,400,000 sacks for August during the last five years. The production of clinker (unground cement) also established a record for August, the output being in excess of 37,200,000 sacks. Clinker production for the eight months amounted to slightly less than 252,000,000 sacks.

These statistics, prepared by Ernest F. Burchard, of United States Geological Survey, are based mainly on reports from producers of Portland cement and in part on estimated data. They indicate that the present demand for cement is greater than might be expected in comparison with that for other mineral commodities.

The Bureau of Foreign and Domestic Commerce, Department of Commerce, reports that imports of hydraulic cement in July amounted to 13,816 sacks, valued at \$9,562; the total for the first seven months of 1921 was 197,056 sacks, valued at \$184,577. The exports of hydraulic cement in July were 324,364 sacks, valued at \$293,960; the total exports for the seven-month period were 3,057,732 sacks, valued at \$2,958,280.

FIRST NATIONAL BANK AT PITTSBURGH

The First National Bank at Pittsburgh is a progressive financial institution of large resources. Every facility in Domestic and Foreign Banking is afforded to corporations, firms and individuals. Exports and imports are facilitated by our Foreign Exchange Department.

This institution has established direct banking connections in all parts of the World, which are a great convenience in the handling of documents pertaining to Foreign Commercial Transactions.

All branches of International Banking are completely covered by our facilities.

We issue drafts and make payments in all parts of the World.

We handle Trade and Bankers' Acceptances.

All languages are spoken in this department.

Officers of this institution are trained bankers with a wide experience, and its directors are successful men in a large variety of enterprises, affording a broad scope of business knowledge.

Capital	\$5,000,000.00
Surplus	3,000,000.00
Resources, over	66,000,000.00

OFFICERS

DIRECTORS

JOHN A. BECK President Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKS Vice-President
HENRY CHALFANT President Spang, Chalfant & Co., Inc.
W. L. CLAUSE Chairman, Pittsburgh Plate Glass Co.
GEORGE W. CRAWFORD
WM. L. CURRY Manufacturer, Pittsburgh, Pa.
JOHN A. DONALDSON
W. D. GEORGE Real Estate; Receiver Pittsburgh Railways Company
WM. H. HEARNE Director La Belle Iron Works, Steubenville, O.
J. H. HILLMAN, JR., Chair. of Board Hillman Coal & Coke Co., Pittsburgh
B. F. JONES, 3rd Assistant Treasurer, Jones & Laughlin Steel Co.
D. T. LAYMAN, JR
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JAMES A. MCCREA
A. M. MORELAND
P. W. MORGAN President East Pittsburgh National Bank
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WM. A. RENSHAWJohn A. Renshaw & Co., Pittsburgh, Pa.
A. C. ROBINSON President Peoples Savings & Trust Company
LAWRENCE E. SANDS
ISAAC M. SCOTT President Wheeling Steel Corporation
BENJAMIN THAW
ROBERT WARDROPDirector of Federal Reserve Bank of Cleveland and Vice President, Peoples Savings & Trust Company

JOHN M. WILSON. . Vice-President National Supply Co., Pittsburgh, Pa.

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Nine

CLAY PRODUCTS



First National Bank at Pittsburgh

December, 1922



The Story of Pittsburgh Clay Products

T

HE uses of clay are numerous, and the history of the human race shows that very early extended use was made of this substance. Bible readers are familiar with the way in which Pharoah embittered the slavery of the children of Israel by compelling them to find their own straw for the brick they were required to make.

The clay industry probably had its beginning in the Valley of the Euphrates, which is the traditional cradle of the human family. According to some authorities, brick dating back to 4500 B. C. have been found in Babylonian excavations. Early man noticed how the heat of the sun hardened the mud along the banks of the river, cracking it into irregular pieces which could be utilized, after shaping them to the desired size, in erecting the walls of his rude Then naturally came the next step, which was to hut. give the mud the proper shape while it was yet soft and plastic, and lay it out in the hot sun to bake. This produces what is called "adobe" brick, and the next improvement was to make the baked bricks more solid by mixing chopped reeds or straw with the soft mud before shaping and baking.

Artificial burning of the shaped clay came later. The Tower of Babel is supposed to have been built of burned brick. By the time Nebuchadnezzar came to the throne of Babylon, in the sixth century before Christ, not only had brick making become an art, but a decorative art also, for colored enamels were used with fine effect for decorative purposes. The old Romans were great builders of dwellings and aqueducts, and although they used much stone in their work, they also used huge quantities of brick. After the Roman empire disintegrated, and the nations of Europe began to form, the art of making brick spread all over the continent, but was carried to a very high state of development in Northern Italy, Southern France, Northern Germany, and the Netherlands, where good building stone was scarce, but clay was abundant.

In the thirteenth and fourteenth centuries brick enjoyed a wide vogue in the erection of the great Gothic structures of that period, and was freely used in the erection of cathedrals, municipal buildings, palaces of the nobles, and residences of the wealthy classes. The brick making industry in England dates from the time of Henry VIII, and was highly developed under Flemish influences. The brick vogue in England continued to expand until the days of Queen Anne and the Georges, when it reached wonderful proportions, and many fine English country houses of that period still remain to testify to the taste of the architects and the durable and satisfying nature of the workmanship.

Much adobe construction was found on the American continent, especially in Mexico and Peru, when the Europeans first began to penetrate into those interiors, but aside from these early uses of clay, the first brick used on this side of the Atlantic Ocean came from England or Holland. and was brought over with other articles needed in the American wilderness by the pioneers. But in the seventeenth century the native American brick industry was started, and the Colonial times saw many fine specimens of brick building, from New England in the North, to Virginia in the South. Up to about the year 1880, however, there was no general attempt to use brick to the best advantage. Previous to that time, the brick building was confined to the use of common brick for ordinary construction, or for backing stone-faced walls. From the date mentioned, to the present time, a growing taste has demanded and secured artistic effects in the brick wall, by the use of especially manufactured face brick, which, in a bewildering variety of beautiful color tones and textures. have been sympathetically and artistically treated by leading architects, all over the United States, as well as in other countries.

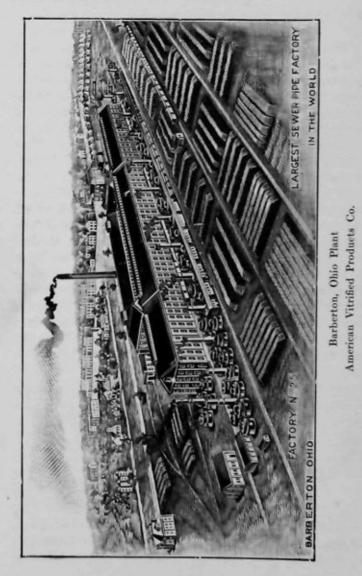
In this booklet will be found details of many forms of clay manufactures, in which the Pittsburgh District excels, and statistics of various corporations and firms engaged in the clay industry.

AMERICAN VITRIFIED PRODUCTS CO.

Was incorporated in February, 1900, under the laws of New Jersev as the American Clav Manufacturing Co. In February, 1901, the name was changed to the American Sewer Pipe Co., and again changed in August, 1919, to the present title. The present company is a consolidation of thirty-two vitrified drain pipe and two paving brick plants. It owns and operates twenty-six manufacturing plants located in Akron, Barberton, East Liverpool and Lisbon, O., Brazil, Ind., Jackson and Grand Lodge, Mich. It also owns large deposits of clay in Ohio, Indiana, Michigan, Pennsylvania and West Virginia, also coal lands in Toronto, Lisbon and Uhrichsville, O., New Brighton, Pa., and New Cumberland, W. Va. It maintains distributing stations in Akron, Cleveland, Columbus, Detroit and New York. It also owns the entire capital stock of Michigan Sewer Pipe Co. (\$10,000) operating three distributing yards in Detroit, the Akron Sewer Pipe Co. (\$10,000) operating three distributing vards in Cleveland, and the American Sewer Pipe Co. of New York (\$1,000) operating three distributing vards in New York City. The annual output is approximately 15,000 carloads.

The authorized capital stock of the American Vitrified Products Co. consists of \$5,500,000 common and \$2,000,000 7% cumulative convertible preferred of which there is outstanding \$3,500,000 common and \$1,750,000 preferred. The common stock has a par value of \$50.00 and the preferred \$100.00. The company has no funded debt. The general offices of the company are at 15 Broad St., Akron, Ohio, and their Pittsburgh Office is at 1427 Oliver Building.

The officers of the company are George R. Hill, Pres., Akron, O.; F. W. Walker, Vice-Pres., Beaver Falls, Pa.; F. B. Theiss, Vice-Pres.; A. S. McCombe, Secretary and Treasurer, Akron, Ohio. The board of directors consists of the officers and L. D. Brown, N. O. Mather, Akron, O.; W. S. Francy, Toronto, O.; Charles Currie, Cleveland, Ohio; W. F. Dunspaugh, New York.



KITTANNING BRICK AND FIRE CLAY COMPANY

The Kittanning Brick and Fire Clay Company was organized in 1894, with a factory at Kittanning, Pa., and has continuously manufactured face building brick since that date, increasing the number and capacity of its plants as the demand for this character of building brick expanded, until they are now the largest manufacturers of face brick in the United States. This company was the first to manufacture and introduce to the public a high grade vitreous buff and gray, or white, building brick. The company therefore rightfully claims to be the manufacturers of the "Genuine Original Kittanning Brick." The introduction of an entirely new and untried product was not an easy task in the early days, but the artistic and practical value of a non-absorbent, light-colored face brick was soon recognized by architects and builders.

The increasing use of Kittanning Brick and the general demand for a similar high grade brick of slightly different texture or color, led to a policy of expansion on the part of the original company. Additional plants were built at Kittanning, and the Martin Brick Company was organized. A short time later, the Yingling-Martin Brick Company at Johnsonsburg, Pa., and the Kittanning Buff and Grey Brick Company, at West Mosgrove, Pa., were incorporated. The Pittsburgh-Callery Brick Company plant was recently leased for a term of years, for the manufacture of building tile and brick. In addition to the production of all of these plants, the Martin Brick Company arranged to purchase the yearly output of several high-grade brick and tile plants, for distribution locally and throughout the United States. This policy of expansion and quantity production resulted in a marked decrease in the manufacturing overhead and selling cost per thousand brick.

"Kittanning Brick" and "Artbrick," produced at Johnsonsburg, have not only successfully withstood the test of time, but have also been subjected to every known physical and chemical test by architects and government engineers. These brick have frequently been substituted for the more expensive limestone and marble, in both exterior and interior construction. The artistic and enduring value of these products, and their approval by architects and engineers of national reputation, is evident from their use in innumerable churches, school-houses, office buildings, apartment houses and residences, in Pittsburgh, New York, Chicago, Philadelphia, Boston, St. Louis, and in almost every State in the Union and every Province in Canada.

The home of the Kittanning Brick & Fire Clay Company, is No. 710 Chamber of Commerce Building, Pittsburgh, Pa.

The official roster is as follows:

OFFICERS. S. C. Martin, President; R. G. Yingling, Secretary and Treasurer.

DIRECTORS. S. C. Martin, S. E. Martin, O. C. Yingling, R. G. Yingling, E. C. Clark.

BRANCH OFFICES. New York, Boston, Buffalo, Cleveland, Cincinnati, Norfolk, Detroit, Chicago, St. Louis, Dallas, Tex., Philadelphia, St. Petersburg and other cities throughout the United States.

AUXILIARY PLANTS. Yingling-Martin Brick Co., Johnsonsburg, Pa.; Kittanning Buff & Gray Brick Co., West Mosgrove, Pa.; Callery Plant, Callery, Pa.

CAPITAL STOCK. Kittanning Brick & Fire Clay Co. originally \$30,000, later increased to \$300,000; Kittanning Buff & Gray Brick Co., \$200,000; Yingling-Martin Brick Company, \$100,000.

PITTSBURGH CLAY POT COMPANY

The manufacture of glass melting pots is a process requiring the most painstaking care and minute attention to details. Years of experience are required to properly select, combine and prepare the clays used in their manufacture, as well as to acquire the skill necessary to build pots which will withstand the high temperatures and extremely trying working conditions incident to the manufacture of glass.

The Pittsburgh Clay Pot Company was organized in 1879, and therefore has had more than 40 years' experience in the manufacture of glass melting pots of all kinds, during which it has established an enviable reputation as producers of the highest grade glass melting pots and glass furnace refractories in general. The foundation of good pot making is the nature of the clay used, quality being the one principle which guides this company in the selection of clays. Keeping in constant touch with sources of supply, and by frequent careful tests, the company is assured that its products are fully up to the standards its officials have set.

After receiving the raw clays from the mines, these clays are all thoroughly inspected and picked by hand. All doubtful or inferior clays are immediately rejected, and extreme care is used to see that only the very best of material enters into the composition of the pot. The company has facilities for burning such clays as are used in the batch in the burned condition, and these clays are all inspected again after burning.

The next process consists of grinding and screening the various clays which enter into the pot mixture. It is highly important that the various clavs be screened to the size that will give the best results in the finished pot, and this detail is looked after with the closest attention. The various clays are intimately mixed in the proper proportions, and then passed through "pug mills," in order that the batch may be thoroughly amalgamated. After this mixing and pugging process is completely accomplished, the batch is stored in bins to age or ripen. The proper aging of pot and tank block clays is of great importance, and the company has bins capable of holding a year's supply of clay, in order that the aging may be properly accomplished. During the aging process the batch is transferred from one bin to another, being again thoroughly pugged at each transfer

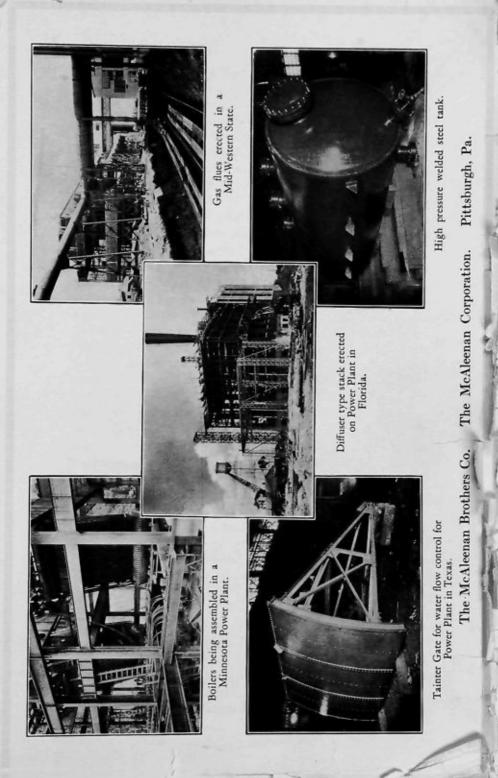
Pot clay usually requires from eight months to one year to age, in order to make it a homogeneous mass. After the clay is properly aged it is again pugged and transferred to the trampers' box, where it is kneaded by the bare feet of the clay trampers. It is then made into small rolls suited to fit the hand of the pot maker. In making the pots the bottoms are made first. These being made to the proper size and thickness, they are turned and the knuckle or joint between the side wall and the bottom of the pot is formed. The side walls are built by "spells," the potmaker moving from one pot to another in his set, and building about six inches to the height of each pot every 48 hours. This allows the various spells time to stiffen, which prevents the lower spells of the pot from sagging. Care also must be taken to see that the upper part of each spell is kept moist, in order that the next spell succeeding it can be properly kneaded.

In order to make a seamless wall for the pot, this process is continued until the crown is turned in and finished, after which the hood is worked on and the pot is thoroughly cleaned and smoothed. It usually requires from six to twelve months from the time the pot is made before it is permissible to be placed in a furnace.

The manufacture of Tank Blocks is also a long and tedious operation. The clay for the various sizes and shapes is rammed into moulds by pneumatic clay rammers. These blocks are placed in drying rooms, with temperature ranging from 90 to 110 degrees, for a period of from one to three months, in order to be thoroughly dried before burning. They are then placed in large kilns, and burned by natural gas, up to a temperature of 2450 degrees Fahrenheit. This burning process requires about three weeks time.

Previous to the organization of the Pittsburgh Clay Pot Company, in 1879, there had been but one concern in the United States, Thomas Coffin and Company, upon which the glass factories had to depend for their supply of one of the most important and absolutely necessary articles in the manufacturing of glass, namely: glass melting pots.

Recognizing the great growing demand for glass ware, and Pittsburgh being the center of this industry, a number of prominent glass manufacturers of the Pittsburgh district organized the Pittsburgh Clay Pot Company, and purchased the Hostetter Graphite Factory on South Avenue, which consisted of a five-story building 100 x 100 feet. In 1883 another five story building 140 x 110 feet and a



a capitalization of \$100,000 and a completely equipped engineering organization, to design, engineer and construct steam power plants. Soon it was necessary to add a chemical engineering department to care for the increasing work in that field, and later a masonry department was formed to handle the brick work of boiler settings, an exceedingly important part of modern steam power plant construction. Thus, under one responsibility, McAleenan Brothers Compapy in conjunction with The McAleenan Corporation are equipped to undertake successfully contracts covering the entire work from planning to construction.

A contract that was fulfilled recently in Minnesota furnishes an interesting illustration of the McAleenan organization's ability to measure up to the unusual demand. In this Minnesota plant the order was issued on October 1 that steam must be raised in the plant on December 1. The boilers were suspended from the building, which necessitated the building to progress before the boilers could be installed. Despite the fact that when the order was given, nothing towards construction was completed except the foundations, the job—three complete boilers totaling 5000 horse power —was completed and steam furnished on the required date.

The chemical department is active in the solution of manufacturing problems and has evolved processes for the recovery of previously wasted by-products in the coking industry, for the elimination of stream pollution by steel plants and other original methods of manufacturing and conserving which effect savings to the interested industries. Under normal conditions the plant employs about 125 men, and the field construction force, in crews spread over the country, totals about the same number.

McAleenan Water Tube Boilers are furnished in two types—inclined and horizontal. The McAleenan Corporation offers an exceptional service in the complete installation of large and complicated boiler settings and furnaces—a service that includes the detail design of all metal and refractory parts, the fabrication of steel work and cast iron members and the entire erection, all under one responsibility.

Other products of the McAleenan organizations are: gas absorbers, steam jacketed agitators, annealing boxes. buckets. By reason of its portability and adaptability to a wide range of uses it sprang into the favor of road building and ditching contractors and engineers. A large and profitable business was added to that already enjoyed in drills and pumps. Out of accumulated profits and surplus the company declared in January. 1924, a stock dividend and offered an additional amount of stock at par to stockholders. The total amount offered was immediately taken up. The paid up capital stock at present is about \$2,000,000.

A good business has been enjoyed during recent years. The total annual business has increased considerably over 100% from 1916 to 1926. The main plant at Beaver Falls covers about nine acres and employs over 400 men, most of them skilled mechanics. It includes several modern machine shops, gray iron and steel foundries, wood working department, boiler shop and forges. Branch offices are maintained in New York, Chicago and Joplin, Missouri. Warehouses and small manufacturing plants are conducted at Arlington, N. J., and Joplin, Missouri. Keystone Well Drills and Excavators are widely used throughout the United States and abroad. Forty-four years of fair-dealing have won the confidence of contractors and engineers throughout the world.

Of the founders of the Company, but one man remains, James D. McAnlis, the revered president of the present board of directors, which includes also the following names: Robert Rex Downie, secretary and general manager; Charles T. Smith, treasurer; John Warren, vice president; and J.Vale Downie, sales manager.

LADD WATER TUBE BOILER COMPANY

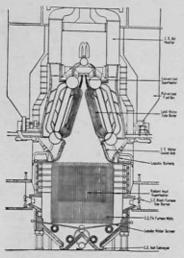
The Ladd Water Tube Boiler Company was organized in 1910, under the name of The George T. Ladd Company, the firm name being changed in 1925, to Ladd Water Tube Boiler Company, becoming a subsidiary of the International Combustion Engineering Corporation of New York. The Ladd Company is a Delaware Corporation with a capitalization of \$7,631,000, and has a large number of boilers in operation throughout the country, varying in capacity from 4,000 to 600,000 pounds of steam per hour.

Ladd engineers pioneered the use of large combustion chambers, having installed boilers in 1916 with four and one-half cubic feet of combustion space per rated horsepower. They were also the first boiler company to use heavy steel work for boiler settings; to suspend the drums inside the boiler settings; to perfect and install a patented feed box arrangement, special baffle tile, air tight doors and many other noteworthy improvements in boiler and furnace construction.

That the fundamental design of the Ladd Boiler is correct is proved not only by the efficient operation of these boilers wherever installed, but also by the fact that today several of the larger boiler companies have revised their original model to more closely conform to the Ladd design.

Probably the largest and best known water tube boiler installation in the world is the eight 2,647 HP. Ladd boilers installed in the River Rouge Power Plant of the Ford Motor Company. Four of these boilers were installed in 1920, and at that time they were not only the largest power boilers ever built, but also the first boilers to be fired by a combination of pulverized coal and blast furnace gas. The performance of the first four boilers was so satisfactory that a second order for four additional boilers of the same horsepower capacity was placed and the boilers installed during 1922.

With the rapid advances that have been made in the past ten years in combustion equipment and with the advent particularly of pulverized fuel it was logical that the largest company in the combustion field and the Ladd Boiler Company should have a common interest. The progressive ideas of both organizations long before a consolidation was effected tended to bring them together in rather closer accord than might ordinarily be expected. On the other hand the engineers responsible for the design and erection of the Ladd Water Tube Boiler as well as the engineers of Combustion Engineering Corporation recognized that a more efficient piece of work could be done by having the boiler and the furnace practically one unit designed by one or-

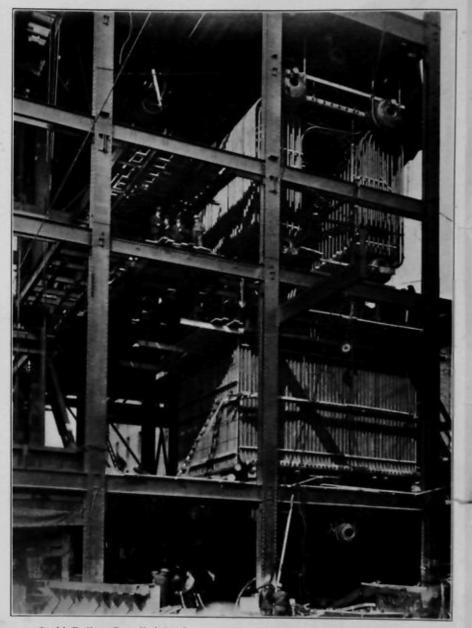


Ladd Boilers with Combustion Engineering Corporation Water Walls, Screen and Air Heater at the Fordson Plant of the Ford Motor Company. Steam Production—535,000 Ibs. per hour.

ganization, thus not only relieving the customer of the necessity of himself harmonizing any differences between two separate contractors, but also saving in initial cost because of dealing with one concern for one unit rather than with two concerns. The Ladd engineers and the **Combustion Engineering** Corporation engineers have in the short time since the consolidation of the two companies demonstrated the logic and advantage of boiler experts and combustion experts coming together.

One of the outstanding results of this combination is a new unit with a number of interesting new features installed at the Fordson Plant of the Ford Motor Company at River Rouge. This is the largest steam boiler in the world, developing approximately 17,000 HP. and operating at extremely high efficiency. Not the least interesting feature of this installation is the fact that there is no brickwork in the furnace, the furnace walls being made of boiler tubes with fins or steel flanges welded to them. Thus the side walls of the furnace become boiler heating surface instead of a constant source of expense because of burned-out brickwork.

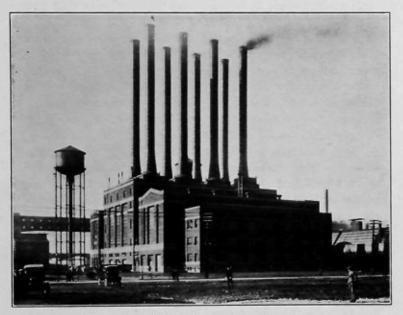
In the Kips Bay Station of the New York Steam Corporation, there are in operation three large Ladd Water Tube Boiler Units—each designed for a steam production of 325,000 lbs. per hour. These boilers are also equipped with Combustion Engineering Corporation water walls, water screens and air heaters. The coming together of the Ladd Company and Combustion Engineering Corporation marks a new step in power plant design, for it is the first time in the history of the country that a prominent boiler concern has



Ladd Boilers Installed in the new Kips Bay Station of the New York Steam Corporation. Steam Production-325,000 lbs. per hour. These boilers are equipped with Combustion Engineering Corporation Water Walls, Screen and Air Heater.'

joined forces with a group of combustion engineers of such broad and varied experience as those who are brought together in this combination.

Since the consolidation with the International Combustion Engineering Corporation, a new steam generator has been developed that has revolutionized the production of steam. Installations are already being made in some of the largest industrial plants and central stations in the country. The design and construction of these steam generators are being directed by the Ladd Water Tube Boiler Company.



Power Plant of Ford Motor Co.'s Fordson Plant.

Recently the International Combustion Engineering Corporation purchased the Heine Boiler Company plants at Phoenixville, Pa., and St. Louis, Mo. The acquisition of these two modern plants provides ample shop facilities for building all types of Ladd and Heine boilers.

The officers of the Ladd Water Tube Boiler Company are as follows: George E. Learnard, chairman of board; George T. Ladd, president; H. D. Savage, vice president; George H. Hansel, secretary and treasurer; Robert E. Chew, assistant treasurer. The main offices of the Company are located in the First National Bank Building, and district offices are maintained in New York and Chicago.

THE MCALEENAN BROTHERS CO. THE MCALEENAN CORPORATION

About fifteen years ago a large boiler company located in Pittsburgh changed ownership. The usual transitions occurred. Veterans went their way, seeking new fields, while replacements came in to carry out the new ideas that new owners believed only possible of fruition by a changed personnel. One man, for fifteen years the superintendent under the old regime, was out of a job. But what's a job when there is a small plot of ground hungering for a new plant where a man of vision can put to the test the practicability of new ideas merged with ripe years of experience in knowing how—in planning, designing and constructing boilers and other products made of steel?

So it was, that on October 2, 1911, McAleenan Brothers Company was established by George R. McAleenan. He and his brother, E. G. McAleenan, had been engaged in this particular industry since their first working days and understood it thoroughly from every angle. With this background and a very limited capital they started out. A small space 20 feet by 60 feet, located on the present site at Twenty-fifth street and Allegheny Valley Railroad, served as headquarters. Today that once small plant has spread out to such an extent that the first impression that comes to a visitor is that the railroad tracks seem like the small boy at his marbles who keep shouting at his competitor, "No hunching." For the present plant of the McAleenan Brothers Co. covers the entire property fronting 200 feet on Railroad street by 400 feet on Twenty-fifth street.

The business grew and expansion was urgent. McAleenan Brothers Company was incorporated June 5, 1913, with an authorized capital of \$100,000, which was later increased to \$150,000. And still progress called for further expansion and The McAleenan Corporation was formed in 1922, with kiln room 140 x 70 feet were erected. In 1893 a six story building 176 x 110 feet was added to the plant, which now extends from South Avenue on the Ohio River to Reedsdale Street and contains about ten acres of floor space in which are manufactured not only glass melting pots but Tank Blocks, furnace linings, lehr tile, floaters, gathering boots, pyrometer tubes, crucibles, enamelers, furnaces, muffles and smelter furnaces, etc., using annually from 5000 tons to 6000 tons of domestic clay, a large portion of which comes from Missouri, and from 2000 tons to 3000 tons of imported clay from Germany.

The original organizers of this Company were:-John Adams, Thos. B. Atterbury, David Challinor, James Campbell, William Doyle, Thomas Evans, A. H. Heisey, Edward Hogan, William C. King, William McMillen, David Taylor.

John Adams was President until his death. He was succeeded by William Doyle, who was President until 1894, at which time he was succeeded by A. H. Heisey, who held office until his death in February, 1922. A. H. Heisey was succeeded by Dos Taylor, who was elected President and holds the office at the present time.

PRESENT DIRECTORS. Dos Taylor, James F. Challinor, William C. King, A. P. Duncan, James Hogan, T. F. Emminger, A. E. Gray.

OFFICERS. Dos Taylor, President; A. E. Gray, Treasurer and General Manager; J. E. McKelvy, Secretary; T. F. Emminger, Production Manager.

The company enjoys a national reputation for its superior products, which are recognized as the highest standards obtainable.

The company employs from one hundred fifty to two hundred workmen, mostly skilled, as the manufacture of glass melting pots is a process which requires the most painstaking care and attention to detail. Years of experience are required to properly select, combine and prepare the clay used in their manufacture, as well as to acquire the skill necessary to properly build pots to withstand the high temperature and extreme working conditions incident to the manufacture of glass.

HARBISON-WALKER REFRACTORIES COMPANY

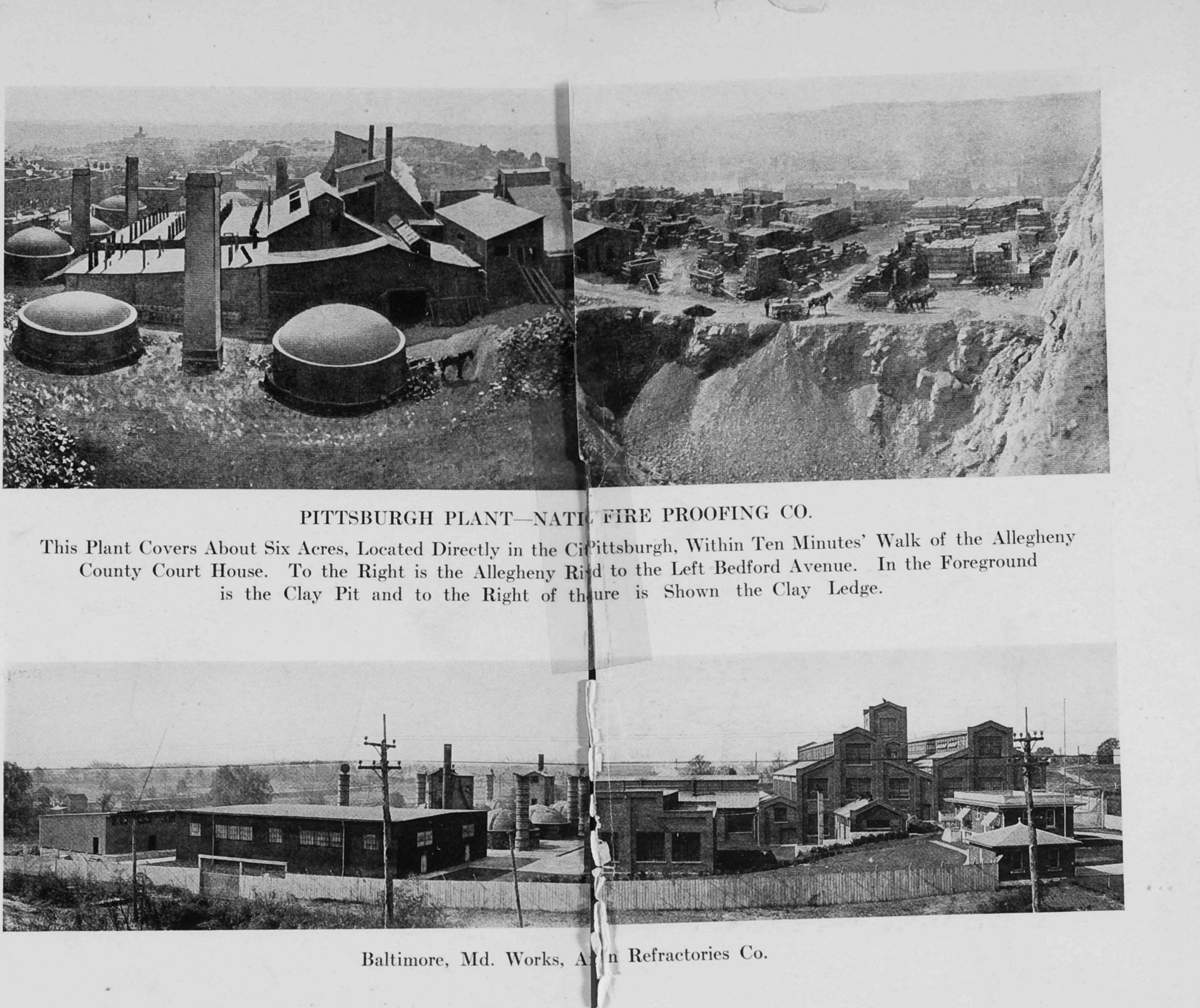
The Harbison-Walker Refractories Company is one of the largest manufacturers of fire brick in the United States. It owns 40,718 acres, and leases 22,500 acres of clay, coal and ganister properties, located in the States of Pennsylvania, Ohio, Kentucky, Indiana and Alabama, maintaining 33 plants, equipped with modern machinery. The company has an authorized and outstanding capital of \$27,000,-000 common stock, and \$9,000,000 6^{C}_{C} cumulative preferred stock, of the par value of \$100. There is no funded debt.

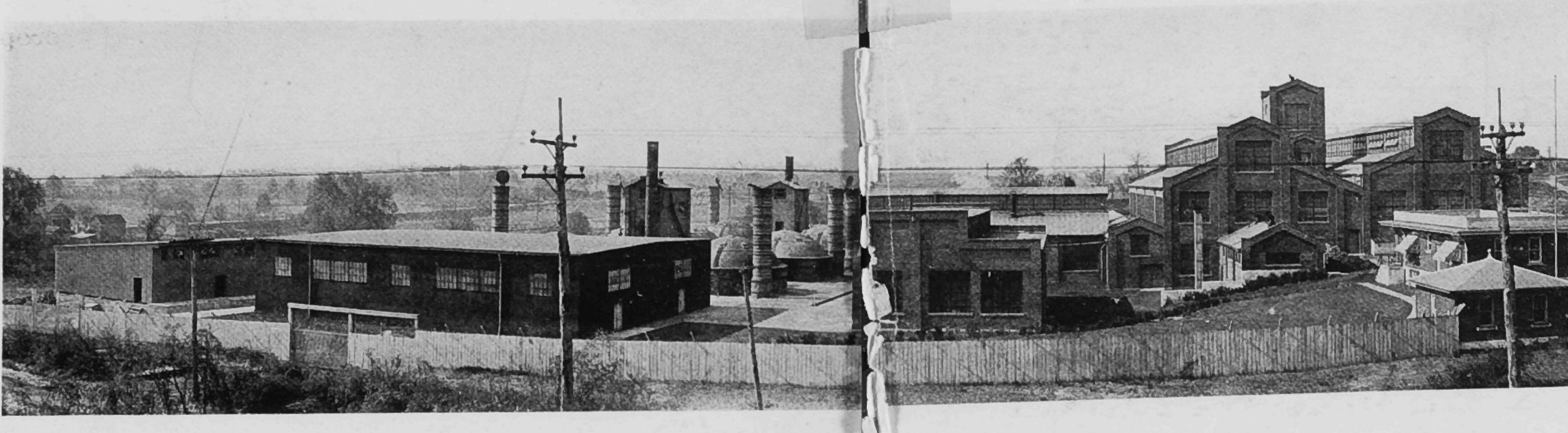
The company was incorporated June 30, 1902, in Pennsylvania, to consolidate leading firebrick interests. It absorbed the following properties: Harbison-Walker Company; Clearfield (Pa.) Fire Brick Company; Isaac Reese & Sons Company; Phillipsburg (Pa.) Fire Brick Company; Fredericks, Munro & Co.; Wallacetown (Pa.) Fire Brick Co.; American Fire Brick Co., Lock Haven, Pa.; Basic Brick Co., Johnstown, Pa.; Clinton County Fire Brick Co.; Portsmouth (Ky.) Fire Brick Co.; Fayette Manufacturing Co.

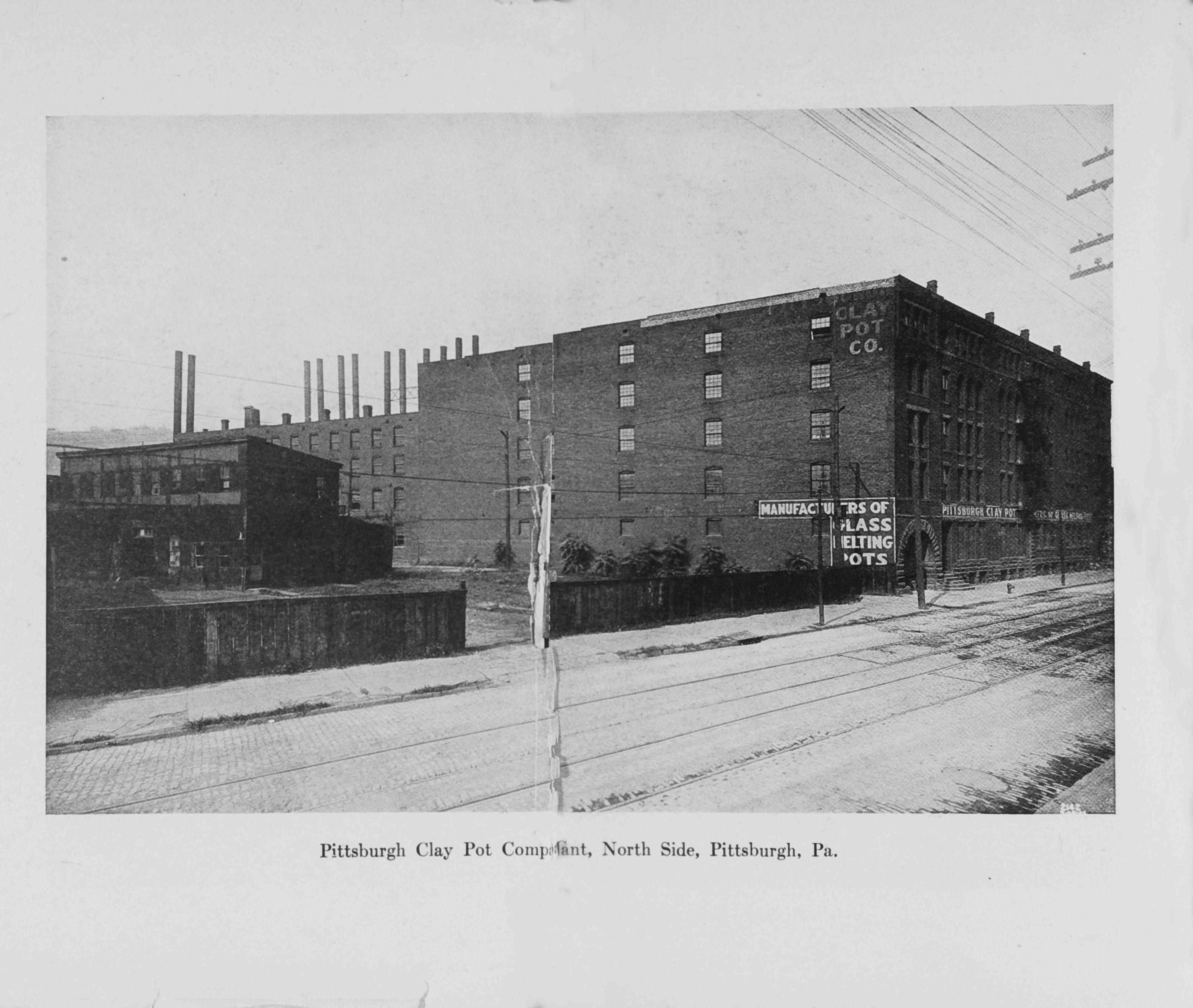
On November 11, 1902, the company purchased all the stock issue of the Portsmouth and Kentucky Fire Brick Co., including all property of said company, acquired from the Portsmouth Fire Brick Co., Kentucky Fire Brick Works, Webster Fire Brick Co., Blast Furnace Fire Brick Co., and Portsmouth and Tygart Valley Railroad Co.

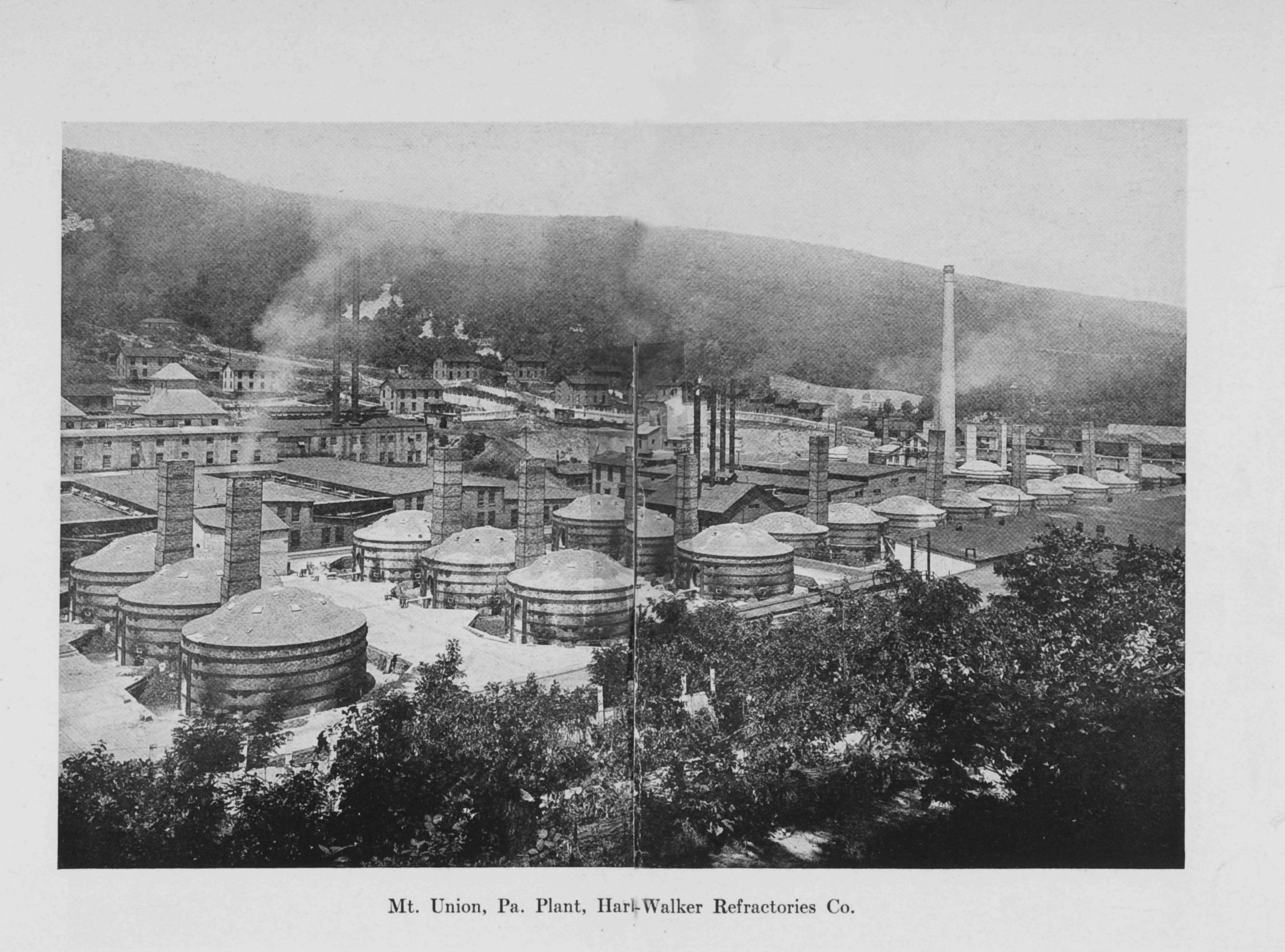
During the period since the purchase of these properties, in 1902, a number of the plants have been dismantled and new plants were erected at Hays Station, Pa., Mt. Union, Pa., East Chicago, Ind., Birmingham, Ala., and Harwalk, O.

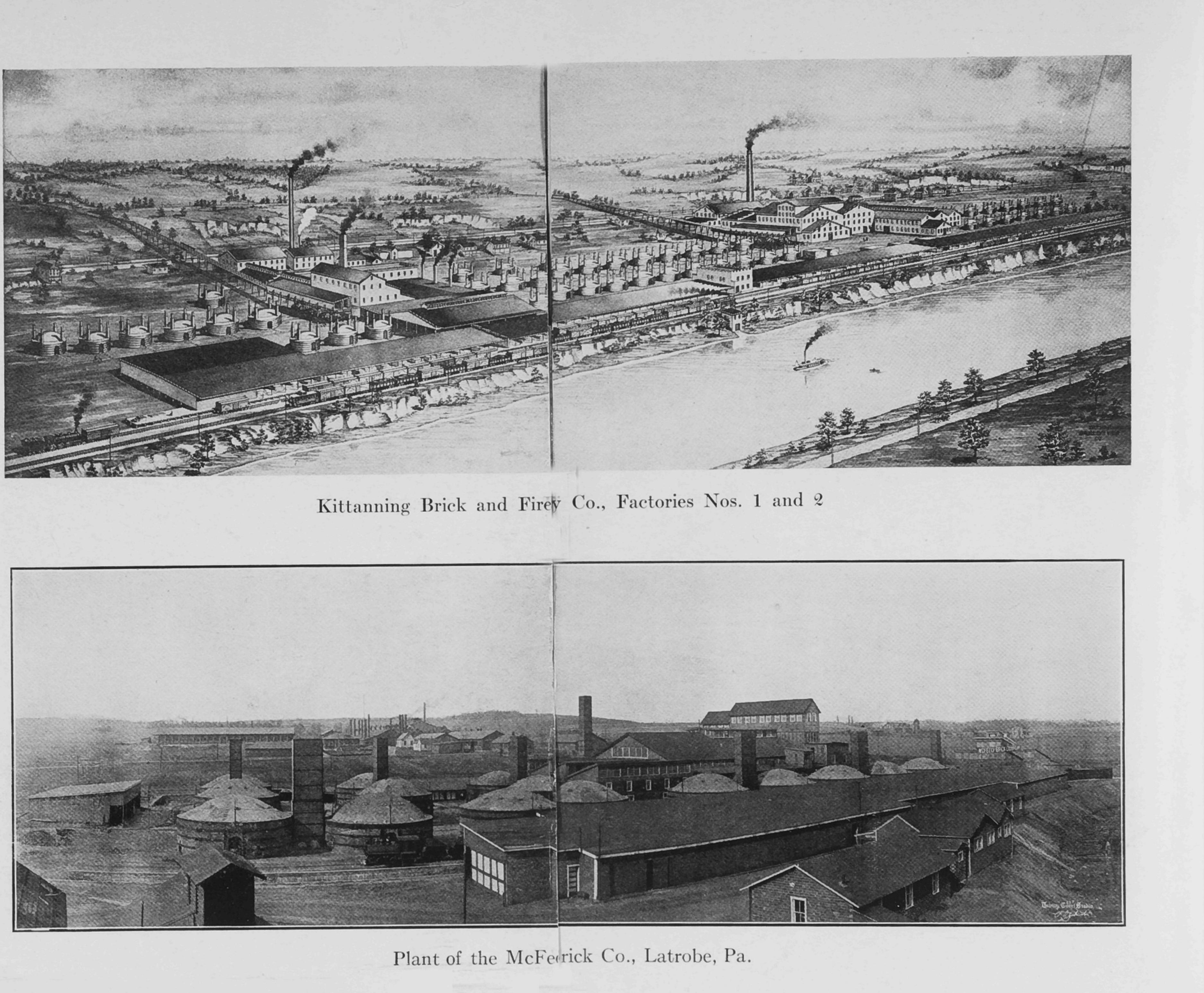
The officers of the company are: Chairman, H. W. Croft; President, J. E. Lewis; Vice-President, O. M. Reif; Vice President, Hamilton Stewart; Vice President, Nin McQuillen; Secretary, P. R. Hilleman; Treasurer, William Walker. The directors are H. W. Croft, R. W. Harbison, J. E. Lewis, Nin McQuillen, O. M. Reif, Hamilton Stewart, Kenneth Seaver, R. H. Youngman, J. E. MacCloskey, Jr., William Walker, J. J. Brooks, Jr., Raymond Willey, T. L. Chadbourne, Jr., J. B. Cullum and J. F. Fletcher.

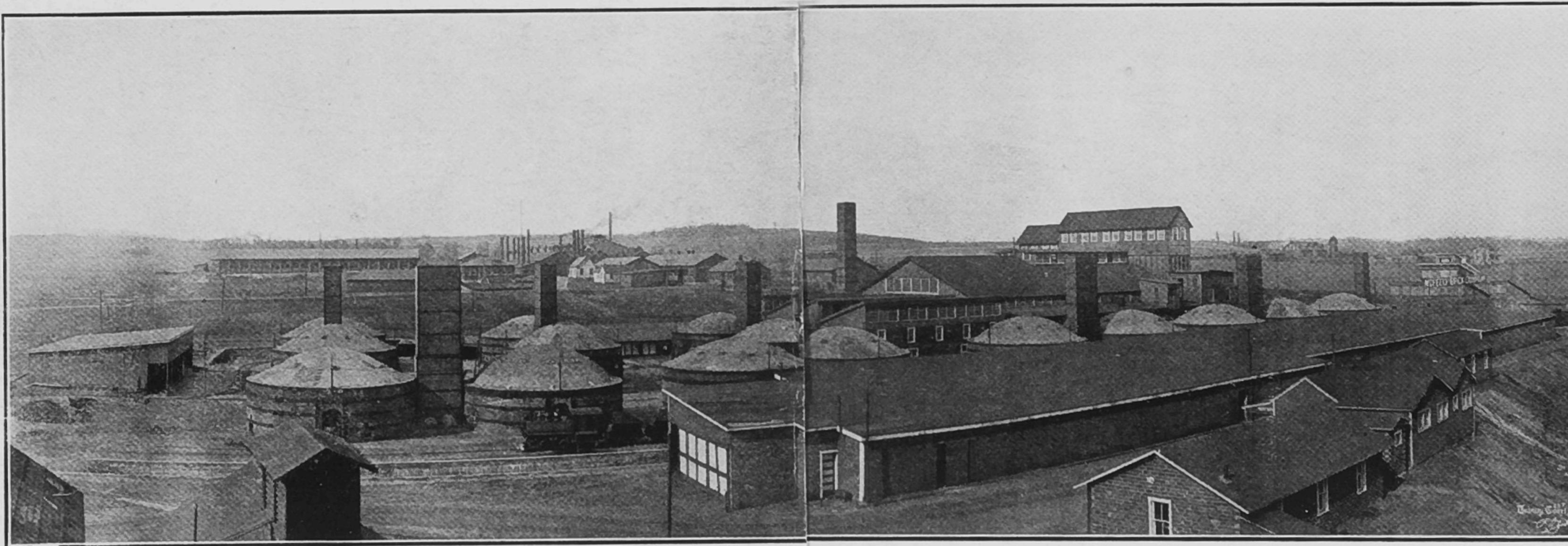












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NATIONAL FIRE PROOFING COMPANY

The National Fire Proofing Company was incorporated on August 21, 1889, in Pittsburgh, with one plant located on Bedford Avenue. The company at that time was known as the Pittsburgh Terra Cotta Lumber Company. The name was changed to National Fire Proofing Company on December 20, 1899, and the capital stock increased for the purpose of acquiring additional properties. On February 17, 1902, the stock was again increased to acquire 18 additional plants, the property of 15 different companies.

At the present time, the company is capitalized at \$12,500,000.00. H. M. Keasbey is President, J. P. Robbins, Treasurer, and C. G. Jones, Secretary. The Board of Directors comprises the following: W. L. Curry, Chairman; A. S. Beymer, D. M. Campbell, J. S. Craig, E. W. Gwinner, S. F. Heckert, H. M. Keasbey, Chas. G. McIlvain, W. M. Scaife and E. H. Straub.

The company manufactures hollow tile, flat arch, segmental arch and other types of tile used in constructing structural floors; all types of partition tile and load bearing tile for exterior and interior bearing walls. A special glazed tile is manufactured to be used exclusively in foundation walls; also a specific block for backing up common and face brick walls. The company, having high grade fire clay deposits, is able to manufacture an exceptionally high quality glazed tile, as well as the unglazed material. One of the best known of their glazed products is Tex-Tile, a material that is unsurpassed in appearance and strength for exterior walls. Other glazed tile products consist of underground conduits, grain and coal bin tile, sewer tile, silo tile and similar specialties.

The company has 22 plants located in a number of states, with a combined capacity of approximately 700,000 tons of finished ware per year. These plants are situated in sections where the best clay deposits are located and are near the good markets in the Central Western, Eastern and New England States, all on one or more railroad lines or on tide water. Hollow Tile was originally designed to protect and fireproof steel skeleton buildings. During the past ten years, it has gradually come into general use not as a fire proofing material only, but also for the construction of low cost walls and floors for skyscrapers, residences, apartment houses, farm buildings, school houses, factories, garages, etc. It effectively fulfills the demand for easily erected enduring masonry construction at minimum initial and maintenance cost.

The company has always kept abreast of these changes, and today stands foremost among the clay companies of , the world, while the name "NATCO" is synonymous with progress and quality in the hollow tile industry.

DARLINGTON BRICK AND MINING COMPANY

The Darlington Brick and Mining Co. was incorporated under the laws of the State of Pennsylvania on May 5, 1900, with an authorized capitalization of \$100,000. A plant was immediately built, which is located at Darlington, Beaver County, and the company has established a reputation for the highest quality of grey and cream Face Brick made in the United States. These brick are produced in three textures: Smooth, Rug or Vertical Score, and Devonshire or Mat texture.

The company's yearly output is 12,000,000 brick, and they are shipped to all parts of the United States, going as far South as Tampa, Florida, into Western Texas, into the Dakotas, and on the Eastern coast as far as Maine.

The brick produced by the Darlington Brick and Mining Co., are especially suitable for high-grade residences, churches, school houses, apartment houses, banks and other public buildings.

M. LANZ BRICK AND TILE COMPANY

The M. Lanz Brick and Tile Co., is the successor to Mathew Lanz and Sons, who started in the brick making business in 1885. At that time, Mathew Lanz owned some real estate on Carson street, near 34th street, on the South Side. It was considerably above the grade of Carson street, and would be improved by cutting it down to grade. A small hand yard, with a capacity of 3300 brick a day, was started to use up the surplus clay. This operation was so successful, that when the available clay was used, another



M. Lanz Brick and Tile Co. Plant Pittsburgh, Pa.

location was sought. This was found close by, at Jane and 34th streets. At this point a machine brick yard was erected, in 1886-87, with a capacity of 15,000 brick per day. In 1898 this capacity was increased to 30,000 brick a day. A Pennsylvania Railroad siding was obtained for the yard.

The market for this company's product up to a few years ago was among the steel plants along the different railroads in the Pittsburgh district. During the depression in the steel business, the demand for brick fell off to such an extent that we were forced to seek another outlet, which we found in the building business in and around Pittsburgh, where we deliver by truck. The company is making considerable face and front brick, in addition to common brick.

The business was organized into a corporation, under the name of the M. Lanz Brick and Tile Co., on January 1, 1921, with a capital of \$75,000. Charles Lanz is president of the company.

AMERICAN REFRACTORIES COMPANY

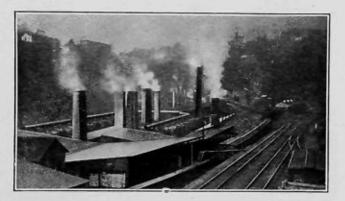
The American Refractories Co. was organized in 1906, under the laws of West Virginia. The authorized capital of the company is \$500,000 preferred stock, and \$1,500,000 common stock, while the invested capital is in excess of \$5,000,000. The annual capacity of the company exceeds 200,000 tons of refractories, consisting of silica, magnesia, chrome and fireclay brick, chrome ore, and Austrian dead burned magnesite.

The plants of the company are located at Baltimore, Md., Joilet and Danville, Ill., with ganister quarries at Devil's Lake, Wis., and magnesite quarries and plant at Radenthein, Austria. The general offices of the company are in the Union Arcade Building, Pittsburgh.

The officers are: Emil Winter, President; J. D. Billard and W. F. McCook, Vice Presidents; P. B. Mossman, Vice President and General Manager; W. Edgar Reed, Secretary, and H. L. Grohne, Treasurer.

THE KIER FIRE BRICK COMPANY

The Kier Fire Brick Company is an organization chartered under the laws of Commonwealth of Pennsylvania. Its main office located at 2243 Oliver Building, Pittsburgh, Penna. Its Fire Brick Plant is located at Salina, Westmoreland County, Penna., and its Silica Brick Plant at Childs, Fayette County, Penna. It owns and operates a Ganister Quarry at Brookes Mills, Blair County, Penna., and the fire clay mining operations are in Clearfield, Armstrong and Westmoreland Counties. It mines coal for its own use at Salina, Penna.



Salina Plant, Pa. The Kier Fire Brick Co.

The company was incorporated in 1900 and was the outgrowth of a business which had been carried on in the form of a partnership at times, and sole proprietorship at others, dating back to 1845.

The business of the company is manufacturing, for sale to consumers, high heat duty refractory products, namely fire brick and silica brick in all standard sizes and shapes, also special shapes of all kinds.

Capacity Fire Brick Plant, Salina, Penna.

18,000,000-9" brick or approximately 63,000 tons.

Capacity Silica Brick Plant, Childs, Penna.

4,500,000-9" brick or approximately 13,500 tons.

ENTRESS BRICK COMPANY

The founder of the present business was John V. Entress, who was engaged in the manufacture of brick his entire life. He came to Pittsburgh in 1879 and opened a hand yard on Bedford Avenue and Moore Street, and after his death the works were moved to Webster Avenue above Kirkpatrick Street, where they had purchased a large tract of land and formed a company under the management of John F. Entress. Operating a brick plant, making sand faced brick, they continued at this site



Entress Brick Co. Plant Pittsburgh, Pa.

until 1906, when they ceased operation, owing to scarcity of clay.

On November 10th, 1910, they formed the present company, with the following officers: John F. Entress, President; Jos. E. Entress, Vice President; Adam J. Entress, Treasurer, and Henry C. Schmelz, Secretary, and have operated continuously since, having the largest capacity in the city of Pittsburgh—60,000 brick daily.

They manufacture Common, Rough Texture and Hollow Brick, and are equipped with all modern up to date machinery used in the manufacture of brick.

McFEELY BRICK COMPANY

The McFeely Brick Company was organized in 1900, and incorporated under the laws of Pennsylvania in 1901. A silica brick plant was built at Latrobe, Pa., with an original capital of \$40,000.00. The production during the first few years was about 3,000,000 brick a year, which has since increased to 20,000,000 brick and the capitalization to \$160,000.00. Ten years ago, a first quality fire brick plant at Bolivar, Pa., was added, specializing on a clay brick adapted to open hearth steel practice. From time to time over a period of twenty years, the company has purchased coal lands about their plants which assure their fuel supply for a half a century or more. The company employs about 350 men.

F. B. McFeely is President, J. H. McFeely, Vice President, and J. M. Steele, Secretary and Treasurer.



Interior View McFeely Brick Co. Plant Latrobe, Pa.

FIRST NATIONAL BANK AT PITTSBURGH

Capital	\$ 5,000,000.00
Surplus	4,000,000.00
Undivided Profits	
Deposits, over	50,000,000.00
Resources	67,708,448.44

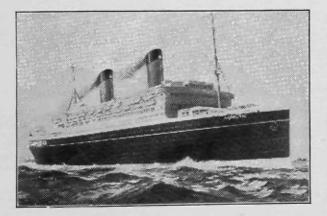
The First National Bank at Pittsburgh offers its services in every branch of Domestic and Foreign Banking, to corporations, firms and individuals. Its resources are amply large enough to take satisfactory care of all financial transactions, whatever their magnitude. At the same time it gives careful attention to the business of depositors of moderate amounts, the checking accounts of men or women, carried for household uses and the payment of monthly bills; and savings accounts, large and small, on which compound interest is paid, at the rate of 4% per annum. The Savings Department is open for the convenience of customers who can not be at the bank during the usual hours, until 5 o'clock, and on Saturdays until 9 P. M.

Banking business of every sort can be satisfactorily transacted by mail, bringing the facilities and the strength of the First National Bank at Pittsburgh, to every part of the world reached by the postal system.

This Bank is unusually well equipped to supply valuable information and advice regarding Foreign Commerce. We handle Foreign Exchange and Foreign Money, deal in Bankers and Trade Acceptances, and transmit funds to any part of the world by mail or cable.

The Safe Deposit Department is equipped with all the modern safeguards and provided with every convenience for renters, including coupon rooms, where privacy is assured. Courteous attendants are always on duty, and the convenient location of the Vaults, right at the corner of Fifth avenue and Wood street, make this department very popular.

Our Steamship and Tourist Department is in the hands of experts, whose advice and assistance is always freely at the service of our clients, and every detail of travel is carefully arranged and provided for, relieving tourists of all anxiety. We leave nothing undone which is necessary to the perfect enjoyment of the trip. As local representatives of all Trans-Atlantic, Trans-Pacific, Coastwise and Lake Steamship Companies, we can arrange trips to all parts of the world.



This department has outgrown its former quarters, making it necessary to open new offices, with greatly enlarged facilities for the convenience of its many patrons, immediately adjoining the main bank building at 513 Wood Street.

OFFICERS

ROBERT WARDROP, Chairman of the Board

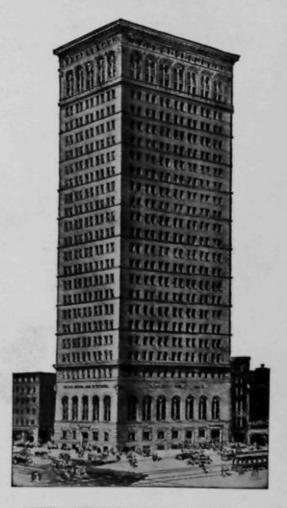
LAWRENCE E. SANDS	
FRANK F. BROOKS.	Vice-President
CLYDE C. TAYLOR	Vice-President and Cashier
JOSEPH W. WARD	
J. HOWARD ARTHUR	Assist ant to the President
WILLIAM H. FAWCETT .	
THOMAS B. HUDSON.	Assistant Cashier
JOHN K. MCKEE	Assistant Cashier
JOHN DEM. WERTS.	Assistant Coshier
	Assistant Cashier
WM. J. FRANK	
P. W. DAHINDEN.	Assistant Manager Foreign Department
J. PARL FORD	Assistant Man-ass Forsian Department

DIRECTORS

JOHN A. BECK President Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKS Vice-President
HENRY CHALFANT President, Spang, Chalfant & Co., Inc.
W. L. CLAUSE Chairman, Pittsburgh Plate Glass Co.
GEORGE W. CRAWFORD
WM. L. CURRY
JOHN A. DONALDSON
W. D. GEORGE Real Estate; Receiver Pittsburgh Railways Company
WM. H. HEARNE Director La Belle Iron Works, Steubenville, O.
J. H. HILLMAN, JR Chair. of Board Hillman Coal & Coke Co., Pgh., Pa.
B. F. JONES, 3rd Director Jones & Laughlin Steel Co.
D. T. LAYMAN, JR
F. H. LLOYD President Pittsburgh Dry Goods Co.
A. M. MORELAND
P. W. MORGANPresident East Pittsburgh National Bank
JAMES A. MCCREA
George E. PAINTER
WM. A. RENSHAW John A. Renshaw & Co., Pittsburgh, Pa.
A. C. ROBINSON President Peoples Savings & Trust Company
LAWRENCE E. SANDS President
ISAAC M. SCOTT President Wheeling Steel Corporation
BENJAMIN THAW Capitalist and Trustee Thaw Estate
ROBERT WARDROP Director of Federal Reserve Bank of Cleveland and Vice President Peoples Savings & Trust Company

JOHN M. WILSON. . Vice President National Supply Co., Pittsburgh, Pa.

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of

PITTSBURGH

Volume One Number Ten

PETROLEUM AND NATURAL GAS

IN TWO PARTS



First National Bank at Pittsburgh December, 1923



The Story of Pittsburgh Petroleum and Natural Gas

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HE first oil well ever drilled in the United States was the celebrated Drake well, which began producing petroleum in August, 1859, at the very shallow depth of 69½ feet. Accounts differ as to exact day in August when this momentous event took place. Various books of reference give the date as August 28 and 29, but the man who did the actual work of drilling the well says it was on August 12, that the precious fluid rose to the surface. The driller was William A. Smith, familiarly known as "Uncle Billy Smith," and we are indebted to "The Derrick's Handbook of Petroleum" for an interesting account of an interview which an Oil City Derrick correspondent had with Mr. Smith in the summer of 1889.

Mr. Smith was then living on a farm in Butler County, Pa., nearly five miles from a railroad or postoffice, on the banks of Rough Run. He was then in his 78th year, and had been engaged in drilling wells for water for years before the search for oil. "I began drilling first in 1828," he said, "and made the first set of jars that ever were used; used them at Freeport in 1830. I made the first temper screw, and the first joints ever used in a drilling set. Before these improvements it took six to seven years to drill a well 600 feet deep. With these improvements such a well could be put down in three months. Sam Kier's father had all his work done by me. They carried on salt works. If they lost any tools I did the fishing. Have invented and made more fishing tools than any other man in Pennsylvania."

It may be well to explain that this "fishing" was the search for such drilling tools as got loose from the machinery and were lost in the hole. Naturally after such an accident the drilling had to cease until the tools could be recovered and set to work again.

Proceeding to his account of the work on the Drake well, Mr. Smith said: "Yes, sir; I think if it hadn't been for me, the oil would have been in the ground yet. Drake often told me that. If that well had not been a success, there never would have been another attempted by any one."

Of course this is mere conjecture, but the old gentleman was probably wrong. It is inconceivable that the future of the great oil industry depended solely on the success of this attempt. Still, it is of great interest to get "Billy" Smith's point of view, because he was the man on the ground, who actually did the work. He went on with his talk:

"After the Drake well I followed the oil business about 15 years, and drilled more than 100 wells. I never drilled a dry hole nor put down a well that did not pay. Before Drake engaged me to drill that well, he had engaged Joseph Doty, Dennis Martin, and Andy Marvin in succession, all of whom had promised to go, but did not. I began work on that well on May 20, 1859, and began to drive pipe on August 5. Couldn't get any pipe in less than a good many miles. Drove 49 feet of pipe, cleaned out and began drilling. Put it down a little over 69 feet and struck oil on the 12th of August."

His attention was called to the discrepancy in dates between his account and many others which had been published, but he was emphatic in his assertion that it was on August 12.

His story runs thus: "When I got to Titusville to put down that well, Drake was sick. He told me to take the tools down to the oil place and I went. Found a man named Cord Redfield there. Talked over the prospects with him; was around there all day Friday, and set to work on Saturday, May 20. Drake came down on Monday. A saw mill stood about 60 yards from the well and the men all came over to see what I thought of the prospects. I said I thought the prospects good.

"That was not the first pipe that had ever been driven in a well. I had driven a set of pipe in a salt well at Salina, on the Kiskiminetas, before I went to the Drake well. I am certain that the oil was found on August 12, 1859. Drake was in the derrick at the time, and Dr. Shugart was also there. While I was drilling I felt the jars stop working. From this I knew there was a crevice and I let out until the jars struck again. It was within a half hour after that time that I got the oil out of the well. When the jars stopped working I noticed the fluid rising in the drive pipe, and called Drake's attention to it. He said; 'What does that mean?' I said; 'That's your fortune coming.' I ran two bits after that, and then I plugged a piece of common tin pipe with a pine plug. I attached it to a strip of lumber and lowered it into the well. No, I did not use a string or rope to lower it, no matter what history says. It was Saturday when I lifted the oil and had about a half gallon of it. The men were called over from the saw mill. The works were shut down and all hands came over. Next day I took out nearly a barrel and a half of oil with the tin pipe. On Monday Drake got about 20 feet of 11/2-inch pipe, which we attached to a common hand pump, and in that way brought up eight barrels per day.

"What we used as a tank was an old fish oil can that would hold about five or six barrels. A man named Sillman then built a wooden tank of about 25 barrels capacity. Then bigger ones were put up. I got a tube and tubed the well, seed-bagged it, made it tight, and then we got nearly 20 barrels per day until October 7. At 10 o'clock that night it burned up. The fire caught from a lamp in my hand. We were so bothered with people coming to look at the well that we put up a big tank house, and that night I thought the tank was not filling fast enough and went in to see. I raised the lamp near the great tank, and in an instant it was all ablaze; burned everything up. Drake was not discouraged. He said: 'The oil is there yet.'

"A new derrick was put up and got started again November 7, and it began anew at 32 barrels per day, and kept it up as long as I was there. I was there nearly three years. I do not know where the engine was built that was used to drill the well. It was there when I went there. I never saw such a time as there was at that Drake well. Hundreds of people every day, and the fool questions they would ask were awful. I thought it funny at first, but soon got sick of answering questions. An Irishman came along one day and asked: " 'Are ye shippin' any oil these days?'

- " 'Lots of it,' says I.
- " 'How do you ship it?' says he.
- " 'In baskets,' I said.
- " 'Great Hivins!' was his exclamation, as he walked off.

"There was a great scarcity of barrels. Had to use old whisky barrels, old vinegar barrels, all kinds of barrels that could be got together. All sorts of devices were resorted to by way of tankage. Big pits were dug in the ground and lined around with planks. One of these, below Petroleum Center, covered about four acres. I don't know how many thousands of barrels it would hold.

"Oil was worth at first about \$1.00 a gallon, or \$40 a barrel, but it did not hold up to that." Further questioning elicited the information that the production of the No. 2 Drake well was about 24 barrels, and that of No. 3 about 12 barrels per day.

While the Drake well was the first ever drilled for the production of petroleum, large quantities of oil in the aggregate had been produced from wells several hundred feet deep before Col. Drake was born. These wells had been sunk for salt water. The United States Census Report on the Production, Technology and Uses of Petroleum and Its Products, issued in 1885, contains an interesting account of the first salt well drilled west of the Alleghenies. It was located on the Great Kanawha, not far from Charleston, in what was then Virginia, but now West Virginia. Work upon it commenced in 1806, by the Ruffner Bros. Other salt wells were later put down, and in nearly all of these salt wells, petroleum made its appearance, and was a source of considerable annoyance. In some of these wells as much as 25 to 50 barrels of oil a day came up with the brine, and was allowed to flow over the top of the salt cisterns into the river, where it spread over a large surface, and by its beautiful iridescent hues and strong odor, could be traced many miles down the stream. It was from this cause that the nickname "Old Greasy" was applied to the river by the Kanawha boatmen.

This experience with salt water wells was duplicated at Tarentum, on the Allegheny river, a few miles above Pittsburgh, where wells were drilled for brine from which to manufacture salt considerably more than a century ago. Some of these wells were operated previous to the year 1810, but when petroleum was struck it was looked upon as a great misfortune, because it ruined the well for salt-making purposes. Similar results were found in wells bored for brine in Ohio, Kentucky and Tennessee.

Of the early utilization of oil in Venango County, an account written some years ago by the Rev. S. J. M. Eaton, of Franklin, contains the following: "A point was selected where the oil appeared to bubble up most freely, when a pit was excavated to the depth of two or three feet. Sometimes this pit was rudely walled up, sometimes not. Sometimes it was near the edge of the water on the bank of the stream; sometimes in the bed of the stream itself, advantage being taken of a time of low water. In these pits the oil and water would collect together, until a stratum of the former would form on the surface of the latter, when a coarse blanket or piece of flannel was thrown in. This blanket soon became saturated with oil, but rejected the water. The blanket was then taken out, wrung into a tub or barrel, and the operation repeated."

Even in those days, Pittsburgh was the market for oil, long before the drilling of the Drake well, for the Rev. Mr. Eaton's narration goes on to say:

"The first shipment of petroleum was to Pittsburgh, and in this wise: Mr. Carv, one of the first settlers on Oil Creek, possessing perhaps a little more enterprise than his neighbors, would collect or purchase a cargo of oil, proceed to Pittsburgh and exchange it for commodities needed in his family. This cargo consisted of two 5-gallon kegs, which were slung one on each side of a horse, and thus conveyed by land. . Sometimes the market in Pittsburgh became very dull, for a flatboatman would occasionally introduce a barrel or two at once, which he had brought down on his raft of lumber or logs. At other times the demand fell off, so that the purchase of a barrel was hazardous. At a period somewhat later than this, General Samuel Hays, who settled in Franklin in 1803. related that at one time he purchased all the oil produced in the country, and that the highest annual yield was 16 barrels. This oil he sold in Pittsburgh at about \$1 a gallon."

There is a local record to the effect that natural gas was first used in a small way in lighting houses at Fredonia, Chautauqua County, N. Y., in 1821. In C. B. Tergo's "Geography of Pennsylvania," published in 1843, occurs the following: "Oil Creek derives its name from the substance called Seneca oil, which rises in bubbles from the bed of the stream, and on reaching the top of the water these bubbles explode, leaving the oil floating on the surface. Though this oil is found in many places throughout the whole course of the stream, it is most abundant two or three miles from the mouth. Several of the owners of the land make a business of collecting the oil during the dry season, as it is most plentiful at low water. From two to twelve barrels are collected in a season by the proprietors, the quantity depending on the prevalence of dry weather and low water. In the low grounds along this creek oil may be obtained by digging to a level with the bottom of the stream, but when thus procured it is not so pure and clean as that taken upon the surface of the creek. This mode of obtaining it has evidently been practiced by the Indians, or some other people, long before the white man set his foot upon the soil of this region."

After the news of the Drake well became known there was a rush to the oil regions comparable to the rush of gold seekers to California and other gold fields at different times. Hundreds of wells were started in the Oil Creek valley, and up and down the Allegheny river. In the following year oil was found at Tidioute, Henry's Bend, Franklin and Smith's Ferry, and the production of the year 1860 is estimated at over 500,000 barrels. In 1861 the first flowing well was struck, near Rouseville, a suburb of Oil City, at the depth of 400 feet. This well was followed by others which produced from 2000 to 3000 barrels a day. Naturally the market was overstocked, for uses for the product were few, and prices declined disastrously. The estimated production for 1861 was 2,113,600 barrels, but much oil was lost, being carried away by the waters of Oil creek and the Allegheny river.

An era of oil stock companies ensued, many of which made money, but the failures, with consequent losses, were very numerous. Later widening markets were found for petroleum, and the search for new fields spread into Clarion. Butler and Armstrong counties. Within 15 years production had grown to nearly 30,000 barrels a day. Late in 1874 the initial well of the great Bradford oil field was opened, and for three years this new district, which covered over 100,000 acres, was the scene of great activity. Production increased at a rapid rate, until in July, 1880, the Bradford field yielded 100,000 barrels a day. Of this large quantity, about 80,000 barrels were run into the storage tanks of the transportation companies, while the remainder was lost. Later came the discovery of gushers in Warren and Butler counties, and since then oil has been found in many parts of the United States, Mexico, South America, and other portions of the globe.

The production of 2000 barrels in 1859, grew, with occasional recessions in totals, until in the year 1917, the total was 335,315,600, with a valuation of \$522,635,213. Coming down to later years, the United States Geological Survey, in a publication dated May 26, 1923, gives the petroleum production of the year 1921 at 472,183,000 barrels.

Very remarkable has been the expansion of the petroleum industry in the last two years, for the American Petroleum Institute, which issues weekly reports on the oil trade, estimates the production of crude oil in the United States, in the week ending October 27, 1923, at 2,265,900 barrels daily, or on the annual basis of a production of 827,053,500 barrels.

As one can easily guess from the number of motor cars in use, the consumption of gasoline is enormous. A report from the United States Bureau of Mines puts the consumption of gasoline for the first quarter of 1923, which includes exports, at 1.447,760,000 gallons, and from this it figures that the total consumption for the year will be between 7,900,000,-000 and 8,500,000,000 gallons. This is based on the fact that since the date of the first government statistics on gasoline consumption, the demand in the first quarter of the year has never been less than 17% and never more than 18.25% of the total consumption for the year. The report goes on to say that the production of gasoline in the first three months of 1923 was the largest on record, and at the annual rate of 7,400,000,000 gallons. Total stocks of gasoline January 1 were 883,792,861 gallons. An excess of 540,000,000 gallons of consumption over production this year would reduce this

figure to 343,000,000 gallons by end of 1923, compared with 1,259,000,000 at the end of March.

The importance of the subject makes it necessary to issue this booklet in two parts, of which this is the first.

In the following pages the First National Bank gives particulars of a number of companies and corporations engaged in the oil and gas business. Others will be discussed in the succeeding number.

PHILADELPHIA COMPANY

One of the great corporations of Pittsburgh is the Philadelphia Company, which was incorporated in 1871 and organized as at present in May, 1884. Philadelphia Company has a very broad charter, which enables it (1) to act as a contractor or as a builder, and as such to build, construct, maintain and manage for others; (2) to act as principal, and as such to build, construct, maintain and manage for itself; (3) to act as a purchaser, and as such to buy, maintain or manage, in its own name or otherwise, "any work or works, public or private, which may tend or be designed to improve, increase, facilitate of or develop" trade, travel, transportation and conveyance of freight, live stock, passengers, or any other traffic, by land or water, from or to any part of the United States or the territories thereof.

Philadelphia Company's major subsidiaries operate the public utilities which serve the Greater Pittsburgh district, having a population estimated at 1,500,000, with gas, electric light and power, city and interurban electric railway service. It also operates many commercial enterprises which augment or are closely allied with its public utility services, including oil wells, coal mines, steam heating plants, river towing, real estate, automobile service, steam railroad, and stores for the sale of gas and electric appliances and fixtures. The company's property and security investments are conservatively valued at \$250,000,000. Securities of Philadelphia Company and affiliated corporations owned by the public amount to \$195,890,450. Dividends on Philadelphia Company common stock have been paid every year since 1885, (except 1897,) at rates averaging 6%. Total dividends on common and preferred stocks of Philadelphia Company, to December 31, 1922, aggregated \$66,233,761.

The Philadelphia Company controls the following gas companies: Equitable Gas Company; Monongahela Natural Gas Company; Pittsburgh and West Virginia Gas Company. These companies own or control 1749 natural gas wells, with 3738 miles of pipe lines. In the year 1892 they sold in the Pittsburgh district, 32 billion cubic feet of gas, to 156,000 domestic customers and over 165 industrial companies. Through owned and controlled lines they supply the major part of the fuel gas consumed in the City of Pittsburgh and manufacturing towns along the Monongahela and Allegheny The company and its subsidiaries control by lease rivers. more than 342,000 acres of gas and oil lands in West Virginia, Ohio and Western Pennsylvania. Operations at present are being conducted on 160,432 acres of these lands, the remainder being reserved acreage.

In the transportation of gas from the fields of southwestern Pennsylvania and northwestern West Virginia, 17 pumping stations are operated, having an aggregate of 36,250 horsepower. In addition to its natural gas production, the company owns a manufacturing gas plant, with a capacity of 24,000,000 cubic feet per day.

The entire capital stock of the Philadelphia Oil Company, amounting to \$2,001,000, is owned by the Philadelphia Company. It was organized for the purpose of acquiring, carrying and disposing of oil and gas leases; for the purpose of mining, boring and digging for, or otherwise obtaining from the earth, petroleum, rock or carbon oils, and natural gas; and manufacturing, refining, buying, selling and transporting the same, in the crude and in the refined states, and generally for the purpose of carrying on such business as pertains thereto. All of the oil produced is Pennsylvania grade, which commands the highest market price. Its operations are in the states of Pennsylvania, West Virginia, Ohio and Kentucky. During the year 1922 it produced 162,193 barrels of oil from 171 wells, and its gross earnings amounted to \$912,391.

The annual report of the Philadelphia Company for the year 1922 said: "During the year more than 1500 new patrons were taken on the lines of the gas companies. This increase was incident to the building of homes, which was carried on to a greater extent than for a number of years past. The total sales of gas were more than 32 billion cubic feet, an increase of over 9 billion cubic feet, or 41%, over the previous year. Gross earnings from the sale of gas amounted to \$13,662,351, an increase of \$3,452,787, or 33.8%."

The following is the official roster of the Philadelphia Company:

Board of Directors: James D. Callery, chairman, James H. Reed, Gerhard M. Dahl, George S. Davison, Benjamin S. Guinness, Charles Hayden, George E. McCague, Moritz Rosenthal, Mason B. Starring, Everett B. Sweezy, Eugene V. R. Thayer, Arthur W. Thompson.

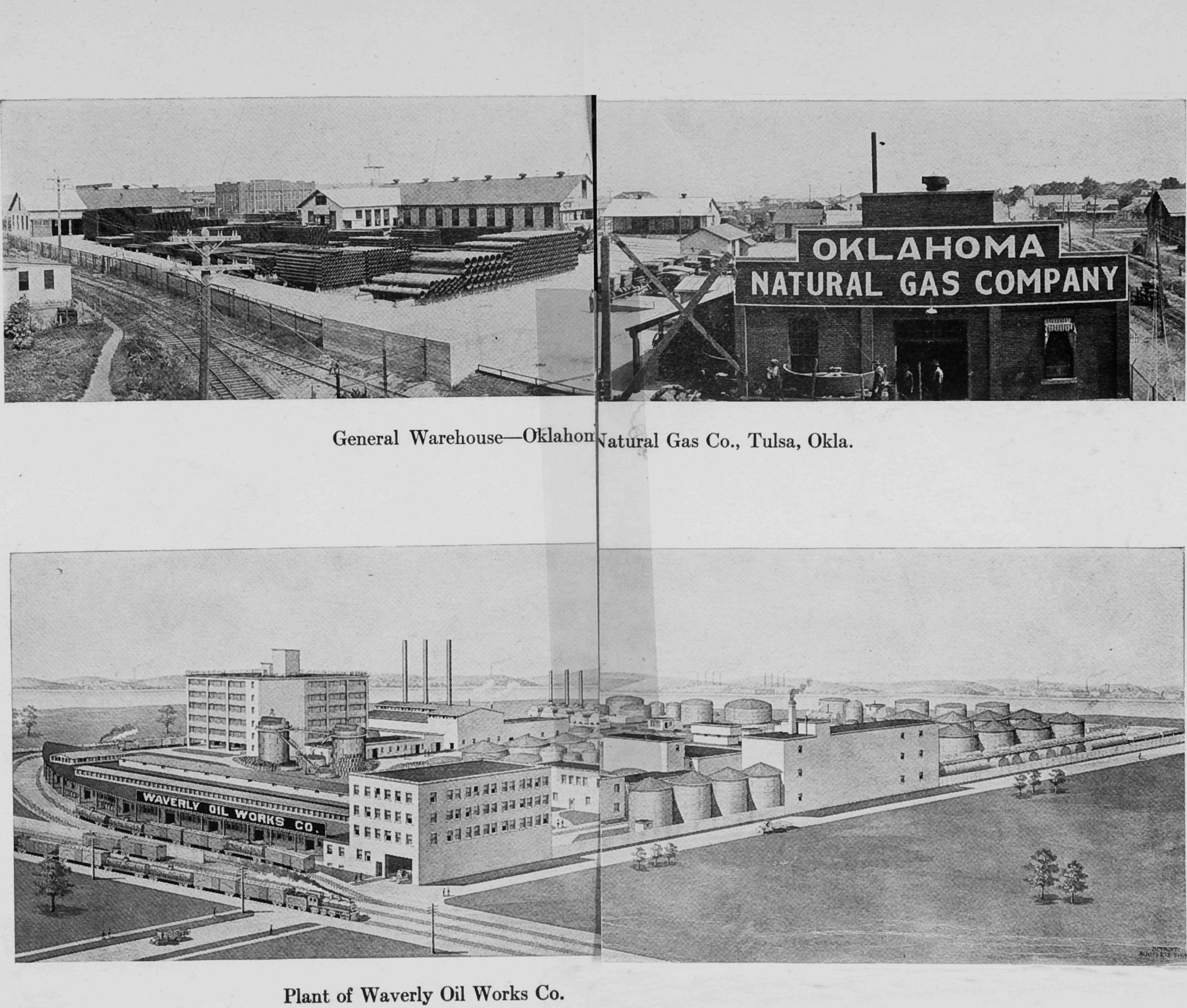
Officers: President, Arthur W. Thompson; Senior Vice President, James H. Reed; Vice President, Andrew W. Robertson; Controller, Curtis S. Mitchell; Secretary, Winfield B. Carson; Assistant Secretaries, Edison W. Washabaugh, Alexander W. Stevenson; Treasurer, Carl J. Braun, Jr.; Assistant Treasurers, James W. Murray, Hugh W. Annett, R. Elton Hanna.

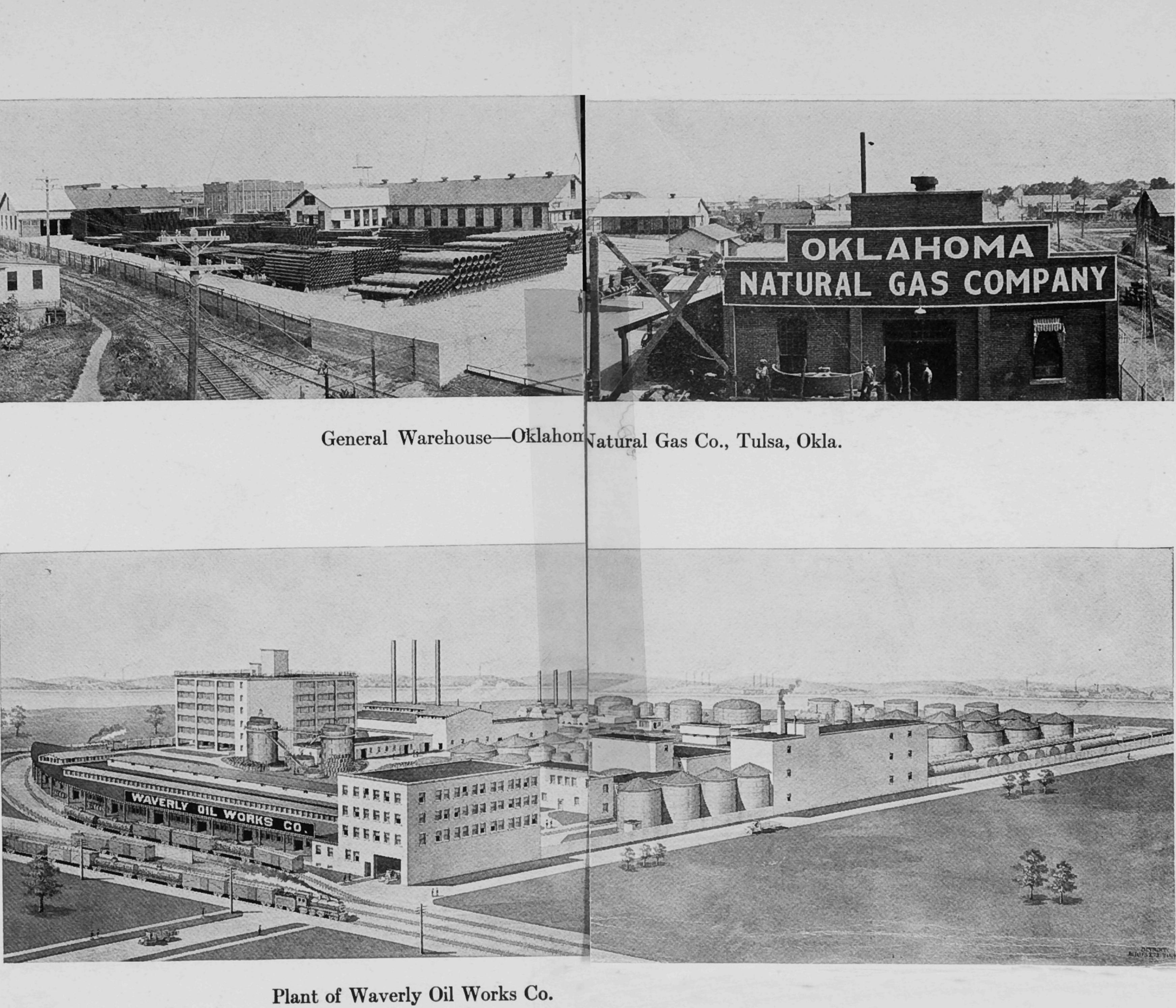
AMERICAN NATURAL GAS COMPANY

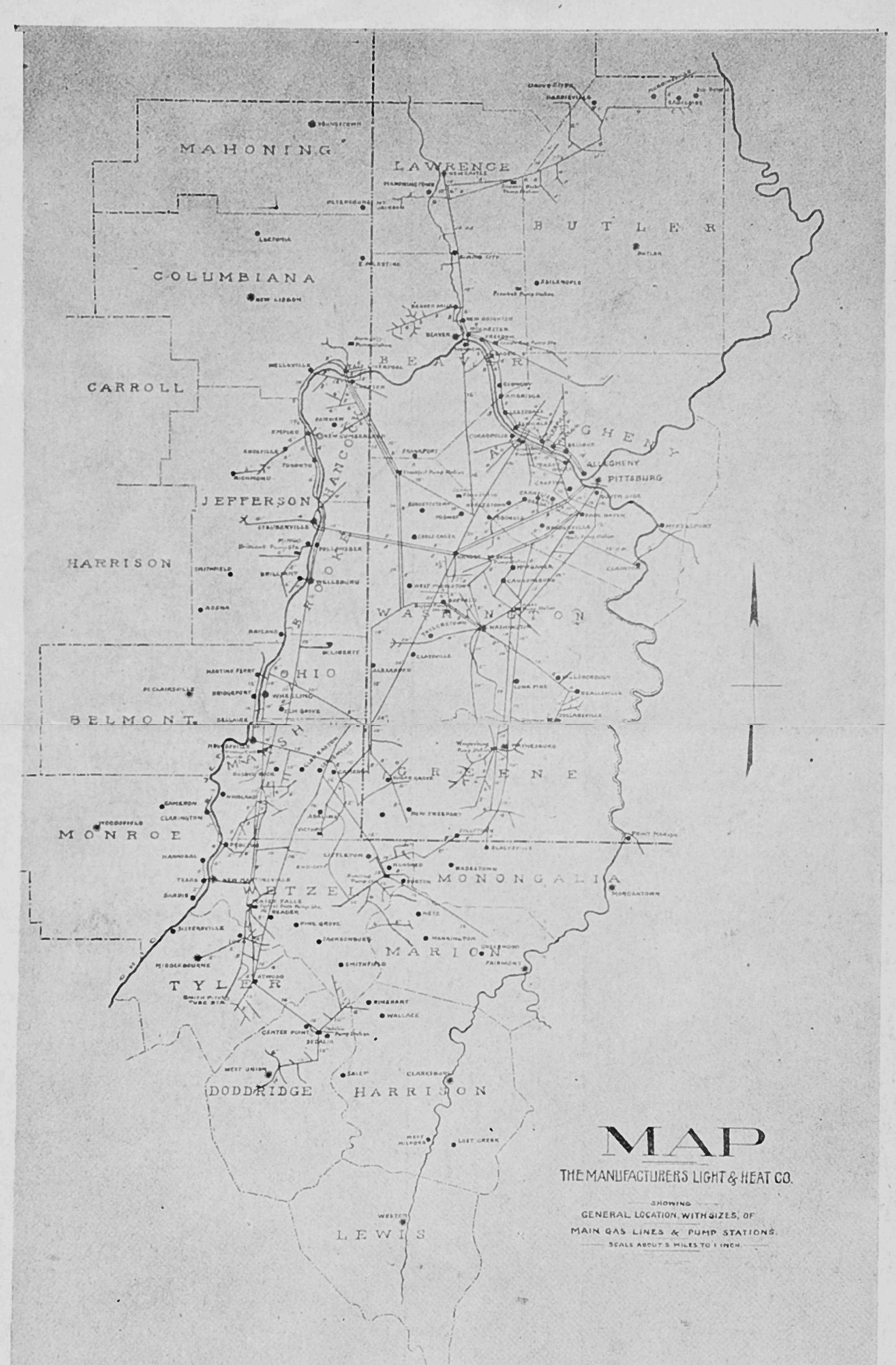
The American Natural Gas Company was incorporated under the laws of Pennsylvania in July, 1889, and began business with one well. Other wells were soon drilled and acquired, all of them in Allegheny County, but the property had reached only modest proportions when in 1898 the company purchased the property of the Pioneer Gas Company, which is believed to have been the first company to pipe gas into the Pittsburgh district, which was about the year 1878. Its lines extended from Etna, Pa., to the Lardintown district in Clinton township, Butler county. This purchase was followed during the next 10 or 11 years by numerous other purchases of like properties, including the following:

1898. Etna Natural Gas Company, owned by Spang, Chalfant & Co., and supplying their mills at Etna, Pa.

1899. West Penn Gas Company, supplying Apollo, Pa., and vicinity.







1902. Leechburg Light and Fuel Company, supplying Leechburg, Pa., and vicinity.

1903. Western Pennsylvania Natural Gas Company, owned by the American Window Glass Company, and supplying its factories at Arnold and Jeannette, Pa.

1906. Kittanning Consolidated Natural Gas Company, and Garretts Run Gas Company, supplying Kittanning and Ford City, and their environs.

1909. Patterson Natural Gas Company, and Evans City Natural Gas Company, supplying Zelienople, Harmony, Evans City, etc.

In 1890 the American Natural Gas Company supplied two brickyards and 24 domestic consumers with fuel, and today have upward of 18,000 domestic and commercial consumers, and supply about 100 industrial plants, in the towns named, and in other localities. The authorized capital stock of the company is \$6,000,000, of which \$4,500,000 is outstanding. The company has 800 wells, with approximately 800 miles of pipe. There are ten pumping stations, and one under construction. Xavier Wittmer, who died in July, 1921, was president of the company from the date of its organization until his death, when he was succeeded by Henry Wittmer, who was the company's general manager from its organ-The company operates in Allegheny, Armstrong, ization. Beaver, Butler, Westmoreland, Indiana and Clarion counties. The officers are: Henry Wittmer, president and general manager; George Wittmer, Jr., vice president and treasurer; R. H. Smith, secretary and assistant treasurer; Thomas Wittmer, vice president and general superintendent; H. H. Brown, assistant secretary.

MANUFACTURERS LIGHT AND HEAT COMPANY

The Manufacturers Light and Heat Company was incorporated under the laws of Pennsylvania, April 21, 1903. Its authorized capital stock is \$25,000,000, of which \$23,000,000 is outstanding. The company holds under lease 339,787 acres of oil and gas territory in Pennsylvania, Ohio, West Virginia, Kentucky, Michigan, Arkansas, Texas and Louisiana, of which 145,524 acres are now operated, and the rest held in reserve for future operations. The company has 1361 gas wells and 470 oil wells, and a total of 3051 miles of pipes of all sizes, in the entire system. The company has on its books, a total of 126,461 meters, of which 125,437 supply domestic consumers. There was an increase in the last fiscal year, of 3419 in this class of consumers.

The company's oil production in the year 1922 was 136,719 barrels, or an average of 374.57 per day. The production of gasoline amounted to 2,520,753 gallons, or a daily average of 6906 gallons.

Gross earnings for the year were \$11,322,422.89, and net earnings from operations were \$2,421,855.32. Dividends paid amounted to \$2,300,000. The officers of the company are: T. B. Gregory, president; L. A. Meyran, vice president; J. I. Buchanan, vice president; H. E. Seibert, secretary and assistant treasurer; G. W. Ratcliffe, Treasurer; C. H. Geilfuss, Assistant Secretary and Assistant Treasurer; F. G. Leslie, comptroller.

A. D. MILLER SONS COMPANY

In 1859 the first oil well was drilled. Three years later, in 1862, A. D. Miller founded this Company and built the original Miller Refinery, this being the first pioneer refinery of crude petroleum. Since that time there has come the wonderful age of progress, which oil, as a lubricant, has made possible. Since the early days of this Company the modern factories and mills of today have been created. The river steamboat and the modern turbine-driven ocean liner have come, the steam and electric railways and finally the automobiles and aeroplanes. All of these have made necessary the enormous oil production and distribution of today. Oils, greases and gasoline are necessities of the modern, every day, business and pleasure life of the world. This company has always maintained an extraordinary high standard of quality, and has been operated since 1862 (61 years) exclusively on high-grade Pennsylvania Crude Oil.

The present plant covers about five acres, located in the City of Pittsburgh, Pa., ten minutes by auto from the heart of the City. Has a capacity of one thousand barrels of Crude Petroleum per day, turning out oils (lubricating and refined) gasoline and greases of a superior quality for domestic and export shipment.

The Company is operating under a Pennsylvania charter, capitalized at \$750,000.00. The officers are as follows:

R. B. Miller, president; J. B. Miller, vice president and treasurer; A. D. Miller, Jr., assistant treasurer; A. D. Miller, III, secretary.

The products are marketed throughout the United States and the world, and bear the highest reputation wherever sold.

OKLAHOMA NATURAL GAS COMPANY

The Oklahoma Natural Gas Company is an Oklahoma State Corporation, having been incorporated under the laws of Oklahoma Territory October 12, 1906. The main office is 117 West Fourth Street, Tulsa, Oklahoma. An office is also maintained at 1501 Union Bank Building, Pittsburgh, Pa., where the company's transfer agent is located.

The original capitalization was \$4,000,000, par value of \$100 per share. In July, 1917, the capital was increased from \$4,000,000 to \$10,000,000, and the par value was changed from \$100 per share to \$25 per share. At that time the Osage and Oklahoma Company, Caney River Gas Company, Enid Natural Gas Company, Peoples Fuel Supply Company and the Oklahoma Fuel Supply Company were consolidated with the Oklahoma Natural Gas Company. In May, 1919, the authorized capital was increased from \$10,000,000 to \$15,000,-000. Of the \$5,000,000 of new stock, \$700,000 remains unissued, making the outstanding capitalization \$14,300,000. The total funded debt is \$650,000, and the total assets amount to over \$20,000,000.

The company owns 108 gas wells and controls by gas purchase contracts 238 gas wells. The operated acreage is 110,000, unoperated acreage 23,000, acreage controlled by gas purchase contracts 89,000, making total acreage of 222,000 acres. The pipe lines consist of approximately 1,450 miles of various size pipe, ranging from 2" to 16", traversing 25 different counties in the State of Oklahoma and serving 43 towns and 75,000 consumers with natural gas. Gross sales of gas for the year 1922 were 14,907,952,000 cubic feet. The company owns and maintains seven compressing stations with total of 9,785 horsepower. Number of employees varies at different periods in the year from approximately 600 to 1200.

The following towns are supplied by the company through its own distributing plants: Tulsa, Sapulpa, Claremore, Chandler, Haskell, Edmond, Bixby, Coweta, Davenport, Red Fork, Shamrock, Kellyville, Pond Creek, Porter, Lamont, Dawson, Depew, Arcadia, Deer Creek, Stroud, Nardin, Inola, Midlothian, Wellston, Turley, Meeker, Peckham, Hunter, Ramona and Luther.

The company supplies the following towns at the city border, other companies owning the distributing plants: Oklahoma City, Muskogee, Shawnee, Guthrie, Enid, Chickasha, Oilton, Bethany, Britton, El Reno, Yukon, Duncan and Marlow. The officers of the Company are: Harry Heasley, president; J. V. Ritts, A. W. Leonard and R. C. Sharp, vice presidents; L. C. Ritts, secretary and treasurer; C. S. Callen and C. A. O'Donovan, assistant secretary and assistant treasurer.

The directors are: H. J. Crawford, R. W. Hannan, Harry Heasley, A. W. Leonard, T. W. Phillips, Jr., J. V. Ritts, R. C. Sharp, W. W. Splane and E. P. Whitcomb.

PITTSBURGH OIL AND GAS COMPANY

The Pittsburgh Oil and Gas Company was incorporated under the laws of the State of Delaware on March 23rd, 1903. The authorized capital of the company is \$3,000,000, of which there is \$2,500,000 issued. It owns the entire capital stock of four oil companies, viz: The Jantha Producing Co., The Marnet Oil and Gas Co., Norwood Oil Co., and Southern Oil Co., with a total of 45,000 acres of oil leases, 1,049 oil wells situated in Pennsylvania, West Virginia, Ohio, Texas, Oklahoma, Illinois, Kentucky, California and Indiana with a daily production of 960 barrels and eleven gasoline producing plants with daily capacity of 1,100 gallons. It also owns the entire capital stock of two natural gas distributing companies, Jantha Light and Fuel Company and Lynn Natural Gas Company, distributing gas in 14 towns in western Ohio and Indiana.

The company has, including both oil and gas divisions, about 300 employees.

T. N. Barnsdall was President until his death, February, 1917. He was succeeded by Robert Law, Jr., who held the office until December 1919 when he resigned. He was succeeded by E. B. Reeser who holds the office at the present time.

Officers: E. B. Reeser, president and general manager; E. O. Bartlett and E. F. Connors, vice presidents; Jas. A. Dunn, secretary, J. T. Furlong, treasurer.

Directors: E. B. Reeser, John L. Porter, E. O. Bartlett, D. H. Ramsbottom, R. G. Jennings, E. F. Connors and Frank Braman.

SALT CREEK CONSOLIDATED OIL COMPANY

The company was incorporated September 8, 1919, under the laws of Maine for the purpose of producing crude oil from the Salt Creek Field in Wyoming. The company holds, under the oil land leasing law, leases on 3200 acres in which it has a net interest of 2300 acres.

Under the present pro-rating conditions which govern the Salt Creek Field, a daily production of 6000 barrels is now being taken from sixty wells, which have, under normal conditions, a potential production of 15,000 barrels per day.

The authorized capital of the Salt Creek Consolidated Oil Company is \$15,000,000, all common, divided into 1,500,-000 shares of par value of \$10. The stock is listed on the Pittsburgh Stock Exchange.

The officers of the company are James Owen, president; W. M. Downing, vice president; W. O. Merryweather, secretary and treasurer. Directors in addition to above are George E. Abbott, Cheyenne, Wyoming; L. L. Aitken, Denver, Colorado; Norwood Johnston, Pittsburgh; and Frank S. Mitchell, Pittsburgh.

WAVERLY OIL WORKS COMPANY

The Waverly Oil Works were established in 1880, and their extensive plant is located in Pittsburgh, at Fifty-fourth street and the Allegheny Valley (Pennsylvania Railroad) tracks, where four acres are occupied. The capital of this concern is \$600,000 and its property represents an investment of \$1,500,000. A petroleum oil refinery in Pennsylvania today is very different from what it was 40 years ago, when the Waverly Oil Works was established. Pennsylvania was the only crude oil then known, while today many refineries run both Pennsylvania and western crudes, and some of them western crudes almost exclusively.

Forty years ago the present day petroleum lubricants were largely unknown or just coming into use, and the only petroleum products then in common use were illuminating oil and benzine, which was mostly used in the manufacture of gas, together with very small amounts of cylinder stock, paraffine oil, black oil and paraffine wax. Tallow was still the popular lubricant for steam cylinders, lard and sperm oils were largely used for general lubrication, and fish oil was the only tempering oil.

During all these years the "Waverly" has been in the vanguard of progress in the oil trade. Away back in the early seventies, S. M. Willock, who built the Waverly Oil Works in 1880, and who owned and operated it until his death in 1908, was engaged in jobbing oils, and brought to Pittsburgh by river steamer from Cincinnati, probably the first cottonseed oil used for burning in coal mines, instead of lard oil. Very early in the 80's "Mecca" cylinder oil appeared as among the very first cylinder oils having a fire test over 600 degrees. In the 90's wet distillation was adopted exclusively and steam stills were erected. Probably the largest steam still ever built, with 1600 barrels charging capacity, is now in operation at the Waverly. In 1900 was erected a modern wax plant, together with filter and retort houses, which at that time were revolutionary in their design and method of operation. About 1902 "Waverly Special" became the first light colored and light bodied automobile oil, while all other brands then on the market were heavy, dark-red oils—paraffine or Texas products. In 1897 leading steel car builders refused to design a Waverly all-steel tank car, saying the demand for tank cars would never amount to enough to make it worth their while; but in 1902 the same builders turned out for the Waverly the first 12,500-gallon all steel tank ever built.

During 1919-20 there was erected a large modern plant for the manufacture of grease, soap and soluble oils, having a daily capacity of 300 barrels. This plant is housed in a large 7-story and basement reinforced concrete building, especially designed for the purpose, with about 50,000 square feet of floor space, fully equipped with steam and fire kettles of various sizes, automatic weighing tanks, barrel and package elevator, and with storage tanks in the basement for fats and oils of 200,000 gallons capacity.

In 1920 there was erected at Carteret, N. J., on New York bay, in association with several other refiners, a water-front plant for barrelling and casing Waverly products for the export trade. Bulk shipments are made to this plant, where large stocks are carried ready for immediate barrelling or casing, and direct lighterage to vessels in the harbor. The Waverly petroleum products are refined from pure "All Pennsylvania" crude oil, while compound oils and grease products are all made from Pennsylvania crude and the purest of animal and vegetable fats. They are sold all over the world, including besides the largest commercial countries, China and Manchuria, Japan and India.

Officers of the Waverly Oil Works Company are: D. E. Weir, president; Harry H. Willock, secretary and treasurer; Geo. J. Willock, asst. secretary and treasurer. Directors: above and J. O. Miller.

THE FIRST NATIONAL BANK AT PITTSBURGH

This institution offers its services to individuals and corporations engaged in the production and marketing of petroleum and its products, as well as those engaged in other lines of industrial and commercial activity. Exports are facilitated by our Foreign Exchange Department, which invites inquiries on any phase of the subject.

This institution has established direct banking connections in all parts of the World, which are a great convenience in the handling of documents pertaining to Foreign Commercial Transactions.

All branches of International Banking are completely covered by our facilities.

We issue drafts and make payments in all parts of the World.

We handle Trade and Bankers' Acceptances.

All languages are spoken in this department.

Officers of this institution are trained bankers with a wide experience, and its directors are successful men in a large variety of enterprises, affording a broad scope of business knowledge.

Capital.	\$ 5,000,000.00
Surplus	
Undivided Profits and Reserves	1,646,586.27
Deposits	56,200,679.39
Resources	73,613,790.02

OFFICERS

ROBERT WARDROP, Chairman of the Board

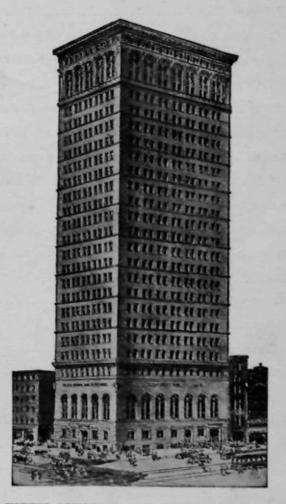
LAWRENCE E. SANDS	President
FRANK F. BROOKS	Vice-President
CLYDE C. TAYLOR	Vice-President and Cashier
J. HOWARD ARTHUR.	Vice-President
WILLIAM H. FAWCETT.	Assistant Cashier
THOMAS B. HUDSON	Assistant Cashier
JOHN DEM. WERTS.	Assistant Cashier
Oscar Wilson	Assistant Cashier
WM. J. FRANK	
P. W. DAHINDEN.	ləsistant Manager Foreign Department
J PAUL FORD	Assistant Manager Foreign Department

DIRECTORS

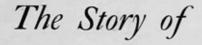
JOHN A. BECK President, Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKS
HENRY CHALFANT President, Spang, Chalfant & Co., Inc.
W. L. CLAUSE Chairman, Pittsburgh Plate Glass Co.
GEORGE W. CRAWFORD
WM. L. CURRY
JOHN A. DONALDSON
W. D. GEORGE Real Estate; Receiver Pittsburgh Railways Company
WM. H. HEARNECapitalist
J. H. HILLMAN, JR Chair. of Board, Hillman Coal & Coke Co., Pittsburgh, Pa.
B. F. JONES, SRDDirector, Jones & Laughlin Steel Corp.
D. T. LAYMAN, JR Henry Phipps Estate
F. H. LLOYD President, Pittsburgh Dry Goods Co.
A. M. MORELAND
P. W. MORGAN President, First National Bank, Wilmerding, Pa.
GEORGE E. PAINTER Capitalist
WM. A. RENSHAWJohn A. Renshaw & Co., Pittsburgh, Pa.
A. C. ROBINSON President, Peoples Savings & Trust Company
LAWRENCE E. SANDS
ISAAC M. SCOTT President, Wheeling Steel Corporation
BENJAMIN THAW Capitalist and Trustee Thaw Estate
ROBERT WARDROPDirector of Federal Reserve Bank of Cleveland and Vice President, Peoples Savings & Trust Company

JOHN M. WILSON..... Vice President, National Supply Co., Pittsburgh, Pa.

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU



PITTSBURGH

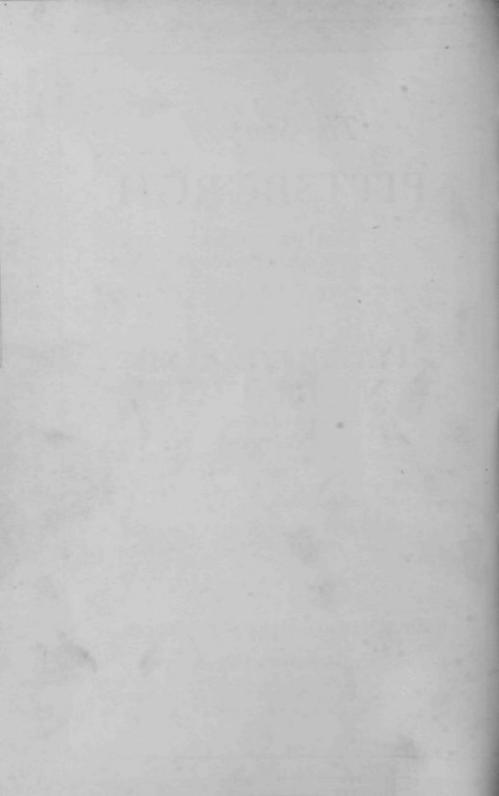
Volume One Number Eleven

PETROLEUM AND NATURAL GAS

IN TWO PARTS Part Two



First National Bank at Pittsburgh December, 1924



The Story of Pittsburgh

Petroleum and Natural Gas

PART TWO

5

HE first part of this story of Pittsburgh, devoted to Petroleum and Natural Gas, dealt with the early history of the discovery of these important products, and gave statistics of their production and manufacture, together with details of many of the companies interested in the business.

This issue, continuing the subject, adds to the information given in the first part, and gives particulars of additional firms and corporations engaged in the oil and gas business.

At a recent meeting of the Pennsylvania Grade Crude Oil Associations, held in Pittsburgh, an important address was delivered by John P. Herrick, of Olean, N. Y., who is chairman of the board of directors of the New York State Oil Producers Association, who gave some striking information on the petroleum business.

"Of the 120,000 oil wells in the Appalachian field, which embraces Pennsylvania, New York, West Virginia and Eastern Ohio," said Mr. Herrick, "75,000 are located in Pennsylvania, and the large majority are owned by individual companies. The South Penn Oil Company, of Pittsburgh, the largest in the field, owns but 8% of the wells of the field.

"The quality of Pennsylvania grade crude oils is recognized everywhere but in its immediate vicinity, but this is not unusual. Notwithstanding the fact that the entire production of the Appalachian field could be consumed in the Pittsburgh area, the largest market is in California, 2500 miles away. Eighty per cent of the crude oil is refined in the Pittsburgh area, \$330,000,000 is invested in property, and 15,000 men are employed in the local field."

It is estimated, according to a recent article in the Oil and Gas Journal, that 200,000 homes, including apartment houses and other buildings used for housing, such as hospitals, burned oil for heat last winter, and that in the coming winter probably 250,000 houses will be burning oil. This circumstance is not of great importance in Pittsburgh and surrounding territory, where natural gas is largely used for fuel, but to the petroleum industry this use of oil is of great importance. Figuring 3,000 gallons as the average quantity of oil used by these homes over the winter, the next season's requirements will total some 750,000,000 gallons. Present tank installation with oil burning equipment is recognized as being, on the average, too small. For private dwellings the average tank is probably no more than 150 gallons capacity, while some of the larger homes have tanks of 500 to 1000 gallons capacity. These larger receptacles city dwellings would find it difficult to obtain space for, while in suburbs they could be easily installed.

The advantages of natural gas are enjoyed by the people of 23 States, but its use on a large scale is limited to only 10, namely: Pennsylvania, Ohio, West Virginia, Oklahoma, Texas, California, Louisiana, Kentucky, Arkansas and Wyoming. Out of a total of more than 3,000,000 consumers of natural gas, more than 1,500,000 live in two States -Pennsylvania and Ohio. The consumption of natural gas is the largest in our own State, while Ohio has the largest number of consumers. The United States Geological Survey says that Pennsylvania consumes 130,733,000,000 cubic feet of natural gas in a year, while Ohio consumes 116,127,000,-000 cubic feet. The number of consumers in our State is approximately 550,000, but much gas is used in industrial and manufacturing plants. Ohio has almost 1,000,000 natural gas consumers. Our own State produces 101,276,-000,000 cubic feet of natural gas a year, and Ohio produces 51,481,000,000 cubic feet. West Virginia is the State which produces the largest quantity of gas, its annual output

being 195,288,000,000 cubic feet, and its consumption 80,000,000,000 cubic feet, the surplus being exported to other States, the Pittsburgh area taking the most of it. Oklahoma produces 140,631,000,000 cubic feet of gas, and uses 111,681,000,000 cubic feet. California produces 84,580,000,000 cubic feet and uses it all. The total production of natural gas per year is approximately 762,546,-000,000 cubic feet.

THE HAZARDS OF OIL

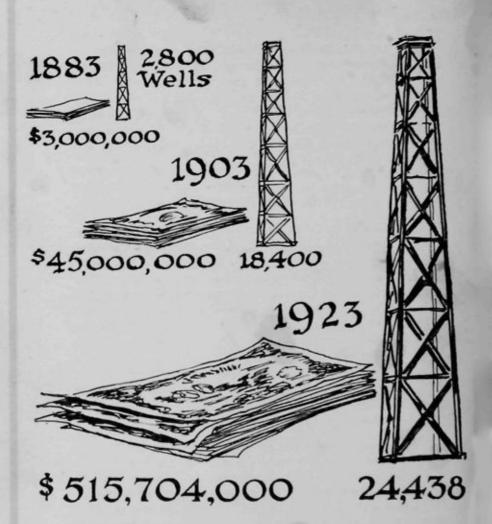
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In his talk on "The Hazards of Finding and Producing Oil," at the St. Louis meeting of the American Petroleum Institute in December, 1923, E. W. Marland stated that "In times of overproduction such as now, we are inclined to consider lightly the estimates made two years ago by the United States Geological Survey that the remaining oil content of the United States is approximately 9,000,000,000 bbls." Mr. Marland also pointed out that if no new wells were drilled for 60 days the decline of the present wells would eliminate the entire overproduction. Furthermore, that to maintain our production on the same basis as in 1923 enough new wells must be drilled in 1924 to produce at least 1,000,000 bbls. a day.

On June 1, 1923, the daily production of crude oil in the United States was rapidly increasing. On December 1, it was decreasing with equal rapidity. During the six months from June 1 to December 1, the average daily production of crude was approximately 2,220,000 bbls. per day. The rapid decline in production stopped about January 1 and since that date production has averaged about 1,900,000 bbls. per day. This decline in production (about 15 per cent from the peak of last summer) has made no shortage of oil—we still have an oversupply, particularly in California.

THE FUTURE OF OIL

Regarding the future of petroleum, the Standard Oil Company has recently issued an official bulletin which is



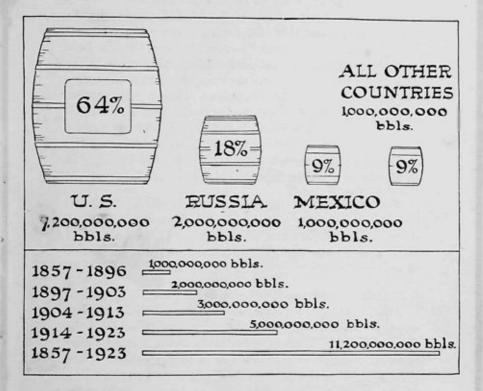
\$515,704,000 IS EXPENDED ANNUALLY IN OIL WELL DRILLING OPERATIONS

In one year, 1923, the petroleum industry completed in the United States 24,438 wells at an estimated cost of \$515,704,000.

Oil wells today are drilled to an average depth of 3,000 feet. The ordinary well costs the oil operator conservatively \$25,000 to drill. Six years ago drilling for oil as deep as 3,000 feet was a rarity and was considered an expensive and hazardous adventure.

Today the drill pipe and the bit are penetrating the earth 5,000 feet as a common occurrence. The cost of drilling these deep wells runs from \$50,000 to \$125,000 each,

Twenty years ago oil was struck at an average depth of 1,500 feet and the average cost of drilling a well was \$2,500. Forty years ago a well could be drilled for a few hundred dollars, the cost rarely exceeding \$1,000.—Oil & Gas Journal



UNITED STATES HAS PRODUCED 64% OF TOTAL WORLD PETROLEUM OUTPUT

Since the first recorded petroleum production, over 11,000,000,000 barrels of petroleum have been taken from the earth.

The United States has produced by far the greatest quantity, a total of over 7,000,000,000 barrels, or 64 per cent of the total. Russia ranks second with 2,000,000,000 barrels, or 18 per cent and Mexico third with 1,000,000,000 barrels, or 9 per cent. The three countries combined account for 91 per cent of the entire world's production.—Oil & Gas Journal really encouraging to the oil trade, and to holders of stocks in petroleum concerns. The Standard Oil Company of California is quite sure that the period of over-production of oil is passing, and says that "we seem to be on the threshold of another phase. Production is falling. Shipments to the Atlantic coast and elsewhere are about half what they were last July. The demand for petroleum is good, consumption great, and the large daily surplus production of crude oil that existed less than a year ago has disappeared. Supply and demand are approximately in balance. Barring the discovery of prolific new fields, therefore, the industry in California must again draw on its reserve stocks."

Pointing out that the oil business is one of feast and famine, and of great transitions and changes, differing in these respects from most other industries, the bulletin of the company emphasizes the additional fact that the source of supply of crude oil is constantly shifting.

"Fields of oil are found, are developed," it says, "the volume of production ascends and then dwindles. New fields, in other States, even in other countries, take the place of the old. There is no certainty about it at all, either as to the location of new fields or as to the volume of the oil. Each time a new field is found, the industry must build, quickly, facilities for handling the new oil—new pipe lines, new tanks and reservoirs, often new refineries, at the new points of output. This has happened over and over again in the history of oil. To meet these situations and emergencies requires great resources by way of organized personnel, and lots of ready money."

In July, 1923, the surplus over the normal demand of California refineries for petroleum reached the remarkable total of 401,000 barrels a day. Of this, 207,000 barrels were shipped to the Atlantic Coast, and elsewhere, through the Panama Canal, and 194,000 barrels a day were put into storage in California. This continued into the present year, until the tanks of California now hold about 97,000,000 barrels of oil.

THE FUTURE OF NATURAL GAS

Not long ago the Natural Gas Association of America held an annual convention in Cleveland, and in his speech, President H. A. Wallace made some very interesting remarks on the future of natural gas, from which the following quotations are made:

I have already remarked on the fact, known to you all, that the natural gas industry is entering upon an era, not of decline, but of transition. There should be nothing surprising or alarming to us in the fact that the reserves of natural gas in the United States were bound to have a limit, no matter how remote that limit might at one time have seemed to be.

And depletion of those reserves, however steadily it may be progressing, has by no means gone so far that there is not ample time available for those natural gas companies which have used adequate prudence and foresight in the management of their properties to take the steps which, it is already clear, the situation will require.

First of those steps, in my opinion, is the education of the public in all communities which we serve, to a realization of the facts of the situation as they are known to us. I have already alluded to the splendid work of the Publicity Committee, but this is a task which can not be too thoroughly performed, and it is also a task that in a sense, in any public utility such as ours, is never completed. We cannot hope to pass successfully through the period of transition without public support, and public support can only be gained and held by thorough education of our communities on the inevitable increase in the cost of service which changing conditions will entail.

We must remember that the lack of public appreciation of the value of natural gas was responsible for the great waste in the past which brought about the early depletion of many once valuable fields. It is doubtful if, even today, any great proportion of the lay public appreciates the true cost of natural gas service, involving such elements as the necessary provision of sufficient reserve acreage for the protection of any field against competitive withdrawals and the maintenance of production on the scale necessary today for any large community.

We must keep constantly in mind for ourselves, and we must be unwearying in our efforts to bring it home to the public, that true conservation of this great natural resource does not consist merely in hoarding our dwindling supply, but in its economical and efficient use in the manner best suited to secure to the greatest number, for the longest possible period, the fullest measure of benefit.

It is my belief that the natural gas industry, by these means—means already well understood, and in many localities well on the way to adoption—will be able not only to hold its present position, but even to expand largely to wider horizons of usefulness than we now realize; to postpone indefinitely the ultimate exhaustion of America's gas fields; and to secure to the communities we serve the benefits of the use of natural gas, for may years to come. In that belief we can face the future with confidence.

TRANSCONTINENTAL OIL COMPANY

The Transcontinental Oil Company was chartered under the laws of the State of Delaware on June 28, 1919, "to produce, refine, transport, sell and distribute petroleum and its products." The charter is perpetual and the company began active operations August 1, 1919. The authorized capitalization is 4,000,000 shares common stock, no par, and 250,000 shares 7% preferred stock \$100 par; 3,000,000 shares common and 157,000 shares preferred now outstanding. The Company is a complete unit in the oil business, being in all branches of the petroleum industry, from the well to the consumer.

The leaseholds of the Company now held in the United States and foreign countries total 1,500,000 acres. The area of the leases held in the United States is approximately 400,000 acres distributed among the following oil and gas producing states; Ohio, West Virginia, Texas, Louisiana, Arkansas, Oklahoma, Kansas, Wyoming, Montana, and Colorado, and 1,100,000 acres in the following foreign fields: Mexico, Colombia, South America and Roumania.

The Company owns 254 producing oil wells and 18 gas wells with a daily oil production of 6,500 barrels. This Company, jointly with the Texas Company, by the recent completion of a 5,000 barrel well, in Moffat County, Colorado, has, from all indications, opened up the most prolific pool of high grade oil yet found in the Rocky Mountain Region. It owns three refineries located at Bristow and Boynton, Oklahoma, and at Ft. Worth, Texas, with a daily capacity of 16,000 barrels of refined products, all of which is marketed under the Company's copyrighted trade brand "Marathon Products." It owns over 400 miles of pipe lines and 1,500,000 barrels of steel storage in the States of Oklahoma, Texas and Arkansas. The combined capacity of these pipe lines is over 20,000 barrels a day. It owns and has under lease 1,400 tank cars. It owns and operates 18 Gasoline Extraction Plants and 7 Blending Plants, also, two Finishing and Barreling Plants for Marathon Lubricating Oils. It owns and maintains 28 Distributing Stations, but the bulk of its refined products is marketed through wholesale and retail distributors, of which it has 480 exclusive agencies in this country and abroad.

The Company owns and operates the following Subsidiary Companies: Transcontinental Oil Company of Kansas; Transcontinental Oil Company of Illinois; Transcontinental Oil Company of Colorado; Transcontinental Oil Company of Colombia, S. A.; United Producers Pipe Line Company; Mid-Colombia Oil & Development Company, S.A.; Carpathian Oil Company, (Roumania); Transark Oil & Gas Company, (1/2 interest); Latin-America Petroleum Corporation, (S.A.) (22% int.).

The Executive Offices of the Company are in the Benedum-Trees Building, Pittsburgh, Pa., with Division Offices at New York City, Chicago, Des Moines, Tulsa, Fort Worth, Sioux City, Denver, Atlanta, and Pittsburgh.

The Officers are: M. L. Benedum, Chairman of Board, F. B. Parriott, President, J. S. Sidwell, O. D. Robinson, T. R. Cowell, J. C. Adams and M. W. Bottomfield, Vice Presidents; E. D. Robinson, Secretary and Treasurer. The Company has 11,000 stockholders and 1,100 employees.

"MARATHON PRODUCTS" are marketed throughout the world and the sign of the "Marathon Runner—Best In the Long Run" is the symbol for good running gasoline and oils. "Marathon Oils" are becoming more and more recognized by the engineering profession for their uniform excellence of quality.

OHIO FUEL CORPORATION

One of the largest natural gas company deals—perhaps the largest in the history of nature's fuel, is announced by the official letters to stockholders of the Ohio Fuel Supply, Manufacturers Light and Heat, and Union Natural Gas Corporation. These companies are producers and distributors of natural gas in Pennsylvania, West Virginia and Ohio. They will be merged by organization of a company, to be known as the Ohio Fuel Corporation, with a Delaware charter, which will have an authorized capital of \$96,000,000, of which \$95,500,000 will be issued for shares of the three companies named.

Knowledge of the coming organization caused great activity of the three stocks named at the Pittsburgh Exchange, all of which sold up to new high prices for their present capitalization. Manufacturers Light and Heat, par \$50, advanced to \$60.25; Ohio Fuel Supply, par \$25, sold up to \$40.75, and Union Natural Gas, par \$25, advanced to \$35.50.

Ohio Fuel Supply shareholders will receive 1.28703 shares of the Ohio Fuel Corporation for each share of their company; Manufacturers Light and Heat shareholders will receive 2.8694 shares, and Union Natural Gas Corporation shareholders will receive 1.21950 shares. It is generally conceded that the object of the merger, which is to reduce operating costs, will be very successful.

The following is the organization of the Ohio Fuel Corporation: George W. Crawford, president; Fred W. Crawford, T. B. Gregory and L. B. Denning, vice presidents; L. B. Denning, secretary and treasurer. Executive committee, George W. Crawford, Fred W. Crawford, T. B. Gregory, L. B. Denning and W. W. Splane. Directors, George W. Crawford, Fred W. Crawford, J. B. Crawford, L. B. Denning, M. C. Treat, L. E. Mallory and J. M. Garard, of the Ohio Fuel Supply Co.; L. A. Meyran, C. F. Nieman, P. C. Beers and T. B. Gregory of the Manufacturers Light and Heat Co.; T. W. Phillips, Jr., W. W. Splane, H. McSweeney and S. Y. Ramage, of the Union Natural Gas Corporation.

OHIO FUEL SUPPLY COMPANY

The Pittsburgh office of the Ohio Fuel Supply Company is in the Farmers Bank Building. The company was incorporated under the laws of Ohio, May 15, 1902. The present capital stock is \$40,000,000, of the par value of \$25. The company's gross earnings in 1923 totalled \$16,682,255, and net earnings were \$4,636,509.

When the company was incorporated it had a capital of \$2,500,000. In 1903 this was increased to \$4,000,000, in 1905 to \$8,000,000, in 1909 to \$10,000,000, in 1910 to \$15,000,000 and in 1916 to \$20,000,000, the increase being used in part to acquire the Ohio Southern Gas Co. and the Northwestern Ohio Natural Gas Co. In 1923 the stock was increased from \$20,000,000 to \$40,000,000, and a stock dividend of 100% was paid.

Each stockholder of record October 1, 1909, was given a dividend of one share of Ohio Fuel Oil Co. The United Fuel Gas Co., a subsidiary company of the Ohio Fuel Supply Co., in August, 1909, purchased the gas property of the United States Natural Gas Co., paying \$2,081,250 and guaranteeing \$2,298,500, 6% first mortgage bonds of subsidiary companies of the U. S. Natural Gas Co.

Company has paid dividends at varying rates from 1902 to date; from 1917 to and including Jan., 1923, regular quarterly dividends of $2\frac{1}{2}\%$ were paid; during the 1917 to 1923 period, extra dividends, amounting to a total of 28% were paid in Liberty Bonds; the dividend rate on the present outstanding stock was established by the declaration of $1\frac{1}{4}$ %, payable April 14, 1923, at which time there was also paid an extra dividend of 1%, payable in Liberty Bonds.

An annual rate of 9% was set up for the new capitalization by the payment of a quarterly dividend of $2\frac{1}{4}$ % in July, 1923. Jan., 1924, annual rate was raised to 10%, by payment of a quarterly dividend of $2\frac{1}{2}$ %.

In July, 1910, there was paid a special dividend of 50% in 6% debenture bonds, amounting to \$6,114,900; registered as to principal and interest; dated July 1, 1910; due March 1, 1927; tax free; interest checks payable on the 15th of Jan., April, July and October. (Bonds all retired January 1, 1917).

In December, 1922, a corporation named Ohio Fuel Gas Co. was organized to take over all the gas properties in Ohio. It was capitalized at \$25,000,000, all of which capital is owned and held by the Ohio Fuel Supply Co. The Ohio Fuel Supply Co., also owns the Northwestern Ohio Nat. Gas Co., and the Pt. Pleasant Nat. Gas Co. Company also owns 49% of the United Fuel Gas Co., which operates in W. Va., the other 51% being owned by the Columbia Gas and Electric Co.

Officers and directors of the company follow: Officers, Pres't., George W. Crawford; Vice-Prest's., F. W. Crawford, L. B. Denning, J. M. Garard; Treas. and Sec'y., J. B. Wikoff; Ass't Secy's and Ass't Treasurers, F. I. Falk and P. A. Balliet. Directors, M. C. Treat, George W. Crawford, F.W. Crawford, J. M. Garard, J. W. McMahon, H. H. Dreibelbis, W. H. Thompson, L. B. Denning, J. B. Crawford, L. E. Mallory.

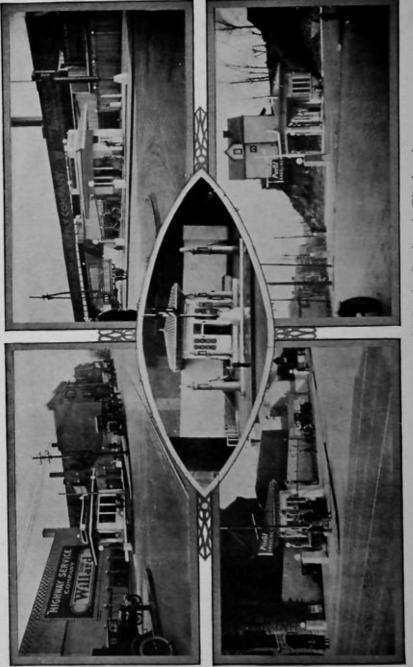
UNION NATURAL GAS CORPORATION

The Union Natural Gas Corporation, with offices in the Union Bank Building, Pittsburgh, was incorporated under the laws of Delaware, May 24, 1902. Its authorized capital stock is \$20,000,000. Of this \$17,220,000 is outstanding at present. The corporation was formed with an authorized capital of \$6,000,000, and acquired all of the stock of the Athens Gas Light and Electric Co., Buckeye Gas Co., Logan Natural Gas and Fuel Co., Manufacturers Gas Co., Newark Natural Gas and Fuel Co., and Warren and Chautauqua Gas Co. In September, 1902, the stock was increased to \$8,000,-000 and one-half of the stock of the Reserve Gas Co. and the Connecting Gas Co. was secured. The addition of \$1,000,000 to the capital in June, 1903. was used for the acquisition of the Citizens Gas Light and Coke Co., Fremont Gas, Electric Light and Power Co., Marion Gas Co., Athens Oil and Gas Co., and the Newark Gas Light and Coke Co,

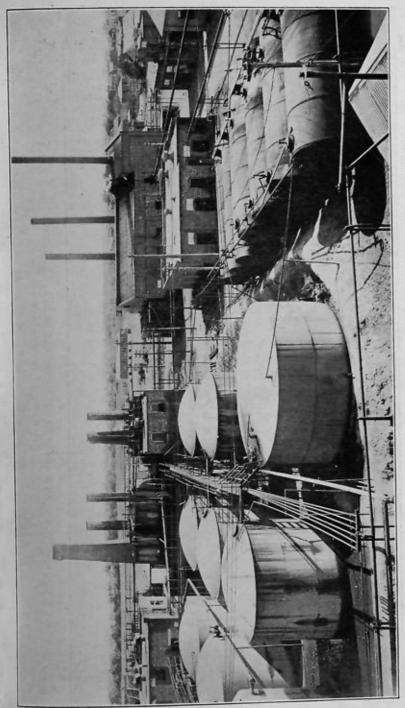
The Athens Oil and Gas Co. was merged with the Athens Gas Light and Electric Co., and the Newark Gas Light & Coke was merged into the Neward Natural Gas and Fuel Co., in 1916. The Warren & Chautauqua Gas Co., was merged with the Mfrs. Gas Co., in April, 1922. The Athens Gas Light and Electric Co., Bellevue Gas Co., Buckeye Gas Co., Citizens Gas and Electric Co., Citizens Gas Light and Coke Co., Fremont Gas, Electric Light and Power Co., The Logan Nat. Gas and Fuel Co., Marion Gas Co., and the Newark Natural Gas and Fuel Co., were merged into a corporation under the name of The Logan Gas Co. which also owns and operates the Preston Oil Co., Columbus, Ohio.

On November 28, 1922, the capital was increased to \$20,000,000 and the par value changed from \$100 to \$25. A stock dividend of 75% was paid in December, 1922. Gross earnings of the corporation in 1923 were \$8,876,051, and net earnings were \$4,250,635. The stock pays 8% per annum.

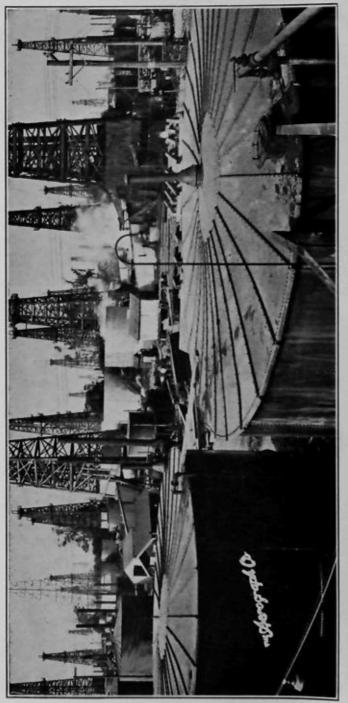
The report of the corporation for 1923 said: Since the last annual report your company, through its underlying companies, has acquired 250,973.11 acres of new oil and gas leases and surrendered 95,053.00 acres that have proven unproductive, and now holds 1,035,258.45 acres. In addition to the above, your company owns a one-half interest in 55,456.96 acres in West Virginia, through its ownership of stock in the Reserve Gas Company. During the year your company drilled 155 deep wells, of which 12 were oil wells, 97 were gas wells, and 46 were unproductive; 27 shallow wells, of which 7 were oil wells, 16 were gas wells, and 4 were unproductive.



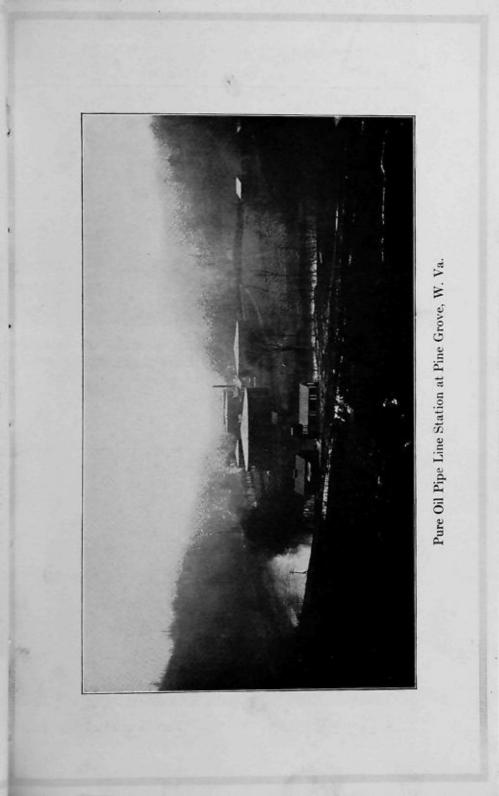
A Group of Well Located Pure Oil Service Stations in Pittsburgh



Partial View of Boynton Refinery Showing Run Down Tanks, Pump House, Wax House, etc. Transcontinental Oil Co., Boynton, Okla.

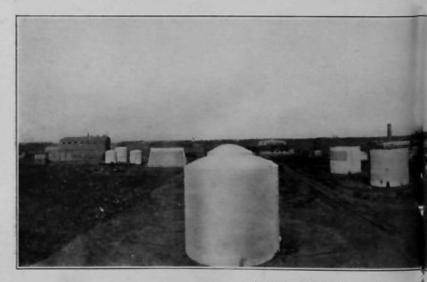


View of the Santa Fe Springs Field in California Contemportate Oil and Gas Journal.





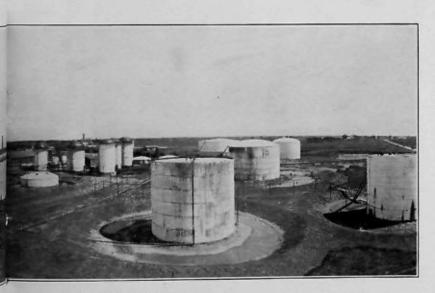
This Remarkable Train of 39 Tank Cars of Fuel Oil Making a Reto Lorain, Ohio. A Striking Illustration of the Ma



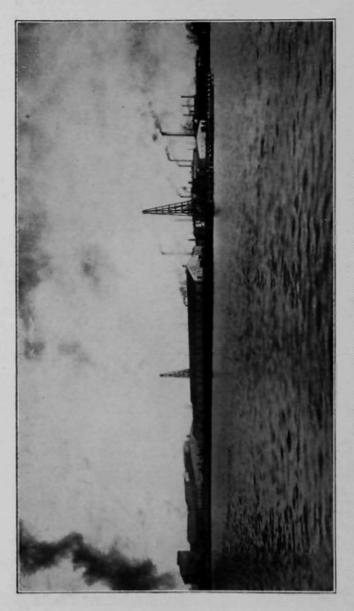
Fort Worth Refinery, Transcot



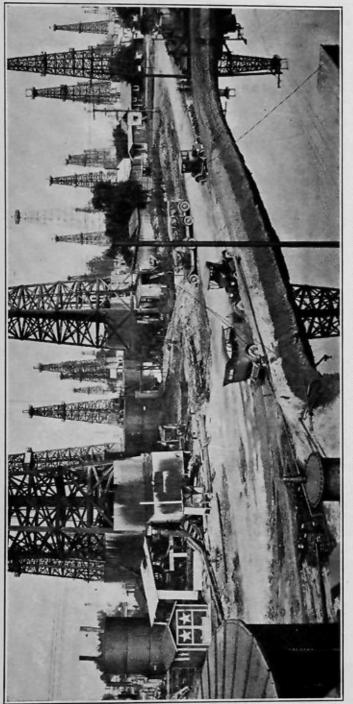
461 Miles in 32 Hours and 45 Minutes from Bristow, Oklahoma the a Large Producer and Refiner Markets Fuel Oil



Company, Fort Worth, Texas



Pure Oil Dock on Delaware River at Marcus Hook, Pa.



During the Period of Its Greatest Flush Production Courtesy of the Oil and Gas Journal



Your company now has a total of 252 oil wells in Ohio, 1179 gas wells in Ohio and Pennsylvania, and, through its ownership of stock in the Reserve Gas Company, a one-half interest in 703 gas wells and 15 oil wells in West Virginia. There were laid in main and field lines 64.43 miles; in extensions in cities and towns 10.91 miles; a total of 75.34 miles of pipe.

Officers and directors are as follows: President and General Manager, E. P. Whitcomb; Vice-President, S. Y. Ramage; Secretary, David E. Mitchell; Treasurer, Hartman Stehley; Assistant Treasurer and Assistant Secretary, C. D. Dorning; Comptroller, A. J. Newman; Assistant General Manager and Purchasing Agent, A. A. Armstrong. Directors, E. P. Whitcomb, P. W. Lupher, A. A. Armstrong, Jos. Seep, S. Y. Ramage, H. McSweeney, W. W. Splane, T. W. Phillips, Jr., David E. Mitchell.

THE PURE OIL CO.

Prodigious growth has marked the progress of the Pure Oil Company from its very beginning. Within one decade the company has developed from an obscure public utility until it is today one of the outstanding leaders in the independent oil industry. The tiny rivulet of 350 barrels of crude oil, which represented the company's daily production in 1914, has steadily increased in volume until it now averages 45,000 barrels a day.

At the time of its entrance into the oil industry, in 1914, the company was engaged in the distribution of natural gas to the cities of Columbus, Springfield and Dayton, Ohio. These gas properties were sold in February, 1924, so that the company is now devoted exclusively to the production, refining, transporting and marketing of oil.

Some conception of the development that has taken place within ten years may be gained by drawing a few comparisons. In 1914 the assets of the company were less than \$14,000,000. At the end of the fiscal year, March 31, 1924, they amounted to \$211,000,000. When the company began its oil operations in 1914 it had 3,200 stockholders. Today they number 38,000. Then it had but 500 employees. Ten years have added 7,000 to the payroll.

Ten years ago the company did not own a single refinery. Last January the ninth Pure Oil Refinery was put into operation, bringing the company's daily refining capacity up to 45,000 barrels. Its few miles of pipe lines have grown and branched out until they now extend 2,675 miles. It was quite natural that Pennsylvania, "the cradle of the oil industry," should be selected by the Pure Oil Company as the location for some of its most important operations.

The Marcus Hook Refinery, located on a 62 acre tract sixteen miles south of Philadelphia, has a daily capacity of 3,500 barrels. The bulk of the company's export business is handled from this point owing to the advantageous loading facilities and deep water frontage. A tank storage farm with a capacity of one million barrels is operated in conjunction with the refinery. This is the terminus of the pipe line of the Pure Oil Pipe Line Company. The six inch main extends from Morgantown, West Virginia, almost the entire length of Pennsylvania. Another pipe line crosses the state from Warren and connects with the main line in southwestern Pennsylvania.

There are 43 pumping stations located in Pennsylvania in connection with this pipe line system. More than eleven hundred miles of main and gathering lines complete the network that gathers oil from Eastern Ohio, Northern West Virginia and Western Pennsylvania.

Headquarters of the Pure Oil Pipe Line Company are established in the First National Bank Building, Pittsburgh, in charge of Mr. L. S. Devol. Export offices of the company are located in the Lafayette Building, Philadelphia. Warren, Pennsylvania, has been the scene of refining activities since 1888, when the Complanter Refining Company began operations there. This 2,000 barrel daily capacity refinery was taken over by Pure Oil Company in 1917.

As a distributor of oil products in Pennsylvania, Pure Oil Company has bulk distributing plants at Parsons, Pittston, Nanticoke, Bethlehem, Allentown, East Stroudsburg, Ackermanville, Chester and Pittsburgh. Eight drive-in service stations are operated in Pittsburgh and two in Chester.

Operations of the Pure Oil Company now extend into 26 states besides Canada, Europe and South America. It owns 86 bulk distributing plants and nearly three hundred drive-in service stations. Its tank storage capacity aggregates thirteen million barrels.

The company controls 13.24 per cent of the entire output of Pennsylvania grade crude, which is considerably in excess of the amount controlled by any other refining company.

Pure Oil Company was a pioneer in the establishment of service stations. It was first to recognize the advantage of attractive service stations as marketing units. The prompt acceptance of this idea by other companies and the immense sums of money today being expended in this direction indicate its soundness. Besides its two Pennsylvania refineries, the company has in West Virginia, 1 refinery; Minnesota, 1; Ohio, 1; Oklahoma, 2; and Texas, 2. Company-owned railroad tank cars totaling 2,661 in addition to 255 leased cars are engaged in the transportation of Pure Oil products.

Operations are further facilitated by the ownership of three ocean tank steamers. These, which are engaged in coastwise and export trade, each have a capacity of 75,000 barrels.

General offices occupy the Pure Oil Building, a modern, eight-story structure, in the downtown business district of Columbus, Ohio.

Officers of the company are: B. G. Dawes, President; W. E. Hutton, R. W. McIlvain, N. H. Weber, H. N. Cole, C. C. Burr, Vice Presidents; F. S. Heath, Secretary-Treasurer, C. E. Mason and C. M. Hinman, Asst. Secretary-Treasurer, C. H. Jay, Comptroller.

OHIO FUEL OIL COMPANY

The Ohio Fuel Oil Co. was incorporated under the laws of West Virginia, in September, 1909. Its main office is in the Farmers Bank Building, Pittsburgh. Its capital is \$500,000, of which \$320,000 is outstanding, and par is \$1. Gross earnings in 1923 were \$1,602,314, and net earnings were \$490,619. Dividends of 100%, or \$1 per share, were paid July, 1912, Feb., May and Sept., 1913, and Jan., 1914. June and Nov., 1914, and April, Oct. and Dec., 1915, and April, Aug. and Dec., 1916, and June, Oct. and Dec., 1917 and May and Dec., 1918, and Jan., 1923, and June, 1923, paid 50% or 50c per share.

After the United Fuel Gas Co. purchased the gas property of the United States Gas Co. the Ohio Fuel Oil Co. acquired all of the oil property and oil rights in leases owned by the United Fuel Gas Co. The shares of the Ohio Fuel Oil Co. in October, 1909, were distributed to stockholders of the Ohio Fuel Supply Co., share for share, as a special dividend, requiring the issuing of 320,000 shares, leaving 180,000 shares in the treasury.

Officers and directors follow: Pres't., Geo. W. Crawford; Vice-Prest's., F. W. Crawford, L. B. Denning; Sec'y and Treas., J. B. Wikoff; Ass't Sec'y and Ass't Treas., F. I. Falk and P. A. Balliet. Directors, J. B. Crawford, L. B. Denning, M. C. Treat, T. B. Gregory, Geo. W. Crawford, F. W. Crawford, L. E. Mallory, Jr.

ARKANSAS NATURAL GAS COMPANY

The general offices of the Arkansas Natural Gas Company are in the Benedum-Trees Building, Pittsburgh. The company owns and operates property in Arkansas, Kansas, Kentucky, Illinois, Louisiana, Texas, New Mexico, Oklahoma, West Virginia, Ohio, Montana and Wyoming, as well as in Pennsylvania. The company also owns a joint interest with the Transcontinental Oil Company, in 629,221 acres in the southern part of Louisiana.

The annual report for 1923, contained these statements: The drilling campaign for the year of 1923 conducted by your Company and its subsidiary, the Arkansas Fuel Oil Company, resulted in 110 wells drilled to completion, of which number 48 were productive of oil, 38 productive of gas, and 24 non-productive. During the same period there were 17 oil wells and 8 gas wells abandoned, leaving the Company, at the close of the year, interested in 574 producing oil wells and 104 producing gas wells; 247 oil wells and 87 gas wells owned outright by the Company and the balance owned jointly with other companies.

The total acreage under lease at the close of the year was 239,807.73 acres of which 28,367.77 were operated and 211,439.96, unoperated.

14.46 miles of gas transportation, distribution, and field pipe lines of various sizes and 18.31 miles of oil pipe line were laid during the year and 9.82 miles of gas pipe line were reclaimed.

During the year your Company erected an additional gasoline plant in the Eastland, Texas, district known as the Downtain Plant which increased the daily capacity by 8,000 gallons. The combined sales from the four gasoline plants now owned and operated amounted to 3,012,643 gallons in 1923.

Your Company served 26,392 domestic consumers with natural gas in the month of December, 1923, an increase of 1,490 over the same month of 1922.

The combined gross earnings and miscellaneous income for the year was \$3,903,420.53 and the combined operating expenses, taxes, and other deductions was \$3,232,157.75, leaving a balance of \$671,262.77. Considering the depressed condition of the oil and gasoline business during 1923 your Board feels gratified with the result of the year's operations.

Your Board deemed it advisable to separate the oil and gasoline business of the Company, to the extent practicable, from its natural gas business, for the reason that the natural gas business of the company is strictly a public utility and subject to commission regulation as to rates. The separation was accomplished by increasing the capital stock of Arkansas Fuel Oil Company, (all of which was owned by your Company), from \$25,000.00 to \$8,200,000.00 and issuing the increase up to \$8,143,450.00 for the oil and gasoline business and properties of the Company, thereby accomplishing a separation of the two classes of the business into two separate entities, yet preserving to the stockholders their entire interest in both properties. While the oil and gasoline business had been conducted as a separate department of the Company previous to this separation, it is now conducted by a separate corporation whose capital stock is all owned by your Company.

The following are officers: J. C. Trees, Chairman of Board; J. R. Munce, President; George H. Flinn, Vice President; A. B. Dally, Jr., Vice President; E. J. Cole, Vice President; W. J. Diehl, Secretary and Treasurer; H. Alexander Dean, Assistant Secretary and Assistant Treasurer; J. R. Munce, General Manager, Pittsburgh, Pa.; E. J. Cole, Comptroller, Pittsburgh, Pa.; C. A. Floto, Purchasing Agent, Pittsburgh, Pa.

GULF OIL CORPORATION

The Gulf Oil Corporation of Pennsylvania was incorporated August 9, 1922. Its authorized capital stock is \$120,000,000, of a par value of \$25, of which \$108,720,400 is outstanding, that amount being issued to acquire all the outstanding stock of the Gulf Oil Corporation of New Jersey, which was originally formed February 13, 1907, with a capital of \$15,000,000. In March, 1913, that capital was increased to \$60,000,000. Of this increase, \$22,416,400 was sold to stockholders at par (\$100) each holder having the right to subscribe for twice the amount of his holdings. On April 15, 1913, a stock dividend of 100% was paid on the \$11,208,200 stock outstanding. The regular dividends are 6% annually.

Subsidiaries of the Gulf Oil Corporation are the Gulf Refining Co., Gulf Pipe Line Co., Gulf Pipe Line Company of Oklahoma, Gulf Production Co., Gulf Refining Company of Louisiana, Gypsy Oil Company, Mexican Gulf Oil Co., and the Gulf Cooperage Co.

Operating revenues of the Gulf Oil Corporation in the year 1923 were \$159,057,367, and operating profits were \$60,864,027.

The main offices are in the Frick Building Annex, Pittsburgh. W. L. Mellon is president, George S. Davison, vice president; J. E. Nelson, treasurer; W. J. Guthrie, secretary.

BARNSDALL CORPORATION

The history of this Corporation dates back almost to the year 1859, when Col. Drake drilled his first oil well on Oil Creek, near Titusville, Penn.

Theodore N. Barnsdall worked on his first oil well in the year 1867, and continuously since that time the Barnsdall Interests have been active in the production of oil and gas in nearly all the fields in the United States and Canada. Mr. Barnsdall moved his General Offices from Bradford, Pa. to Pittsburgh, Pa. about 1900, although he had conducted a large amount of his business in Pittsburgh previous to that date, and from that time until his death in 1917 he was one of the most important factors in the development and operation of the oil and gas business. A large number of the most successful of the Natural Gas Companies in business to-day were organized by Mr. Barnsdall in Pittsburgh.

Barnsdall Corporation was incorporated in 1916 under the name of Pittsburgh Investment Company, the title being changed to Barnsdall Corporation in 1919, at which time a number of other Barnsdall Companies were consolidated and merged. This resulted in the consolidation under the name of Barnsdall Corporation of all the properties theretofore owned and operated by Theodore N. Barnsdall during his lifetime through the various subsidiary companies organized by him.

The Corporation, through its subsidiaries, is engaged in producing, refining and distributing petroleum and its products; the production and distribution of natural gas; also is engaged in the mining of silver, lead, zinc and tripoli, and owns valuable gold and copper mines not being operated at present.

The Corporation has about twelve hundred employees.

The most important of the subsidiaries are the following Companies:

BRANSDALL OIL CO.—Producing crude oil, operating principally in Oklahoma.

PITTSBURGH OIL & GAS CO.—Producing crude oil, operating through subsidiary companies in States of Pennsylvania, Ohio, West Virginia, Indiana, Illinois, Texas, Oklahoma and California.

POTTER GAS Co.—Producing and distributing natural gas in Pennsylvania and New York States, also producing crude oil through Potter Oil Company in Oklahoma, and through Potter Oil Company of California in California.

BARNSDALL REFINING COMPANY (DEL.)—Refinery at Barnsdall, Oklahoma, having maximum skimming capacity of 14,000 barrels per day, or a capacity of 8,000 barrels per day, completely refining 3,000 barrels thereof.

BARNSDALL REFINING COMPANY (ME.)—Distributor of refinery products. Has warehouse and office at Kansas City, Mo., and 37 Tank Stations in surrounding cities and towns of Missouri and Kansas.

BARNSDALL ZINC CO.—Zinc mines and mills in Joplin, Mo., district.

AMERICAN TRIPOLI Co.—Mining and milling tripoli and marketing the various products. Located at Seneca, near Joplin, Mo.

MONCTON TRAMWAYS, ELECTRICITY & GAS Co., LTD.— Natural gas, electricity and street railways plants, located at Moncton, New Brunswick, Canada.

DEMPSEYTOWN GAS CO.—Furnishes gas to refineries and industrial plants at Oil City, Pa.

The various Subsidiary Companies have a total of 2700 producing oil wells, 500 gas wells, 285,000 acres of oil and gas rights under lease and in fee. The following products were produced in 1922: 2,516,670 barrels Crude Oil, 33,000,000 gallons Refined Products, 3,500,000,000 cu. ft. Natural Gas, 1,500,000 gallons Casinghead Gasoline, 22,000 tons Zinc Concentrates, 9,200 tons Tripoli Products. Capital Stock Outstanding, \$16,713,400; Undivided Surplus, \$7,175,673; total Consolidated Assets after deducting Depreciation and Depletion, \$38,828,796. The Corporation handles a considerable portion of its business through Pittsburgh Banks, and maintains in Pittsburgh an office of the Pittsburgh Oil & Gas Company, located in Farmers Bank Building. The General Offices of the Corporation are at 41 East 42d Street, New York City.

THE FREEDOM OIL WORKS COMPANY

The producing, refining, and distribution of motor and factory oils and gasoline for internal combustion engines and other power producing machinery, is one of the nation's most romantic industries. The spectacular increase in the numbers of automobiles, trucks, and other such consuming machines during the last few years has required serious thought on the part of the industry's men. Their problem is to furnish the enormous amount of fuel and lubricant required—one of the largest parts of which problem is to find and to extract the crude product from the bowels of the earth in sufficient quantities to meet the ever increasing demand. This problem can be appreciated when it is remembered that a concern must "grope around" in the ground in an endeavor to locate the oil pockets where Mother Nature has stored her crude.

In the main, there are two kinds of crude;—paraffin base crude and asphaltum base crude. The former, found in by far the smaller quantity, is the crude used in making oils and gasoline by The Freedom Oil Works Company, of Freedom, Pennsylvania. The wells from which this company draws its supply of crude, are located in Pennsylvania. The oil when it comes from the ground is pumped into large distributing pipes and carried directly to the company's plant at Freedom, where the crude is refined by a process of distillation and filtration.

The distillation process is not unlike the boiling of water in a tea kettle. When water is boiled in this manner, steam rises and escapes out of the spout. If you would attach a hose to the spout and by means of it, lead the escaping steam under cold water, the steam would be chilled and return back into a liquid. This water is pure distilled water, such as you use in your battery or for absolutely pure drinking water. Similarly, the crude oil is placed in huge boilers, a fire placed under them, and the "lighter ends" (gasoline, kerosenes, etc.) are distilled off. Because those ingredients vaporize more readily, they pass off, while the lubricating stocks, from which lubricating oils are made, remain. During the process of refining, the paraffin is removed. The lubricating stocks are filtered through clean fullers earth to remove impurities and to produce the body and color of the motor lubricating oil desired. The theory is, that as the oil globules pass through this fullers earth, carbon and other particles of impurity are attracted to it and held by the particles of earth.

The Freedom Oil Works is one of the oldest firms of its kind in the Pittsburgh district. Started in 1879, it was incorporated under the laws of the State of Pennsylvania, on April 17, 1889, with a capitalization of \$50,000. Among the men originally interested and still connected with the company are August J. Minke, Vice-President, and E. J. Bischoffberger, Manager. In 1890 Joseph W. Craig of Pittsburgh, well known in the oil and natural gas industry, purchased the controlling interest in the company and became its President, which position he occupied until his death, which occured in the early part of 1912. During the life of Mr. Craig the business progressed and grew until it became necessary to increase the capital stock in 1901 to \$250,000. At the death of Joseph W. Craig, Percy L. Craig was elected to succeed him as President, which position he has occupied since that time.

In 1914 the capital stock was increased to \$500,000, and in 1922 to \$1,500,000. The company has occupied the same site for its refinery since its inception. It also owns thirtyfive distributing branches located in the principal towns and cities of Western Pennsylvania, Eastern Ohio, and Northwestern West Virginia.

The present officers are: Percy L. Craig, President; A. J. Minke, Vice President; Earle M. Craig, Assistant to the President; C. E. McKee, Secretary and Treasurer; E. J. Bischoffberger, Manager.

SOUTH PENN OIL CO.

The South Penn Oil Co. was incorporated under the laws of Pennsylvania on May 27, 1889, for the purpose of producing oil and gas. The company's properties are located in Pennsylvania, West Virginia and New York, comprising 1,500,000 acres of which 300,000 acres are actually operated. The company also has a controlling interest in the Penn-Mex Fuel Co. with holdings in the gusher area of the Gulf Coast fields; the Big Creek Development Company in the Lincoln District of West Virginia; and the New Domain Oil & Gas Co., operating in the Central Texas fields.

The present authorized and outstanding capital stock of the company is \$20,000,000, par value \$100, the capital stock having been increased from time to time from \$2,500,000.

The officers of the company are Joseph Seep, Chairman of the Board; L. W. Young, Jr., President; E. E. Crocker, Vice President and General Manager; W. Va. Division, P. H. Curry, Vice President and General Manager, Pennsylvania Division; S. G. Hartman, Treasurer; R. W. Cummins, Secretary; J. B. McFate; Purchasing Agent; Daniel Reese, Auditor. The Directors are E. E. Crocker, S. G. Hartman, R. W. Cummings, L. W. Young, Jr., P. H. Curry, F. J. Huffman and Joseph Seep. The general offices of the company are at 541-549 William Penn Way, Pittsburgh, Pa.

PENNSYLVANIA LUBRICATING COMPANY

The Pennsylvania Lubricating Company was formed in 1890 and in 1895 was organized under the laws of the State of Pennsylvania, becoming a subsidiary of the Standard Oil Company of New Jersey for the manufacture of oils and greases. The capital today is paid up \$1,000,000, and the number of employees averages 200. The plant occupies three city blocks from 33d to 35th Streets, while the General Office is located at 34th and Smallman Streets.

The Board of Directors consists of Grant McCargo, F. H. Bedford and F. H. Bedford, Jr., and the officers of the company are: Grant McCargo, President; F. H. Bedford, Jr., Vice President; J. F. Mackenzie, Secretary and Treasurer.

THE FIRST NATIONAL BANK AT PITTSBURGH

The First National Bank at Pittsburgh numbers among its customers many firms and corporations engaged in the petroleum, natural gas and gasoline businesses, and is exceptionally well prepared to handle the financial end of these, and other commercial operations.

These facilities are arranged to cover not only domestic needs, but also foreign requirements. No commercial point is too distant for the experts of our Foreign Exchange Department to reach and cover. Hence we can facilitate exports and invite inquiries on any branch of this subject.

This Bank has direct financial connections in all parts of the World, and can handle promptly all documents pertaining to Foreign Commercial transactions. Exports and imports are facilitated by our knowledge of conditions in all quarters of the Earth.

Drafts are issued and payments made in all commercial centers, and Trade and Bankers Acceptances are handled.

In our Foreign Exchange Department all languages are spoken, and documents relating to foreign trade are translated.

International Banking of every variety is completely covered, and dispositions of cash are made by mail, cable or radio.

This Bank's service to its friends and customers is not limited to the foregoing. The convenience and courtesy of the Commercial and Savings Departments are supplemented by facilities in several other lines.

Practically every one owns deeds, insurance policies, and other important papers, and for their safety a box in our Armor Plate Vault is a necessity. These are available in various sizes, from small ones, costing only \$5 a year, to boxes large enough for any purpose, and suiting the needs of corporations.

To the man or woman who is considering the purchase of securities, our Investment Department, rich with the knowledge which three-quarters of a century has given it, and the service of financial experts, offers the benefit of sound advice.

For the traveler, our Steamship and Tourist Departments will arrange the itinerary, make reservations, buy the tickets, and generally perform all those details of preparation which would occupy his or her time and cause needless worry.

The Officers of the First National Bank possess a wide experience in banking, and the directors of this institution are men engaged in a great variety of business enterprises, bringing to this bank the knowledge of a large scope of enterprises, all of which is available to our customers.

Capital	\$ 5,000,000.00
Surplus	5,000,000.00
Undivided Profits and Reserves .	2,433,251.48
Deposits	64,177,628.48
Resources.	82,190,565.35

OFFICERS

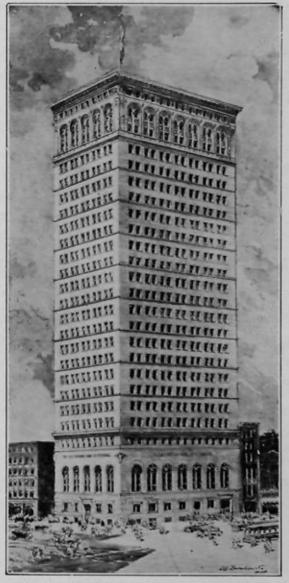
ROBERT WARDROP, Chairman of the Board

LAWRENCE E. SANDS Presi	dent
FRANK F. BROOKS	dent
CLYDE C. TAYLOR	hier
J. HOWARD ARTHUR	dent
WILLIAM H. FAWCETT	hier
THOMAS B. HUDSON	hier
JOHN DEM. WERTS	hier
OSCAR WILSON	hier
WM. J. FRANK	nent
P. W. DAHINDEN	nent
J. PAUL FORD. Assistant Manager Foreign Departm	nent

DIRECTORS

JOHN A. BECK. President Big Four Oil & Gas Co., Pittsburgh, Pa.
FRANK F. BROOKS. Vice President
HENRY CHALFANT. President Spang, Chalfant & Co., Inc.
W. L. CLAUSE Chairman Pittsburgh Plate Glass Co.
GEORGE W. CRAWFORD
WM. L. CURRY. Manufacturer, Pittsburgh, Pa.
JOHN A. DONALDSON Vice President Pittsburgh Coal Company
W D. GEORGE
WM. H. HEARN
J. H. HILLMAN, JR. Chair. of Board, Hillman Coal & Coke Co., Pittsburgh, Pa.
A. L. HUMPHREY
B. F. JONES, 3RD Director Jones & Laughlin Steel Corporation
D. T. LAYMAN, JR. Henry Phipps Estate
F. H. LLOYD
A. M. MORELAND
P. W. MORGAN President First National Bank, Wilmerding, Pa.
GEORGE E. PAINTER
WM. A. RENSHAW. John A. Renshaw & Co., Pittsburgh, Pa.
A. C. ROBINSON President Peoples Savings & Trust Company
LAWRENCE E. SANDS
ISAAC M. SCOTT
CLYDE C. TAYLOR
BENJAMIN THAW
ROBERT WARDROP
Louv M. Wilson President National Supply Co. Pittsburgh Pa

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU



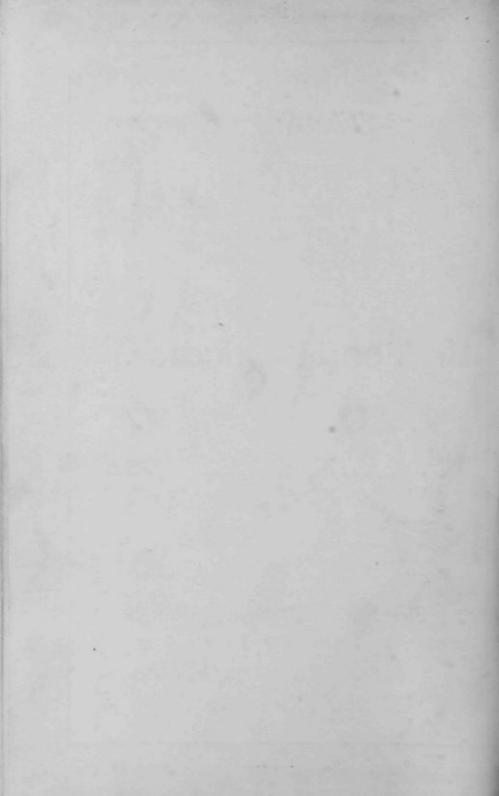
PITTSBURGH

Volume One Number Twelve

FOOD PRODUCTS



First National Bank at Pittsburgh December, 1925



The Story of Pittsburgh Food Products

50

ERSONS who have been in the habit of regarding Pittsburgh as "The Workshop of the World," with iron and steel as its basic products, and as a great market for coal and coke, with continually enlarging business in petroleum products and natural gas, as detailed in previous issues of this series of booklets, will no doubt be surprised at the foremost place held by this city in the manufacture and disposition of "Food Products."

The State of Pennsylvania is known all over the world as a Commonwealth of mechanical manufactures. Were it not for this eminence, it would be known as a great agricultural and stock raising commonwealth. If it had no vast iron mills, coal mines, glass factories, and petroleum producing territory, it would command attention as a producer of wheat, corn, oats, cattle, sheep, hogs, and horses. Its forests are wider in extent than some States, and its lumber business is vast. The value of stone quarried in Pennsylvania is the very first in the whole United States. The chief center of cement production in the nation is in Pennsylvania.

The Keystone State is more than 158 miles from North to South, being larger than the distance between two parallels of latitude, 42 degrees marking its Northern boundary, while the parallel of 40 degrees lies to the North of a line running above Philadelphia, York, Uniontown, and Waynesburg. Its length from New Jersey to Ohio is 302 miles. The area of its land surface is 45,126 square miles and its population is greater than any other State in the Union except New York.

By way of comparison with one item, it may be stated that in the year 1922, when the potato crop of the United States was the largest on record, Pennsylvania was the fifth State in the whole nation in point of production, having raised 28,512,000 bushels. This compared with 11,214,000 bushels produced in Ohio and 16,435,000 raised in New Jersey. The States which in that year produced more potatoes than Pennsylvania, were Minnesota, Wisconsin, Michigan, and New York.

The packing and preservation of food is a great modern invention, and the scientific methods employed in canning, drying, pickling, and in other ways preserving food products which, but for these methods, would speedily decay, afford means of providing a great supply of food products through all seasons of the year, and operate to prevent famine, and to supply the population with plenty of food in seasonable months, and in periods of scarcity or poor crops. Long before these methods were introduced into the food business, and people depended largely on fresh meats and vegetables, periods of distressing scarcity were numerous.

Adulteration of food was a common offense. The first protective food law on record was English and bears the date of 1203. It was designed to prevent dishonest bakers from preying on the public. A few years later butchers, brewers, and wine makers were added to those needing legal restraint against fraudulent adulterations. Adulteration continued, however, until nearly every line of standard food was the subject of a special law—a condition indicating that food adulteration was rife.

This is one of the greatly improved results of scientific food preservation. Adulteration at present is comparatively small in amount. A few years ago the widespread use of benzoate of soda aroused much question as to its harmfulness, and Dr. Harvey W. Wiley, chief chemist of the United States Bureau of Chemistry, began an investigation. A socalled "poison squad" of healthy young men were fed with benzoate of soda in varying quantities for a period of several weeks, and the most careful scientific watch was kept over them. Detailed records were made at great length. The conclusion of the bureau was that benzoate of soda was "a deleterious substance" within the meaning of the law, and its use in foods was forbidden by the Secretary of Agriculture. Food manufacturers appealed from the Secretary to President Roosevelt, who appointed a board of consulting scientific experts to make an examination. This board also used "poison squads," and brought in a report that in the small quantities used in preserving food, benzoate of soda could not be proved injurious to health. The Secretary of Agriculture then issued a new ruling permitting the use of benzoate of soda if the percentage used in the food so preserved was truthfully stated on the label.

This is mentioned as one of the incidents which the preservation of food has made prominent in the United States.

In the following pages will be found particulars of a number of Pittsburgh firms which have become prominent in the preservation and marketing of food products.

AMERICAN FRUIT GROWERS, INC.

The American Fruit Growers, Inc., is a nation-wide distributing system for fresh fruits and vegetables, with its center at Pittsburgh. The company was incorporated under the laws of the state of Delaware in June, 1919, with an authorized capital of \$10,000,000 represented by 100,000 shares 7% cumulative preferred stock of a par value of \$100, and 400,000 shares common stock of no par value; 54,447 shares of preferred stock and 57,866¹/₂ shares of common stock are now outstanding. The officers of the company are: J. S. Crutchfield, President; R. B. Woolfolk, Vice President and Chairman of the Board; W. H. Baggs, Vice President and General Manager; M. E. Simond, Secretary and Treasurer; Alexander Murdoch, Comptroller.

In addition to its major marketing activity, the company owns and operates production properties in most of the leading fruit and vegetable districts of the United States, with an acreage of 14,077, and a book value of \$4,787,950.51 as of December 31st, 1924. Any estimate of the value of American Fruit Growers, Inc., to the Pittsburgh district must begin, prior to 1919, with a firm which pioneered in the national distribution of perishable fruits and vegetables, Crutchfield & Woolfolk, a partnership which formed the nucleus of the present corporation.

In the decade prior to 1919, Crutchfield & Woolfolk had established themselves, without question, as the leading factors in the produce trade of Pittsburgh district. They had developed around their Pittsburgh organization a national distributing service, drawing supplies of perishables from producing areas and giving them a wide distribution over the entire country. Finally, they had been very active in pro-



Packing "Blue Goose" Tomatoes at plant of American Fruit Growers, Inc., at Fullerton California.

moting the organization of the fruit and vegetable industry at various points; specially the citrus industry in Florida, the cantaloupe industry in California, Arizona, and Colorado, and the apple industry in the east and northwest. They were the first private concern to extensively develop the use of advertised brands for perishable food products.

In 1919 the partnership, recognizing the insistent demand for better and more economical distribution, and being keenly interested in working out the problem, organized the American Fruit Growers, Inc., using their own successful business as the nucleus.

Joining Crutchfield and Woolfolk, as stockholders in the enterprise, were many leading fruit growers, a majority of the former employees of the partnership, a number of the jobbing trade, as well as financiers and business men with a recognition of the fact that successful distribution of perishable fruits and vegetables is a great business undertaking, vital to the welfare of modern society.

The new company brought to the task a fresh point of view. Whereas the one or two large successful cooperative associations preceding it in the field operated very largely if not entirely for the producers' benefit, the American Fruit Growers, Inc., recognized from the start that the consumer was as vitally interested in proper distribution as the producer, and this company may be said to be the first determined move to build a marketing system for fresh fruits and vegetables to meet the requirements of the consumer as well as the producer.

It was recognized that, in order to effect economies in distribution, perishable products must be standardized in the growing process. The company's production operations have contributed measurably to improving production methods in the past five years.

The company also sponsored a system of electrically marking individual fruit, and established the Blue Goose trade mark. This was the first large scale movement to identify fruit to the ultimate consumer. To be successful it required a marketing system that would insure the product reaching, not only the market, but the ultimate consumer, with regularity and in perfect condition.

Such a system the American Fruit Growers, Inc., developed and is constantly improving. Its tonnage, amounting in 1921 to 31,288 car loads, in 1922 to 34,087 car loads, in 1923 to 37,829 car loads, and in 1924 to 36,912 car loads; represents the products of thousands of growers. The 1924 tonnage included 9,098 cars of apples, 6,428 cars of citrus fruits, 1,872 cars of potatoes, 2,770 cars of grapes, 2,998 cars of cantaloupes, 2,633 cars of peaches, 1,900 cars of lettuce, to mention a few of the leading products handled. This tonnage is gathered through a dozen shipping divisions and numerous subdivisions. It is distributed through a terminal sales organization which includes jobbing houses in three important market centers, New York, Pittsburgh, and Chicago; salaried offices and agencies covering all carlot markets of the United States and Canada; and an export department which is rapidly increasing exports of fresh fruits to Great Britain, Europe, and the Orient.

Today the American Fruit Growers, Inc., is recognized as meeting the essentials of national marketing, in that it standardizes the product in the growing, grading, and packing and ships it to the market under a consumer-advertised trade-mark with regularity throughout the season. Blue Goose products may be found in all markets, large and small, of the United States and Canada, and in European countries, practically every day in the year.

The agricultural industry lags behind in the adoption of efficient business methods. As a result, agricultural producers have suffered heavily. It is generally recognized that what the industry needs is organized marketing on a national and international scale. Such organization will probably mean the development of a few great distributing systems, large enough to operate nationally and internationally, and reducing economic waste to a minimum.

Thanks to the vision of its organizers and supporters, the American Fruit Growers, Inc., has taken the lead in this development, marking Pittsburgh as the center of another great and vital enterprise.

CRUIKSHANK BROTHERS COMPANY

The Cruikshank Brothers Company is a Pennsylvania State Corporation, incorporated in 1892, but it had its beginning many years before in the handling and manufacturing of food products. The father of Cruikshank Brothers established a grocery business in Pittsburgh on the North Side in 1844. The sons took up the business in 1875. In those days there was no refrigeration for the preservation of fruits and vegetables and the handlers of such products had great losses through spoilage. When quite a young man and working in the grocery store, Frank Cruikshank, one of the sons, got the idea that there should not be so much waste in the loss of fruits through spoilage and would gather up the fruits that were left over in the store after the day's work was done and would take them into his mother's kitchen and cook them into jellies, preserves, and jams; store them away until the winter season and then sell them over the counter.

The goods were made from fruit and sugar only, being strictly pure, and the firm continued along such lines, always aiming to put out the best product possible. The result was a big demand by the consumers and finally by other retail stores and then Frank Cruikshank withdrew from the grocery store and went into the preserving business on a larger scale, establishing the present business in the early eighties. He, therefore, is the originator of the pickling and preserving business as carried on today. He has been in continuous charge of the business for almost fifty years and is still actively engaged as general manager.

The firm at the present time have their goods distributed all over the country, under their own sales force, having ninety to one hundred salesmen on the road at all times. They have a branch office in New York City with twenty-five salesmen distributing the products all through the New England States. The products consist of fruit preserves, jelly, apple butter, pickles, relishes, mustard, ketchup, etc. Cruikshank Brothers Company are therefore pioneers in the manufacturing of their line of products and market them under the registered trade name "Crubro."

The company has an investment of \$1,000,000, with an annual product of \$2,000,000. Employees in addition to salesmen, 300 to 500 people, according to the packing season, salesmen—90 to 100.

Officers: Frank Cruikshank, Sr., President; Allan W. Cruikshank, Secretary and Treasurer; Frank Cruikshank, Jr., Vice President; Vinton W. Cruikshank, Second Vice President.

H. J. HEINZ COMPANY

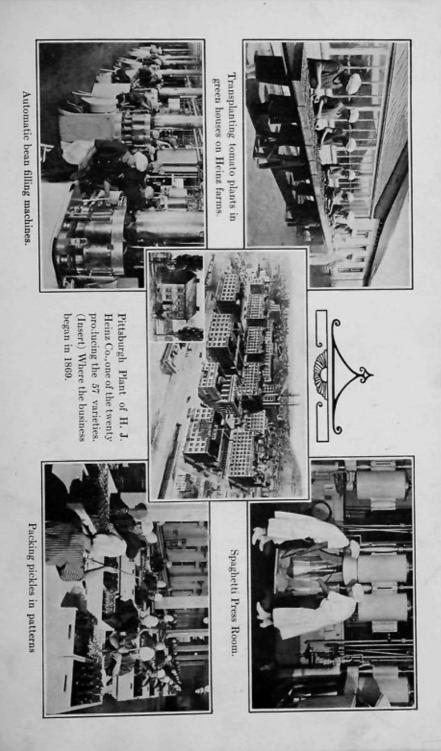
H. J. Heinz Company had its beginning at Sharpsburg, Pa., in 1869, when the Horse-Radish produced in a small garden was prepared, packed and marketed by the founder of the enterprise, assisted by two women and a boy, in two rooms of a residence.

Today the Company produces the famous 57 Varieties, pure food products, at its main plant in Pittsburgh and twenty branch factories in three countries. Its distributing system reaches every civilized trade center.

The business established by Henry J. Heinz, and controlled by him until his death in May, 1919, linked Pittsburgh with the prepared food industry. Under the control and direction of Howard Heinz, son of the founder and president of the Company since 1919, the business has continued to expand. From the small market centering in Pittsburgh, its products in the past fifty-six years have spread to the tables of the world.

In carrying out its policy of controlling its products from the seed to the prepared food container, the Company has established a chain of factories that runs across the continent in the United States, reaches up into Canada and across the Atlantic to England and Spain. As Spain is noted for its fine green olives and olive oil, the Company operates groves and a factory at Seville. In its California groves and factories, ripe olives are grown and prepared for the table. The English and Continental markets call for varieties of sauces, and they are included in the output of the London factory. In this country, tomato products, baked beans, mince meat, fig pudding, plum pudding, mustard, horse-radish, pickles, spaghetti, macaroni, vinegar, fruit preserves, salad dressings, and sauces are produced. The Canadian factory produces the varieties that are in largest demand in the Dominion.

The company maintains a system of sales branches and warehouses in the United States, Canada, England, and Scotland, and through agencies and representatives, the 57 Varieties are placed on store shelves in every part of the globe. Traveling representatives cover the Occident and Orient, and the foreign demand for Heinz products is constantly growing.



The main factory and offices on the north bank of the Allegheny River, within the corporate limits of Pittsburgh, occupy a group of buildings with a total floor space of over fifty acres. From the executive offices in this city, the international activities of the Company are directed. Through centralized direction, the same standards are maintained in every factory and producing area, and Heinz products are of such uniform, high quality, that "57" is accepted as a symbol of pure foods.

The following are interesting facts about Heinz Company:
Number of Factories. 20
Salting Houses and Receiving Stations
Branch Sales Offices and Distributing Ware-
houses 71
Foreign Agencies 71
Floor Space-Main Plant, Branch Factories,
Branches, Warehouses, Salting Houses, and
Receiving Stations
Use products of over
Number of people required to harvest crop-
Approximately
Number of Salesmen directly employed by
H. J. Heinz Company here and abroad 1,419
Total number of people employed, over10,000

Visitors, to Pittsburgh Plant yearly, over 50,000

H. J. Heinz Company operates its own glass, can making, and box factories, and printing plant. It also operates its own freight and tank railroad lines.

THE LUTZ & SCHRAMM COMPANY

The Lutz & Schramm Company located at 1412 River Avenue, Pittsburgh, Pa., is one of the oldest manufacturers of pickles and preserves in the United States. The company was first established in 1884 and was originally known as Lutz Brothers. The first plant was located in a remodeled brewery in Pleasant Valley, Sharpsburg, Pa. In 1887 the company purchased a property at the corner of Cherry and Main Streets in lower North Side, Pittsburgh, Pa., where the business was conducted until 1902 when the property at 1412 River Avenue was secured and the affairs of the company moved to that point.

The original concern known as Lutz Brothers was a partnership composed of Jacob Lutz and Julian Lutz. In 1904 the latter partner died. In 1906 the concern was reorganized under its present style and was known thereafter as Lutz & Schramm Company, and Joseph Schramm who had been connected with the company for a great many years was recognized as a partner with Jacob Lutz.

This company, like practically all others engaged in the manufacture of food supplies has felt at times the effects of depression. At present, however, the company is managed by men who are experts in their line, and who have made the manufacture of food stuffs for human consumption their life study. The company's slogan "Food Products of Quality" aptly illustrates the undertone of not only the selling policy but also of every step of manufacture. Only the choicest of raw materials are used and with expert attention being given to manufacturing, the products are the finest of their type. A complete line of pickles and preserves are manufactured in addition to sauer kraut, catsup, baked beans, and table sauces.

The raw materials used in the pickling department are grown in Michigan, Indiana, and Ohio and are sold to the company by farmers, most of whom have grown pickles for the company for the past twenty-five years. In order that the crop may be efficiently handled it is necessary to maintain more than thirty gathering stations in the pickle fields.

An up to date catsup plant located at Sandusky, Ohio, produces the tomato products. Sauer Kraut is manufactured at Fremont, Ohio, in one of the largest and best kraut plants in the United States known as the Fremont Kraut Company. The manufacturing of preserves and other items in the company's line are handled in the Pittsburgh plant.

While the major portion of the company's products are distributed from the Pittsburgh sales office, four branch sales offices and warehouses are maintained, namely, in Boston, Massachusetts; Scranton, Pennsylvania; Cleveland, Ohio; and Cincinnati, Ohio. The officers of the company are as follows: A. E. Slessman, President; Marcus Blackemore, Vice President; W. L. Dunn, Secretary-Treasurer; J. C. Curow, Factory Superintendent.

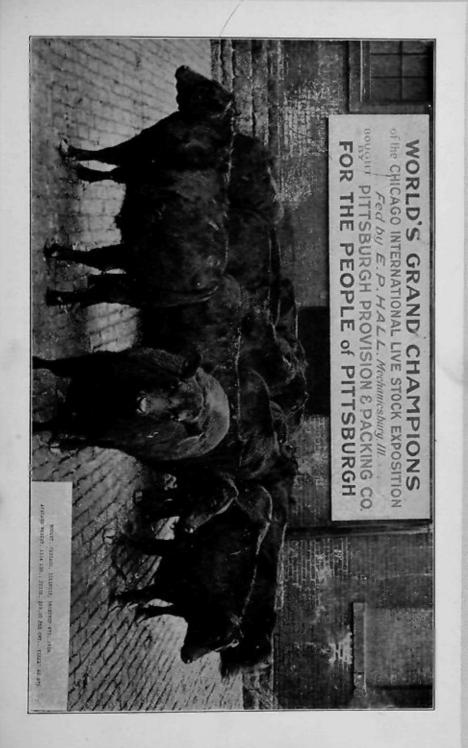
PITTSBURGH PROVISION & PACKING COMPANY

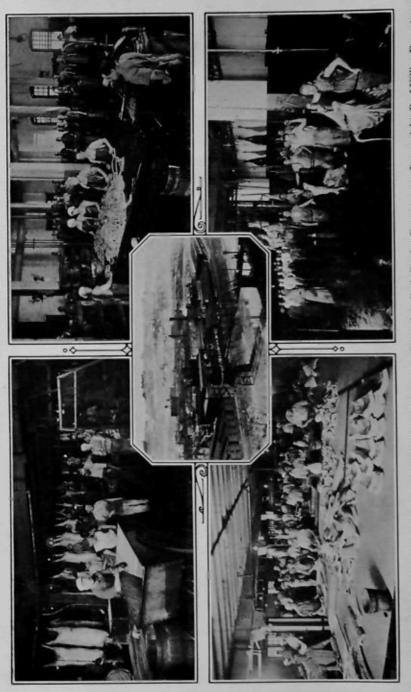
The Pittsburgh Provision & Packing Company was incorporated under the laws of Pennsylvania, July 1, 1901, succeeding the Pittsburgh Provision Company, incorporated 1893, which company purchased the business from Emil Winter Company. The Emil Winter Company was organized some time prior to 1888. The plant, covering about four acres, is located on Herrs Island, Pittsburgh, and can be reached from the heart of the City by trolley in fifteen minutes, or by automobile in eight minutes.

The Company operates under the supervision of the United States Department of Agriculture, Bureau of Animal Industry, all animals slaughtered being subject to post mortem and ante mortem examination by veterinaries employed by the Federal Government. Animals showing traces of disease are condemned as unfit for food and retained by the Federal Government's representatives, whose duty it is to see that the animals are tanked for inedible grease. No dressed meats of any character are allowed in this plant unless purchased from a United States Government Establishment.

The Company has a weekly capacity for 1200 cattle, 8000 hogs, 2000 calves, and 2000 lambs. The Company has an annual payroll of over one million dollars, the number of employees varying from seven hundred to nine hundred. It operates branch houses in Johnstown, Pa., and Cumberland, Md.; operates fifty of its own refrigerator cars, fifty auto trucks, mostly of four and five ton capacity, and also uses about twenty teams for short hauls. It is the largest meat packing establishment in the Pittsburgh District, and is widely known for its famous "Irish Brand" Hams and Bacon.

Present capitalization \$600,000.





Upper left, Pork Killing Department. Upper right, Pudding Department. Lower left, Pork Cutting Department. Lower right, Beef Killing Department. Insert, Plant of Pittsburgh Provision & Packing Co. The Officers are: Robert Allerton, President; Jas. S. McFadyen, Vice-President; John Anderson, Treasurer and General Manager; Geo. N. McDonald, Secretary.

SWIFT & COMPANY

Although Swift & Company was not incorporated until 1885, the business out of which it grew was founded by Gustavus F. Swift in 1868. From the time Mr. Swift made the first successful refrigerated shipments of dressed meats to the East, during the seventies, Swift products have been regularly sold in Pittsburgh.

Swift & Company is an Illinois corporation, owned by more than 47,000 stockholders, and capitalized at \$150,000,-000. The growth of the company, from a modest beginning has been made possible largely because a portion of the profits has been re-invested in the business year after year since its founding. To-day it is one of the largest American packing companies, with a nation-wide organization, and has more than 50,000 employes. Last year the company's sales amounted to \$775,000,000.

This company slaughters cattle, sheep, and hogs, and markets the resulting meat and by-products in various stages of manufacture. The company also assembles and distributes produce, (butter, eggs, poultry, and cheese), manufactures oleomargarine, soap, gelatin, glue, fertilizer, etc., and refines and markets cottonseed oil and other vegetable shortenings.

Swift & Company has 26 meat packing plants located in various parts of the United States. Most of these are located in the principal livestock producing regions. The company also operates produce plants where eggs are sorted and prepared for market, where poultry is milk fed and standardized according to weight and quality, and where butter is manufactured in modern and sanitary creameries.

Swift products are distributed through more than 400 branch houses and a large number of "car routes" in this country and through numerous branches and agencies abroad. The branch house is a wholesale marketing establishment located in the larger towns and cities, from which Swift products are sold to retailers. Carloads of meat, produce, and other products are shipped direct from the packing plants in the West and Midwest to branch houses located in the centers of population. Some retailers come in person to the branch houses to select their products, while others give their orders to traveling salesmen.

The smaller towns and villages are served by car routes. A car route is made up of a number of towns located so that they can be served by consignments from the same refrigerator car. Salesmen take the dealers' orders and the goods are loaded into refrigerator cars and shipped direct from the packing plants over the various routes, usually once a week, though oftener in many cases. Orders for local retailers are taken out of the car at each stop along the way. The distributing service of Swift & Company is materially aided by the use of more than 6,000 Swift refrigerator cars. These are kept in constant operation, carrying perishable goods from 80 packing plants and produce plants to branch houses and thousands of small towns.

Swift & Company has operated two branch houses in Pittsburgh for many years. One of these, the Southside Market, is located at 21st Street and Carson Street; while the other, the Allegheny Market, is located at 309-313 Anderson Street. A large number of Pittsburgh dealers are regularly supplied with Swift products by these branches. The branches in turn receive regular shipments of fresh meats and other packinghouse products from the company's plants at Chicago and Missouri River points. Numerous small towns in the vicinity of Pittsburgh are supplied by Swift car routes.

Gustavus F. Swift, the founder of Swift & Company remained at its head until his death in 1903. Since that time, L. F. Swift, his eldest son, has been President. Associated with Mr. Swift in the active management of the company are his brothers, E. F. Swift, C. H. Swift, G. F. Swift, and H. H. Swift, and his son, A. B. Swift, Vice-Presidents; L. A. Carton, Treasurer; and C. A. Peacock, Secretary. In addition to the Swift brothers and Mr. Carton, Lewis L. Clark, President of the American Exchange National Bank, of New York City, and M. B. Brainerd, President of the Aetna Life Insurance Company of Hartford, Connecticut, are directors.

ARMOUR AND COMPANY

To look behind the scenes of an industry which produces products that we use every day, and rather take for granted, is a very unusual experience for the ordinary consumer. There probably is no industry, the products of which we take quite so much for granted, as we do those of the packing industry.

In the beginning, the industry, as exemplified by Armour and Company, was planned to handle hogs in a very seasonal way. Armour and Company began back in the early sixties and it was formed by Philip D. Armour and John Plankinton, to provide hams and bacon and other cured pork products for the people of the East who were gathering in ever increasing numbers in the manufacturing centers which then were almost exclusively along the Atlantic seaboard. Another feature in the business was the provisioning of home seekers and of the thousands who were passing from the East to the West. hunting gold, or returning from their search to their homes in the East. The hogs that were slaughtered for that provision business were hogs that were produced in the territory immediately adjacent to Chicago or Milwaukee, and the slaughtering was confined to the late fall and winter months exclusively. Cattle slaughter was conducted on a very restricted scale and the market was, of course, local,

There were no store houses of any consequence in which might be kept the accumulations that were acquired during the slaughtering season. The pork was packed into barrels, and the barrels were placed in mountainous piles out on the prairie adjacent to the slaughtering house, there to await distribution throughout the year. The people of the East had a real need for the products of live stock because in them was the food so necessary to maintain the vigor and the strength of the laborers in manufacturing plants. And the people of the West, or Middlewest, had just as real need for such packing activities as did the people of the East, because it was in that manner that their markets were broadened and the people of New York became the principal consumers of the products that were raised in surplus quantities in the West. But having established the packing industry on as wide a scope as it then was possible to establish it, the pioneers of the business began to see the possibilities of its growth and they began to seek ways in which greater quantities of surplus might be cared for and whereby waste of product could be avoided. It was in that endeavor that refrigeration was developed.

At first refrigeration was quite crude and it consisted pretty largely of warehouses constructed something like ice boxes, with the interstices between inner and outer walls filled with ice that had been harvested from the nearby lakes in the winter time. The value of refrigeration became immediately apparent and the packers availed themselves of the best engineers to evolve artificial refrigeration and refrigerator cars which would permit a nation-wide and year-around distribution of their products. It was not until in the seventies that refrigeration reached the point where it may be said to have exercised such a vital influence on the industry as to make the work "packing" a misnomer in characterizing it, for no longer were the major portions of products packed in barrels as they once had been.

With refrigeration came ability to utilize virtually every portion of meat animals and the development of by-products which have taken such a prominent, if not almost dominant, place in the economics of meat packing.

The financial history of the packing industry is quite similar, indeed, to the chronological history of the story of its development. As the business grew beyond state borders or trafficking in provisions, a much greater investment was necessary to carry on the work. Armour and Company, for a considerable time after its formation, was a partnership and the partners were placing back into the business a major portion of their earnings each year. The necessity for a corporation became apparent about 1900 because of the ramifications of the business having become so great and because of the facilities of operations and the economics of financing that would accrue to a corporate entity.

There were branch houses to be maintained-the branch house system has grown from one house in 1869 to more than five hundred to-day—the car line system which embraces the use of refrigerator cars having reached the point where thousands of cars must be maintained daily; the growth and the change in the service of surplus production and the spread of distance between production and consumption; all of those things were vital factors in the financial history of the company, its expansions, its metamorphosis, as it were, from packers of pork to meat packers with distribution international in its scope.

The entire history of Armour and Company has been merely a history of service—economic service. The company has stood as one of the principal factors, converting the producer's raw material into marketable products, distributing them and, in effect, redistributing the cash obtained from the consumer back to the producer. It has been a factor in permitting the continuation of the growth of the great manufacturing industries, in that it has provided the workers, in the manufacturing sections in the popular centers of trade, with meat with which to keep their vitality going.

ITALIAN SAUSAGE & PROVISION CO.

In March, 1895, G. Pasquinelli started the manufacturing of dried sausage products, and was located at 604 Grant Street. In conjunction, he also operated a wholesale and retail meat market. His output at that time was approximately 15,000 pounds per annum.

One year later (1896) the first Italian Ham was cured in the United States by G. Pasquinelli. These hams are now known by the name of Prosciutti, and to-day are being manufactured by all the leading packers throughout the United States. In September, 1907, G. Pasquinelli organized the present firm of the Italian Sausage & Provision Company, of which he is now sole owner. Their products are at present approximately 200,000 pounds per annum. They are also large importers of Italian Cheese and Olive Oil. The business is located at 1700-02-04 Penn Ave., Pittsburgh, Penna., and is managed and conducted by G. Pasquinelli and his son, S. J. Pasquinelli.

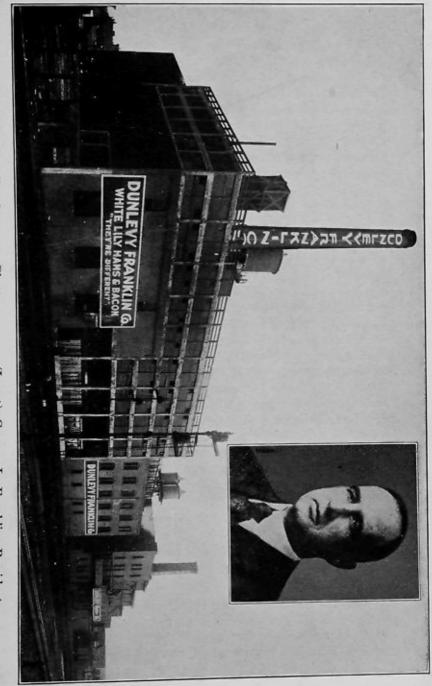
DUNLEVY-FRANKLIN COMPANY

Pittsburgh has an international reputation for its industries. It leads all other cities in the production of iron, steel, glass, tinplate, airbrakes, railway signals, safety devices, and electrical machinery. However, it is not universally known that some of the country's finest foods are produced here. Take the matter of hams and bacon for instance. Surely one could not hope to find hams and bacon of more excellent quality than those put forth by the Dunlevy-Franklin Company, originator and producer of the well known White Lily brand.

This business was founded more than fifty years ago, within the "golden triangle" on Oliver avenue near Liberty; then after constant expansion—in 1892 the Dunlevy firm located in East Liberty on Hamilton avenue adjoining the Pennsylvania Railroad, at which location the Dunlevy-Franklin Company are now doing business.

They have one of the model packing houses of the country. The buildings and equipment are superior and modern in every respect. The present holdings of the company cover 70,000 feet of real estate, including 260,000 sq. ft. of floor space. The establishment is divided into four large buildings, the office building and garage, power plant, packing and smoking buildings.

George L. Franklin is President of the Dunlevy-Franklin Company, which company he organized in 1921. Mr. Franklin is one of the leading packing house men in the country, having had a wealth of experience in this line. He was associated with Wilson & Co. in Chicago for some years, later joining forces with the Harris abattoirs of Toronto. Just prior to the World War he joined the Montreal abattoirs, which firm handled all of the Canadian meat exports to Great Britain during that trying period. Then in 1919 he came to Pittsburgh as general manager of the Dunlevy Packing Company, which company he managed so successfully for three years, then reorganized same and formed the corporation of which he is now president.



Dunlevy-Franklin Company Plant

1

(Insert) George L. Franklin, President

The same care and attention that is given to the making of White Lily Hams and Bacon is applied to every other product turned out by the Dunlevy-Franklin Company, the constant aim being to please their millions of users, with the result that today their splendid home at 6500 Hamilton avenue, East Liberty, has become one of the largest concerns in this section of the country. They have done much to place the name of the municipality upon the map and to add to its lustre as a city of other accomplishments besides the manufacture of mineral matter.

NATIONAL BISCUIT COMPANY

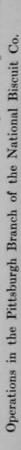
The Pittsburgh plant of the National Biscuit Company is a large and modern institution in East Liberty, being located at 6400 Fenn Avenue. This is a concern which makes 50,000 loaves of bread a day, to say nothing of countless varieties of crackers, of which the celebrated "Uneeda Biscuit" is an important member, and other specimens of the pastry maker's art. In these factories 2,000 persons are employed. Every week they use 2,800 barrels of flour, and every month they transact \$1,000,000 worth of business. In the East Liberty factory 1,500 persons are employed, and in the downtown plant there are 500 more. Half of these are women and girls. Few factories operate so many different departments, and few products require so many different processes. Flour, for instance, is bolted and then sieved three times before it is ready for use. Sacks are turned inside out, cleaned and then returned to the mills. Only creamery butter and leaf lard are used, and these must be tested for freshness and purity. All the eggs used in the plant are first candled, and then cracked and examined by girls trained for this purpose. Floors in the working department are scrubbed every day. The dough troughs, tables, machines, kettles, and all other appliances, are kept scrupulously clean.

It is regarded of the highest importance that the physical condition of all employees be kept up to par, and every scratch, cut, bruise, or blister is immediately attended to in the first aid department, where a trained nurse is on duty. A physician comes twice a week to examine applicants for positions, and also to examine groups of employees. Four to six times a year all are examined to see that their general health is good.

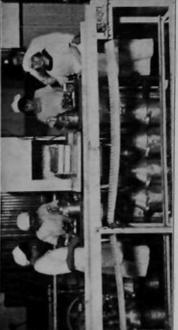
Every day there is a conference between the officials and the ten foremen and forewomen, to map out the day's program. Different styles of ovens are used, depending on the kind of bread being baked, but in most of these the dough is placed on a large metal conveyor that moves slowly through the oven, the speed and heat being so regulated that the bread is baked when it reaches the delivery end of the oven. Bread baking starts at 5 P. M., and the wagons and trucks begin the distribution a few hours later.

Cracker dough is rolled out in thin sheets, and these are placed in ovens immediately after they have been marked or cut by large dies, all operations being mechanical except the placing of the sections of dough in the oven. Special forms, such as the familiar alphabet crackers, are cut out by dies in the same way, and the redundant dough returns to the feeding end of the machine to be run through again. Cookie machines operate in a manner similar to those which turn out the crackers, although the dough is different. Lady fingers are dropped on oiled papers from a hopper above a moving belt, and the small portions of dough are cut off by a fine wire drawn taut, which moves across the openings from the hopper at just the right instant. Conveyor systems carry the small baked goods from the ovens to the boxing departments as soon as they come from the ovens. In the case of "snaps," they are boxed. Then lids and labels are glued on the boxes. and they are ready for packing within five minutes after they leave the ovens.

Special depositing machines are used for handling the marshmallow and jelly goods, and there is an enrobing machine which puts the chocolate covering on that class of goods. From two to two and a half tons of chocolate a day are required in the operation of the local factories. This chocolate is crushed and melted at 90 degrees temperature. Marshmallow is mixed cold, no part of it being cooked. Special mixing machines are required to manipulate the chocolate,



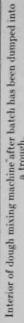
Experts candling and cracking eggs.



a trough.













Kettles and mixing muchines where chocolute, marshmallow, and icing are prepared.



the icing, and the marshmallow, and prepare it for use in connection with the baked portion of the finished cake.

Every piece of machinery is thoroughly protected to make it practically impossible for employees to become injured. Smoking and recreation rooms are maintained. Lockers are provided in well ventilated dressing rooms, and there are shower baths and lavatory conveniences.

F. F. Barkow is manager of the Pittsburgh factories of the National Biscuit Company, and James McVeigh is manager of the bread department.

The National Biscuit Company was incorporated under the laws of New Jersey in 1898. It has authorized common stock to the amount of \$60,000,000 at \$25 par, of which \$51,163,000 is outstanding. Its preferred stock is 7% cumulative, of which \$25,000,000 is authorized and \$24,804,500 is outstanding. Common stock was \$100 par for many years, on which 1% quarterly dividend was paid, later increased to 13/4%. In November, 1911, an extra dividend of 2% was declared and a stock dividend of 75%. The stock was changed to \$25 par, with quarterly dividends of 75 cents a share, and an extra dividend of \$1 a share on November 15, 1924. Net profits of the company for the year 1924 were \$12,881,530. After the preferred dividends amounting to \$1,763,315 were deducted, the balance left for the common stock was \$11,145,-215, equivalent to 21.76%. The dividends paid on the common totaled \$8,186,080, or 16%, and the surplus for the year was \$2,959,135, which, added to the previous surplus, made a profit and loss surplus of \$14,451,697.

WARD BAKING CORPORATION

Robert Boyd Ward, of Pittsburgh, son of Robert B. Ward who opened a bakery in Broome Street, New York, in 1849, foresaw the change of sentiment toward baking in the minds of housewives about 1878, saw the possibilities of multiple production and opened a bakery in Pittsburgh under the name of R. B. Ward & Co., for the development of the distribution of bread to the people in the manner which has been carried on since that time. He was "father of all the bakers" now known prominently in American industry as "the Wards." That business was the nucleus of what is now known as the Ward Baking Corporation, with eighteen baking plants from Chicago east, the nineteenth being under construction in Detroit at the present time and about to be completed at a cost of one million dollars.

It was his vision in Pittsburgh which rose in his mind at the same time as the changing character of the American housewife's life. The bread-baking housewife, kneading dough and baking bread twice or thrice a week, when required by the family's consumption, is rapidly disappearing, as the distributive power of mechanically operated bakeries meets the community demand for a wholesome staff of life. Even the farmer's wife waits for the bread to be delivered at her door. That necessity for great quantities of reliable foods has grown out of the rapid emancipation of the housewife from the cares of kitchen drudgery.

The times were ripe for multiple production. The craving for ease in domestic life has made the bakery, among other food plants, a community affair depending for its existence, its increasing importance, and its financial status upon the unvarying quality of its almost continual production of a nutritious food made from ingredients of correctly analyzed and standardized attributes.

That vision of Robert Boyd Ward has become the basic principle in all baking companies whose production has been increased because of the conditions which he saw so clearly and the inevitably increasing demands of the people. That demand, which, throughout the United States was 25% of all bread consumed in 1900 is now over 60% of all bread consumed in 1925. It is estimated that the consumption of the people of this country is about 20 billion loaves annually, so that the annual production by the great baking companies is about 12 billion loaves. Of this amount the Ward Baking Company produces nearly 400,000,000, the gross poundage of bread produced in 1924 being 307,446,764, and of cake 71,264,614, a total of 378,711,378.

This business is done on a cash basis, the infinitesimally small quantity that is sold on short time credit playing almost



Fresh from the oven — — Ward Baking Corporation — — 5000 loaves per hour.

the part of a cash business. This provides experienced and progressive management with the means for supplying these staple foods at fair prices by the employment of highly trained and equipped operating and merchandising methods maintained in modern buildings and highly efficient equipment.

These three factors of an always normal and increasing demand even in times of depression, the cash basis of selling, and standardized multiple production have stabilized a business in which the very life of the people is concerned in its support and growing importance. Few businesses have such basic security for the funds of investors.

The present Ward Baking Corporation was incorporated in Maryland in December, 1923, with William B. Ward, son of Robert B. Ward, as its president. Included in the present corporation is the entire business built up by his father over a period of 37 years.

The capitalization of the Ward Baking Corporation (as of Aug. 9, 1924) is: 7% Cum. pref. stock (par value \$100) \$50,000,000 (of which \$30,352,200 is outstanding); Class A common stock (no par value) 500,000 shares (of which \$1,109 shares are outstanding); Class B common stock (no par value) 500,000 shares (of which the entire amount is outstanding).

These securities are listed on the New York Stock Exchange. During 1924 the number of stockholders increased from 2462 to 7079.

The net earnings in 1924 (before interest charges, depreciation and taxes) were more than \$6,700,000, exceeding by \$1,500,000 that of any previous year of the predecessor company. Net earnings after all charges were \$4,369,739.75, (annual net earnings based on 6 months, July 5, to December 27, 1924, amounting to \$2,487,036.80 would be at the rate of \$5,000,000). The report of the first twelve weeks of 1925 shows an increase of more than 30% over the corresponding period of 1924.

The variety of products handled is limited to bread, rolls, and cake, many well known names such as Ward's "Fine" Bread, Tip Top, Dainty Maid, Home Spun, Sunkist Gold, Silver Queen, Paradise Fruit, etc., being among its widely distributed products. The system of deliveries meets the exacting needs of groceries, delicatessens, restaurants, hotels, etc., with a service which is known to be dependable. Nearly two thousand salesmen covering about 1600 routes in some 1500 electric and gasoline delivery cars maintain this service in all weathers and often over long daily mileage far into small outlying villages and settlements. Retail distribution is benefited by the regularity of deliveries to nearly 80,000 stores each day.

This huge output is made possible by the maintenance at a high state of efficiency of the modern mechanical equipment attended by bakers trained to the repetition of perfected methods and operations. The common acceptance of sanitariness in the production of foods not only prevails in all of the Ward plants, but is also made a religion of the trade in each room. The adoption of standard processes in production is aided by the maintenance of standardized ingredients chosen by specialists in laboratory analyses made effective by daily inspection of raw materials used in all products.

RIECK-McJUNKIN DAIRY CO.

Folks who lived in Jane Street section of South Side back along about 1881—the light sleepers especially—undoubtedly were awakened in the early morning hours by the clattering of a horse's hoofs over the cobbles. The horse drew a milk wagon and the driver was Edward E. Rieck.

From this one-wagon milk and cream route there has grown the world's largest dairy corporation serving hundreds of thousands of retail consumers with not only milk and cream and ice cream, but with practically every product of the modern dairy industry.

Today, some 44 years from the time Mr. Rieck first shouted "Giddap" to his equine partner, the Rieck-Mc-Junkin Dairy Company enjoys the position as the mother unit of the National Dairy Products Corporation, whose field of activity sweeps west from the Atlantic seaboard to the Mississippi River and south from the Great Lakes to Dixieland.

Previous to the inception of the National Dairy Products Corporation in 1923 Mr. Rieck had by various steps built his business to the point where the corporation he led was dominant in the distribution of milk, cream, ice cream and other dairy products throughout Southwestern Pennsylvania. In 1898 Mr. Rieck made his first ice cream following the expansion of facilities that came when the business was incorporated as the Edward E. Rieck Company of Pennsylvania. This organization continued to prosper and grow to immense proportion until 1918 when the McJunkin-Straight Dairy Company was absorbed. That corporation has since been known as the Rieck-McJunkin Dairy Company and operates three plants in Pittsburgh and others in McKeesport, Butler, New Castle, and Charleroi.

It was in 1923 that the Rieck-McJunkin Dairy Company in cooperation with the Hydrox Corporation of Chicago, which similarly dominated the Chicago dairy field, formed the necleus of the National Dairy Corporation. Mr. Rieck headed the latter as Chairman of the Board of Directors while Thomas H. McInnerney, President of the Hydrox Corporation and a prominent Chicago financier and industrialist, became President.

While this organization was being completed a program of expansion began. In keeping with the character of the principal companies the units that have been added are uniformly old established companies and invariably good earning properties. First, National Dairy Products Corporation took over the Castles Ice Cream Company of Perth Amboy, N. J., and the J. T. Castles Ice Cream Company of Newark, N. J., through an exchange of National Dairy common for the common stock of the subsidiaries. The two Castles companies controlled the ice cream situation in many sections of New Jersey after operations dating back to 1892. J. T. Castles continues to manage both enterprises. Later the W. E. Hoffman Company operating plants in Altoona, Phillipsburg, Barnesboro, and Tyrone, Pa., was acquired by outright purchase from the surplus of National Dairy. This company began ice cream manufacture in Tyrone, Pa., in 1891 and later took on other plants, entering Altoona in 1916, where it became the leading factor in the industry. The Durkin Ice Cream Company of Waukegan, Ill., was the third unit added to the group during 1924.

With the beginning of 1925, National Dairy became even more active and added to its holdings the Chapell-Thompson



A view of the Freezing Room in the Rieck Ice Cream Plant. 201,600 guarts of ice cream can be frozen every 24 hours.

Company of Chicago, the largest competitor of Hydrox there; the William Ohlhaver Company of Aurora, Ill.; the J. A. Ohlhaver Company of Joliet, Ill.; Moore Bros. of Oil City and Meadville, Pa.; and more recently the Bridgeman-Russell Company of New York. Since then the Erie County Milk Association of Erie, Pa., which commands the situation there, has been acquired.

National Dairy had previously operated in New York through the Hydrox Corporation's acquisition of the Shevers Company. The Bridgeman-Russell Company is now known as the Edward E. Rieck Company, Inc., and both National Dairy Companies in New York are making "Hydrox Ice Cream" which is being heavily advertised in the metropolis with a resultant leap in popular demand for the product.

May 1st saw National Dairy operating 31 plants in 23 cities and towns in the United States with an estimated ice cream gallonage of 12,000,000 annually and a distribution of many million quarts of milk daily in addition to large quantities of cheese, condensed milk, butter, and other dairy products.

In all its expansion National Dairy has gone along without the need of special financing since the various properties were generally acquired through an exchange of common stock. Where needed, cash was used from the surplus earnings.

This situation undoubtedly has been a factor in the steady rise of National Dairy stock from 33 in 1923 to 74, the present price. Of course, this rise in the face of a heavy market has been due largely to the fact that National Dairy is engaged in a basic industry whose volume of business continually increases in greater ratio than population growth, regardless of conditions of depression or of the seasons. Even more rapid growth can be expected as more of the population comes to realize the high food value of milk products under the influence of educational agencies the country over.

Comparison of National Dairy earnings is hardly possible because of the constantly shifting conditions that the various acquisitions have produced. The annual report for 1924, which included operations only of the Rieck-McJunkin Dairy Company, Hydrox Corporations and their subsidiaries, the two Castles Companies and the W. E. Hoffman Company, revealed earnings at \$6.10 on each share of National Dairy Products Corporation stock then outstanding. This was after making provisions for dividends for the full year on subsidiary stocks. The net worth of the Corporation as it stood on December 31, 1924 was \$15,407,608.86, with good-will, trade names, and other intangibles capitalized at \$1.00.

HARMONY CREAMERY COMPANY

The Harmony Creamery Company was organized in the City of Pittsburgh in the year 1893 by the deceased President, B. F. Otto, in conjunction with his four sons, three of whom survive and two continue to conduct the business. The Company was incorporated in 1908, taking the name of the home town wherein the father and sons were born and raised, with capital of \$50,000. The business continued to grow until the annual output increased from a few hundred dollars to the present, where the sales are running between three and four million dollars. The demand for Harmony Products became of such volume that it was necessary to open up new sources of supply, build additional plants, one for manufacturing butter, one for the manufacture of powdered milk located in Pennsylvania and Ohio, with seven other plants for the condensing and pasteurizing of milk.

The number of employees a few years ago including all departments was fifteen. Employees on the pay roll at present number 225. The present capital authorized is \$500,000, with \$220,000 preferred and \$150,000 common issued.

In order to supply the demand, from one horse and wagon the delivery increased to 100 horses and wagons and 25 trucks, all of which are in use to deliver milk, cream, butter, eggs, and cheese to all points in Allegheny County, independent of business outside of the County, which is taken care of by express and freight delivery.

The Harmony Creamery Company was two years-in the lead to adopt the present method of pasteurizing milk, and the first company in the world to transport milk in glass lined tank cars, trucks, and wagons, of which they were the originators and inventors. They adopted this method of transportation August 1, 1921, two years before any other company, and were the first dairy company to install the most highly perfected and enlarged powdered milk machine ever open to public inspection at one of its branch plants, and the first dairy company in this city to install the Meyer-Dumor automatic bottle washing machine, guaranteed by the manufacturers to thoroughly clean and sterilize 999 bottles in every 1000. This machine was installed over two years ago and by its efficient operation, washes, rinses, sterilizes, fills and caps 178 milk bottles per minute.

By all these improved methods authorities on dairy equipment claim that with its machinery and equipment, also glass lined facilities for transporting milk, the Pittsburgh Plant of the Harmony Creamery Company is one of the most completely equipped plants of any dairy in the world. There have been inquiries from many foreign countries to their office, asking questions about their method of doing business and especially transportation of products.

HERMES-GROVES DAIRY COMPANY

In the year 1864 an orphan boy 14 years of age came into Pittsburgh. This young man had no worldly possessions except a pleasing personality and a burning desire to become a monumental success in the land of his adoption. Young Peter Hermes soon found employment as a farm hand on one of the largest dairy farms in the vicinity of Pittsburgh in that early day. Four years later he came to the city and entered the employ of a small dairy. His conscientious efforts were so successful that he was soon engaged by the then larger Ohio & Pittsburgh Milk Co. as general manager. At that time, 1872, this company operated two milk routes. In 1875 he purchased the entire business of the Ohio & Pittsburgh Milk Co. and from that time on was actively at its head. In 1894 he was honored by his fellow citizens by election to the Council of Pittsburgh from the old 6th Ward. He served three full terms. During this time the company was managed by his son, John R. Hermes, who is now president.

Incorporated under the laws of Pennsylvania in November 1903 as the Ohio and Pittsburgh Milk Co., previously a partnership known as Peter Hermes & Son, and after purchasing the business of Joseph Groves Dairy Co., became known as the Hermes-Groves Dairy Co.

The concern has continually forged ahead and is today considered one of the country's foremost Milk and Ice Cream operations. John R. Hermes has instigated many reforms in this business that have been copied the nation over and become standard scientific practice in other of the greatest plants of the United States. It is to him that Pittsburgh acknowledges tribute for the stupendous growth of one of its greatest firms. Mr. Hermes is also President of the Big Four Oil & Gas Company, with very large holdings in producing oil territory.

Plant No. 1, located at Andover, Ohio, is a large property situated on the main line of the Pittsburgh and Lake Erie Railroad. It is equipped throughout with all the latest machinery used in separating and condensing milk, and for the manufacture of dry milk powder. It has double units in every department so that in case one unit is disabled the duplicate units can assume the work. This eliminates all possibility of the loss of milk (that is perishable) and it insures the constant supply for daily delivery to the city plant. The handling capacity of the Andover Branch is 100,000 pounds of milk daily.

Plant No. 2, East Orwell, Ohio, is also modern in every respect and particular. It is equipped with ice machines, electric light dynamos, coolers, cream separators, condensors and other machinery necessary in the handling of milk and cream.

Other Plants are located at Phalanx, Leon and New Lyme, Ohio.

At the main plant at Pittsburgh all local milk from nearby Pennsylvania points is prepared for sale. This milk coming from nearby farms and from our own Braeburn Farms by truck arrives earlier, which makes it possible to deliver to retail and wholesale customers twenty-four hours earlier than most large local dealers. Twenty-four hours fresher milk was introduced into Pittsburgh by this company. This plant has a capacity of 175,000 pounds of milk daily, and is the oldest concern of its kind in Pittsburgh, and the largest of the independent companies, having grown from an investment of one hundred dollars to one and one-half million dollars, including no good will or intangible assets, in 53 years.



Pittsburgh Plant of Hermes-Groves Dairy Company

Its equipment includes 175 head of horses, 80 wagons, 54 trucks, a battery of fifteen of the most modern glass lined pasteurizing vats, refrigerating and ice manufacturing machinery, with a refrigerating capacity of 250 tons daily, improved bottling machinery, filters, clarifying machinery, a battery of 20 ice cream manufacturing units, hardening rooms and coolers, creameries equipped with manufacturing machinery, where among many other operations the highest grade milk powder and other products are produced. It owns and operates its own wagon manufacturing plant, where all refrigerator wagons and truck bodies are made. It has its own paint shop, automobile repair department, and is without exception the most complete dairy and ice cream manufacturing plant in Western Pennsylvania.

In the wholesale milk department, Pittsburgh plant, the Ohio & Pittsburgh Milk Co. has enjoyed a steady growth and now operates ten wholesale milk and cream routes in addition to its larger ice cream business and retail milk business.

In 1903 the Ohio & Pittsburgh Milk Co. started the manufacture of ice cream with a production of 500 gallons per day. Year by year the ice cream plant has been enlarged and equipment added, so that today it has more than ten times its original capacity, operates 20 routes with daily delivery and supplies stores in every section of Greater Pittsburgh.

The growth of the retail milk department has been phenomenal. In 1915 one route was established. From this small start it quickly reached twelve routes. The growth was continual and in 1919 the Ohio & Pittsburgh Milk Co. bought the business of the Joseph Groves Co., which consisted of twelve routes and included beautiful Braeburn Farms, a tract of 500 acres, less than one hour's drive from Pittsburgh. These companies have been operated since under the trade name, Hermes-Groves Dairy Co.

Braeburn Farms is equipped with every scientific and up-to-date apparatus for the handling of milk. The houses, barns and plants are electrically lighted. It has its own gas supply, its own artesian wells, and five of the largest silos. It has a herd of 250 tested cows. It is one of Pennsylvania's model dairy farms and has a certified milk capacity of 2,000 quarts per day.

The acquisition of the Joseph Groves Co. was a master business stroke and is a good example of the increase in business that the new consolidation will bring about, as the Hermes-Groves Dairy Co. lowered operating costs and increased their retail milk business to four times that which was enjoyed by each before the consolidation. Forty-eight retail routes are now operated, serving 22,000 families by direct delivery and through the stores that sell its products.

Officers are John R. Hermes, President; H. A. Friday, Vice President; W. W. Lapham, Secretary and Treasurer; J. B. Dalton, General Manager.

Directors are the above, with John A. Friday.

THE D. L. CLARK COMPANY

The development of the D. L. Clark Company from an extremely humble beginning to its present position as one of the foremost candy manufacturers in the country is the result of many years of steady and brilliant effort on the part of its founder, D. L. Clark.

Thirty-eight years ago Mr. Clark commenced his successful career by opening a small jobbing and manufacturing business on Third Alley, Allegheny (now N. S., Pittsburgh), occupying the first floor of a two-story frame building. Associated with him as candymaker was W. H. Rechter, the present factory superintendent.

In May, 1891, the business was moved to Walnut Street, McKeesport, Pa. Although still operating on a small basis the business steadily grew, necessitating the remodeling of the property and finally the addition of a third floor. On February 13, 1902, the present Company was incorporated and D. L. Clark was elected President.

It was at this time that the real expansion began. A modern eight-story building was built on Fifth Avenue, McKeesport, and furnished with up-to-date machinery and equipment. In September, 1904, the company moved to these premises which were occupied until 1911. This period was a very eventful one in the history of the firm. It was then that they introduced their famous package of food confection, —Zig Zag—which became immensely popular to the extent of national distribution. The D. L. Clark Company was the originator of this type of confection in this district and its popularity has never waned but rather has increased from year to year.

In 1911 the property and equipment of a bakery and confectionery factory on the North Side, Pittsburgh, marking part of the present site, was purchased, and the company moved back to the district where their modest start was made twenty-four years previous.

The above year also marked the introduction of another famous Clark product to the public. After years of experimenting Teaberry Gum was pronounced ready to uphold the Clark reputation for quality confections and was accordingly placed on the market. The sale of this product reached such proportions that, owing in great measure to the extreme variation in marketing procedure between Chewing Gum and Candy, the Teaberry Gum department was transferred in April, 1924, to The Clark Bros. Chewing Gum Company. This company was organized for the purpose of marketing and manufacturing Teaberry Gum and immediately commenced operations in a splendidly equipped factory, modern in every respect, and located adjacent to The D. L. Clark Company factory. D. L. Clark is also President of the new company.

At regular intervals other famous confections now appeared to take their places in public favor along with Zig Zag and Teaberry Gum. Undoubtedly the most popular of these has been the Clark Bar,—the biggest nickel's worth of quality candy in the country today. The quality of this piece of candy is such that the firm did not hesitate to place its stamp of approval by giving the bar its name,—and the public by buying it in such quantities that a sale of two hundred million bars is predicted for 1925. Red Cap Suckers, Butterettes, Boomers,—are other pieces of quality confection that have helped to make The D. L. Clark Company known in every State in the Union.

The increasing demand for Clark products could have but one result—expansion. Adjoining properties were purchased and additions made to the factory until to-day the firm boasts one of the finest and most up-to-date plants in the country. Cleanliness and efficiency mark every department of both the Gum and the Candy plant. A staff of department heads that averages practically twenty years of service with The D. L. Clark Company maintains the high quality that brought the firm to the front.

It is a far cry from that little candy business back in the 80's operating in an old frame building, doing all work by hand, to the present ultra modern, sunlit, air conditioned factories complete with all modern machinery and equipment and employing one thousand people. Locker rooms, with matrons in attendance,—spotless uniforms, laundered daily, —cafeteria service—not dreamed of in the old days, are realities to-day. Huge electric signs, the talk of the country radio broadcasting from the world's most powerful station, the entertainment of thousands—are other signs of the progressive spirit of this active organization.

The Pittsburgh district can well be proud of the initiative and constructive effort of a man who has not only provided an industry for the employment of Pittsburgh skill but has successfully advertised the Steel City in practically every city and town in the country.

The D. L. Clark Company's officers are, D. L. Clark, President; R. E. Stone, Vice President; H. S. Clark, Treasurer; E. O. Long, Secretary. Board of Directors, D. L. Clark, R. E. Stone, H. S. Clark, C. C. Lance, J. B. Snitger.

Clark Bros. Chewing Gum Company officers are: D. L. Clark, President; E. O. Long, Vice-President; H. S. Clark, Treasurer; R. H. Hickman, Secretary. Board of Directors, D. L. Clark, E. O. Long, H. S. Clark, R. H. Hickman, D. L. Clark, Jr.

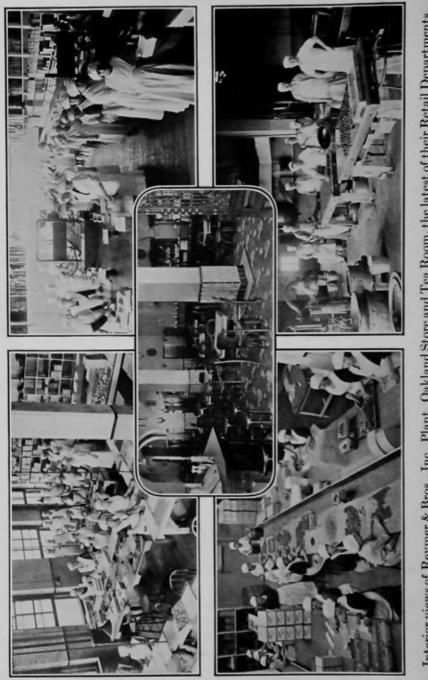
REYMER & BROTHERS, INC.

"Remember, Everybody Likes Candy." This is the slogan of the National Confectioners' Association. And it is also a truism. Perhaps, however, a better truism is: "Remember, Everybody Likes More Candy." For actual facts, borne out by statistics, are that the consumption of sugar, in the United States, which now leads the world, is constantly on the increase, and a large part of this increase is used in the making of confectionery.

As it is the intent of this article to relate what we believe are interesting facts concerning confectionery as a food product, it will be noted we but briefly comment on the numerous commodities that enter into its manufacture. To do justice would require another article; perhaps several. Neither is it the intention to debate or explain the probable reason for the marvelous increase in the apparent liking for sweets, interesting as this might be; sufficient to say that 100 years ago the amount of sugar used per capita in the United States was 10 lbs. Last year it was over 100 lbs.! And so to what effect the 18th Amendment has had, some say this and some say that, but deponent sayeth not.

In 1849, which appears the first year a census was taken of the candy industry, we find the number of manufacturing confectioners in the United States is given as 383—with a capital of \$1,036,000 and annual sales of \$3,041,000. In 1879 this had increased to 1450 manufactories—with a capital of \$8,487,000 and sales of \$25,637,000. In 1923 there were over 3500 manufacturing confectioners, this not including many small factories making goods valued at less than \$5000 yearly. There are over 70,000 retail confectioneries in the United States and last year's sales are variously estimated from onehalf billion to one billion dollars. And strictly chocolate and cocoa are not included.

It is doubtful if there is any modern industry that has experienced more radical changes during the last 100 years than that of candy making. Prior to 1846 the manufacture of "boiled sweets," as candy then was called, was largely an English specialty, and it is doubtless a fact that the great International Exhibition in London in 1851, when the unique



Interior views of Reymer & Bros., Inc., Plant, Oakland Store and Tea Room, the latest of their Retail Departments.

display of candies attracted the attention of America, resulted in giving the industry in the United States an impetus which soon caused us to lead not only England but all other countries. And we have continued this supremacy. The history of the candy industry has been a continual record of development. From time to time and very rapidly, especially during recent years, new improvements have been made and more perfect machinery invented, making possible the many various kinds of candy. It will be readily seen that candy making has created a large number of allied industries and increased the business of many others. A list would include almost every business, and unlike many others, its activities extend to every section.

Chemistry plays a very important role in the manufacture of confections. All raw materials such as sugar, chocolate, cream, butter, nuts, and fruits must undergo a rigid inspection before being passed upon as suitable for use in the manufacture of candies.

The colors used to produce the beautiful tints, as well as the flavors, are products blended by an experienced chemist. Just as the artist who mixes his colors to produce the wonderful color effects on his canvas, so the chemist blends primary shades to produce the tints that appeal to the eye of the consumer of confections.

A resume of the sources of supply of flavoring oils reads like a trip around the world. Peppermint, wintergreen, orange, sassafras, grape, raspberry, strawberry, and peach from the United States; lemon, lime, rose, violet and orange flower water from Italy and France; cinnamon and cloves from Ceylon; pineapple from Hawaii, Singapore and Bahama; vanilla from Mexico, are all gathered to delight the lover of confections. Nut Meats in car lots of 30,000 pounds (think of quantity of unshelled nuts required to make a car load of the meats!) are brought from South America, the home of the brazil nut, the pistachio from Persia, the pignolia from Italy, the cashew from India, the almond from Spain, France and Italy, the mayette and chaberte walnuts from France and the more and more popular pecan from Texas and Georgia and Louisiana, and, lest we forget-the humble peanut also from the Southland. As to fruits, in addition to pineapple,

immense quantities of cherries from the United States and France, Oregon has now quite an industry in preserved strawberries. While France furnished the original glaced fruits, California is rapidly forging ahead.

The motto of the National Confectioners' Association, founded in 1884, is: "To advance the standard of confectionery in all practicable ways and *absolutely to prevent adulteration.*" A large amount of the remedial legislation has been passed by the various States and by the United States, but the high standard set by the leading confectioners has doubtless eliminated the manufacture and sale of candy containing harmful ingredients and poisonous coloring matter. It is possibly due to this fact that the confidence of the consumer in the purity of the products of well known manufacturers has led to the large increase in the eating of candy.

The principal ingredients of candy are sugar, chocolate, cream, butter, cocoanut, nut meats and glaced fruits. Sugar is a highly concentrated food and easily digested. Experiments show that 98.9% of its total energy is available to the body. It has a food value of 1810 calories. With the exception of prepared cocoanut, chocolate is highest in food value, being 2860 calories per lb. Nut meats will average 1500 calories. The food value of milk is well known. The calories in various kinds of confectionery are thus calculated :-- chocolates with nut centers 2498; cream chocolates 2092; sugar coated almonds 2410; caramels 2500; marshmallows 1737; gum arabic drops 1685; fudge 1687. These figures compare more than favorably with:-eggs 695; beefsteak 1090; rice 1620; white bread 1180. The food value of candy was signally recognized during the World War when confectioners were placed on the essential list of industries by the United States and candy was one of the commissary supplies of the Allied Armies.

In final reference, however, to purity it should be noted that quality is also very important and it is well to recognize the fact that in candy as in other things it most often pays to "pay a little more" and get not only "a little better" but a great deal better in quality as well as purity.

Very few persons outside of any particular organization are interested in the history and development of that particular organization, so acting on this principle, our Story of the House of Reymers' will be brief. May we just state as a fact that the foregoing resume of the Confectionery Industry is in truth the story of the growth, the methods, the aims and purposes of the House of **Reymers**'

In 1846 Philip Reymer, being ambitious to enter business, decided that Pittsburgh, then a city of about 30,000, needed a first-class candy store. He associated with him R. J. Anderson and so the firm of Reymer & Anderson opened the finest confectionery in Pittsburgh. It was located on Wood Street, opposite the St. Charles Hotel, which at that time was a leading hostelry. After a short time R. J. Anderson withdrew and Jacob S. Reymer and Harmar D. Reymer entered the firm and the name was changed to Reymer & Brothers. Thirty years pass, the business grows and on December 2, 1876, the magnificent store so well known to thousands of Pittsburghers, located at 124-126 and 128 Wood St., opposite the First National Bank at Fifth Avenue, was opened. There the name of Reymers' was inseparably associated with the *best* in Candy, as it has been ever since.

Soon following this regime J. H. Smitley, Benjamin Dangerfield, and William Price, faithful employees, were admitted to partnership. This partnership continued until 1901, when a company was chartered under the name of Reymer & Brothers, Incorporated. A better distribution of Reymers' Candy commenced at this time until 5,000 agencies are now established in the Pittsburgh District. The Modern Factory and Offices of the Company are located at Forbes and Pride Sts., Pittsburgh.

The original Partners have passed from earth's activities but the business so well founded on integrity and fair dealing continues. The present officers are B. Dangerfield, Jr., president; George T. Price, vice president; Harry Dangerfield, secretary & treasurer. These with John H. Dadds and M. J. Brown constitute the board of directors.

At the time of Incorporation in 1901, the present store at 239 Fifth Avenue supplanted the one on Wood Street. From time to time other stores have been opened at strategic points. These are located as follows: 6018 Penn Avenue, East End; Oliver Building, corner Sixth & Smithfield; Union Trust Building, Fifth Avenue and William Penn Way; Jenkins Arcade, Penn Avenue; and The Iroquois Building, Forbes & Atwood Streets. Tea Rooms—and there are none finer—are operated in connection with the Oliver, Jenkins and Oakland Stores.

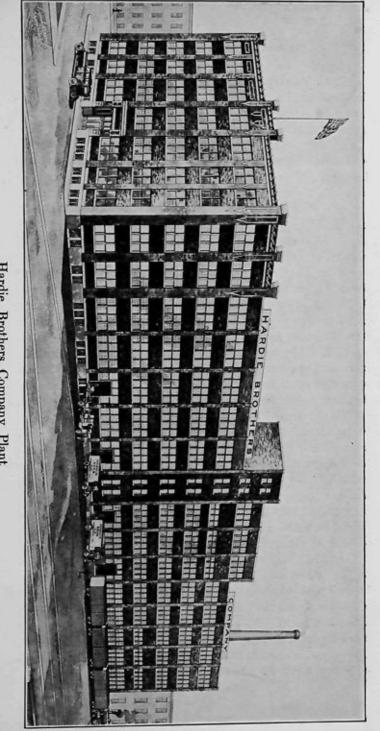
When you think of Candy, think of Regimers and remember also that Candy is a food-a necessity, not a luxury.

HARDIE BROTHERS COMPANY

Hardie Brothers Company, manufacturers of candy, was organized in 1901, having succeeded their father, James Hardie, who had been in the biscuit and candy business in Pittsburgh since 1870. The father having sold out the biscuit portion of his business to the National Biscuit Company, the sons took over the candy business and gradually expanded until today they utilize over five acres of floor space devoted exclusively to the making of candy. The following directors are all actively engaged in the management of the business: Edward Hardie, Walter L. Hardie, James Hardie, Jr., John L. Hardie, Alexander Hardie, and S. D. McGlumphy.

The latest improved machinery is used in turning out their product, and the average daily production is 150,000 lbs. of finished goods, employing over five hundred people. They make an extensive line of penny goods, much sought after by the children, 5c and 10c bar items, package and bulk goods which is sold exclusively to the jobbing trade.

The very best materials are used in the making of candy and it may be truly termed a "World Product" where the greater portion of ingredients used are secured from many foreign markets such as Cocoa and Vanilla Beans, which are used in making chocolate coating, come from Africa, Brazil, Trinidad, Venezuela and Mexico, as well as nuts and fruits, flavoring oils, etc., coming from such countries as France, Spain, Italy, Turkey and China and many other countries, as well as cane sugar from Cuba and Porto Rico.



Hardie Brothers Company Plant

WEAVER, COSTELLO & CO., INC.

E. C. Weaver, the President of Weaver, Costello & Co., Inc., started in the candy business as a salesman for L. T. Yoder, June 15, 1875. This firm handled the then limited line of candy, along with cakes, crackers, and fireworks.

In May 1882, Charles W. Costello joined L. T. Yoder, who was then located at 315 Smithfield Street, as a salesman, and in March of 1884, James C. Patch entered the concern as shipper. Candy salesmen in those days drove heavy wagon teams over the mud roads, and delivered the major part of the orders from the stock they carried with them, and both E. C. Weaver and C. W. Costello have envious records of salesmanship which they made in those early days.

Early in 1889, a partnership, capitalized at \$30,000 was formed by L. T. Yoder, E. C. Weaver, C. W. Costello and J. C. Patch and a small line of hard candies, stick candy, peanut brittle, and kisses was made in their location at 332-334 Third Avenue.

L. T. Yoder retired from the business in 1891 and in 1892 increased business made necessary the construction of a six story fire proof factory which was built at 230-232 Second Avenue, which was then a 20 foot street.

This increased floor space permitted a much larger line to be manufactured and in 1893, feeling the necessity of having their own private line of chocolates, they conceived the Edgeworth Chocolate line and had it manufactured for them by a large well known Eastern factory. Also in 1993, the first pound package of candy was placed on the market by a well known Boston manufacturer and they secured the Distributing Agency on this line of package goods for Ohio, West Virginia, and Western Pennsylvania.

In 1898, Pan American Mixture was originated and placed on the market and has always enjoyed a steady sale.

In July 1902, the business was incorporated with a capital of \$250,000 with the following officers: C. W. Costello, President; J. C. Patch, Vice-President; E. C. Weaver, Secretary and Treasurer, and the firm began to manufacture Edgeworth Chocolates, a line of pail chocolates, penny chocolates, caramels, and a general line of confectionery.

Sales organization and interior views of the plant of 談

Weaver, Costello & Co., Inc., Pittsburgh, Pa.

Increased business again called for more floor space, so in 1904 an additional six story fire proof building was built next door at 234-236 Second Avenue, and upon its completion the manufacture of package candies was instituted with the production of "Fort Pitt" Chocolates, "Superfine" and "Swiss Style" Milk Chocolates, "Auto" and "Parfait" Packages.

In the early spring of 1916, C. W. Costello retired from the business. With the European War in progress, it was necessary to enlarge the package goods line. The "Private Stock" Chocolate package was first marketed in July, 1916, and has since been the leader in the line. A great number of attractive packages have been successfully placed on the market and each year the company has had a pronounced increase in its house brands, until to-day Edgeworth Chocolates occupy an outstanding position in popularity with candy buyers throughout the territory covered.

Among the many popular confections manufactured by Weaver, Costello & Co., Inc., are Edgeworth Chocolates. Peanut Butter Puffs, Opera Mints, a complete line of bar goods, pail goods, and penny candies. Particular stress has always been laid on the fact that candy is made to eat and, therefore, must be pure and wholesome, made of the purest ingredients, under the most modern and sanitary conditions. The company has always supported all pure food laws, especially the National Food & Drug Act of June 30, 1906, and was sponsor of the Pennsylvania State Pure Food Law of 1907-1909. At the present time they have many customers on their books who have been buying steadily for forty years. They travel 14 salesmen, a radius of 150 miles of Pittsburgh in Ohio, West Virginia, and Pennsylvania, and largely through the efforts of this Company many specialties made by other manufacturers have been popularized in this territory.

In March 1922, J. C. Patch sold his holdings in the company and retired.

The officers of the Company at present are: E. C. Weaver, President; D. P. M. Loughry, Vice-President; W. D. Sleppy, Secretary, and Wm. H. Wilkewitz, Treasurer. The Directors of the Company are: E. C. Weaver, D. P. M. Loughry, W. D. Sleppy, M. C. Cochran, W. H. Kast, W. H. Wilkewitz and L. J. Weaver.

THE FIRST NATIONAL BANK AT PITTSBURGH

IN DICIMI

This popular bank carries the accounts of many of Pittsburgh's business men interested in food products, as well as those engaged in other departments of mercantile and manufacturing activity. The First National Bank's facilities cover every branch of banking activity, from the savings of modest depositors to the vast transactions of large corporations. Its activities are not restricted to Pittsburgh nor to the United States. It has established connections all over the globe, and no point is too distant for it to handle financial obligations for its customers. Exports are facilitated by its Foreign Exchange Department, which will be happy to give information on any phase of this subject. All documents pertaining to foreign commercial transactions are handled, as all branches of international banking are covered. Foreign languages are spoken here and documents prepared in tongues of other countries.

Drafts are issued and payments made in all parts of the World. Trade and Bankers' Acceptances form a regular part of our business.

Investment opportunities are offered by the bank's Bond and Security Department, which is presided over by experts, and which has the benefit of our trained officers and of our large and varied Board of Directors of successful business men.

Katten

Capital	\$ 5,000,000.00
Surplus	5,000,000.00
Undivided Profits and Reserves.	2,858,520.13
Deposits.	68,547,995.94
Resources.	87,067,115.84

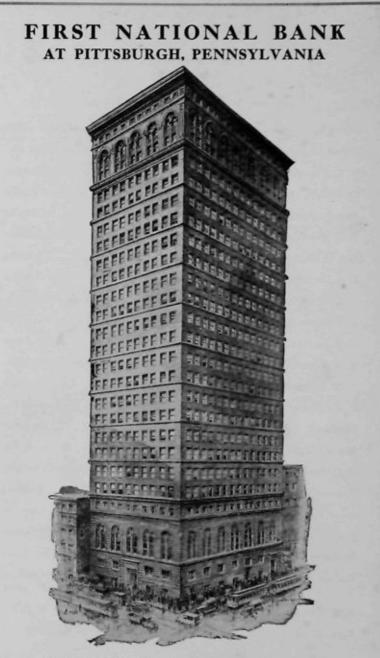
OFFICERS

LAWRENCE E. SANDS.	Prendent
FRANK F. BROOKS.	Vice-President
Clyde C. Taylor	Vice-President and Cashier
J. Howard Arthur.	Vice-President
WILLIAM H. FAWCETT.	Assistant Cashier
TROMAS B. HUDSON.	Assistant Cashier
GRIER C. ORR.	Assistant Cashier
JOHN DEM. WERTS	Assistant Cashier
Oscar Wilson	Assistant Cashier
Wm. J. Frank	Manager Foreign Department
P. W. DAHINDEN	nt Manager Foreign Department
I Part Forn Assista	nt Manager Foreign Department

DIRECTORS

ROBERT WARDROP, Chairman of the Board

FRANK F. BROOKS
HENRY CHALFANT President, Spang, Chalfant & Co., Inc.
W. L. CLAUSE Chairman, Pittsburgh Plate Glass Co.
GEORGE W. CRAWFORD
JOHN A. DONALDSON
W. D. GEORGE
WM. H. HEARNE Capitalist
J. H. HILLMAN, JR Chairman of Board, Hillman Coal & Coke Co.
A. L. HUMPHREY President, Westinghouse Airbrake Co.
B. F. JONES, SRD Director, Jones & Laughlin Steel Corporation
D. T. LAYMAN, JR
F. H. LLOYD President, Pittsburgh Dry Goods Co.
A. M. MORELANDCapitalist
P. W. MORGAN President, First National Bank, Wilmerding, Pa.
GEORGE E. PAINTER
WM. A. RENSHAW John A. Renshaw & Co., Pittsburgh, Pa.
A. C. ROBINSON President, Peoples Savings & Trust Company
LAWRENCE E. SANDS President
IBAAC M. SCOTTPresident, Wheeling Steel Corporation
CLYDE C. TAYLOR
BENJAMIN THAWCapitalist and Trustee Thaw Estate
ROBERT WARDROPDirector of Federal Reserve Bank of Cleveland and Vice President, Peoples Savings & Trust Company
E. T. WHITER
JOHN M WUSON President, National Supply Co., Pittsburgh, Pa.



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Thirteen

Diversified Products



First National Bank at Pittsburgh April, 1927 This booklet, prepared and published by the First National Bank at Pittsburgh, Pennsylvania, is one of a series issued, from time to time, since August, 1919, portraying the various industries of the Pittsburgh district, with the intention of emphasizing the importance of Pittsburgh as a commercial and financial metroplis. A large number of its many industries have been described in the booklets, of which thirteen, in all, have been published, to date. The following is a list of the subjects discussed, with the date of issue:

Vol. 1, No.	1—Introductory Booklet	. August, 1919
Vol. 1, No.	2—Iron and Steel	.September, 1919
Vol. 1, No.	3—Iron and Steel (Part 2)	January, 1920
Vol. 1, No.	4-Coal and Coke.	.June, 1920
Vol. 1, No.	5—Glass	.December, 1920
Vol. 1, No.	6-Electrical Appliances	. March, 1921
Vol. 1, No.	7—Rad'um	. August, 1921
Vol. 1, No.	8—Cement and Concrete	.December, 1921
Vol. 1, No.	9-Clay Products	. December, 1922
Vol. 1, No.	10—Petroleum and Natural Gas	. December, 1923
Vol. 1, No.	11—Petroleum and Natural Gas (Part 2)	. December, 1924
Vol. 1, No.	12—Food Products	.December, 1925
Vol. 1, No.	13-Diversified Products	. April, 1927

The Story of Pittsburgh Diversified Products

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HE previous issues of this series of booklets, telling the Story of Pittsburgh, as it is related in the great business which this city is doing, have dealt with the chief industries of the community, which are most widely known. The object of the First National Bank at Pittsburgh, however, has not been merely to speak of the basic industrial enterprises, but also to inform the world of many other lines in which Pittsburgh is prominent.

Naturally enough, in an industrial metropolis known all over the world as "the Iron City," the metallurgical industries are by far the most important. Without them other industries could not exist, and therefore previous issues of these booklets have handled Iron and Steel in a thorough manner, and in a way which has been a great satisfaction to Pittsburghers at home and Pittsburghers abroad, and to the customers of Pittsburghers in all parts of the world.

Then there was a time when Pittsburgh was known as "the Natural Gas City." At that period natural gas was produced in vast quantities close to the city limits, and scarcely any other fuel was used in the community, whether for homes or for great manufacturing plants. The tremendous quantities of gas consumed cut deeply into the supply, and it became necessary to go further and further away, drilling wells and bringing the gas from many miles distant. Pittsburgh is still the greatest user of natural gas of all the cities of the world, especially in the winter, when dwellings are heated, as well as many factories deriving fuel for manufacturing purposes. These factories can get much more gas in the summer time, when residences are using but little, and the additions then to their fuel supply, from the natural gas fields, maintain the steady use of Nature's fuel. Associated with natural gas is petroleum, and Pittsburgh has always been one of the most important centers for the development of oil fields. Our booklets have given in detail the rise and progress of the oil and gas development, the particulars of which have greatly surprised people who thought themselves thoroughly familiar with the great oil and gas industry.

Without coal it would have been impossible for the iron and steel and oil and gas industries to start and grow, for this form of fuel is of vital importance, and it is no wonder that the First National Bank's booklet on Coal had a wide reading.

Many other Pittsburgh industries have been discussed, one of the businesses perhaps less known but of great importance, being Radium, which formed the subject of a booklet. Then came Food Products; the extent of Pittsburgh's interest in the production, preservation and distribution of food making a booklet of decided importance.

In the present issue a number of "Diversified Products" of Pittsburgh and its environs are discussed, with particulars of the origin of the businesses, the location and cost of the plants, the officers of the concerns, and the number of men employed in the several businesses.

ALUMINUM COMPANY OF AMERICA

There is a wonderful romance about aluminum, the silver-white metal of extreme lightness, familiar to all, through its use in the manufacture of domestic articles, as well as in articles which are not often seen about the house. Not every one, however, knows that aluminum is the most common element in nature, with the exception of oxygen and silicon. About 8% of the earth's crust is aluminum, and it is twice as plentiful in nature as iron, for it occurs in many minerals, clays and earths, but no process has yet been discovered of extracting the metal from common clay, although chemists have been working on the problem for years.

Aluminum can be extracted only from a single widelyscattered and generally little known mineral called bauxite, and the expense of extracting it from that mineral is very heavy. The presence of aluminum in the earth's crust was known to scientists for many years before it was actually isolated and obtained in metallic form. It was a young American, Charles Martin Hall, who made the momentous discovery, in 1886, that has given aluminum to the world. He was only 22 years of age at the time, and a student of Oberlin College. Mr. Hall applied for a patent covering his discovery, in the year named, but it was not issued until 1889. The patent expired in 1904.

In 1888 Mr. Hall associated himself with some other young men in Pittsburgh, and formed the Aluminum Company of America. These men are the pioneers of the aluminum industry, and, except as death has thinned their ranks, they and their company have developed aluminum, in the short space of 38 years, from a laboratory curiosity into one of the most important metals of everyday use. It was under the guidance of these men that aluminum in the United States was reduced in price from \$8 a pound to 25 cents a pound, and its uses extended to such a degree that it is now a necessity of civilized life.

In the year 1888 there was no consumption of aluminum at all; today the world is consuming the metal at the rate of 250,000,000 pounds a year. This indispensable metal is chiefly the product of labor. A ton of the material has a value in excess of \$500. The raw materials, unimproved by labor, required to produce this ton of aluminum, are not worth over \$25. Least valuable of all is the bauxite, which must be mined, treated, transported and put through an elaborate chemical process. Coal must be mined, transported, and its energy turned into steam; limestone must be quarried, transported and treated; common salt must be produced and put through an extensive chemical process to produce soda ash; cryolite is produced in the Arctic Circle and brought from that distant field; fluorspar is mined at considerable hazard and expense, and is highly treated; the carbons used are the product of elaborate manufacture, using as raw products materials which have progressed through other stages of manufacture in the coal tar and oil industry, and the hydro-electricity used is practically all labor, since it represents the harnessing of water.

Coal, limestone and water power are not found in proximity to the bauxite. In America the bauxite is carried 400 miles to the plant which refines it. The resulting alumina is transported from 600 to 1200 miles to the point where hydro-electricity is available.

Beginning in 1888, with an investment of \$20,000, in a plant 20 feet by 100 feet in size, with a daily capacity of a few pounds of aluminum and employing five persons, the Aluminum Company of America has grown into a corporation with an investment of \$200,000,000 in more than 20 plants, having a capacity of 170,000,000 pounds a year, and employing 20,000 people. Its payrolls aggregate \$24,000,000 a year, and its taxes, municipal, State and Federal, are \$3,200,000 a year. The company was recapitalized and reincorporated in July, 1925. For the ten years ending December 31, 1926, the net income of the company after taxes and depreciation available for interest has averaged over \$12,000,000 per annum and for the last three years such net income has been, respectively: 1924—\$13,425,266.69; 1925—\$22,891,505.40; and 1926—\$19,747,068.85.

The company has acquired a large water power on the Sanguenay River, in the Province of Quebec, and has constructed there a large almuinum producing plant, which is now in operation. The company and its subsidiaries own and operate plants at East St. Louis, Ill., Niagara Falls, N. Y.; Massena, N. Y.; Edgewater, N. J.; New Kensington, near Pittsburgh; Shawinigan Falls, Quebec; Toronto, Ontario; Badin, N. C., and Alcoa, Tenn. Ample deposits of bauxite are owned in Arkansas, British Guiana, Dutch Guiana, and other foreign countries.

The offices of the Aluminum Company of America are in the Henry W. Oliver building, Pittsburgh. Arthur V. Davis is president; the vice presidents are Roy A. Hunt, R. E. Withers, E. S. Fickes, Edward K. Davis, C. H. Moritz, W. P. King and G. R. Gibbons. G. R. Gibbons is secretary and R. E. Withers is treasurer.

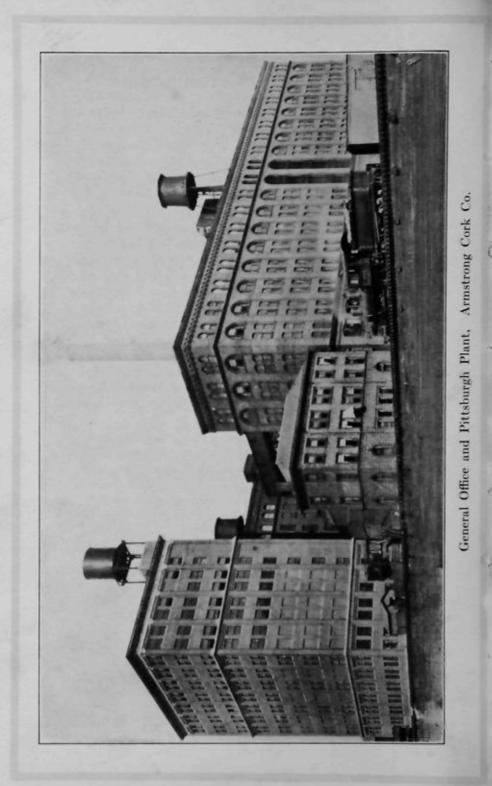
ARMSTRONG CORK COMPANY

The Armstrong Cork Company had its beginning in a small room at the corner of Smithfield Street and Diamond Alley, Pittsburgh, in the year 1860, when Thomas M. Armstrong and John D. Glass purchased the hand-cut cork business of Harry Overington, a former workman of William King of New York City, the first person to manufacture corks in the United States.

Mr. Glass died in 1864 and shortly afterward his interest in the business was purchased by William L. Standish and Robert D. Armstrong, a brother of Thomas M. Armstrong. The name of the firm was then changed to Armstrong, Brother & Company, and the business was moved to a location on Third Avenue in the rear of the old St. Charles Hotel. Somewhat later the factory was moved to First Avenue where it remained until 1878, when the continued expansion of the business made necessary the purchase of land for a much larger plant in the area bounded by Twenty-third, Twenty-fourth and Railroad Streets and the Allegheny River, the site of the present Pittsburgh factory, warehouse and office buildings.

The erection of the new factory was but one step in the expansion of the Company which has been going on steadily ever since. In 1893 the Lancaster Cork Works at Lancaster, Pa., was purchased to supply more efficiently the trade in in the east; in 1900 a new plant was erected at Beaver Falls, Pa., for the manufacture of cerkboard insulation from the waste developed in the making of bottle stoppers and other cork products, and in 1904 a similar factory at Camden, N.J., was purchased from the Nonpareil Cork Manufacturing Company.

For many years the Company had secured corkwood, the outer bark of the cork oak tree, from various sources in the cerk producing countries. But in 1906 the business had grown to the pcint where it was necessary to build a factory at Seville, Spain, for the preparation of its raw material. This was the forerunner of a large foreign organization which now numbers some sixteen plants in southern France and northern Africa.



In 1907 the Company entered an entirely new field, the manufacture of linoleum, and built a plant at Lancaster, Pa., which has been added to repeatedly until now it is the largest factory of its kind in the country.

Since then three additional plants, at Oakdale, Pa., New Brunswick, N. J., and Algeciras, Spain, and many new products have been added until now the Company sells to almost every industry-cork stoppers of all descriptions, cork gaskets and floats for automobiles and other machines. seamless cork cots for spinning rolls in textile mills, cork compositions for innersoling and box toes in shoes, linoleum of all kinds, cork carpets, felt base floor coverings, flooring tile of pure cork and cork composition, corkboard for the insulation of cold storage rooms, refrigerators, and the walls and roofs of residences and other buildings, cork covering for refrigerated pipe lines, heat insulation for steam pipes, boilers, furnaces, ovens, kilns, stills, etc., cork brick for floors in dairy barns and hog houses, cork machinery isolation for deadening noise and vibration of moving machinery, and a host of other articles made of natural or composition cork, such as pen holder tips, insoles, yacht fenders, handles, washers, discs, etc.

Because of the varied character and use of these products, their sale is handled through three main sales divisions— Cork Division, Linoleum Division and Insulation Division, with offices in all of the principal cities.

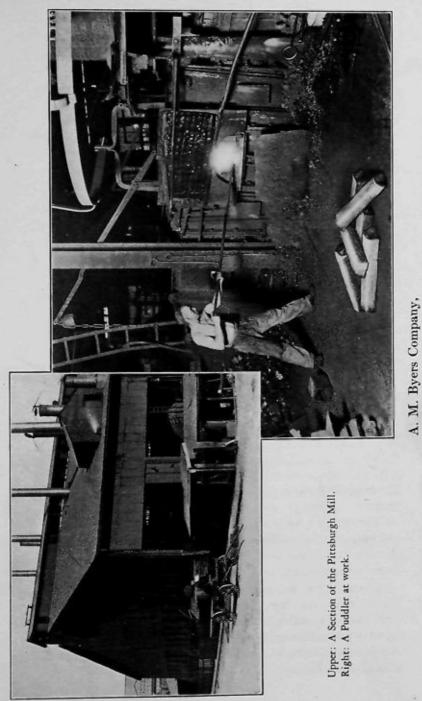
At the present time, the Armstrong Cork Company owns, directly or through subsidiaries, seven factories in the United States, in addition to sixteen plants in the cork producing countries for the collection and preparation of raw material. Two of these foreign plants produce finished materials as well. The Company is a Pennsylvania corporation and employs approximately 5,000 persons.

A. M. BYERS COMPANY

Established in 1864 as Graff, Byers & Co., incorporated in 1893 as A. M. Byers & Co., and in 1903 under its present name, the A. M. Byers Company makes and sells approximately half the genuine wrought iron pipe today manufactured in the United States. In the early years bars, sheets, etc., as well as pipe, were made. Now the entire output of the company's puddle mills is required in the manufacture of Byers Pipe, couplings and nipples. Surplus of pig iron, made primarily for supplying the company's puddle furnaces, is sold to the foundries within shipping distance of the blast furnace at Girard, Ohio.

Typical of the unvarying policy which the Byers Company has pursued in maintaining the highest standards of quality, and in building into its pipe the longest possible life, it is noteworthy that its rolled products have always been made of unadulterated wrought iron with no admixture of scrap of any nature whatsoever. In this connection it is interesting to examine the picture of the old puddle mill, shown on the opposite page. It stands on the site of the original Byers plant, and the sheets which form the siding and roofing were made in Byers own works in 1881. Without paint, without galvanizing, and practically without repairs, these wrought iron sheets have served for 45 years in the smoke and sulphur laden atmosphere of the industrial plants and railroad yards of Pittsburgh's South Side. Their condition today makes it appear that these old sheets will last for another generation. Many records of old Byers Pipe in buildings that have been dismantled also show uninterrupted service for forty, fifty and more years-all bespeaking the exceptional life of old-fashioned wrought iron.

While higher in first cost than modern steel pipe, the lasting qualities of Byers Genuine Wrought Iron Pipe make it particularly adapted for permanent installation where ultimate cost per year of service is the dominant consideration. It finds its chief uses in the plumbing, heating and other pipe systems of large buildings; in railway service, particularly for locomotive piping and for airbrake lines; in the oil and gas fields, both in the wells and long distance pipe lines; for water and gas service lines, and other underground installations; in industrial plants for handling process liquids, hot water, steam returns and in other similar services where corrosion is a factor to be reckoned with.



Manufacturers of Genuine Wrought Iron Pipe and Oil Country Tubular Products.

The higher cost of Byers Pipe originates in the oldfashioned puddling operation—slow and laborious, but the only known method of producing the highest quality of wrought iron. However, to the eye of the layman, genuine wrought iron looks much like the cheaper metal, steel. It has therefore been necessary for the Byers Company to devise distinguishing marks for their product, and for more than ten years the name Byers in raised letters, followed by two figures indicating year of manufacture, have been rolled into the metal and repeated each three or four feet on every length of Byers pipe.

Since early in 1925, an additional marking has been provided in the form of a colored stripe which winds around each piece of pipe from end to end. It is painted on by machinery in the course of the several inspections to which the pipe is subjected prior to shipment. This stripe is visible from any angle, at distances of 50 feet or more, and makes Byers Pipe, either black or galvanized, the most easily identified of any pipe made. Byers nipples are also marked with the Byers name and the thickness; that is, whether standard or extra heavy weight.

Among the notable modern structures in which many miles of Byers Pipe are in service, are the Woolworth Building and the Pennsylvania Hotel, New York; Stevens Hotel, Chicago; William Penn Hotel, Pittsburgh; Southwestern Bell Telephone Building, St. Louis; Standard Oil Building, Baltimore; General Motors Building, Detroit; Dexter-Horton National Bank, Seattle; Seville-Biltmore Hotel, Havana; Marunouchi Building, Tokio, and many others equally well known.

The Byers Company operates a blast furnace, puddle and rolling mills at Girard, Ohio, and puddle and pipe mills at Sixth and Bingham Streets, South Side, Pittsburgh. These two plants employ from 2,500 to 3,000 men.

The principal business office of the company is at 235 Water Street, Pittsburgh, with the general sales office in the Union Bank Building, Pittsburgh. Branch sales offices are maintained in Boston, New York, Rochester, Philadelphia, Pittsburgh, Cleveland, Chicago, St. Louis, Jacksonville, Birmingham, Houston, Tulsa and Los Angeles. The capital stock of the company consists of \$4,500,000 seven per cent cumulative preferred stock, and 150,000 shares common stock without par value.

The present officers of the company are: E. M. Byers, chairman of the board of directors; A. H. Beale, president; J. Frederick Byers, L. M. Johnston, E. L. Ives, vice-presidents; Frank G. Love, secretary and treasurer; H. H. Bryant, assistant secretary and assistant treasurer; C. G. Jensen, comptroller; W. S. Graham, auditor.

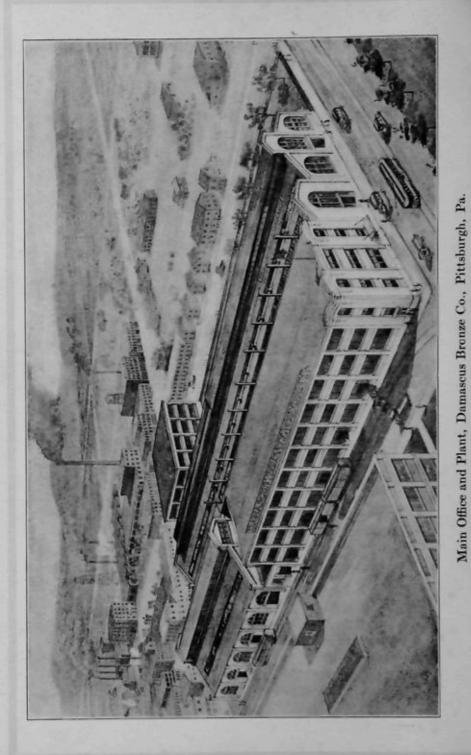
DAMASCUS BRONZE COMPANY

Along with the growth of the steel industry and railroads in Pittsburgh, there came a rebirth of the ancient industry of bronze founding. Bronze had been used throughout the ages for coins and statuary, and it was this time-tried alloy that has made possible the development of heavy rolling in our mills.

Bronze and its close relative, babbitt, are carrying the locomotives and cars of our railroads in unprecedented volume. The rolls in many mills operate at a dull red heat and with scanty lubrication. The bearings are therefore called on not only to withstand high temperatures, but to support the rolls at the tremendous pressures encountered. Different conditions require different formulae and this fact has necessitated the use of all the helps of modern science in the present day manufacture of bearings.

It is by the recognition of this fact that Damascus Bronze Company has grown from the small beginning in 1879, with a capital of less than \$5,000, to a company owning assets of well over a million dollars. M. J. Graney may be called the father of the present company, when he started his foundry on Church Street in old Allegheny. Later was associated with him William T. Paul, and then came Frank Scott and George A. McLean, all of whom greatly aided the company's growth. John T. Brown was appointed manager in 1892 and until his death in 1913 was a well known figure in Pittsburgh industry.

The products of the company include bronze bearings, bronze and alloy ingots and babbitt metals. These are



shipped to all parts of the world, as "Damascus Better Bearings" are known wherever steel is rolled. The present policy of the company is the same as that which produced its growth and requires the use of virgin metal mixtures in high grade bearings.

The management is in the hands of William B. Klee, president; William K. Frank, vice president and general manager; Edwin B. Ross, secretary, and these with Isaac W. Frank and William E. Cartwright, constitute the board of directors.

FORT PITT BEDDING COMPANY

The Fort Pitt Bedding Company, located on Liverpool Street and Preble Avenue, North Side, was incorporated in May, 1906, for the sole purpose of manufacturing bedding the main articles being mattresses, bed springs, steel cots, steel couches, double deck bunks, pillows, automobile seats and the nationally known Sealy Mattresses. Some of the products are shipped into every state in the Union.

The stockholders and officers are as follows: W. L. Trimble, president; Chas. P. Trimble, secretary and treasurer; H. E. Wolf, general manager.

The payroll consists of 180 employees. The company operates its own printing department and has a first-class machine shop. Extensive additions have been made to the plant in the past 10 years.

Recently, this company with 24 other bedding factories located throughout the United States, bought out the Sealy Mattress Company of Texas, which concern made what is known as the Famous Sealy Tuftless Mattress and this mattress is now being manufactured and distributed by 25 Sealy factories.

GOLDEN-ANDERSON VALVE SPECIALTY CO.

The Golden-Anderson Valve Specialty Co. was incorporated in Pennsylvania in May, 1905, to specialize in the manufacture and sale of automatic control valves for steam and water service, and its products are nationally known for their superiority in design, construction and operation. The company furnishes all the leading water works, railroads and industrial plants with its automatic valves because they are indispensable for efficient and economic operation and for preventing loss of life and property in case of accidents. The valves are furnished in bronze, cast iron and cast steel, according to the service requirements and conditions.

Prominence was given to the correct mechanical design of these valves by tests made by the Steel Corporation, who wanted only the best for life and property protection, and the Golden-Anderson valves proved their merit and durability over all competitive makes of similar valves which were included in that test.

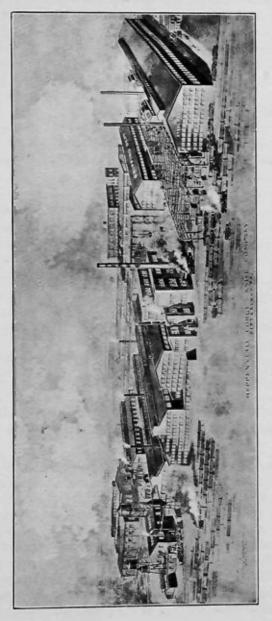
The company only builds automatic control valves, and most prominent among its designs are automatic valves for boilers to protect life and property in case of boiler or steam line explosions; for steam engines to prevent fly-wheel explosions; altitude valves to maintain a constant water level in tanks, standpipes and reservoirs without the use of floats or complicated fixtures; and regulating pressure valves for reducing a higher pressure to a lower fixed pressure.

The officers of the company are C. E. Golden, president; E. V. Anderson, vice president; D. B. Golden, treasurer, and J. A. Voland, secretary. Representatives of the company are established in all the principal cities of the United States.

THE HEPPENSTALL FORGE & KNIFE CO.

Back in 1889, in a little building about twenty-five by fifty feet, the Samuel Trethewey & Co., Ltd., was organized for the manufacture of shears and rolling mill machinery. Samuel Trethewey, the founder of this company, held some patents on certain parts of steam hammers and shears.

The next year, 1890, the name of the firm was changed to the Trethewey Manufacturing Co. and the plant was moved to a plot of ground fifty by one hundred thirty-five feet, at 47th and Hatfield Streets, about the middle of the present location of the Heppenstall Forge and Knife Co. At this same time, the company also began the manufacture of shear knives.



HEPPENSTALL FORGE & KNIFE COMPANY

In December, 1895, the company was reorganized under the name of the Pittsburgh Shear Knife and Machine Co., under the management of Sam Heppenstall, who had purchased stock in the original company in 1889, and had actively entered its employ in 1893. It was in 1893, shortly after entering the company, that Mr. Heppenstall had a vision of a better shear knife than they were putting out—a shear knife with four cutting edges instead of one, as shear knives were then manufactured. Despite the protests that it could not be done, Mr. Heppenstall made a shear knife with four cutting edges, and today all shear knives are manufactured with four cutting edges.

On January 5, 1904, the company was reorganized under the name of the Heppenstall Forge and Knife Co., with Sam Heppenstall as president, and Charles William Heppenstall as manager, and began the manufacture of forgings and shear knives, in which work it is still engaged.

The plant has grown from that small building in 1889, to one covering six city blocks, where one may follow the steps of making a steel forging or a shear knife, from the melting of the steel, through the forging, heat treating, and machining to the finished product.

In 1911 an auxiliary plant was organized in Bridgeport, Conn., which was called the Heppenstall Forge Co., and in 1919 another branch warehouse was opened in Detroit, Michigan, under the name of the Heppenstall Steel Co. The company also maintains sales offices in all the large cities.

In 1920 Sam Heppenstall resigned from the active presidency to become chairman of the board, and his son, Charles William Heppenstall, was elected president, with Samuel B. Heppenstall as vice-president. Today, the Heppenstall Forge & Knife Co. manufactures die blocks, hammer rams, piston rods, crankshafts, pinions, many other kinds of forgings and shear knives, and sends them to all corners of the globe. Today, also, the third generation of Heppenstall is working his way up through the plant, in the person of Robert B. Heppenstall, son of the president.

THE O. HOMMEL CO.

About thirty-five years ago, in a room in a building in the downtown section of Pittsburgh, O. Hommel, the head of this company, started the business by supplying makers of picture frames, gilders of ornaments, lithographers, painters and manufacturers of other surfaced material with a bronze powder imported from Germany. This room enclosed the office and the receiving and selling departments. The business progressed and from this humble beginning has arisen a large factory, covering approximately three acres of ground at Carnegie, Pa., with general and executive offices at Carnegie and Pittsburgh and sales offices in the most important cities of the United States, the vested interests approximating one half million dollars.

"Quality First" was the motto, coupled with the watchword "Service," and Mr. Hommel realized that, in order to insure to the trade uniform material and satisfactory deliveries, it would be necessary to go into the manufacturing business. Bronze Powder has an extensive use in surfacing. You see it on wall paper and moldings, picture frames, lamp bases of every variety and shades of bronze; labels; letter heads; Christmas cards; radiators; pipe; gilt painting, especially on iron objects, indoors and out, and on many other objects.

Soon after the bronze factory was well established the company embarked in the production of oxides and colors for use in glass, pottery and iron enamel trades.

With the motto "Quality is remembered long after price is forgotten," always in view, the company is always reaching out for something better. With Mr. Hommel's long experience and study of industries which it serves and with his staff of expert assistants this branch of the business has grown to large proportions, and has become one of immense value to the ceramic industry. Every color of oxide and almost every shade of colors are produced for the iron enamel trade, and all varieties of known colors are brought out for the glass and pottery trade and art decorators. A person admiring the beautiful colors in a piece of porcelain, glass or enamel ware—and enameled stove colored in mahogany, black and white and other colors—has no idea of the long, tedious, painstaking work required to produce a color. Often it takes an expert years to bring out a particular shade.

An important branch of the company's system is the research department. A large laboratory fully equipped is maintained where new colors are produced, better methods for using old and new materials are developed, and where the materials manufactured are tested to keep them uniform. This department is famous throughout the United States, Canada and Mexico. Not a day passes but some query comes in by phone, by mail or by person asking for the correct or most approved method of using some material. Mr. Hommel, together with his staff of experts, are often called upon as consultants by glass, pottery and iron enamel manufacturers who are having technical or other difficulties.

In the early days, the method of blending and shading colors on pottery and glass was crude Stippling and dry dusting were tried and discarded as unsatisfactory. Mr. Hommel, seeing the possibilities in the advancement of decorating if an instrument or tool could be made to produce the proper effects with his experts, set to work on the problem. The result was the air brush-a spraying tool operated by compressed air. The air brush has revolutionized the glass and pottery industries. By its use every variety of shade and blend of color are applied to ware. This we see in lamp shades and bases; white lamps in hospitals, trains and offices, with blends of ivory effects; vases of every color and shade; and other articles too numerous to mention. Nearly every pottery and glass factory now has its decorating shop, many making this the important part of their business. Thousands of men and women are employed in these shops in all manner of art decorating. The air brush has been developed and improved until now there is an air brush for every kind of surfacing from the smallest piece of art china or glassware to the largest objects-even house painting.

The industry has an appeal to the educational institutions of the city. Every year chemical students from our high schools, by request, are conducted through the plant. They are shown chemical and smelting departments where oxides of all colors and shades are made for the iron enamel trade; the mill or grinding rooms where colors are made and mixed for the pottery, glass and other decorating trades; the gold room where pure gold is converted into form for use on gold encrusted ware; and the heavy stamp and polishing rooms



A corner in the Bronze Powder Room. Intermediate process. O. Hommel Co., Carnegie, Pa.

where copper, zinc and aluminum are made into gold and silver bronze powder. In addition many visitors come annually from other states and from foreign lands to visit the factory.

The ccmpany's close association with other factories in this country and in Europe places it in a position to furnish art decorations, potteries, glass factories and iron enamel works with tools and supplies of every nature required and of the best quality. Not the least among these are porcelain grinding balls and lining bricks used in mills for grinding enamel, color and dry earth powder of every kind; and grinding jars or mills. They have also in course of development pyrometer tubes for use with heat recording instruments.

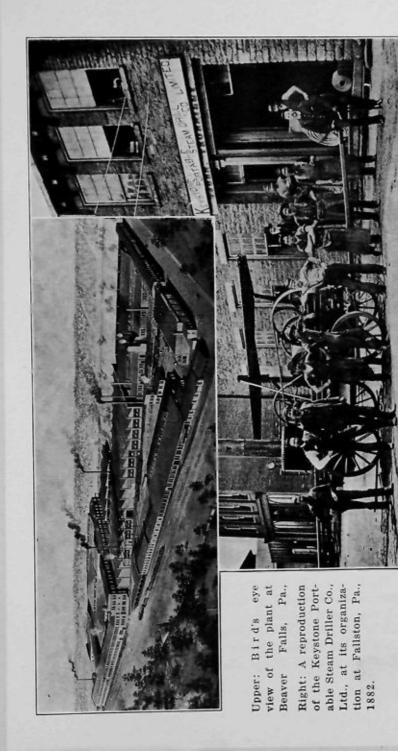
The O. Hommel Co. is continually taking on and developing new features in the ceramic trades and bids fair to grow to still greater importance as one of the industries of Pittsburgh. The general office is located at Carnegie, Pa., and executive office at 209 Fourth Avenue, Pittsburgh.

THE KEYSTONE DRILLER COMPANY

Robert Magee Downie was born on a farm near Valencia, Butler County, Pennsylvania, August 21, 1853. At the age of 22, while as yet there was no such device known as a well drilling machine on wheels, he learned that there was a method of sinking small test holes for coal, by hand, using a sapling as a spring-pole, to carry the drilling tools. With the proceeds of a winter's school-teaching and the assistance of a neighbor he procured an outfit of spring-pole drilling tools and went into the business of exploring for bituminous coal.

It was hard work. Five to ten feet of three inch hole was a fair day's work for two strong men. He learned the theory and "art" of drilling wells; and he observed that the farmers sometimes used the abandoned test holes for water supply. With a set of larger tools he went into the business of drilling water wells, for which there was great demand; but he had trouble convincing his clients that a permanent and adequate supply of water could be gotten out of a 5 inch hole. The world had been accustomed since the days of Abraham to wells four or five feet in diameter. He had to guarantee his new-fangled well to produce "plenty of water or no pay." Experience showed that the drilled well was more sanitary, could be cased securely against surface contamination and vermin; that it was more reliable because it could be carried down to a second or third waterbearing stratum; that it was cheaper to make and safer for man and beast.

It seemed that there should be an easier way. In 1878 Robert Downie built in his father's farm yard, out of a heavy wagon truck, a second-hand boiler and small steam engine,



Keystone Driller Company, Beaver Falls, Pa.

and with some assistance from his younger brothers, John G. and James L., the first well drilling rig to be mounted on wheels. It was a success and enabled him to drill 5 inch or 6 inch wells at the rate of 40 to 50 feet per day-ten times as fast as they could be drilled by hand and with about a tenth of the labor. He "drilled" his way through Geneva College, graduating with the class of 1881. The school had that year been moved from Northwood, Ohio, to Beaver Falls, Penna. At this time Dr. H. H. George was President of the College. Dr. David McAllister occupied the chair of Philosophy. James D. McAnlis kept a jewlery store at Seventh avenue and Eighth street. Robert Downie, who had had some success as a debater in the Adelphic Literary Society, had one firm purpose and ambition. He desired to preach the gospel. He was preparing to leave for Allegheny and the Covenanter Seminary, when he met James D. McAnlis, who suggested the organization of a company to manufacture well drilling machinery. It was largely due to Mr. McAnlis' persuasion, and to the friendly interest of Dr. H. H. George, that a new industry was founded in the Beaver Valley.

The well drilling business had, in the meantime, probably in 1878, been organized under the name of R. M. Downie and Bros., with an office at the corner of Arch and Ohio streets, in Allegheny; and some six or eight replicas of the original non-traction well drill were manufactured under contract with the Velte Foundry Company, at 33rd Street and Penn Avenue, and sold under the adopted trade name, "Keystone." John Galbraith Downie was closely associated with his brother Robert M. in this as in many other enterprises at a later time. R. M. Downie & Bro. exhibited one of their machines at the Pittsburgh Exposition in the winter of 1881.

The Keystone Portable Steam Driller Company, Ltd., was organized on Ground Hog Day, February 2, 1882, in the back room of Mr. McAnlis's Jewelry Shop, with a capital stock of \$20,000. Of this amount \$10,000 was subscribed in cash by the following charter members and founders, and \$10,000 worth of stock was allotted to Robert M. Downie and John G. Downie, for patents and rights to manufacture Keystone Drillers: Robert Patterson, of Beaver, attorney at law; Dr. R. J. George, pastor of R. P. Church, Beaver Falls; Dr. H. H. George, President of Geneva College; Dr. David McAllister, of Walton, N. Y.; John G. Downie, of Downieville, Butler County, Penna.; James D. McAnlis, jeweler, of Beaver Falls; Robert M. Downie, theological intendant, of Beaver Falls.

At the organization R. M. Downie was elected secretary and general manager, positions which he held until his death, October 23, 1924, in New Brighton, whither he had been taken from his home overlooking the campus of his alma mater, in Beaver Falls.

The manufacture of Portable Water Well Drilling Machines was begun in a small stone building, the old Thornily Foundry and Machine Shop, at Fallston, Penna., in February 1882, with a crew of twelve men. A 10-HP water turbine furnished power for the plant. In 1887 the company purchased four building lots at Twentieth street and Eighth avenue, Beaver Falls, and erected larger frame buildings. In 1891 the company re-chartered under the name of Keystone Driller Company with a capital stock of \$150,000, and from time to time the working capital was increased by the sale of stock and stock dividends. The annual business at this time had approached \$100,000. At the end of the decade it had doubled—a slow but steady and healthy growth.

The photograph of the Fallston plant is much more interesting, from a historical standpoint, than the bird's eye view. It shows the original crew of twelve men employed by the company, beginning with the second man at the left in a white shirt, who is R. M. Downie. The third man is J. G. Downie. The man seated on the end of the wagon tongue is Robert G. Forbes, who was at that time bookkeeper, and was later and for many years, treasurer and purchasing agent. The machine shown in this picture was the principal product and is a No. 2 non-traction Keystone Portable Steam Drill. The photograph was taken in April or May of 1883, but shows the plant as it was in the organization of the business, February 2, 1882. Across the top of the picture you will notice two cables. These are not telephone wires, or electric service lines, but were used in transporting power from a 10-HP water turbine in the mill race across the street, to operate the plant.

By 1902 considerable expansion had taken place, several large wooden buildings had been added and about one hundred men were employed in all departments. Following a machinists' strike the plant was almost entirely destroyed by fire, in November of that year. The newly erected brick fire-proof office building at Twentieth street and Eighth avenue escaped and forms the front of the present office. An issue of preferred stock with a guaranteed dividend of 6% was placed on the market to raise some of the money needed for the construction of new and better buildings. At this time the paid up capital stock was about \$250,000, and the annual business had grown to nearly that amount. Additional much needed ground was obtained by the purchase of the adjoining plant of the American Steel and Wire Company. All the new buildings now erected were of modern fire-proof construction.

John Galbraith Downie, younger brother of Robert M., was the inventor and patentee of the Downie Double Stroke Deep Well Pumps, about 1888. These were manufactured by the Downie Pump Company, of New Brighton; later moved to a new plant at Downieville, Penna. In 1907 the established business of the Downie Pump Company was bought out by the Keystone Driller Company, and moved to Beaver Falls. During the first decade of the century Keystone Drills were greatly improved, new sizes were added to the catalogue; machines were adapted to new uses, such as mineral prospecting, placer gold testing, blast hole drilling in quarries and oil and gas well drilling. The responsibilities of management were divided between R. M. Downie, general manager, and Frederick W. Ransom, assistant general manager and treasurer.

In 1912 the company, by purchase of patents and direct development, produced a light traction power shovel, usable with the novel "Skimmer" and "Pull Stroke" ditcher smoke breechings, coal and ash bunkers, steel chimneys, creosoting cylinders, digesters, chemical and rotary dryers, air and gas ducts, evaporators, flanging, coal and ash hoppers, chemical kettles, oil tanks and stills, vacuum pans, penstocks and riveted pipe, air and gas receivers, boiler, kiln, etc., shells, tar acid recovery systems, chemical plant equipment, chemical surveys and reports. The products of the McAleenan organizations have been installed in practically every state in the Union as well as exported to various foreign countries.

The officers of the organizations are:

McAleenan Brothers Company.

George R. McAleenan, president; W. W. Johnston, treasurer; E. G. McAleenan, sales manager; N. R. Seidle, general manager; W. G. Ingham, secretary.

The McAleenan Corporation.

George R. McAleenan, president; E. R. Cate, vice president and secretary; W. W. Johnston, treasurer; R. M. Crawford, manager chemical department; J. F. Roney, manager masonry department.

THE MCKINNEY MANUFACTURING COMPANY

In 1865 in a small machine shop at Cincinnati, Ohio, the business of the McKinvey Manufacturing Company was begun. Several years later the founder, William S. Mc-Kinney, was joined by his brother, James P. McKinney, and in 1870 the company moved into larger quarters at Hamilton, Ohio. In 1878 the plant was finally located in Pittsburgh, where it has continued to grow and expand until today it is one of the largest manufacturers of wrought hardware in the world, with a vast scope of products including not only a complete line of hinges and butts, but such hardware specialties as door latches, bolts, handles, shelf brackets, barn and garage door hangers and track, and other miscellaneous articles; all with one predominating characteristic—quality.

Early in 1926, after several years of careful study and exhaustive research, McKinney Forged Iron Builders' Hardware, an innovation in builders' hardware, was introduced as an addition to the company's general builders' hardware line. This step was the result of a close survey of the growing tendency on the part of interior decorators and home builders to use forged iron in their decorative schemes. Several nationally known architects were consulted and used in the research work and in the selecting of the old originals, copies of which the company was to forge.

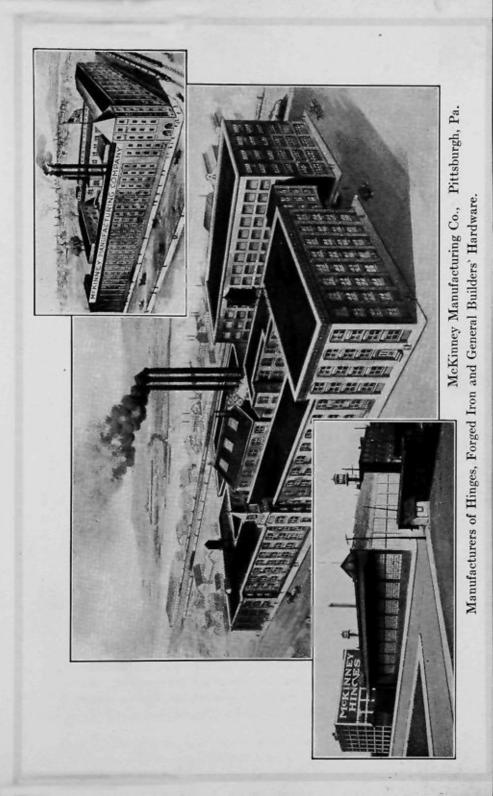
The makers of the famous McKinney hinges have now made available beautiful forged iron pieces to fit the spirit of the modern period homes. It is fabricated in the finest and most authentic traditions of the art of metal craftsmanship. Adaptation of forged iron hardware to modern building requirements has heretofore presented a hard problem. To overcome difficulties McKinney was most fortunately placed, for, as manufacturers of hinges of long standing, there was available a wealth of practical experience in solving the problems of application.

To enable the builders of a period home to carry out the same decorative motif throughout the home and the entrances, four beautiful forged iron lanterns have been added to the forged iron line. They blend into their surroundings and add that touch of genuineness and hospitality which is so much desired by lovers of the home beautiful.

When the company was founded in 1865 the space occupied was approximately 5,000 square feet. Today the factories and warehouses cover about $2\frac{1}{2}$ city squares with a floor space of over 400,000 square feet, approximately 9 acres, and give employment to 800. Recently a large $3\frac{1}{2}$ story factory adjoining McKinney Manufacturing Company's premises was purchased to make room for the steady growth of the business.

The officers and directors of the company are Wm. C. Farr, president and treasurer; R. G. McKinney, vice president; Jas. P. McKinney, Jr., vice president; Wm. S. Mc-Kinney, vice president; and Robt. L. McKinney, secretary.

Branch offices are located in Boston, New York, Baltimore, Chicago, San Francisco, Montreal and Toronto. Export representatives market the products all over the world.



MILLER SAW-TRIMMER COMPANY

The Miller Saw-Trimmer Company, corner Penn avenue and Water street, are the largest manufacturers of automatic feeders for printing presses and the largest manufacturers of printers' saw-trimmers in the world. This company located in Alma, Michigan, until 1913, and was brought, while there, to the attention of the Pittsburgh Industrial Development Commission. Investigation followed, which resulted in the establishment of the company in Pittsburgh, where in June, 1913, it was installed on the fifth floor of the Point Building. This one floor was sufficient to house the entire office staff, engineering and mechanical forces, which totaled at that time thirty-five people. The plant now occupies the entire eight floors of the Point Building as well as another building adjoining. Its entire forces now total upwards of eight hundred men and women.

In 1919, the Miller Saw-Trimmer Co., with its great demand for perfect, intricate gray-iron castings, engaged in the manufacture of its own castings by establishing the Pittsburgh Gray Iron Foundry at South avenue and Walker street, North Side, with up-to-date foundry machinery and an organization of one hundred and fifty men. This foundry is not only providing castings for the Miller Saw-Trimmer Co., but has built up a very large commercial trade. Its output is known as the most perfect casting in Western Pennsylvania.

From the manufacture of a single product, namely Saw-Trimmers, it has expanded to the building of Automatic Printing Press machinery that has found a place not only in this country, but in Great Britain, France, Germany, Belgium, Holland, Spain, Sweden, Norway, Italy, Chili, Paraguay, Peru, Argentine Republic, Colombia, Costa Rica, Cuba, Mexico, Porto Rico, Japan, China, India, Java, Australia, Philippine Islands and throughout the entire Dominion of Canada.

The Miller Saw-Trimmer Co. has of its own manufacture 31,105 machines in operation in printing, lithographing and engraving plants. Its product consists of automatic platen press feeders, automatic cylinder presses, automatic die



The Point Building, occupied entirely by the Miller Saw-Trimmer Co., Pittsburgh, Pa.

press feeders, automatic roll gold leaf presses, automatic line casting machines, printers' saw-trimmers, automatic line casting saws and slugotype saws. Not only are these machines in demand for commercial printing, but are specially efficient in art work and have produced the finest catalogues, books and advertising illustrations. All these machines are printers' labor-saving devices. The speed of the platen and cylinder presses ranges from 3000 to 4500 impressions per hour.

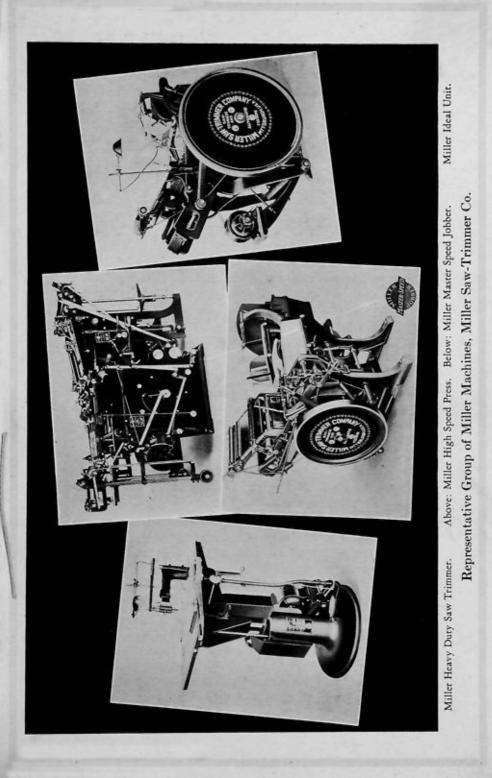
It designed, manufactured and marketed the first automatic job printing press of any importance in 1915. This machine saved hundreds of printers from bankruptcy during the war, releasing to our army thousands of young men printing press operators. No other device relating to the printing industry maintains the same accuracy of machining and mechanical construction; 15,559 printer customers recognize this fact. Its reputation is international. It markets its own product, maintaining on the road about one hundred salesmen, demonstrators and service men.

In addition to its Pittsburgh factory, it maintains branches and service stations in New York, Philadelphia, Chicago, Atlanta, Detroit, Minneapolis, St. Louis, Dallas, New Orleans, Los Angeles, San Francisco and Boston; with foreign agencies in Winnipeg and Toronto, Canada; London, Amsterdam, Barcelona, Stockholm, Christiana, Paris, Sydney, Melbourne, Australia, Manila, Tokio, Havana, Rio Janeiro, Buenos Ayres, Mexico City, Lima and Capetown.

Its trade marks are: Craftsman, Miller Ideal Unit, Simplex, High Speed, Master Speed Jobber, Printers' Greyhound Presses, Universal, Heavy Duty and Slugotype Saws. Its main slogan is "Service."

The Miller Saw-Trimmer Cg. was incorporated under the laws of the State of Pennsylvania in March, 1916. Its issued capital stock is \$1,500,000. Its preferred stock \$185,000. Its surplus \$432,043.80.

The Miller Saw-Trimmer Company's business is directed by the following corps of officers, all of whom are Pittsburghers: F. F. Nicola, president; P. C. Dunlevy, vice president; J. H. Cannon, vice president and treasurer; A. W.



Barrett, vice president and production manager; T. R. Foster, secretary.

The directors of the company are: F. F. Nicola, J. F. Keenan, J. H. Cannon, A. W. Barrett, P. C. Dunlevy.

Its successful development of printers' precision machinery and its remarkable growth in a tonnage industrial center, is an evidence that technical and diversified industries have a proper place in Pittsburgh.

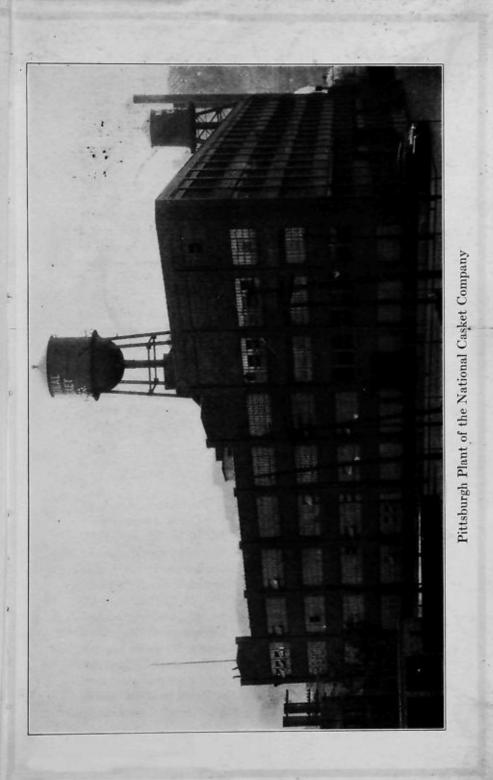
NATIONAL CASKET COMPANY, INC.

The National Casket Company, Incorporated, is a nation-wide concern for the manufacture and distribution of burial receptacles and equipment required for the conduct of modern funerals.

In 1864 William Hamilton, James T. Arnold, J. W. Carnahan and H. G. Algeo started the first coffin and casket factory west of the Allegheny Mountains, known as the Excelsior Coffin and Casket Works, the original plant being located on Virgin alley, now Oliver avenue, Pittsburgh, Pa. In the '80s they moved to old Allegheny. The firm name was changed to the Hamilton, Lemmon, Arnold Company. In 1890 this company consolidated with the Chappell, Chase, Maxwell Company of Oneida, N. Y., and the Stein Manufacturing Company of Rochester, N. Y., and formed the National Casket Company, Inc., with an authorized capital of \$3,000,000.

Some years later they added to the consolidation a number of other firms in the south and southwest, increasing the capital to \$6,000,000. The present authorized capital stock of the company consists of an equal number of shares of non-par preferred stock and non-par common stock.

The late William Hamilton of the North Side, Pittsburgh, Pa., was the first president of the National Casket Company, Inc. The present officers of the company are P. B. Heintz of Boston, president and general manager; Leo Stein of New York City, first vice president; F. C. Guthrie of Nashville, Tepn., second vice president; H. M. Tuttle of Boston, Mass., third vice president; W. E. Carnahan of



Pittsburgh, treasurer; F. C. McKee of Pittsburgh, assistant treasurer; H. L. Stein of Boston, secretary, and H. A. Haney of Boston, assistant secretary. Robert J. Cleland of Pittsburgh, is a director in the company. The executive offices are located at No. 3 Park Street, Boston. The treasurer's office is at 2216 Oliver Building, Pittsburgh.

The company maintains sixteen factories, two casket hardware factories and twenty-two sales rooms. Of the above, one sales room, as well as the largest, completely equipped plant for the manufacturer of wood and metal caskets, burial garments and casket hardware, is located in Pittsburgh, the salesroom being at Seventh street and Duquesne way, and the plant on the North Side, the local manager being George Reatchlous.

The plant at Pittsburgh, to which extensive additions were made in 1920, not only supplies wood and metal caskets, casket hardware, and burial garments for the territory immediately adjacent to Pittsburgh, but produces at this point the metal caskets and casket hardware distributed throughout the entire country, by the company through its various sales branches; and also supplies through its export department at New York, these goods for shipment to foreign buyers.

NATIONAL LEAD AND OIL COMPANY



The National Lead and Oil Co. of Pennsylvania had its beginning in 1891, being incorporated under the laws of Pennsylvania andcapitalized for \$2,000-000. In 1892 it succeeded to the established businesses of the Armstrong McKelvy Lead &

Oil Co., Beymer-Bauman Lead Co., Fahnestock White Lead Co., and others. Also, in more recent years, purchased the Sterling White Lead Co. and the Davis Lead Co. and at the present time continue the manufacture of these brands. Plants covering approximately four acres are now operated at Pittsburgh and New Kensington, where the nationally known and advertised Dutch Boy White Lead and Oxides are produced. The Company has a capacity for producing annually 7000 tons Dutch Boy White Lead, 10,000 tons of Oxides (Litharge and Red Lead), 2000 tons of Lead Pipe, 1500 tons of Sheet Lead, and 2000 tons of solders and babbitts, practically all of which is marketed in Pennsylvania, west of the Susquehanna River, Eastern Ohio and small northern portions of the States of Matyland and West Virginia; all being distributed through the Pittsburgh office.

Pursuant to the thought of guaranteeing the absolute purity of the products, only virgin metals are purchased to go into the manufacture of same; the bulk of the pig lead used coming from the west out of the mines of the National Lead Company, of whom this company is a subsidiary.

With regard to the matter of health and welfare of the employees, it is considered of vital importance to the company. Therefore a physician makes weekly examinations and a welfare room is maintained, each employee being required to use the facilities for bathing regularly. A restaurant is also provided where the employees are encouraged to dine; lunches being furnished at cost of food only.

The officers are: W. N. Taylor, president; W. H. Taylor, vice president; H. J. Irvin, treasurer, and J. W. Schlotterbeck, secretary. The foregoing are directors, together with E. J. Cornish and Norris B. Gregg, of New York, and Edward F. Beale, of Philadelphia.

OIL WELL SUPPLY COMPANY

In 1862, just three years after the Drake well was drilled, John Eaton, a native of New York State, came into Pennsylvania, to look into the prospects of the oil trade. His inspection inspired him with a bright vision of the future. Believing that "Seneca oil" meant much more to humanity than its curative properties, which was what it had been used for when collected laboriously from the surface of Oil Creek, he decided that here was opportunity—to supply drillers with better tools and to make oil field supplies readily available. John Eaton founded the first oil well supply company, in 1862, with a small supply house in Oil City, which prospered from the very beginning. Today the company which sprang from it, the Oil Well Supply Company of Pittsburgh, has seven factories, covering more than 90 acres, and over 100 branches located in the various oil fields of the United States, with foreign branches in London and Tampico, Mexico, and a factory at the latter place.

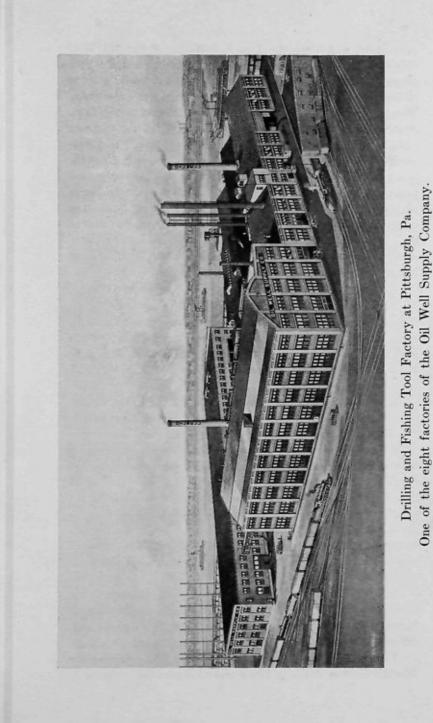
From this modest beginning has sprung a gigantic organization which ranks as the world's oldest and largest manufacturers of oil field equipment, and its growth is of interest to every one connected with the oil industry.

Soon after the first supply house was opened in Oil City, the first manufacturing plant was established at Bradford, and was devoted to the making of woodwork materials. In 1899 this plant was moved to Parkersburg, W. Va., and at the present time covers about five acres. It is still used exclusively for the manufacture of woodwork for drilling rigs. In 1880 the first shop for the manufacture of drilling and fishing tools was opened in Summit City, McKean County, Pa. In 1882 a second shop was opened at Bradford, and continued in operation until 1890, when the factory at Pittsburgh was started.

At its beginning the Pittsburgh factory employed 22 men, and had a power plant of one 80 horsepower boiler and one 30 horsepower engine. As the oil industry grew and the demand for equipment became larger and more exacting, the Pittsburgh factory increased its working force and enlarged its plant until today the present factory employs about 600 men, has a plant of 10,000 horsepower and covers seven acres. This factory is devoted exclusively to the manufacture of drilling and fishing tools and is the largest plant of its kind in the world.

In 1890 a factory was started at Van Wert, O., for the manufacture of wood sucker or pump rods. In 1902 this factory was moved to Poplar Bluff, Mo., its present location, and covers about five acres.

The first factory at Oil City was established in 1889, and consisted of an engine works and machine shop. During the



years 1900 and 1901 the Imperial Works of the Oil Well Supply Company was built at Oil City for the manufacture of general oil well supplies. It began with a working force of 300 men and at the present time employs 1,100 men. This is the company's largest factory and covers 45 acres. At this plant are manufactured "Oilwell" drilling engines, "Black Bear" gas engines, Imperial "Mud Hog" and Imperial "Giant Mud Hog" pumps, "Oilwell" pumping powers and pumping equipment, "Oilwell" rotary drilling equipment and other miscellaneous supplies. This factory is the home of the famous "Imperial Rotary," which a few years ago quite revolutionized rotary drilling—a rotary which "makes up" (screws together) and "breaks out" (unscrews) drill pipe, casing and tool joints without manual labor and in less than half the usual time required for this work.

In 1900 the first boiler factory was opened at Oswego, N. Y., with a working force of 30 men. The present boiler factory employs 300 men and covers five acres. Here all types of oil country boilers are made—"A. S. M. E." Code and Non-Code, "A. P. I.," Canadian and British Burma in locomotive type, and horizontal tubular in "A. S. M. E." code type.

In 1908 a factory was built at Bradford for the manufacture of all types of packers. In order to take care of the Pacific Coast trade, a Los Angeles factory was started in 1908, and at the present time covers five acres. In addition to the factories named, the company maintains over 100 branches, located in the various oil fields of the United States, 20 of which are branch machine shops, and the remainder branch stores, with complete stocks of oil field equipment. Frequently special tools must be made for special cases, or immediate repair work is required to save time and expense on a well. With "Oilwell" shops right in the field, prompt service can be given.

Most of the employees of the company are veterans in the business and their accurate knowledge is a most valuable factor. Its engineers are constantly studying various conditions and perfecting suitable equipment to meet them.

The company has exhibited and taken first prizes at the World's Fair in Paris, in 1900, and at Turin, Italy, in 1911. as well as at the Chicago World's Fair in 1893. An exceptionally interesting display was made for the Paris Exposition, a contract being made to drill an artesian well during the course of the display. Prior to this the shortest time in which such a well had been drilled was four years, but "Oilwell" equipment completed the task in three months.

Officers of the company are: Louis Brown, president; D. J. Brown, vice president; Thomas Fleming, Jr., vice president; S. Clarke Reed, vice president; H. C. Burns, treasurer; W. W. Anderson, secretary; H. A. Boschert, assistant treasurer; E. W. Criswell, assistant secretary.

PENNSYLVANIA SALT MANUFACTURING CO.

The Pennsylvania Salt Manufacturing Company is now in the seventy-seventh year of its existence, having been organized in 1850, with Charles Lennig as president and George Thompson as secretary and treasurer. The offices were originally in Pittsburgh, but they were moved to Philadelphia in 1873, and have been there ever since, moving from time to time to obtain larger quarters, and now being located in the Widener Building. The company was chartered for 10 years on September 25, 1850; renewed for 20 years in 1860, and on June 2, 1879, the charter was renewed for 999 years.

The original capital stock was \$100,000. Many increases were made, until in 1912 the capital was fixed at \$7,500,000. Dividends were paid from 1863 to 1914, inclusive, at the rate of 12% per annum; for the next two years, 8%; and from 1917 to the present time, 10%, with two extra dividends of 1% each.

The plants of the company are located at Greenwich Point, Philadelphia, and Natrona, Pa.; Wyandotte and Menominee, Mich. It has branch offices and sales agencies at Pittsburgh, New York, Chicago and St. Louis.

In 1920 the Natrona Light and Power Company and the Brackenridge Light and Power Company were incorporated, to supply light and power to the towns, residents and industries adjacent to the Natrona plant. As of January 1, 1924, Natrona Stores Company and Pennsalt Coal Company were incorporated, the former to operate a general store, and the latter to operate a coal mine, both at Natrona, Pa. In addition, the Wyandotte Southern Railroad Company and the Natrona Water Company are owned and operated. The capital stock of the Michigan Electrochemical Company was purchased October 31, 1924.

At the last named plant bleaching powder and caustic soda are manufactured, in addition to liquid chlorine. The company imports large quantities of kryolith, bauxite and nitrate soda, and manufactures acids, acid phosphate, alum, alumina, lye, sodas, chlorides, sulphates, salt and other products.

The company's net earnings in 1926 were \$912,255.74, and its balance sheet shows assets of \$14,339,607.01.

Following is the executive organization:

Directors—Geo. Fales Baker, M. D., Miers Busch, John M. Scott, Leonard T. Beale, William P. Gest, William P. Morris, Sydney Thayer; chairman of the board, Geo. Fales Baker, M. D.; president—Miers Busch; first vice-president— William P. Morris; secretary and treasurer—L. A. Smith; assistant secretary and assistant treasurer—Warner R. Over; general sales agent—N. E. Bartlett; assistant general sales agent—Chas. W. Bowden; traffic agent—H. L. Crowder; general purchasing agent—Norman W. James; assistant purchasing agent—Herbert W. Ingham; directors of research department—A. E. Gibbs, Herbert Philipp.

THE PITTSBURGH GEAR AND MACHINE CO.

The history of this relatively small and new company gives proof to the fact that every American workman has, under industrial conditions in this country, an opportunity for self-advancement.

The Pittsburgh Gear and Machine Company was incorporated under the laws of the state of Pennsylvania in 1916, just before the World War, and its present authorized capital is \$200,000. The officers of the company are as follows: Frank H. Rea, president and treasurer; Henry E. Rea, assistant treasurer; John J. Jackson, vice-president; Joseph C. O'Brien, secretary; John Harper Jackson, assistant secretary.

Frank H. Rea was formerly with Rea & Company, pork packers, whose business was dissolved after a disastrous fire about fifteen years ago. Mr. Rea looks after the financial end of the business and has devoted much of his time to developing the company.

Henry E. Rea is a son of the president and after about five years of practical training in the shop in various capacities is now engaged in sales development work, in addition to his duties as assistant treasurer.

John J. Jackson is one of the pioneers in the gear business, having worked his way from machine operator to the position of general superintendent of the plant of the R. D. Nuttal Co., one of the oldest gear manufacturing companies in the country. Mr. Jackson personally looks after the shop operation and is known throughout the gear industry as a "live wire." Joseph C. O'Brien is also an "old-timer" in the gear business, having served in various capacities from machine operator to chief mechanical engineer of the R. D. Nuttall Company.

Mr. O'Brien is in charge of the engineering, estimating and cost work of the company.

John Harper Jackson is a son of John J. Jackson and after graduating from college was with the Sharpless Separator Co. and United States Cast Iron Pipe and Foundry Company. He then served as lieutenant in the Ordnance Department and is now in charge of the development of the business.

In the hectic days at the opening of the World War this small company was not carried away by the abundance of opportunities for branching out from their chosen lines of endeavor, but calmly selected the work for which their organization was best fitted to serve the country, mapping out a war program and a post-war program regarding policies to be followed in the development of the business.

During the war they manufactured transmission gears for a number of the largest farm tractor companies in the country; also larger gears for ammunition presses, and kindred machinery, and became known as a virtual service station for all sorts of repair parts for the munition factories in the Pittsburgh district. The company is now engaged in manufacturing gears for new equipment as well as repairs for a great variety of industries, a few of which are manufacturers of the following: Coal mine equipment, furnaces, etc., steel mill machinery, bottling and canning machinery, amusement park machinery, truck and tractor attachments, iron and steel products, food products, sanitary ware and pumps.

In keeping with the development of this art, the company has taken on the manufacture and sale of Fabroil and Textolite gears. These are quality products known as silent or noiseless gearing. The raw materials were developed and are manufactured by the General Electric Company and the finished gears are made in the plant of the gear company. Through their facilities for rendering service, the company has built up quite a business in this branch of their activities.

The company has also taken on the sale of chain drives, which is a sort of companion business to that of gears. They act as distributors for the Whitney Manufacturing Company of Hartford, Conn., one of the oldest and most reliable silent type chain manufacturers in the world. The sprockets are manufactured in the gear company's plant and complete drives designed and furnished to meet all requirements. Here, again, their excellent facilities for rendering service have been instrumental in developing a growing volume of business.

The policies of the company in rendering service to its customers, the handling only of quality products of their respective kinds, and the development of a thoroughly trained and efficient organization to carry out the policies of the management give promise of a prosperous future.

PITTSBURGH TESTING LABORATORY

The nation-wide service of the Pittsburgh Testing Laboratory of today, with branch offices and laboratories in many of the principal cities of the United States, is the result of 46 years of dependable inspection and testing service to industry.

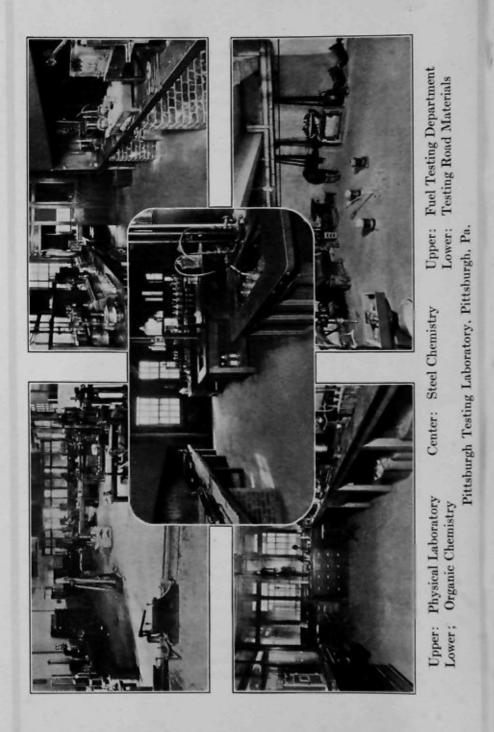
Founded in 1881 by William Kent and William F.Zimmerman, under the firm name of Kent & Zimmerman, mechanical engineers, it was later acquired by Capt. A. E. Hunt and Geo. H. Clapp, who inaugurated the unique service of inspection of materials, testing of machinery and metals, and chemical analyses—a service upon which the business was built.



Pittsburgh Testing Laboratory Building, Stevenson & Locust Streets, Pittsburgh, Pa.

Industry found their services of great value in making independent inspections and tests, free from all bias or exaggeration, and the scientific methods by which they pursued their investigation soon won the confidence of all industry.

In 1891, it was made a limited partnership under the name of Pittsburgh Testing Laboratory, Limited, and in 1907 was incorporated under the laws of Pennsylvania.



The business was started in the Schmidt Building in Fifth avenue, the chemical laboratory located at the old Carbon Iron Works and the Physical Laboratory was later moved to the basement of the Fitzsimmons Building in Fourth avenue.

Later on, all departments were grouped at 325 Water street, where the business remained for 22 years. In 1910, their own building was erected at Seventh and Bedford avenues, which property they still own.

The rapid growth of the business, extending to every form of inspection, analysis, special research and physical testing, made it necessary to move into still larger quarters in 1923, purchasing at that time the old Newboys' Home, at the corner of Stevenson and Locust streets, and now occupying the entire property.

The present organization and service of the Pittsburgh Testing Laboratory embraces the following departments:

General Inspection Department: This comprises a properly organized corps of accredited inspectors, in industrial centers, for the inspection of steel and iron products used in buildings, bridges, rails, cars, locomotives, special machinery, tanks, steel and iron pipes, hydro-electric equipment, wire, transmission towers, etc.

Department of Research and Special Investigation: This service includes research along chemical and engineering lines, in developing new products, in lowering costs of manufacture and in investigating various industrial problems; experts in patent litigation, along metallurgical and chemical lines, as well as investigations of mining properties and mineralogical surveys.

Chemical Department: Well equipped laboratories are located at Pittsburgh, New York, and Birmingham, Ala., for conducting chemical tests and investigations, involving ferrous and non-ferrous metals, asphalts, clays, silicates (glass), coal, gas, oil, paint, ores, lubricants, alloys, water, food products of all kinds.

Physical Testing Department: Well equipped laboratories are also located at Pittsburgh, New York, Birmingham, Ala., Dallas, Tex., Chicago, Detroit, Cleveland, Buffalo, Miami, and Tampa, Fla., for physical tests of cement, concrete, sand, stone, metals of all kinds, wood, materials used in highway construction, building materials and for boiler tests, power plant tests and other engineering problems.

The present officers of the Pittsburgh Testing Laboratory are: George T. Ladd, chairman of the board; James Milliken, president; F. V. Green, vice president; F. O. Gardner, secretary-treasurer, and A. R. Ellis, general manager.

The directors include George T. Ladd, James Milliken, D. Frank Crawford, C. H. Curry, George H. Clapp, F. F. Brooks, A. R. Ellis, and John C. Slack.

PITTSBURGH TRANSFORMER COMPANY

The Pittsburgh Transformer Company is a Pennsylvania corporation and a peculiarly Pittsburgh institution throughout. Its plants and head offices are in Pittsburgh, owned in Pittsburgh, and all the employees are native Pittsburghers. All officers are Pittsburghers. Over ninety per cent of the raw materials used are manufactured in Pittsburgh.

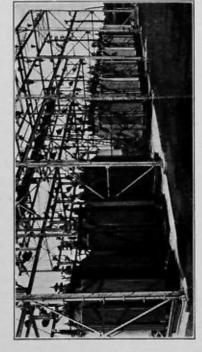
This company's business in 1901 was \$20,000 a year. The business today occupies five complete city blocks, covered with the most modern factories and equipped with the most modern and efficient machinery for the manufacture of all parts of transformers. This company is the only company in the world that manufactures all its parts, except accessories. No other company manufactures all its electrical parts and also all of its tanks, radiators and fabricated steel, which Pittsburgh Transformer Company does in its various North Side plants.

The gross sales of the Company have grown in twentyfive years from \$20,000 per annum to \$6,000,000 per annum, and the company now is the largest independent manufacturer of transformers in the United States, with a total number of employees of over six hundred.

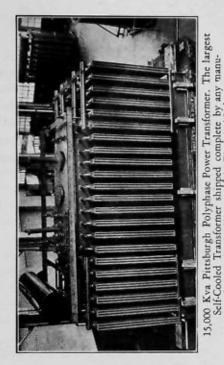
An interesting point here may be noted in reference to wages paid by Pittsburgh Transformer Company. The



Factory of the Pittsburgh Transformet Company, Pittsburgh, Pa.



Factory of the Pittsburgh Transformer Company, Pittsburgh, Pa.



Installation of Pittsburgh Single Phase Power Transformers.

facturer in the History of the Electrical Industry.

average wage paid in the factory, taking an average of skilled and unskilled labor and boys,—that is, an average of the entire working force,—is \$1880 yearly. The average of twenty-one cities in the United States is \$1321.50. The wages of this company are 42% higher.

The Pittsburgh Transformer Company has just shipped five of the largest transformers ever made in the world, shipped complete, ready to install on arrival. Every part of these enormous transformers was manufactured in its own plants. These are served by the Pennsylvania and Baltimore and Ohio Railroads, and shipping facilities are provided by eleven sidings.

The factories are equipped with electric cranes ranging in size up to fifty tons. As transformers are shipped all over the United States, Pittsburgh is a very central distribution point. This company now is the second largest shipper on the North Side, quite a distinction in this city of tremendous freight figures.

Pittsburgh being primarily a steel and glass center, diversified industries are very desirable for the prosperity of the city. The Pittsburgh Transformer Company is particularly of this nature, belonging essentially in the diversified class. Yet, over 90% of the raw materials entering into the construction of the finished transformer are produced in Pittsburgh, i. e., various products of steel and oil. The annual consumption of Pennsylvania base electric oil alone exceeds 1,500,000 gallons, purchased of course from Pittsburgh manufacturers.

R. V. Bingay, president, became connected with the company two years after its founding in 1898, when he was 29 years of age. He has introduced several revolutionary principles of design, and the list of patents owned by the company fills almost a page of the catalogue. His associates on the board of directors and in the ownership of the company are C. V. Edwards and S. McN. Johnston. In building his organization, Mr. Bingay has never gone outside his office or shop for men. He takes boys in their teens and makes works managers of them. He believes in giving his men full responsibility and in promptly rewarding those who do their duties well.

LEE S. SMITH & SON COMPANY

Lee S. Smith & Son Company was founded January 1, 1866—61 years ago. Its ownership and executive control has remained unchanged during the entire six decades. The late Lee S. Smith originally came to Pittsburgh in 1862 to study dentistry with Dr. C. Sill, a prominent Pittsburgh dentist at that time; he worked in Dr. Sill's office for two years before enlisting in the Union Army during the Civil War.

Before enlisting he clerked for a short time in the dental depot operated by Torrence & McGarr in connection with their drug store on the corner of Fourth and Market. On his return to the city Mr. Smith learned that Dr. M. E. Gillespie, who had in the meantime purchased the depot, desired to dispose of it. Mr. Smith had no money except a small amount of back pay due from the government, but Dr. Gillespie sold the business to him on notes.

The meager stock was moved to 58 Market street, between Third and Fourth, and said Mr. Smith, "On January 1st, 1866, I launched the Lee S. Smith Dental Depot and flung my banner to the breeze. Because I couldn't afford to do anything else I took my sleeping quarters under the counter, did my own janitor work and ran my own errands. When my son Linford was old enough I employed him first as errand boy and then as salesman. When he finished school I gave him an interest in the firm, then changing its name to Lee S. Smith & Son. Later the business was incorporated as Lee S. Smith & Son Company."

The enterprise which had such a humble birth has grown until it is today one of the largest businesses of the kind in the entire world. The retail salesroom and executive offices occupy an entire floor in the Keenan Building, from which a staff of salesmen travel the surrounding territory; a fourstory factory building at Aspinwall is owned and operated by the company, shipping dental goods throughout America and to countries overseas.

STANDARD SANITARY MANUFACTURING CO.

When Pittsburghers are entertaining friends from Europe and are being told of the exquisite linens made back home in Ireland or the dapper woolens made in England or the lovely silks in France—then Pittsburghers can take their guests to one place in their home and even the score with lots to spare. The bathroom, of course.

Pittsburghers then can say: "Americans are healthier, happier, because Pittsburgh has led in the development and making of plumbing fixtures. Pittsburgh has had a big share in making America the leader in sanitation. The Standard Sanitary Manufacturing Company, with home offices in Pittsburgh, is the largest manufacturer of plumbing fixtures in the world."

The guest from abroad is likely to make us appreciate what we take for granted. "How wonderful," he is apt to say, while looking at the built-in bath, hard, smooth, white, and not a single crevice or joint.

If our guest is of an inquisitive nature, he is apt to make us feel foolish with a torrent of questions. "It is iron underneath, isn't it? How do they make it so large, all in one piece? How can they put on enamel so evenly on such a large piece, with those curves, and to be so beautifully white?"

We answer as well as we can. But the interest of our guest is stirred. He fires more questions at us. We have a happy thought and tell him: "While we are downtown this afternoon, we will stop at the 'Standard' showroom and find out all about it."

At the showroom we see rows and rows of plumbing fixtures in various designs and sizes with various kinds of fittings. With an attempt at an air of ease we turn to our guest and say: "See, side by side, so a person can compare and quickly tell what he wants."

We ask for the manager. "Yes, you want to see Mr. Rutledge. Just a minute." A large, white-haired, genial gentleman comes forward. He has a cordial, well modulated voice. We feel relieved. We think to ourselves, "Our guest from abroad can't stump this chap." We listen to see if there won't be some question that will not be met by a ready answer.

"How large is your organization? Do you have representatives in Europe?"

"Yes, we have either branches or agents all over the world. We have factories here in Pittsburgh; in New Brighton, a little outside of Pittsburgh; in Louisville; in Baltimore; in Tiffin, Ohio; in Kokomo, Indiana; in Richmond and San Pablo, California, and in Toronto, Canada. We have four large warehouses on the Atlantic coast and three on the Pacific. We have showrooms in most of the large cities in this country."

"You sell a good many fixtures, then?"

"Since 1900, we have sold over 28 million. We now make and sell each year more than 2 million fixtures and more than three million brass fittings."

"Fixtures, fittings? What is the difference?"

"Take this lavatory for instance. Without these handles, this nickelplated spout and these pipes, we have the bare fixture. These trimmings are called fittings. You can have whatever fittings you choose on the lavatory you select."

"This company is fairly old, then?"

"The present company was organized in 1900, combining many smaller companies into a single concern."

By this time we have sauntered around so that now we are in front of a drinking fountain. Mr. Rutledge turns a handle. A jet of clear water bubbles upward. He invites us, "Want to try it out?"

While we are taking our turn at the fountain, our friend bombards Mr. Rutledge with another question. "These fountains, they are not enameled iron, are they?"

"No, they are vitreous china. Much the same material as in china dishes."

"You make all-the enameled, the brass fittings and this vitreous china?"

"Not only that, but we make more of each than any other manufacturer in the world."

"What an exquisite child figure," exclaims our guest, stopping before a colored hanger showing a child climbing



Admiring a Pedestal Lavatory in one of the many showrooms Standard Sanitary Mfg. Co. Pittsburgh, Pa. into a bath. "Ah, that is very, very fine. And the artist? J. W. S."

"Jessie Wilcox Smith," supplies Mr. Rutledge.

"Oh, we have heard of her. She paints children so lovely, so life-like that one is tempted to call to them, half expecting an answer. Yes, you have real art in your advertising. But does it pay?"

Mr. Rutledge settles back on his heels. Then he begins: "You see the bath in the painting. Built-in. Only a few years ago, built-in baths were rare. We made so few they were expensive to produce. Now when we make hundreds of thousands a year, our manufacturing costs are lower and we can sell built-in baths at a price within the reach of the average home owner."

Our friend's face brightens. He interrupts with, "Yes, I know. You are on a large production basis. As they say, your cost per unit is lower."

"Exactly. But before we could make so many per year we had to be sure we could sell them, We had to show people how much more beautiful and sanitary they were than tubs on legs. That has been the job of 'Standard' advertising. When a woman looks at a lovely 'Standard' bathroom she decides her new home will have a built-in bath."

"You can say then that 'Standard' advertising has made homes more sanitary by making people want better fixtures and has reduced prices by making people want more fixtures."

"And made people healthier. More baths mean more bathing. And millions of women have less back strain and are healthier because kitchen sinks are now set 'yard stick high.'"

"Yard stick high?"

"Yes, the old practice was to set sinks 30 inches high. Much too low. 'Standard' advertising convinced housewives, architects, builders that sinks should be set higher-36 inches best for the average woman."

"Another lovely painting," remarks our friend about a poster strongly colored in tints of blue and orange. He reads aloud: "The Plumber Protects the Health of the Nation." Mr. Rutledge explains, "This company distributed this poster all over the country. It helped make the public appreciate more fully the importance of the plumber in the community."

"A far-visioned act, indeed," the man from Europe comments.

"Yes, the company is very broad in its policies. And because of that fact, it has a very loyal organization. The company makes it easy for its employees to buy stock, it insures its employees and follows a general practice of selecting its executives from its own ranks."

We remember promising to let some one meet our foreign friend at the William Penn at four. We thank Mr. Rutledge and at last succeed in making our friend terminate his expressions of appreciation.

On the sidewalk he turns to us, "That was an interesting visit. Yes, you are ahead of us in sanitation. Pittsburgh should be proud of her part in making American homes the world's models in means of cleanliness."

The company was incorporated December 26, 1899, and capitalized at \$5,000,000. The present capitalization consists of \$4,736,400 preferred stock and \$26,954,050 common stock, with surplus and reserves of \$16,947,848.36. The average number of employees on the payroll for the year 1926 was 11,535, to whom was paid in wages and salaries \$18,601,321.11, being an average per employee of \$1,612.60. There are 6,746 shareholders, an increase of 645 last year. Employee shareholders number 4,132, or 37.6% of the payroll, and hold 230,075 shares of the common and 6,711 shares of the preferred stock.

Directors—Theo. Ahrens, J. W. Arrott, Jr., Willard C. Chamberlin, A. V. Conradt, David Jameson, F. G. McIntosh, W. C. McKinney, Theo. E. Mueller, E. L. Dawes, J. W. Oliver, H. L. Ott, H. M. Reed, J. D. Tschopik.

Officers—Theo. Ahrens, president; J. W. Oliver, first vice president and chairman of executive committee; E. L. Dawes, second vice president; W. C. McKinney, secretary and treasurer; J. D. Tschopik, vice president and general manager of branches; H. M. Reed, vice president and general manager of factories; Willard C. Chamberlin, vice president and general sales manager; M. C. Wilde, assistant treasurer; Jas. DeHaven, assistant secretary; Theo. E. Mueller, assistant general manager of factories.

STANDARD UNDERGROUND CABLE COMPANY

Richard S. Waring (deceased) was the founder of the Standard Underground Cable Company, in 1882; he was a real pioneer,—a man of vision; and his venture in the new and untried field of underground cables was the first specific project of the kind in the United States.

Many discouragements and difficulties were encountered, including opposition, or at least no encouragement by public service companies, who naturally did not relish the thought that they might be required to spend large sums of money to remove their overhead wires from the streets and place them underground without long proof of permanence. But Mr. Waring was an outstanding example of the type of men who never acknowledge defeat, and whose extraordinary foresight and courage spur them on in spite of seemingly insuperable obstacles. Before many years public service companies realized the value of underground cables, and nowadays such cables have become an indispensable part of their equipment in the larger cities.

There were associated with Mr. Waring in the later formative period of the Cable Company some of the prominent leaders in other Pittsburgh industries, such as B. F. Jones, Sr., John and Willis Dazell, John and Frank Moorhead, Mark W. Watson, George B. Hill, Jacob Painter, Jr., and James H. Willock, and finally (in 1886) George Westinghouse.

The company was first organized as a New Jersey corporation, but in 1889 it became a Pennsylvania corporation, by receiving a charter signed by Governor James A. Beaver, on June 4 of that year.

It was only a few years after 1886 that the company began its unbroken record of cash dividends, interspersed now and then with stock dividends out of surplus earnings, its January, 1927, cash dividend being Dividend No. 143. From a corporation with \$1,000,000 capital, and very little or no surplus, and only one small plant, in 1889, it has grown to be the leading manufacturer of underground cables in the United States, with an issued capital stock of \$6,300,000, in addition to an earned surplus in excess of that figure, and with the most modern plants (named in the order of their creation) in Pittsburgh, Oakland, or Emeryville, Cal., Perth Amboy, N. J., Hamilton, Canada, and St. Louis, Mo.

Its list of products has also expanded tremendously in kind, as well as volume, from the small production of underground cables only, in the beginning, until now it includes not only all types of underground, aerial and submarine cables, but copper rods and wire, brass and bronze rods and wire, and practically all kinds of insulated wires and cables, such as magnet wire, weatherproof wire and rubbercovered wire. Its total volume of business has grown from a few thousands to approximately \$30,000,000 per annum. The Standard Underground Cable Company's products are known and shipped to every state in the Union, and to many foreign countries, and the strategic locations of its plants enable it to procure its raw materials of manufacture, and to serve its localized customers, to the best advantage of all concerned.

Its district sales offices extend from the Atlantic to the Pacific coasts, and include Boston, New York, Philadelphia, Washington, Atlanta, Pittsburgh, Chicago, St. Louis, San Francisco, Los Angeles and Seattle, besides having commission agencies in various places in the United States and in some foreign countries.

Its Pittsburgh plant, which is of special interest to Pittsburghers, is located on the Allegheny Valley division of the Pennsylvania Railroad, on Pike street, and extends from Sixteenth street to Seventeenth street, a distance of 475 feet, covered with buildings, nearly all having five floors. This plant is devoted mainly to the manufacture of leadcovered cables for telephone, telegraph and electric light and power service, and the manufacture of cable accessories, such as terminals and junction boxes and splicing materials. The general offices of the company and a cafeteria are also located in a portion of the top floor of this plant.

Commercial testing laboratories are maintained at all its plants to assure the perfection of the materials shipped out; and extensive research and development laboratories are maintained at its Perth Amboy and Pittsburgh plants, for in this branch of electrical development, as in the electrical field generally, constant vigilance (study and research) is the price of liberty (commercial and financial success) and the Standard Company, through its corps of specially trained engineers, has always given the closest attention to the needs of the industry, and while those needs have had a marked growth in the last four or five years, the end is not yet.

Four or five years ago, underground cables to carry current at 33,000 volts pressure were rare, and were considered very difficult to make, while today they are not at all uncommon for some of the cable manufacturers; in fact this company has during the last two years, made and furnished a number of underground cables to operate at 66,000 to 75,000 volts pressure, as the demand arose for such extraordinary super-tension cables, and concurrently with such cable development has also gone the development of terminals and joints to match the cable. Now there is a wish, in some important quarters, that cables for 132,000 volts might be made available, and the Standard Company is at work on the problem, and expects to make such cables commercially in the near future.

This company has been peculiarly fortunate in holding its important staff for long periods of time, and in commanding a degree of loyalty and attachment to its interests which is rarely found. Thus a relatively large number of the more important key men (as well as some of minor importance at present) both in production and research, in sales and administration, have to their credit continuous periods of service ranging from fifteen years up to thirtyfive years or more, the president of the company, Joseph W. Marsh, having been connected with it since its birth in 1882. The company has just completed a large program of extensions and improvements, covering a period of five years, and involving the expenditure of upwards of \$5,000,000, and all without borrowing, and without calling upon its stockholders for additional capital.

The Standard Cable Company is distinctly a Pittsburgh industry, even though it has some plants elsewhere,—for it was organized solely by Pittsburgh people, its executive and general sales offices have always been in Pittsburgh, and its stockholders, at least to 95%, are residents of Pittsburgh and vicinity.

Its directors are Henry Buhl, Jr., Joseph N. Davidson, Louis W. Dalzell, Harvey L. Childs, James H. Lockhart, Joseph W. Marsh, John Moorhead, Jr., H. D. Shute, and P. H. W. Smith.

The officers are: President, Joseph W. Marsh; vice presidents, P. H. W. Smith, C. J. Marsh and A. B. Saurman; treasurer, C. M. Hagen; assistant treasurer, R. M. Farber, assistant treasurer and assistant secretary, H. B. Brunot, secretary, J. W. Shibler; auditor, F. L. Dudgeon; assistant auditor, S. A. Leppert.

UNITED ENGINEERING AND FOUNDRY CO.

The United Engineering and Foundry Company is an organization of engineers, founders and machinists which stands in the foremost rank of this industry, and which constructs complete machinery equipment for iron, steel and tube works. It occupies extensive areas of plants in Pittsburgh and Vandergrift, Pa.; Youngstown and Canton, Ohio. The Pittsburgh plants are: the Frank-Kneeland Machine Company Department, located at Fifty-fourth street and the Allegheny Valley railroad; the McGill & Company Department, at Twenty-seventh and Smallman streets; and the Lincoln Foundry Company Department, at Sixtieth and Butler streets. At Youngstown, O., are the Lloyd Booth Company Department and The William Tod Company Department. At Canton, O., is the American Roll and Foundry Company Department. The steel foundry is at Vandergrift, Pa.

In the long list of products of this great concern may be found, under the head of "Mills," blooming, universal, plate, slabbing, sheet, tin, guide, structural, skelp, muck bar and cold strip. Under the heading "Shears," are bloom hydraulic, lever, guillotine, vertical, plate, squaring, doubling and rotary. Other products are high-speed forging presses; sand, chilled, steel and "Adamite" rolls; tube works machinery for complete lap and butt weld equipment. Under the title of "Miscellaneous Machinery," may be mentioned hot and cold saws, roll lathes, accumulators, ingot tilters, mill, traveling and tilting tables; billet, ingot, ash and slag cars; ore mills, squeezers, intensifiers, manipulators, plate bending roll, iron and steel castings, machine molded and cut steel gears.

Much of this will be found quite technical, but it is necessary to mention these numerous forms of machinery in order to tell the great scope of operations of the company under discussion.

Quite recently the United Engineering and Foundry Company constructed the largest blooming mill in the whole world. It is technically described as a "54-inch 2high reversing blooming mill," This mill was recently completed at the Youngstown plant of the company, for use at the Homestead works of the Carnegie Steel Company. In addition to its being the largest structure of its kind in the world, it is of special interest in many other particulars. The entire mill is of massive construction throughout, and with the exception of a few minor parts, the castings are all made of steel. Incorporated in the design are the latest inprovements in blooming mill practice, including several exclusive "United" features. Due to the dimensions necessary for the mill, it was practically impossible to obtain sufficient spread of bed plates or a suitable arrangement of feed rollers in a one-piece housing. It was therefore necessary to design a built-up housing assembly, made up of four post sections and a top and bottom separator.

This design is similar to the very successful housing arrangement which the company developed and built for the 206 inch 4-High Plate Mill at the Lukens Steel Company, Coatesville, Pa., which has been in operation about nine years and proved entirely satisfactory. The finished weight of the housing assembly is about 800,000 pounds. The total finished weight of the mill is 3,833,000 pounds. The total height of the mill, including shoe plates and supports, is 38 feet and $\frac{3}{4}$ inches.

The capitalization of the United Engineering and Foundry Company is \$1,770,300 preferred stock and \$6,-935,300 common stock, a total of \$8,705,600. Total sales for the first year of its organization were \$2,250,000; total sales for the fiscal year 1926, were \$12,000,000.

Present officers of the company are: I. W. Frank, chairman of the executive committee; F. C. Biggert, Jr., president; G. G. Small, first vice president; William Gardner, second vice president; Charles E. Satler, secretary; George H. Friesel, treasurer-auditor. Directors are, besides the officers: W. K. Frank, K. C. Gardner, George W. Knotts, George T. Ladd, William Metcalf, R. W. Tener, John Quinn, C. W. Bray and J. H. Lockhart.

THE VITRO MANUFACTURING COMPANY

The activity of Vollkommer & Company as specialists for the enameling, glass and ceramic industries dates back to the year 1896, when J. Vollkommer was assistant manager and superintendent of enameling plants, and later on consulting engineer for various large firms. During 1903, by association with his brother, Theodore J. Vollkommer, an expert mechanical engineer, the co-partnersnip of Vollkommer & Co. was formed. As the result of careful study of the conditions then existing in many enameling plants, it was found desirable not only to continue their activity as consulting engineers, but also to assist their patrons in obtaining the best possible raw materials and chemicals at reasonable prices. The firm first engaged in the business of importing such products. This proving a success, arrangements were made to build a small plant for manufacturing certain materials. In 1905 a building was leased in East Liberty for manufacturing on a small scale. The materials met with such approval by the trade that a larger plant and improved facilities for manufacturing were found necessary, and in 1907 land was purchased at Sheridan, Pa., and a factory built and equipped. About eighteen months after completion, this plant, together with a large quantity of finished products and raw material, was entirely destroyed. Undaunted by this misfortune, the owners immediately set to work and in January, 1909, a new plant, considerably enlarged, built in a very substantial manner, and completely equipped, resumed operation. The business since that time has been incorporated and operated successfully as The Vitro Manufacturing Company.

Some of the materials manufactured are prepared enamels for steel, cast iron and copper, coloring oxides, especially prepared to give enamels and glass any desired color or shade; enamel white and vitrozircon, materials developed to replace the expensive oxide of tin in white enamels; vitrifiable colors and gold compounds for decorating glass, pottery and tiles; ceramic chemicals such as chromium oxide, cadmium sulphide and uranium products used as coloring mediums for the glass, enamel, pottery and cement industries.

All raw materials and finished products are manufactured and controlled by chemical and ceramic methods. In addition to a well equipped plant, this company has recently built and equipped a laboratory for research and development of new products, as well as plant control. This laboratory is in charge of an expert research chemist and the staff includes practical enamelers, engineers and ceramists. Vitro products are distributed not only in the United States and Canada, but also in South America, Europe, Australia and the Orient.

The main office of the Vitro Manufacturing Company is at 928 Fulton Building, Pittsburgh, Pa. It is a Pennsylvania corporation, with a capital of \$250,000. Josef Vollkommer is president, J. W. Wenning vice president, Theodore J. Vollkommer secretary, H. E. Roemhild, treasurer.

THE WOLFE BRUSH COMPANY



The older generation still recollect the display for almost a quarter of a century on Wood street of two large stuffed boars, one white, the other black, which held in their mouths various types of brushes. These symbols of the brush

trade were displayed by Wolfe Bros. & Co., the pioneer brush makers of Pittsburgh, who at one time occupied a building whose site is now part of the plot on which the First National Bank Building is now erected.

The Wolfe Brush Co. originated in 1851 by David Stewart, who located on Fifth street, later locating on Liberty avenue, near Sixth street.

In 1883 after the death of David Stewart the business was purchased by Wolfe, Patton & Co. and moved to 514 Wood Street. Later the firm name changed to Wolfe Bros. & Co., and with the purchase of the Walker Brush Co., of Franklin, Pa., became Wolfe, Walker & Co., by which name it was known until the Company incorporated in 1903 as the Wolfe Brush Co., shortly thereafter moving to 511 Wood street, where a retail business in brushes of all kinds, including barber supplies, was conducted, the factory being located in a large building at Fifteenth and Bingham streets, South Side.

In 1912 the business was reorganized by the present incorporation and the retail business was discontinued. The factory was moved to the North Side, eventually occupying for its quarters the large site on Pennsylvania avenue and Bidwell street, where high grade paint brushes are made, together with a complete line of industrial brushes.

The firm makes a specialty of manufacturing specification brushes and numbers among its customers the large railroad systems of the country, together with the largest steel plants and industrial concerns, most of whom require brushes made to suit their particular requirements.

Raw material is principally high grade bristle, some grades of hair costing \$400 per pound. Other materials, of which there are too many to enumerate, are assembled from every country in the world, and almost every animal contributes its share to the manufacture of this useful, necessary tool, which includes brushes from the smallest miniature brush hardly larger than a pin to roller brushes twelve feet long.

Most of the well known woods are used in the manufacture of brushes, including sandal wood, mahogany, ebony, olive and walnut. Fibers of every description, each having its own merit by reason of its peculiarity, are brought from all over the world, such as bass fiber from Africa, bamboo from China, rattan from Ceylon, palmyra from India, tampico from Mexico. Metals including gold, silver, copper and tin, are used in various capacities, from making brush backs to binding, together with silk, cotton, linen thread, bone, ivory, celluloid. rubber, etc.

The Wolfe Brush Co. has a capital investment of over \$500,000 and its officers are Chas. E. Willock, president, S. Laird Lang, vice-president and treasurer; E. F. Johnston, secretary and general sales manager.

WOODINGS FORGE & TOOL COMPANY

The Woodings Forge & Tool Company, organized in 1924 and located in Verona, Pa., while a comparatively new company, is directed by men with long experience in the manufacture of railway track tools. The president, Emanuel Woodings has been identified with the manufacturing end of this industry for forty years; the vice-president, J. T. Brooks, has had many years of experience in the selling end, and has been responsible for the successful development of many new ideas.

Among several "Woodings" ideas, which have been accepted by the railroads of the United States, are the fol-



WOODINGS FORGE & TOOL COMPANY

lowing: Reforming of splice bars: By the patented Woodings process old splice bars which have already given full service can be worked over and again put in use. This is a financial asset quickly grasped by the roads and beginning to figure largely in the maintenance of way department.

Rail Anchor: A new and novel rail anchor endorsed by the leading railroad engineers of the country and widely used by the largest railroads.

Track Chisels: Improvements in track chisel design, thereby greatly increasing the life of same.

Every type of track tool utilized by the railroads of the country in the maintenance and upkeep of their road beds is manufactured by the Woodings Forge & Tool Company. The company is not limited to the above mentioned departments, but has a very highly developed forge shop, equipped with the necessary modern machinery to do any kind of forge work, having specialized in car forgings consisting of nearly all the kinds of levers used by the car builders.

Perfect arrangements are now completed for the oil quenching and heat treating of all devices manufactured by the Woodings Forge & Tool Company requiring such a process.

The quality of its tools and the value of its inventions have made the name "Woodings" known and heard on every railroad.

The officers of the company are E. Woodings, president and general manager; J. Twing Brooks, vice president and treasurer; I. G. Sadler, secretary; directors: E. Woodings, F. F. Brooks, J. J. Brooks, Jr., J. T. Brooks and George T. Ladd.

FIRST NATIONAL BANK AT PITTSBURGH

In issuing this booklet on the varied industries of Pittsburgh, the First National Bank does not pretend to have exhausted the numerous lines in which the business men of this great city are engaged, in the category of diversified products, but it is intended to suggest the importance of this great industrial and commercial center in many ways which will not readily suggest itself to the minds of people who regard Pittsburgh as an iron and steel, or gas and oil center.

The First National Bank desires to recall to readers of this publication the importance of this financial institution in maintaining and promoting business propositions of every variety. Its Directory is composed of men who have had and still have a successful career in many lines of industry, commercial, manufacturing and professional; and they are therefore unusually qualified to pass upon and advise upon the various questions which are constantly arising. Its officers are bankers with a long experience in the handling of financial affairs, and who keep constantly informed on money matters both locally and nationally, and are, moreover, thoroughly informed on developments in all parts of the globe.

They are ready to transact business anywhere on earth, by radio, cable or mail, for the Bank's representatives in Europe, Asia, Africa, Australia and in all parts of the American continent and contiguous islands, as well as in the Philippine Islands, Porto Rico, and other dependencies of the United States, are chosen with great care for the prompt carrying out of business arrangements and the efficient handling of financial problems.

Every form of banking is being constantly attended to with dispatch, whether the accounts belong to great corporations, or are savings accounts of small proportions. Every one should feel that it is the pleasure of the First National Bank's officers to give advice in everything pertaining to finance. A comprehensive Tourist Department is maintained, and many Pittsburghers never take their vacations without consulting our travel experts. We are agents for all Ocean, Coastwise and Lake steamship companies, and our advice on travel is based on a complete knowledge of ships and foreign countries. We arrange all details of travel, provide Letters of Credit and Travelers' Checks, secure passports when necessary, buy and sell foreign money, and relieve the traveler of all the burdensome details of the journey, thus adding immeasurably to the pleasure of travel.

A new form of vacation travel just now attracting much attention is "Land Cruises in America." These cruises take routes through little known portions of America, with journeys by daylight, stopping at points which illustrate the genius and types most truly American, including travel by special and luxurious motor cars, with rest and relaxation at the best hotels, and all this without any care on the part of the sight-seer. Details of these trips are available at all times.

Capital	\$6,000,000.00
Surplus	6,000,000.00
Undivided Profits and Reserves	
Deposits	73,223,554.30
Resources	96,125,663.80

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DIRECTORS

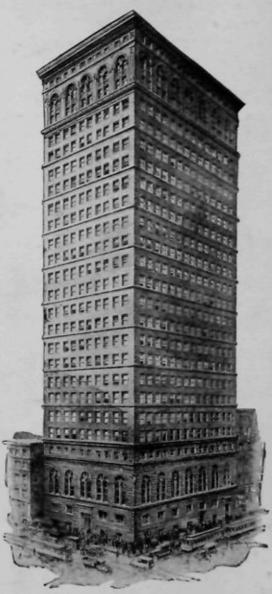
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FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Fourteen

Education



First National Bank at Pittsburgh April, 1928 This booklet, prepared and published by the First National Bank at Pittsburgh, Pennsylvania, is one of a series issued, from time to time, since August, 1919, portraying the various industries of the Pittsburgh district, with the intention of emphasizing the importance of Pittsburgh as a commercial, educational and financial metropolis. A large number of its many industries have been described in the booklets, of which fourteen, in all, have been published, to date. The following is a list of the subjects discussed, with the date of issue:

Vol. 1, No.	1—Introductory Booklet	August, 1919
Vol. 1, No.	2—Iron and Steel	September, 1919
Vol. 1, No.	3—Iron and Steel (Part 2).	January, 1920
Vol. 1, No.	4-Coal and Coke	June, 1920
Vol. 1, No.	5—Glass	. December, 1920
Vol. 1, No.	6-Electrical Appliances	. March, 1921
Vol. 1, No.	7—Radium	August, 1921
Vol. 1, No.	8-Cement and Concrete	. December, 1921
Vol. 1, No.	9-Clay Products	December, 1922
Vol. 1, No.	10—Petroleum and Natural Gas	December, 1923
Vol. 1, No.	11—Petroleum and Natural Gas (Part 2).	December, 1924
Vol. 1, No.	12—Food Products	. December, 1925
Vol. 1, No.	13—Diversified Products	April, 1927
Vol. 1, No.	14-Education	April, 1928

The Story of Pittsburgh

Education

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HE remarkable position held by Pittsburgh in the fields of industrial enterprise has been detailed to a large extent by the previous issues of the series of booklets, entitled "The Story of Pittsburgh," and prepared by the First National Bank.

An equally remarkable place is held by this city in altruistic lines. It is the purpose of this book to show the high situation held by Pittsburgh in other matters than those relating to manufactures, or incidental to the amassing of money. The mind is cultivated in Pittsburgh, and the needs of the soul are adequately considered.

The educational facilities of the city range from the public and parochial schools to the college and the technical school and university, while the training of ministers of the Gospel goes on in theological seminaries. One of these latter institutions co-operates in the support and control of the American School of Oriental Research in Jerusalem, and offers students the unique facilities afforded by that school, affording opportunities which have never before been open to American students, with arrangements made to reduce the expenses of such students to the lowest point.

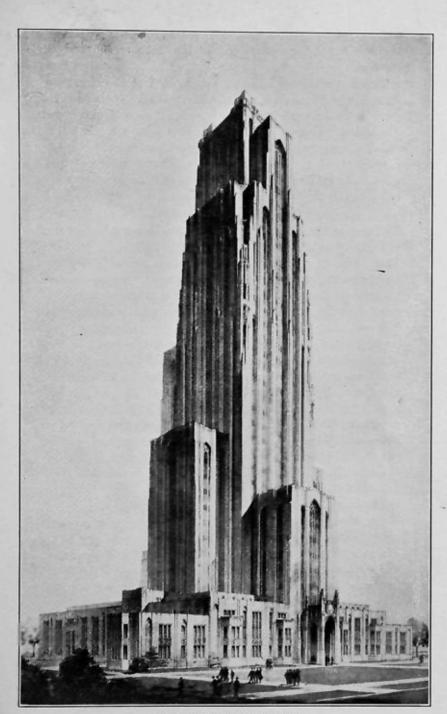
Great work in astronomy is done in this city, and the achievements of the Allegheny Observatory and of the scientists who have been connected with that institution are known the whole world over.

Pittsburgh has always been a warm supporter of religion, and the number of churches, of various denominations, scattered all over its territory, tells of the deep feeling of devotion to religion which pervades the community.

The Bellefield district presents one of the finest civic centers in the world. In one view will soon be seen the great Cathedral of Learning, under construction by the University of Pittsburgh, surrounded by many present university buildings. Not far away is the Pitt Stadium. There has been standing for many years the magnificent St. Paul's Roman Catholic Cathedral, one of the really great ecclesiastical edifices in the United States. Many fine churches of other denominations are in view. Schenley Park lies in the district, with its beautiful forests and fields and lakes, in which is located Phipps conservatory. Immediately adjoining are the many buildings of the Carnegie Institute of Technology and the Carnegie Institute. Not far away is the fine building of the United States Bureau of Mines. Other important buildings in this great civic center include the Allegheny County Soldiers' Memorial, Eighteenth Regiment Armory, administration building of the Board of Public Education, in process of erection, Schenley High School, Catholic High School, Western Pennsylvania School for the Blind, Syria Mosque, Masonic Hall, Pittsburgh Athletic Association, Mellon Institute of Industrial Research, University Club, Twentieth Century Club, Children's Hospital, Knights of Columbus and the Young Men and Women's Hebrew Association buildings.

UNIVERSITY OF PITTSBURGH

The ever-increasing educational interest of the Pittsburgh community, and of western Pennsylvania. is perhaps nowhere so adequately expressed as in the expansion of the university which bears the city's name. One hundred forty-one years ago, in 1787, the University of Pittsburgh had its beginning. It was known as Pittsburgh Academy. Pittsburgh at that time was a frontier trading post, with less than a thousand inhabitants, but one of its foremost interests was education. Judge Hugh Henry Brackenbridge, a graduate of Princeton, enlisted the cooperation of leading clergymen and other public and professional men in establishing an academy and on February 28, 1787, a charter was obtained and the academy incorporated. Today that academy has grown to be one of the three universities in Pennsylvania, and



The Cathedral of Learning

the only one in the western part of the state, which receives state aid.

The first academy building was located at the corner of what is now Third Avenue and Cherry Way. It was a twostory brick house, with two rooms upstairs and one room downstairs. George Welch was the first principal. In 1810, the administration of Rev. Joseph Stockton, one of the most prominent of the early principals, began. He was the author of the Western Spelling Book and the Western Calculator, the most popular textbooks of the time.

The year 1819 marked a new epoch in the school's history, for the Pittsburgh Academy became the Western University of Pennsylvania, and a new three-story building was erected. Then came a period of misfortune and struggle. Twice the building was destroyed by fire. For a time it was necessary to suspend instruction. But in 1855 a new building was erected at Ross and Diamond Streets, and brighter days followed.

In 1891, Dr. William J. Holland was appointed to the chancellorship of the University. At that time there were less than one hundred students and a faculty of eighteen members. Dr. Holland determined that the institution should become a university in fact as well as in name. Schools of Medicine, Law, Pharmacy, Mines, and Dentistry were established or affiliated. Faculty members whose names will long be remembered were such men as Daniel ("Uncle Dan") Carhart, Reginald A. Fessenden, Dr. Francis Clifford Phillips, Dr. Albert Ellis Frost, Edmund Burke Huey, Dr. George A. M. Dyess, and others.

In 1904, Dr. Samuel Black McCormick became chancellor. He immediately made new plans for the University. The year 1908 was a red letter year, for in that year the name was changed to the University of Pittsburgh and the location was moved to its new campus in the Schenley district. New schools were soon established—the Schools of Business Administration, Education, Graduate School, and Mellon Institute of Industrial Research. New buildings were added, and the growth of the University since that time has been phenomenal. The expansion which began with Dr. Holland's administration continues in that of Dr. John Gabbert Bowman, the present chancellor, who succeeded Dr. Mc-Cormick in 1921.

Within the past year more than 1000 students have received their degrees from the University of Pittsburgh. The faculty numbers approximately 800 members. The approximate enrollment in all schools of the University for the year 1926-27 was 10,000. Of these 5200 were regularly classified students. Enrolled in the extension division were over 2000, bringing the total enrollment to about 12,000. As the number of students taking advantage of the opportunities which the University has offered has increased, it has extended and expanded its service to the community.

The University is now composed of sixteen schools and divisions. They are: The Schools of Medicine, Law, Pharmacy, Dentistry, Engineering, Mines, Education, Business Administration, the College, the Graduate School, the Research Bureau for Retail Training, the Mellon Institute of Industrial Research, the Allegheny Observatory, the University Extension Division, Downtown Division, Summer Session and Radio Studio. In the fall of 1927 the Downtown Division was established. Its purpose is to give courses in the late afternoon and evening for teachers and others employed who cannot attend the classes on the campus. The Downtown Division is located in the Chamber of Gommerce and courses are offered in liberal arts, engineering and mines. education and business administration. Facilities are provided for 3.500 students. Instruction is offered, for the most part, by faculty members who are teaching on the campus. Dr. Vincent W. Lanfear, formerly associate professor of Finance at the University, is the director of the Downtown Division. Heretofore the evening division had been a part of the School of Business Administration.

"The purpose of the new unit," Chancellor Bowman says, "is simply to carry on downtown the regular work done on the campus in the College of Liberal Arts and in the Schools of Business Administration, Engineering and Mines, and Education. The growth of the evening division of the School of Business Administration downtown has brought a demand for courses of study outside of that particular field. The University believes that the time has come when it should offer a substantial program, not limited to any one field, in a downtown location. It is also believed that this expansion is demanded by the University's growing program of service to its community."

The summer sessions of the University have also shown steady growth. The 1927 session which marked the twentyfirst year of the summer session enrolled nearly 2500. Competent instructors from the University of Pittsburgh and other institutions offered courses from July 5 to August 12. The purpose of the summer school, as expressed in the bulletin, is "to meet the needs of those preparing for teaching as well as of those in other fields who can avail themselves of the opportunity the summer affords for further study." There are courses for those working towards teachers' certificates, for those who wish a higher certificate, for those wishing to take regular University work, or for those who wish to attend for the purely cultural value. Summer session courses were also conducted at Johnstown and Erie.

The Extension Division, gives courses in towns scattered from Erie to Morgantown, and Altoona to Steubenville. It is the aim of this division to bring higher education to the very door of citizens unable to attend the University proper. The Division provides speakers, conducts surveys, offers academic courses, runs a teachers' appointment bureau, and acts as a general clearing house for community educational problems. The recently established Johnstown Junior College and the Erie Center are under the direction of the Extension Division.

The proposed medical center, in which the University of Pittsburgh school of medicine will have teaching privileges, is a forward step in furthering the medical profession. Such a center will contain a group of teaching hospitals, dispensary facilities, nurses' training school and home; administrative, library, laboratory, and lecture room facilities. Each unit of the proposed group will preserve its own identity and management, cooperating only for teaching and laboratory service and economy of administration. Of this proposed medical center, the Children's Hospital is the first building actually erected. The Elizabeth Steel Magee Maternity Hospital is already closely affiliated with the University. Plans for the Presbyterian General Hospital, which will be a unit of the center, are well under way.

While the University of Pittsburgh draws students from abroad, it is primarily a Pittsburgh institution. Nearly 50 per cent of its students live in the city, and almost 75 per cent are from Allegheny County. More than 90 per cent of the University of Pittsburgh student body are from the state of Pennsylvania, the majority of them representing the 26 counties of western Pennsylvania, which have a population of about 5,000,000. More than half of the full-time students are women, and women are admitted to every school, both undergraduate and professional, and take a prominent part in student activities.

The roster of the University of Pittsburgh's alumni contains the names of many who have achieved distinction and brought honor to their Alma Mater. Among them are Washington Roebling, the engineer who built the Brooklyn Bridge from the plans of his father; George Wilkins Guthrie, ambassador to Japan under President Wilson and the first mayor of Greater Pittsburgh; Andrew William Mellon, the Secretary of the Treasury; Senator David Aiken Reed; Ethelbert Nevin, composer of music; Hervey Allen, modern poet, and numerous others who have taken an important part in civic, educational, and professional life.

In the frontier days Pittsburgh Academy expressed the courage and tenacity of the pioneer settlers of the trading post community. Something of that same spirit has been carried through the years of the University's transition and growth. The time has now arrived for another step to be taken to meet the increasing demands upon the university. Facilities have proven inadequate, and an extensive building program has been adopted. The new plans for the expansion of the University include a building which will express the traditions of the city of Pittsburgh and express the spirit of hope and achievement for which it stands. A Cathedral of Learning, unique in design, in that it will tower to a height of more than 30 stories, is now in the process of construction on the plot of ground bounded by Fifth Avenue, Bellefield Avenue, Bigelow Boulevard and Forbes Street, and with the present buildings, will accommodate 12,000 students.

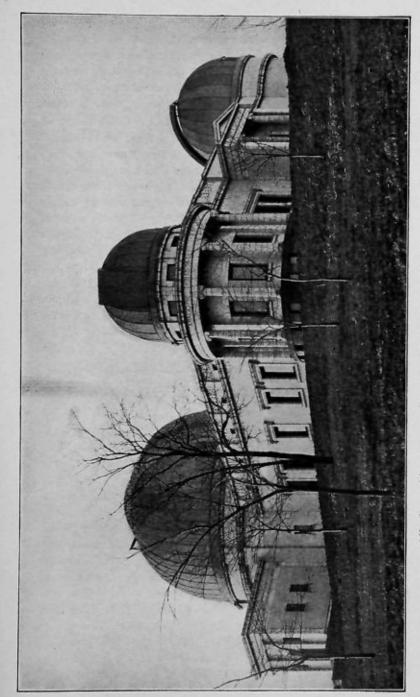
Contemplating the University's present building program and the relation of the University to the city, Dr. Bowman has said, "When we even half realize what the city of Pittsburgh is, the wilderness here which reached down to our grandfathers' time, the epic story of the city's growth, the doings and the hope of its people, when we half realize in our hearts how much we desire that this record continue, that achievement remains our inspiration not only in industry but in all that makes life satisfying—philosophy, government, science, and literature—then we know what the University is to Pittsburgh. It is a central symbol which calls into practice all of the sterling stuff in us.

"A building of enduring beauty, the Cathedral of Learning will be a fitting monument to the brave pioneers who started the Pittsburgh Academy in 1787, and to those others who have brought the University to its present status. To the many students who will enter its portals in the years to come it will be an inspiration and incentive to live always at the highest level. And to the city of which it is such an essential part it will stand as the realization of an ideal."

ALLEGHENY OBSERVATORY

Pittsburgh makes many contributions to astronomy through the Allegheny Observatory, one of the great astronomical institutions of the world, belonging to the Pittsburgh University. This observatory is situated on the highest hill in Riverview Park, overlooking wooded valleys, with a wide view down the Ohio River. The observatory is famed throughout astronomical and scientific circles alike for its equipment and the quality and quantity of results achieved by its staff.

The present observatory developed from a small beginning in 1859, when several citizens of the present North Side of Pittsburgh organized the Allegheny Telescope Association. Its efforts at raising funds were so successful that instead of buying an 8-inch telescope, at first contemplated, a 13-inch telescope was secured, and mounted in the new building in the beginning of 1861. When mounted, this telescope was



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Allegheny Observatory-Riverview Park. Northside, Pittsburgh, Pa.

surpassed in size by only two other refractors in the world, each of which was 15 inches in diameter, and one of them was at Harvard College. In 1865 the observatory became the possession of the university, with a modest endowment fund, and Prof. Samuel Pierpont Langley was made director, continuing 20 years.

Langley's skill as a draftsman and illustrator enabled him to make the finest drawings of sunspots ever executed. At that time, visual observations were the only means of the study of the sun. The photographic plate has since superseded the eye, aided by many modern instruments, including the spectograph and spectroheliograph: but Langley's visual observations, made in Pittsburgh, are now regarded as classic. He not only studied the solar spectrum visually, but he also used a very delicate thermo instrument called the bolometer, extending human knowledge of the spectrum far into the infra-red, much beyond the power of the eye to see. This region of the spectrum mapped by him is that part from which the earth gets most of its heat energy, affecting the thermometer, but not the eye.

While at the Alleghenv Observatory, Langlev made his experiments on the lifting power of the air by means of a whirling table on which were mounted planes tilted at various angles-the precursors of the wings of the airplane. Langley himself constructed the first airplane after he left Pittsburgh and went to Washington as secretary of the Smithsonian Institution. The failure of his plane to make a flight greatly distressed him. He had the right idea, however, and its lack of success was not due to the plane itself, but to the failure of the launching apparatus, which, instead of directing the plain upward, threw it downward into the Potomac River. Much ridicule was heaped upon Langley for his attempt at air flight, and he found it impossible to obtain the necessary funds to continue his experiments. However, this same machine, in the hands of the Wright Brothers, made a successful flight, long after the death of Langley, proving that he was the inventor of the airplane. James E. Keeler was another director who did excellent work. His principal achievement was the spectroscopic proof of the constitution of Saturn's rings, by a spectrograph of his own design.

John A. Brashear later became connected with the observatory and constructed many instruments for which a demand developed in all parts of the world. He raised sufficient funds to build the present beautiful building, costing about \$300,000. A 30-inch reflector was built, called the Keeler Memorial Telescope. This is adapted to spectroscopic work, and with it were determined the orbits of a large number of spectroscopic binaries, stars which by means of the spectroscope are known to be double, and yet are so close together that the telescope is not capable of showing them double.

As a memorial to William Thaw and his son, William Thaw, Jr., the immediate families of these men furnished the money, about \$125,000, for the erection of the Thaw Memorial Refractor. So difficult was the task of making perfect discs, a wait of more than 10 years was necessary before they could be delivered. The second of these discs was sent from Germany only four months before the outbreak of the World War. In April, 1914, after the receipt of this disc, the Brashear Company ground and finished the lens in four months, much the shortest time in which any large lens had ever been finished. The observatory now houses the finest photographic reflector in the world.

The present director is Dr. Heber D. Curtis, who has been a member of every important expedition for the observation of solar eclipses in recent years.

Four nights a week are allotted to visitors to the observatory, and about 5000 persons, many of them from distant parts of the country, and other parts of the world, "see the stars" annually through the facilities offered by the Pittsburgh University.

MELLON INSTITUTE OF INDUSTRIAL RESEARCH

"An industry is made great, not by its raw materials, not by its products, but by the men who show how to use them to best advantage i.e., by scientists and engineers in its service."

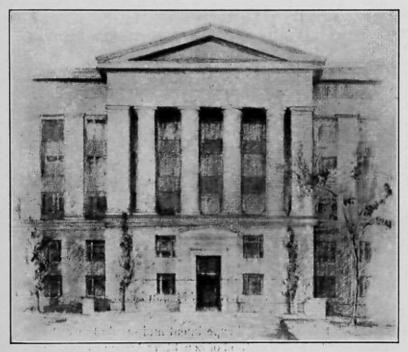
HON. A. W. MELLON.

The essential aim of Mellon Institute of Industrial Research is the creation of new knowledge by scientific investigation, in accordance with the Industrial Fellowship system of Dr. Robert Kennedy Duncan. The institution was founded by Andrew W. Mellon and Richard B. Mellon, whose constant interest has brought success to the application of the system.

The industrial research of the Institute is organized on a contract basis, the problem being set by a person, firm or association interested in its solution, the scientific worker being found and engaged by the Institute, and an industrial fellowship being assigned for a period of at least one year. Each holder of an industrial fellowship is given for the time being the broadest facilities for accomplishing a definite piece of research, and all results obtained by him belong exclusively to the founder (donor) of the fellowship. Only one investigation is carried out on a particular subject at any one time and hence there is no duplication of the research activities of the Fellowships in operation.

The Institute is primarily an industrial experiment station, but the nature of its investigational procedure enables broad training of young scientists in research methods and in special subjects of technology. It also has a department of research in pure chemistry, which investigates fundamental chemical problems that are of purely scientific interest.

The idea of the Industrial Fellowship system was conceived by Dr. Duncan in 1906, while in attendance at the Sixth International Congress of Applied Chemistry in Rome. For some time previous to this Congress, Dr. Duncan had been in Europe gathering material for several books on chemistry. Through visits of inspection to factories, laboratories and universities of some European countries, and through conversations with industrialists and scientists, he had become impressed at various places with the spirit of cooperation that existed between technology and science, which made for the advancement of both. At the same time, he became aware, more than ever before, of the fact that



Entrance to Main Building Mellon Institute of Industrial Research

much of American chemical industry, from the standpoint of manufacturing efficiency, was in a weak condition. The absence of the application of scientific research methods was one reason for this state of affairs, and Dr. Duncan was led to propose a remedy in industrial fellowships. His plan was to assist manufacturers who desired to break away from tradition and to make even more scientific that production already well on the road from tradition to science. Upon his return from Europe to accept the chair of industrial chemistry in the University of Kansas, Dr. Duncan arranged for the establishment of the first Industrial Fellowship in January, 1907. In 1910, Dr. Duncan was called to the University of Pittsburgh to inaugurate his system in the Department of Industrial Research, and the operation of the Fellowships was begun in a temporary building on March 1, 1911. Andrew W. Mellon and Richard B. Mellon, citizens of Pittsburgh and sons of Judge Thomas Mellon, of the class of 1837 at the University of Pittsburgh, noted the practical



A View in the Library of Mellon Institute

success of this educational experiment and saw in the system an apparently sound method of benefiting American industry by the study of manufacturing problems under suitable conditions and by training young men for technical service. In consequence of this interest, in March, 1913, they founded Mellon Institute of Industrial Research at the University of Pittsburgh, and later placed the Industrial Fellowship system on a permanent basis, as a memorial to their father (1813-1908) and to Dr. Duncan (1868-1914). The main building of the Institute, which is a part of the central group of the University of Pittsburgh, was occupied in February, 1915, by the twenty-three fellowships then in operation. At the present time, two buildings are filled to approximate capacity with sixty-two fellowships, covering a wide variety of different problems. These fellowships employ one hundred and ten research chemists and engineers. The continued financial support of the Messrs. Mellon has made it possible to develop the system to its present strong position.

By the application of the Industrial fellowship system, the Institute has been successful in demonstrating to American manufacturers, irrespective of size, that industrial research, properly carried out, is profitable to them. Most of the problems accepted for study, 1911-1928, have been



A Corner in the Machine Shop of Mellon Institute

solved satisfactorily, and many chemists and chemical engineers have been trained in research methods and then placed in useful industrial positions. The Institute has also been active in stimulating research in other laboratories and in cooperating with other research establishments, both in the United States and abroad. It is however best known by the successful commercial processes which it has developed and by its contributions to the literature of chemistry and allied sciences. The total contributions to literature for the fifteen years ended January 1, 1927, were as follows: 12 books, 56 bulletins, 411 research reports, 636 other articles, and 322 United States patents. Notable investigations have been carried out by Industrial Fellowships on subjects in the following fields: bread, by-product coking, carbon dioxide, cellulose, citrus products, composition flooring, corrosion, dental products, edible gelatin, electrical precipitation, enameled ware, fertilizers, fiber containers, fish products, flotation of ores, food and beverage flavors, fuels, galvanizing, garment cleaning, glass, glue, heat insulation, hydro-metallurgy of copper, inks, insecticides, laundering, magnesia products, matches, natural gas, nickel, olefine gases, organic synthesis, perfumes, petro-



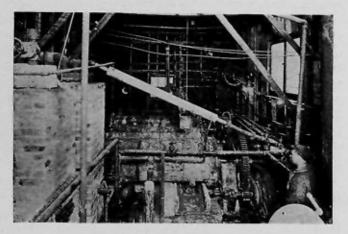
A Corner of a Research Laboratory in Mellon Institute

leum, protected metals, refractories, roofing materials, rubber compounding, sleep, smoke abatement, sodium silicate, stove enamels, sulfur, synthetic resins, vitamins, vitrified tile, wood chemicals, wrought iron, and zinc.

GENERAL PRINCIPLES OF THE INDUSTRIAL FELLOWSHIP System

In accordance with the System of the Institute, an individual industrialist, a company, or an association of manufacturers, that has a suitable problem or group of problems that requires investigation, may become the donor of an Industrial Fellowship, provided the problems are of sufficient scope to warrant the services of at least one man for a period of not less than one year, provided no other investigation is in progress in the Institute on the research topic that is of interest to the prospective donor, and also provided the Institute can give accommodation to the work that is necessary to solve the problems. Each industrial fellowship that is accepted by the Institute is the subject of a definite agreement between the industrialist, company, or association of manufacturers concerned and the Institute.

The industrial fellowships of the Institute are of two general types, namely, individual and multiple. An in-



An Interior View of a Unit Experimental Plant at Mellon Institute

dividual industrial fellowship utilizes the services of one research chemist or engineer (with assistants when necessary), who is responsible directly to the executive staff of the Institute. A multiple industrial fellowship has the services of one or more research men (junior fellows) under the direction of a senior fellow, who, in turn, is responsible to the executive staff.

The Institute is not of a commercial nature, being entirely independent and deriving no financial profit from the investigations conducted under its auspices. Moreover, members of the executive staff devote their time and ability to the interests of the Institute and of the University of Pittsburgh without outside remuneration. The donor, on his part, provides a foundation sum that is adequate to cover the annual cost of maintenance of the industrial fellowship, comprising operating charges, the purchase of all necessary special apparatus or other equipment and the salary of the research man or men selected to work on the particular problem, the solution of which is of concern to the donor. This sum of money is approximately \$6000 for each research man needed on the fellowship.

The Institute, in due order, selects the industrial fellow, and the investigation to be carried out is entrusted to this qualified man, who devotes his entire time to it.

The Institute furnishes laboratory, library, and consultative facilities, the use of its permanent research equipment, direction to the progress of the work, and an environment that stimulates productive investigation. All results obtained by the industrial fellowship are the property of its donor. Each industrial fellowship is a case of trust and is operated in strict accordance with the terms of the agreement governing its operation. Information pertaining to its subject matter and progress is not released to the public unless the donor so desires.

Cooperation is a large factor in the success of the Institute. Teamwork and high creative ability go together—an idea that was made vital by Dr. Duncan and is now a valued heritage of the Institute. The system of the Institute enables a manufacturer to obtain results in a shorter period of time and at less cost than is ordinarily possible. The cooperative and research facilities of the Institute hasten results.

There are three definite stages of industrial fellowship work, namely: preparatory, experimental, and developmental.

The preparatory stage includes a critical study of the literature of the subject, preliminary conferences with the donor, and visits to his plant, in order to familiarize the industrial fellow and the executive staff with the problem in all its aspects. Each incumbent of an industrial fellowship, who is getting ready to undertake a piece of research, submits a report on his plans for investigation and on what has been found on the subject in the literature before he actually begins experimental work. Most of the troubles of the industries have a chemical origin. Most of the Institute's researches are therefore in the closely related provinces of chemistry and chemical engineering; but the solution of many problems requires the cooperative efforts of the chemist and the physicist or the biologist.

Following the approval of the executive staff to a definite program of research, the experimental stage is entered. It embraces laboratory work and contact with the donor through regular progress reports and necessary conferences.

The developmental stage, which follows the laboratory or experimental investigation, includes the working out of processes or the preparation of products on first a unit-plant scale and then in the donor's factory. It is essentially chemical engineering in character, and stress is placed on those chemical and physical facts that are of direct economic interest. A process may be carried out on a laboratory scale with entire success; but just as soon as it is put in operation under semi-commercial conditions, or on an industrial plant scale, it may fail through inadvertent neglect of engineering factors. Hence plant-size investigations, involving considerable financial outlay, are often necessary in industrial research.

Research at the Institute is not of the individual type, carried out for the personal gratification and advancement of scholarship of the industrial fellows. It is institutional in that it is conducted by scientists, working independently or in varying measure of cooperation, as members of an organized agency, designed to serve industry. The effort is made to administer the Industrial Fellowships in such a way as to enable their holders to put forth their best efforts.

The renewal of many industrial fellowships, year after year, attests to their productivity and to the confidence that their donors have in the Institute. It is of interest to mention here that the incumbents of the larger and older industrial fellowships are recognized generally as specialists in the particular branches of technology in which they are conducting investigations.

The United States Department of Commerce has expressed the opinion that "among constructive activities of trade associations none is more fitting nor more profitable than scientific research." Mellon Institute has been engaged in research for a number of associations of manufacturers since 1914—at present there are thirteen association fellowships in operation—and its experience shows convincingly the valuable relation of industrial research to the advancement of business in the manufacturing fields thus covered.

Each association of manufacturers that is maintaining an industrial fellowship in the Institute consists of those firms in an industry having problems of common interest which are so basic or of such general application that the results of research thereon are of importance to all companymembers. This type of investigational work may be carried on without interfering with competitive interests or the relative commercial positions of the cooperating firms. It has been demonstrated that competitors can work harmoniously on a research program, provided the problems selected are of concern to all members of the association and do not require the disclosure of confidential information by any member of the organization.

For the most part, the Institute's researches for associations have for their object the advancement of basic knowledge of the industries, their processes and products. It has been especially successful in work on standardization of factory practice and manufactured products and on extending uses of various chemicals and commodities.

The purpose of industrial research is to promote success in manufacturing practice through scientific investigation; in other words, to find new materials, new processes, and new uses of products, for industrial development, and to advance manufacturing operations through the application of scientific methods to industry. Before things can be used in any way they must be discovered, and it is the particular function of science to reveal them. It is the business of the scientific investigator to discover and of the engineer or inventor to recognize and apply the results achieved.

The spirit of all industrial research is sincerely scientific. It seeks to be open-minded toward new truth. It recognizes the intricacy of its problems, it does not hesitate to admit ignorance nor to suspend judgment. Its constant aim is the discovery of truth and its application to human need. Its scope is as wide as the range of influences, chemical, physical, biological, and economic, which affect technology.

The effects of the influence of scientific investigation on behalf of technology are so broad and beneficial that they are interwoven intimately with every-day life and contribute constantly to human progress. Industrial research is one of the greatest gifts of science to mankind.

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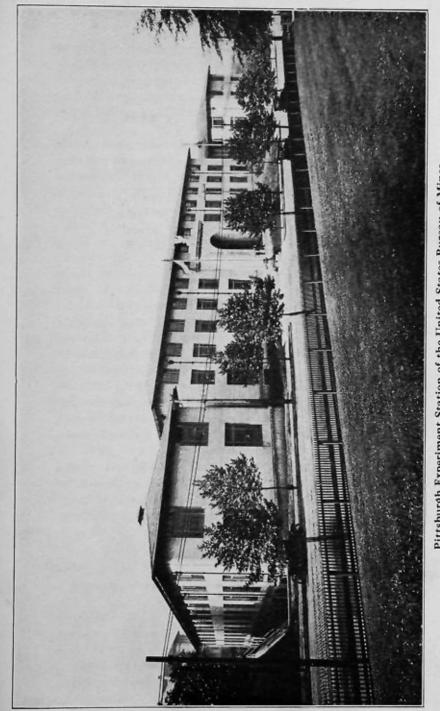
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UNITED STATES BUREAU OF MINES

Among the important educational and research organizations of Pittsburgh is the experiment station of the United States Bureau of Mines. The handsome building, which cost \$500,000 in 1917, and grounds, which were deeded to the Federal Government by the city in exchange for other land, are adjacent to Carnegie Institute of Technology, Carnegie Institute, Mellon Institute, University of Pittsburgh, and Schenley High School; in addition, close contact is maintained with these institutions. Although this Federal bureau has been functioning here since 1910, and prior to that year as the Technologic Branch of the United States Geological Survey, many Pittsburghers are unaware of its existence and of what it does and accomplishes.

This experiment station employs 100 technical men and 165 others; in addition, a number of field engineers are directed from this station. It is the largest of this Bureau's 11 stations scattered throughout the country, and the largest experiment station of its kind in the world. A coal mine near Bruceton, 13 miles from Pittsburgh, where all manner of tests on mining hazards, ventilation, and explosives are carried out every day, is part of the station. As the principal functions of the Bureau of Mines are safety and the most efficient methods in mining, metallurgy, and related industries, the work of the Pittsburgh experiment station is devoted to these problems. In part of this work, the station has the cooperation of the industries and civic organizations of Pittsburgh, the State of Pennsylvania, and the other mining states and industrial corporations. Cooperation and contact is maintained with foreign countries on certain problems.

In the Pittsburgh experiment station are 20 well-equipped laboratories with specialists to investigate problems arising from the following: Manufactured gas, chemical analyses, coal and coal products, dusts of all kinds, electricity in mines, explosives, first aid, fuels, gases of all kinds (including helium), heating and ventilating, metallurgy of iron and steel, microscopy, mine-rescue work, physical testing of instruments, and physiological effects of gases, etc., on work-



Pittsburgh Experiment Station of the United States Bureau of Mines

men. Actually, 85 per cent of the research is in coal mining and utilization of coal. In addition, the Experiment Station is equipped with its own power plant, machine and woodworking shops, glass-blowing and instrument shops, drafting and photographic departments, cafeteria, and auditorium to seat 250 persons.

As to the educational value of this experiment station to Pittsburgh, any accredited person or persons or organizazation may at any time inspect or be guided through the laboratories and shops mentioned, which is an education in itself. Arrangements may be made for school classes to attend the showing of motion pictures depicting certain industries or the promotion of accident prevention; this is done frequently. Instruction is given at regular intervals in first-aid and mine-rescue work to any employees of the mining, metallurgical, and petroleum industries who desire to learn the art. Examinations are sometimes held for mine foremen and inspectors, by arrangement with the state. Each collegiate year, Carnegie Institute of Technology and the Bureau of Mines arrange to assign several fellows to work on research problems suggested by the official Mining and Metallurgical Advisory Boards representing the industries of the district. Scientific societies hold some of their meetings here; and at the experimental mine, demonstrations are made to mining men and the public of the actual testing of explosives and full-scale mine explosions of either gas or coal dust, or both. It will be seen, therefore, that a great research organization like the Pittsburgh experiment station of the United States Bureau of Mines is really of considerable educational value to Pittsburgh, the district, state, and country at large.

SHADY SIDE ACADEMY



Shady Side Academy had its inception in a private school that was established in Allegheny in 1881, with Dr. W. R. Crabbe as principal, for the specific purpose of preparing boys for college. Two years later the principal

transferred the school to a more central location in Shady Side, Pittsburgh, and provided more ample accommodations for a patronage that was steadily increasing. The rapid growth and evident promise of the school induced the patrons to erect, in 1883, a well-appointed building with a capacity for sixty-five students. The institution was incorporated and given the name of "The Shady Side Academy." Since its incorporation the Academy has been quadrupled in capacity to meet the demand for enlarged facilities for college preparation.

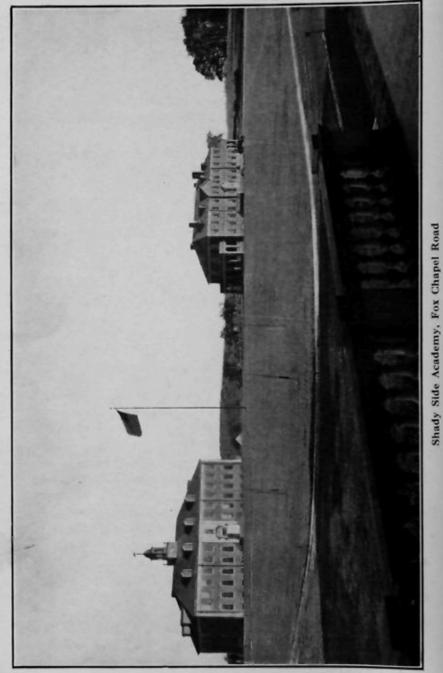
For thirty years Dr. Crabbe was principal, but because of ill health, resigned in 1913 and was succeeded by Luther B. Adams. In 1916 there was talk of making the academy a country school. So unanimous became the feeling among trustees and patrons that the change was determined upon and steps were taken to make the move. Then the war came on, and all plans were laid aside for the more important duties to our country.

Mr. Adams resigned in 1919 and was succeeded by Harold A. Nomer, who for ten years had been a master at the Lawrenceville School, New Jersey. Plans for the new school were resumed and a campaign was organized for the solicitation of funds. Subscriptions totalling \$1,000,000 were secured and construction was started. Through the very generous gift of Mrs. Wallace H. Rowe, of 125 acres of land, adjoining the Field Club beyond Aspinwall, a site had been provided for the new school. Ground was broken in February, 1922, and in May, the cornerstone of Rowe Hall was laid with appropriate ceremonies.

The Academy now consists of eight new buildings and four old ones remodeled, a golf course, two football and baseball fields, and eight tennis courts.

The Shady Side Academy Junior School for young boys, was added in 1909 and is still located at Ellsworth and Morewood avenues, Pittsburgh.

The school is located on a very beautiful tract of high ground, adjoining the Field Club, on the Fox Chapel road. On the 125 acres are the following buildings:—Rowe Hall, recitation building; Ellsworth House, dormitory; Morewood House, dormitory; Aiken House, dormitory; Dining Hall; Heinz Infirmary; power house; gymnasium; school garage,



and four houses, in which live certain members of the faculty and others in the employ of the school. The buildings are fireproof, heated by hot water, and lighted by electricity. All equipment is new and of the most approved type.

The Heinz Infirmary, the gift of Howard Heinz, '97, and Clifford Heinz, is completely equipped with four double patients' rooms, nurses' suite, two kitchenettes, two baths, and sun parlor. There is a contagious ward, which can be completely shut off from the rest of the building, and which in itself is complete. The dispensary forms a central part of the building, and is fitted up to take care of all emergencies. The infirmary is in charge of Miss Alvilda Oliver, who for several years was on the staff of the Homeopathic Hospital, Pittsburgh, Pa.

In addition to the infirmary, there is in Rowe Hall, a clinic, in charge of Miss Oliver also, at which, during certain hours of the day, boys get advice and treatment.

The Junior School, for boys from six to twelve, located at Ellsworth and Morewood Avenues, Pittsburgh, affords very complete facilities for both study and play. Above the Third Form, there are men teachers only. An acre and a half athletic field, a large winter playroom, and special encouragement and instruction in athletics, provide unusual opportunities for physical development.

Following is the Board of Trustees:—Augustus K. OLIVER, President; MARCUS W. ACHESON, JR., Vice President; JAMES R. STERRETT, HON. J. J. MILLER, J. J. TURNER, OGDEN M. EDWARDS, JR., M. D., THOMAS S. ARBUTHNOT, M. D., DAVID D. KENNEDY, M. D., JOHN W. CHALFANT, CHARLES L. FLACCUS, JR., C. E. BEESON, J. H. HILLMAN, JR., HOWARD HEINZ, CHARLES E. DICKSON, W. L. MELLON, JAMES C. CHAPLIN, W. E. MCKELVY, CHARLES L. MCCUNE, C. H. CURRY, ROYAL S. GOLDSBURY, A. REX FLINN, JAMES C. REA, EMIL WINTER, E. BRUCE HILL and DON R. CONNER, Secretary and Treasurer.

DUQUESNE UNIVERSITY

Duquesne University is situated on an eminence overlooking the Monongahela River and the "Golden Triangle" of the City of Pittsburgh. Being geographically central, the university is accessible from both the residential and the business sections, as well as the suburbs. The campus, consisting of about seven acres, was acquired piecemeal by the Holy Ghost Fathers, who have conducted the school since Eight buildings constitute the present plant: St. 1878. John's hall and St. Martin's hall, both residential, acquired from former owners; the main building, erected in 1884; the chapel, begun in 1894 and enlarged in 1904; the Science hall, built in 1915; and the power plant, the gymnasium and the magnificient Canevin hall, all three erected in 1922. In addition, three floors in the Vandergrift building, on Fourth Avenue, have been rented since 1913 for the use of the School of Accounts.

In 1878, Right Rev. Bishop Domenec urgently requested Father Joseph Strub, C. S. Sp., exiled from his native Germany by the Bismarck regime, to undertake the work. He complied, and after much effort found quarters for his confreres and their forty pupils in a business block at Wylie avenue and Federal street. The Rev. W. P. Power, C. S. Sp., was the first president. His seven years' administration were years of struggle for existence but of constant progress, ending shortly after the dedication of the first permanent building on what is now the campus. Under Rev. John T. Murphy, C. S. Sp. (recently deceased as Bishop of Port Louis, Mauritius), who guided the destinies of the college for thirteen years, notable material expansion and scholastic advancement were made. It was he that purchased most of the present recreation ground, built handball courts, a temporary gymnasium and the chapel, raised the standard and widened the curriculum of both the classical and commercial courses, furnished the library, established debating societies and the students' magazine.

But these achievements, important as they undoubtedly were, are dwarfed by those of the present incumbent, Very Rev. M. A. Hehir, C. S. Sp., LL. D., who has stood at the helm since 1899. A man of profound judgment and methodical ways, he has set the stamp of his character on the work of the various departments. In his first years he added to the courses in modern languages and sciences, and made provision for the education of needy students. But it was in 1911 that the school made its biggest stride forward. In March of that year, Holy Ghost College became Duquesne University, with the legal right to open all the professional courses implied in that title. The Law School began to function in the George building in the following September, with Judge Joseph M. Swearingen in the position of dean. In 1913 were opened the School of Speech Arts, under Dr. Clinton E. Lloyd, and the School of Accounts, Finance and Commerce, under Dr. William H. Walker. These three deans have continued to the present day in charge of their respective schools, which are solidly organized and conducted with conspicuous success.

The School of Social Service was opened in 1916, under the presidency of the Rev. J. A. Dewe, Lit. D., but discontinued when the Students' Army Training Corps was established in 1918; its work is now carried on by other agencies under the auspices of the school. The past year saw the University's first entrance into the medical field, in the establishment of the School of Pharmacy, with Dr. Hugh C. Muldoon as dean, and the opening of the Graduate School, under the leadership of the Rev. J. F. Carroll, C. S. Sp., S. T. D. The School of Music, headed by Professor Joseph A. Rauterkus, is now in its second year.

The College of Arts offers courses leading to the degrees of Bachelor of Arts, Bachelor of Letters, Bachelor of Education and Bachelor of Philosophy. Among its graduates are numbered about half of the priests of the Pittsburgh diocese, and many of its professional men. By means of night courses, Saturday classes and Summer sessions, it has in the last decade opened the way to hundreds who would otherwise have been debarred from opportunities of higher education, and notably to many Sisters of the various teaching communities. The College enrolled 369 students in 1926-27.

The College of Science offers a combined science and arts course leading to the degree of Bachelor of Science. It has given pre-medical and pre-dental preparation to a large number who afterwards matriculated successfully in various medical and dental schools. The present enrollment is 56.

The School of Pharmacy is adequately staffed and thoroughly equipped. It offers three and four year courses. The former, leading to the degree of Graduate in Pharmacy, trains men for positions as prescriptionists, for hospital dispensing; the latter, leading to the degrees of Pharmaceutical Chemist and Bachelor of Science in Pharmacy, gives additional training in pharmaceutical and chemical manufacturing and control work, analytical chemistry, bacteriology, and in food, drug and water analysis. The students are constantly reminded of the high professional, ethical and scientific standards maintained among its members by the American Pharmaceutical Association, and trained to take the right view of their future honorable positions as guardians of public health in the community. The first and second year students number 62 at the present moment.

The School of Accounts, Finance and Commerce is a full grade university school of business administration, the work in which leads to the degree of Bachelor of Commerce and Bachelor of Science in Economics, and prepares students to pass successfully the rigid state examinations for the position of Certified Public Accountant. Quarters, equipment and faculty are up to the highest standards of excellence, as the school's record shows. In the day and evening classes 1124 students are at present enrolled.

The School of Law has in its brief existence achieved a widespread and merited reputation through the efficiency of its instructors and the success of its graduates. Late afternoon sessions are held. The Bachelor of Laws degree is conferred on the completion of a three year course. The Law students now number 222.

The School of Speech Arts trains the public man for the many occasions when his gifts as an orator must be called into play; and fits the teacher, the salesman, the entertainer, for a better use of oral English. The degree of Bachelor of Arts in Drama is conferred on those who complete the four year course. There are over 500 students taking work in the School of Speech Arts.

Music, both vocal and instrumental, has been taught in Duquesne University since its foundation. A number of celebrated musicians received their first training here. It was only in the last year, however, that steps were taken to establish a School of Music with fully graded courses leading to degrees. Instruction is offered both to those who wish to adopt music as a profession and to such students in the College of Arts and Letters as wish to carry certain courses for elective credit. The courses are arranged to allow the talented student to develop freely along the line of work most natural to him and to gain a thoroughly practical, specialized training in that direction. Broad literary and artistic culture are insisted upon rather than to narrow concentration upon one branch of technical work. The 52 students who enrolled for the first year were an augury of the success that is in store for the School of Music.

The faculty also maintains a preparatory school with three distinct departments—academic, scientific and commercial—in which multitudes of the youth of the tri-state section have not only laid the foundation of successful careers as college students and professional men, but have received that training in self-reliance, self-control and ideals of personal responsibility and service, which it has ever been the first ambition of the University authorities to impart. The enrollment in the High School in 1926-27 was 645. The total student body, including those taking extension courses, was 3266 in the year just closed.

The Holy Ghost Fathers, while entrusting the distinctive work of the departments to specialists, maintain the general management and control of the University. To them is largely due its continued growth. Today its students represent every section of the country, and number well over three thousand.

PENNSYLVANIA COLLEGE FOR WOMEN

In 1869 there was opened in Woodland Road, one of the finest residential situations in Pittsburgh, a college for women. Unlike most colleges of that date which began as seminaries, Pennsylvania College for Women was incorporated as a full-fledged college and has given the A. B. degree to graduates every year since 1873.

Although meeting with many difficulties in its development, it remains the only distinctive college for women in western Pennsylvania and still keeps its fine Christian spirit, its atmosphere of culture, its spirit of service, combined with its official standing as a class A college in scholarship. It maintains a faculty of recognized standing, small classes with individual instruction, a genuine religious atmosphere, special courses leading to certificates in music, spoken English, and social service, which enable its students to combine professional training with a broad cultural course, and has a secluded campus in one of the beautiful districts of Pittsburgh, and is within easy access to all that is best in Pittsburgh's life in music, art and science.

The School of Music was organized in 1871 and is the only school of its kind in Pittsburgh and the only one that can offer dormitory accommodations. It gives a professional certificate combined with the A. B. degree. The college was a pioneer in social service. At the time that it was organized in 1908 no social service course was given in other colleges. There were no text-books, for they had not been written. The college invented its own way to teach social service in college. Today, the social service course circulates through the heart of the college curriculum.

The beautiful amphitheatre on Woodland road is the scene every two years of the May Day festival, one of the loveliest traditions of the college. Many thousands of people assemble at this time on the hill side to enjoy the beautiful pageant given by the student body and the alumnae children under the direction of the Department of Spoken English. On May 14, 1927, the college presented a May Day festival written by two students, entitled "Deep Sea Caverns." The college considers this one of the most beautiful of the many pageants it has given.

One of the best traditions of the college is the daily living together of teachers and students in an atmosphere of familiar friendship, which is the peculiar privilege of a small institution. This year the college numbers three-hundred and fifty students and graduates a class of sixty-five. In order to carry on its work, new equipment is necessary and plans are being formulated to this end. During the current year, two new houses for residence have been opened and a large building lot on Fifth Avenue adjoining the college campus, has been secured. A loyal alumnae, a united faculty and student body, and many friends heartily desire that such equipment shall be not only adequate in academic lines, but meet the standards of beauty which the location on Woodland Road suggests and which shall make the college an object of pride among the educational institutions of Pittsburgh.

The administrative officers are Cora Helen Coolidge, Litt. D., president; Mary Helen Marks, A. M., dean; Janet L. Brownlee, assistant to the dean; Margaret A. Stuart, secretary and assistant treasurer; Harriet D. McCarty, A. B., librarian.

WESTERN PENNSYLVANIA SCHOOL FOR THE BLIND

The Western Pennsylvania School for the Blind is a residential school for blind or partially blind children residing in the western part of the State and is located in what is termed the "Educational Center" of Pittsburgh, being only a short distance from Schenley High School, Carnegie Institute and Library, Carnegie Institute of Technology, and the University of Pittsburgh.

The ground on which the school stands consists of five and one-tenth acres, located at Bayard street and Bellefield avenue, and was given by Mrs. Mary E. Schenley. In 1884 a legacy of \$40,000 was left by Miss Jane Holmes of Pittsburgh to establish an institution for the blind, with the condition that \$25,000 additional be subscribed by the citizens of Pittsburgh for such a purpose. In 1887, a meeting was held by a representative group of Pittsburgh citizens to make some plans for the carrying out of Miss Holmes' wishes. At this meeting, a board of corporators was chosen, and later a board of directors, consisting of nine members, was elected. In 1890, the school was opened on Forty-second street, with Hiram B. Jacobs as Superintendent, and with an enrollment of twenty-one pupils. The present buildings were completed in 1894, and the school was transferred to its present location in that year.

The property is held in trust for the blind by board of corporators. The executive head of the school is Superintendent B. S. Joice, and the school is managed by a board

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of directors, composed of the following members: President, W. W. Blackburn; first vice-president, William M. Furey; second vice-president, Taylor Allderdice; secretary, John Crossan Dilworth; treasurer, Joseph Horne Holmes; counselor, L. M. Plumer; George D. Edwards, and James H. Hammond.

The present school consists of five buildings-a large main building, kindergarten, industrial building, gymnasium, and power house and laundry. The school will accommodate 140 pupils, and its aim is to provide a practical education for The literary department follows as closely as possible all. the courses of the elementary and high schools, supplemented by musical and commercial courses, while the industrial department seeks to give to every pupil some trade or occupation which will aid him in earning a living. In addition to this, much attention is given to physical training, and daily instruction is given along this line, including swimming, the purpose being to develop normal activity as much as possible. Many graduates of the school have found it possible to enter schools of higher learning, such as the Margaret Morrison School, Carnegie Institute of Technology, University of Pittsburgh, Temple University, and others, where they have made creditable records for themselves. Many of these handicapped boys and girls, aided by the assurance that a self-supporting ability gives, are enabled to achieve success in many lines of endeavor and to become useful and inspiring members of society.

PITTSBURGH THEOLOGICAL SEMINARY

The Pittsburgh Theological Seminary of the United Presbyterian Church was founded in 1825. It is under the control of the First Synod of the West and the Synods of Pittsburgh, Ohio and New York. Its immediate management is committed to a board of directors and a board of trustees. The former consists of six ministers and three elders from each synod. Three additional ministers are elected by the Alumni Association. The trustees hold and manage the real estate and funds. There are nine members.



Pittsburgh Theological Seminary

three being appointed annually for three years' service. The General Assembly determines the studies.

In the year 1825 the Associate Reformed Synod, then but five years old, resolved to establish this theological seminary, and the first professor was the Rev. Joseph Kerr, a graduate of the University of Glasgow. The seminary opened in December, with Dr. Kerr in charge, and three students in attendance. A suitable library was purchased and the "Young Men's Fund," for the most part the gift of Dr. Kerr, and for the aid of students, was established. The seminary



One of the Fines



enters of the World

made encouraging progress from the very beginning. During the century of its history it has trained between 1600 and 1700 young men for the Christian ministry. Of these, more than 90 have served the Church in the foreign field. From this seminary about 600 of the present ministers of the United Presbyterian Church have been graduated.

The president of the faculty is the Rev. John McNaugher, D.D., LL.D.; The Rev. W. R. Wilson, D.D., is registrar, and the Rev. D. F. McGill, D. D., LL.D., is secretary. Besides these clergymen, the faculty includes the Rev. John A. Wilson, D.D., LL.D., who is emeritus professor of church history and government; the Rev. James D. Rankin, D.D., professor of systematic and biblical theology and Christian sociology; and the Rev. Robert N. Montgomery, Th. B., acting professor of Old Testament literature and exegesis. J. Brad Craig is instructor of religious education, and John C. Smith is instructor of elementary Greek and Elbert R. Moses is instructor in public speaking.

By a special arrangement with the University of Pittsburgh, affiliation with that institution is arranged on a basis very advantageous to the theological students, its undergraduate and graduate courses being open to them. The working relation gives the students of the seminary all possible opportunity of supplementing their college training by prosecuting advanced and specialized courses, leading to standard degrees.

Pittsburgh Seminary is one of the group of universities, colleges and theological seminaries in the United States cooperating in the support and control of the American School of Oriental Research in Jerusalem. This school was founded to afford such opportunities as have never before been open to American students in the study of Biblical and Palestinian archeology; the geography and natural features of the Holy Land; the history of Israel; early church history; the Arabic and other Semitic languages; Mohammedanism; political, industrial and social conditions in Bible lands; Roman administration and colonization in the East; the Crusades; and the comparative history of religions. Travel through the land and researches in historical geography and archeology are features of this school.

THE WESTERN THEOLOGICAL SEMINARY

The very name is suggestive of history, for when the institution was created by the General Assembly of the Presbyterian Church in 1825, the site of Pittsburgh was considered western. Pittsburgh did not secure this institution without a struggle. There was a year-long controversy as to its site, rival claims of various Ohio and Indiana towns, some of them now long forgotten, being urged as against "Alleghenytown," then a village of seven hundred souls. The Assembly appointed a board of five commissioners to determine this site, and few now know that first of this group was General Andrew Jackson, of Tennessee.

The first session formally opened on November 16, 1827, the instructors of this class of four being the Rev. Elisha P. Swift and the Rev. Joseph Stockton, both pioneer clergymen of the first rank. Dr. Stockton had been principal of the old Pittsburgh Academy, now the University of Pittsburgh. The centennial anniversary was observed with much ceremony on November 16, 1927.

The first building was erected in 1831 on what is now known as Monument Hill. This building was completely destroyed by fire on January 23, 1854. The second building, erected on Ridge Avenue facing West Park in 1855, and known as "Seminary Hall," was partially destroyed by fire in 1887 and immediately repaired. In 1914 this building was demolished to be replaced by a large modern group, two wings of which were dedicated May 4, 1916. Architecturally the new buildings are English Collegiate Gothic, and structurally they are steel frame and fireproof. These two wings contain six class rooms, an office, a large faculty and directors room, a beautiful reading room 38 x 88 feet, a librarian's office, a seminar room for private study, and a stack room capable of holding 160,000 volumes. For its size, it is an equipment second to none in the country.

The first dormitory was erected in 1859 and was made possible by the generosity of Mrs. Hetty E. Beatty, and known as Beatty Hall. This structure becoming inadequate by 1877, the Rev. C. C. Beatty furnished funds for a new dormitory, which was known as Memorial Hall, as Dr.



Western Theological Seminary

Beatty wished to make the edifice commemorate the reunion of the Old and New School branches of the Presbyterian Church. The present dormitory was dedicated in 1912 and was erected on the site of Memorial Hall and retains the historic name of the old hall. It is a reinforced concrete, fireproof building, with suites to accommodate seventy-five students. It also contains a beautifully furnished social hall and a thoroughly equipped gymnasium, as well as a dining room.

But bricks and mortar are not standards by which the achievements of educational institutions can be judged. The service rendered by the graduates of the Seminary furnish a real touchstone for judging its contribution to humanity. According to such an acid test, the Western Theological Seminary may well be proud of its record. In every department of ministerial activity its graduates have rendered distinguished service. This seminary has sent forth eminent missionaries to every part of the globe. Of these missionaries, three laid down their lives as martyrs in China and India. Some of its graduates have achieved distinction as educators and have served as presidents of colleges and state universities. Others have acquired a world wide reputation as Biblical scholars. On the roll of its graduates appear the names of moderators of the General Assembly and secretaries of the boards of the church. Above all, the institution can boast a long line of faithful and eloquent preachers who have proclaimed the Gospel of Jesus Christ in almost every state in the Union as well as in the missionary lands across the seas.

In the course of a hundred years the seminary has been able to secure for its faculty some of the leading theologians, Biblical scholars, and preachers of the Presbyterian Church. Indeed there have been professors of this institution who have won a reputation that transcended denominational and national limits. We mention only those who have passed to their reward: of theologians, there have been Archibald Alexander Hodge, Samuel H. Kellogg, Benjamin B. Warfield; of Biblical scholars, Melancthon W. Jacobus and Matthew B. Riddle; of preachers, William M. Paxton, Samuel Jennings Wilson, Henry T. McClelland, Robert Christie and David Gregg.

To-day a complete modern theological curriculum is offered, with elective courses leading to the degrees of S.T.B. and S.T.M. The faculty consists of seven professors and five instructors. The average enrollment is seventy-five. The president is James A. Kelso, Ph. D., D.D.; secretary, William R. Farmer, D.D.; registrar, David E. Culley, Ph.D.

PUBLIC SCHOOLS OF PITTSBURGH

Pittsburgh is very proud of its public school system, which is keeping pace with educational ideas, and is in charge of a fine board of education, with Dr. William M. Davidson as superintendent of public schools, supported by an excellent teaching staff.

The total number of children enrolled last year was 105,409 in the public day schools, and 17,876 in the evening schools, making a grand total of 123,285.

To do the work of the day schools, more than three thousand teachers and principals are required at the present time, for which the city of Pittsburgh receives \$300 per teacher per year (or \$900,000) out of funds appropriated by the State to apply on the salaries of teachers. The balance of the teachers' salaries is paid through revenues derived from local taxation.

To teach the students enrolled in the evening schools has required the services of 580 teachers. A part of the salaries of the evening school teachers, by act of the Legislature of 1925, paid out of moneys appropriated by the State and a part out of tax revenues collected by the local district.

The day schools are kept open each year for a period of two hundred days, actual schooling, five days each week. The evening schools are kept open for a period of twentyfour weeks each school year. These evening schools open about the middle of September and continue until about the first of April each year.

No pupil in a day school is permitted to enroll in a night school, under the age of sixteen. This means that of the



Taylor Allderdice High School Forward and Shady Avenues

seventeen thousand students enrolled in the night schools, the vast majority of them come from the ranks of the adult population of the city. Pittsburgh is spending about \$150,000 a year for this extension of its public school work to the adult population.

For housing the children of the public schools, there have been erected 145 school buildings, as follows: For the elementary children, 129 buildings; for the trade and vocational schools, 3 buildings; and for the high school children, 13 buildings. In this connection it should be noted that the growth of high school enrollment in Pittsburgh in the past decade and a half is greater than that of any other city of its size in the country. We have more than doubled the enrolment in the past ten years in this department of the schools.



David B. Oliver High School Brighton Road and Island Avenue, North Side

The statistics for 1916 show a total enrollment of 9,364 pupils in the high schools; the statistics for 1926 show a total enrollment of 20,142 pupils.

These figures speak eloquently of the demand of the youth of the city for advanced education. Hundreds and hundreds of graduates of the high schools enter not only the local institutions of higher learning in Pittsburgh, but some fifty of the leading colleges and universities of the country located in at least twenty different States of the Union.

As a capsheaf to its public school system, Pittsburgh has developed a teachers' training school, in which it trains young women graduating from our public high schools, for



Schenley High School Bigelow Boulevard and Center Avenue

the calling of teaching. To be qualified to enter this school an applicant must be a graduate of a first-class four-year high school and at the same time be a resident of the city of Pittsburgh—that is to say the Board of Education has found it necessary to limit admission to this school to resident students.

About sixty per cent of the new teachers appointed to positions in the schools in any given year is recruited from the graduates of the Pittsburgh Teachers' Training School. The remaining forty per cent required to meet the demand for new teachers is recruited from outside the list of Training School graduates in order to avoid too great an in-breeding in the schools, and at the same time to meet the needs of the system where teachers of riper experience are vitally necessary to the work. This policy has made it necessary for the Board of Education to limit the number of admissions to the Training School each year, which practice has proved to be a very wise policy.

If the status of our Training School were defined educationally it would be to classify it as a school of Junior-College rank, due to the fact that the two years of professional training are considered by colleges generally as equivalent to the completion of the first two years of college work.

A new building to house the Teachers' Training School with its model group of elementary children, has been erected in the Schenley district, facing on Thackeray street just above Fifth avenue. This building is known as the Henry Clay Frick Training School for Teachers.

When the will of the late Mr. Frick was opened it was found that he had bequeathed to the Frick Educational Commission of this city, the sum of \$5,000,000 to be used in promoting the professional growth and improvement of the teachers employed in the Pittsburgh public schools.

Since and before that bequest, Mr. Frick's beneficence has made it possible for the Educational Commission to award free scholarships to more than three thousand teachers connected with the Pittsburgh Public Schools. On these free scholarships teachers have been able to attend summer vacation schools conducted by leading colleges and universities. The commission has not only awarded scholarships to teachers, but it has paid either part or all of their expenses incurred while attending these summer schools. The commission has likewise brought from the fields of art and literature some of the most eminent and successful men and women in America to inspire the twenty thousand boys and girls enrolled in the high schools of the city. The commission has generously encouraged the routine professional work being carried on with the teachers throughout the school year by making an appropriation to pay for the services of outside school experts who may be brought to the city to assist in the development of such work.

This gift of Henry Clay Frick is unique in the educational annals of America. No bequest has ever been made to an educational institution in this country that has ever accomplished so much in a given space of time as has been accomplished by the magnificent bequest, to the uses of the public school teachers of Pittsburgh. Due to his beneficence this city is today among the foremost cities of America, and of the world, in all matters pertaining to the professional growth and the professional improvement of its teachers.

PARISH SCHOOLS OF THE DIOCESE OF PITTSBURGH

The Pittsburgh Diocesan School Board, which has in its charge the parish schools of the diocese, is headed by the Very Rev. M. A. Lambing, chairman, and is formed of 29 Catholic clergymen. Rev. C. M. Hegerick is secretary. The superintendent of the parish schools is Rev. Paul E. Campbell, A. M. The Diocesan Parish School System



Catholic High School Fifth Avenue and Clyde Street

operated 226 schools, according to the last annual report. Of this number of schools, 48 are high schools, 25 being in the City of Pittsburgh, with over 2000 pupils, 16 being in Allegheny County outside the city, with 777 pupils, and 7 outside Allegheny County, with 317 pupils. The total enrollment of the parish schools was 83,665 pupils, of which the average daily attendance was 91 per cent. These schools had a teaching corps of 1494 sisters, 11 brothers and 134 lay teachers. In addition to the regular staff, the various elementary and high schools employed 47 special teachers in art, music, physical training, public speaking, modern languages and domestic science. To this number should be added the community supervisors and the normal school instructors in the various mother houses. Approximately 60 sisters are included in these two groups, which brings the total of the parish school teaching and supervision staff to about 1750 members.

Among the schools recently erected are the boys' Catholic High School, Fifth avenue and Clyde street; the St. Joseph School, Everson; Holy Trinity School, Duquesne; St. Mary's School, Pine Creek; St. Mathias School, Natrona, and St. Brendan School, Braddock.

CARNEGIE INSTITUTE

Visitors to Pittsburgh invariably have an opportunity to see the many evidences of its industrial prowess. They observe the coal barges, which are either moored to the banks of the two rivers or are being towed down the Ohio. By night they can not fail to see the sky aglow with red from the furnaces of the mills. If they visit some of these plants, they are impressed with the power of what are termed the basic industries, and they come to realize the important place Pittsburgh holds in the industrial life of the nation.

Unfortunately, not all the visitors have an opportunity to study the cultural development of the community which centers in and about the Carnegie Institute. Those who spend even an hour within the great Renaissance building at the entrance to Schenley Park carry away with them some idea of Pittsburgh as a center for the arts and sciences.

The Carnegie Institute almost equals the record of hotels in keeping open house for visitors. It is open on week-days from ten in the morning until ten in the evening, and on Sundays from 2 P.M. until 6 P.M. It is closed only on Christmas, Memorial Day and Independence Day.



Most institutions of similar character in this country charge admission at least on two or three days of the week, but the inscription over one of the entrances of Carnegie Institute—"Free to the People"—tells the story of the liberality of the donor, Andrew Carnegie.

The Carnegie Institute building is unique in that it houses under one roof a library, a museum of natural history, a department of fine arts, and a music hall. The fact that all these divisions are in one building might indicate to some that they are not comprehensive in their respective fields, but this is not the case. Each department takes rank with any separate institution of like character in the country.

The Carnegie Library of Pittsburgh is the largest Carnegie library in the world. It is a free public circulating and reference library, open to all people. For more than thirty years it has been serving Pittsburgh, and in that comparatively short time, it has grown from one main library with a staff of 16 people, a permanent collection of 16,000 books, and an annual circulation of 113,835 books, to a system of 10 tibraries, 2 sub-branch libraries, 18 adult deposit stations (such as at telephone exchanges, department store employes' rest rooms, etc.); 14 high school libraries, 70 libraries in platoon schools, 8 school deposit stations (from which the community as well as school children draw books), and 12 schools, having 50 classroom collections.

The staff now includes 290 people, and 2,304,912 books were sent during 1927 into the homes of Pittsburgh. This is twenty times the circulation of the first year. During the last ten years the number of books lent for home use has increased 85 per cent.

Who uses these books? Are they read mostly by children? In 1927, the books read were almost equally divided between juvenile and adult. This means that on the whole, children and their elders run an almost even pace in reading. Did they read stories and novels largely? Only 57 per cent of the books lent were fiction. This means that 985,549 books of a more serious nature were borrowed for home reading in addition to about 600,000 volumes used in the Central Library for study and research. The library has become a large factor in carrying on the educational work of Pittsburgh.

The Carnegie Library of Pittsburgh was founded by Andrew Carnegie in 1895. On November 25, 1881, Mr. Carnegie offered to give \$250,000 for a free library in Pittsburgh, provided the city would agree to appropriate the sum of \$15,000 annually for its maintenance. At that time the city had no power to raise money by taxation for the maintenance of such an institution, but in 1887, the enabling act was passed by the Legislature, and Mr. Carnegie was notified that the city was able to perform its part if he would renew In February 1890, Mr. Carnegie offered to expend his offer. not less than \$1,000,000 on condition that the city would bind itself to place in the hands of the board of trustees of the library, at least \$40,000 annually. With this larger offer to an enlarged city, Mr. Carnegie suggested the erection of branch library buildings.

The ordinance accepting the second proposition was passed on March 1, 1890. At the first meeting of the board of trustees, James B. Scott was made president, Henry C. Frick, treasurer, and William N. Frew, secretary. In 1891 the city authorized the board of trustees to erect the main structure for the library on part of the nineteen acres of park land which had just been acquired from Mrs. Schenley. The building was dedicated to public use on November 5, 1895.

In a few years after the opening of the Central Library building, it became clear that it was outgrown; whereupon Mr. Carnegie gave another gift of \$5,000,000 for the reconstruction of the building. The plans for the extension provided new quarters for the Department of Fine Arts and the Department of the Museum. The enlarged building, as it stands today, was formally opened to the public in April 1907.

This building stands on Forbes street at the entrance to Schenley Park, just beyond Forbes Field. The building is three stories in height and covers approximately four acres. The walls are a light gray sandstone, and the architecture is a modification of the Italian Renaissance. The walls are surmounted by a bronze cornice, below which, carved in the stone of the frieze, are the names of men distinguished in the fields of literature, music, art and science. The principal entrance to the library proper is on the western facade facing Forbes Field. Bronze doors open into a dignified hallway panelled with Tennessee marble. On the first floor are the lending department, the Department for Children, the Carnegie Library School and the administration offices.

In the adult and juvenile lending rooms, readers have free access to the shelves which contain about 35,000 representative books. The lending collection, as a whole, numbers over 400,000 volumes of which about 220,000 are shelved in the Central Library.

Two broad marble staircases lead to the second floor. From one side of the second floor corridor opens the reference room, a place for quiet study and special assistance. Here expert help is given to students, club women, business and professional men, teachers, newspaper writers, etc. All general reference books, such as encyclopedias, dictionaries, biographical handbooks, etc., are collected in this room.

At the south end of the corridor is the periodical and newspaper reading room, where over 1300 current magazines and newspapers are on file. The Department of Work with the Blind opens from the reference room. The Technology Department occupies rooms on the third floor.

Ever since the library opened in 1895, special emphasis has been placed on the selection of books along industrial lines, with the result that Pittsburgh now has one of the finest collections of technical books in the country. The Technology Department in Pittsburgh was the first department of its kind ever organized in a public library. It publishes quarterly, a Technical Book Review Index, which is the only publication of its kind.

The responsibility of the public library for encouraging a love of good reading in young people was recognized as early as 1898, when the Department for Children was first organized. There is no more important work in the library and none that pays better in far-reaching as well as immediate results. The department is concerned chiefly with the reading interests and literary training of children from the pre-school age to those fourteen or older. It aims to provide a wholesome form of recreation and amusement, to supplement the work of the schools, and to give training in appreciation of the best literature.

The special activities of the department include instruction in the use of books and libraries, reading aloud, storytelling, and book talks. For the younger children, storytelling has proved an effective means of presenting good literature, and during 1927 the attendance at the library story hours was over 100,000. In 1927, 50,000 reference questions were answered in the Department for Children, an indication of the value and use of the children's rooms. The department makes a special study of children's literature and cooperates in every way with parents, teachers and others interested in the welfare of young people.

Great care is taken in the selection of books. Of the thousands of new books printed each year, the library is able to purchase only a limited number. It is accordingly very important that those books be chosen which will be of greatest service to the people who use the Library. All works of fiction are read by some member of the staff before they are purchased, and non-fiction is added to the collection only after authoritative reviews have been consulted or upon the recommendation of some specialist in the subject under consideration.

In order that the book may give its full service, the information it contains must be made readily accessible to the public. Each new book of non-fiction added to the library is accordingly first carefully examined and classified and its contents are noted on cards for the catalogue under the principal subjects discussed, with annotations to make clear the author's method of treatment. This is the work of the Catalogue Department.

The binding of magazines, newspapers, and other printed material, the repairs to and rebinding of worn books, constitute an important part of the mechanical work of the library, and with the reenforcement of new books, total about 90,000 volumes each year.

The library contains a total of about 630,000 volumes, of which over 50,000 volumes are in foreign languages. Each branch has a limited collection of its own which it supplements by drawing upon the general collection of the Central Library.

The newest branch library is the Business-District Branch, located on the first floor of the City-County Building at Grant and Diamond streets. This branch was opened in June 1924, for the convenience of business and industrial concerns, and for busy people downtown. Directories of principal cities, business digests, bond and statistical rating service, trade directories, and business reference books form the bulk of the book collection here, but a daily messenger to the Central Library makes the entire collection of over a half million books available upon a day's notice. Over a hundred trade and technical magazines are received here regularly, and two important financial papers—the Wall Street Journal and the Journal of Commerce—are received daily.

In 1920, the Department of Work with Schools was officially organized. Hitherto, library work with the schools had been carried on by the Department for Children to which it is still closely allied. Up to that time, with one exception, all work was done with schools through the nearest branch library only. The first separate school library in Pittsburgh was started at Schenley High School in 1916. This was the first to come under the cooperative plan of the Board of Public Education and the library, whereby the library fulfilled certain obligations. The library room, its equipment, and the reference books which are on permanent deposit are furnished by the Board of Public Education; the supervision, cataloguing of all books, and the books in the circulating collection are furnished by the Library.

Since the birth of the official Department of Work with Schools, twelve more high school libraries have been organized. Allegheny High School Library had been started previous to the organization of this department.

The platoon school library is an entirely new development. During six years' time, forty-three platoon school libraries have been established. The particular advantages of a platoon school library may be briefly told as follows: 1. The library collects books and related literary material in a specially equipped room. The advantage of this arrangement over scattering books over the building wherever there happens to be space is obvious.

2. The library centralizes information for every department, every teacher, every child.

3. A special library teacher is employed. She is effective because she becomes the specialist in library work. Each semester she carries out a brief course of instruction for every grade in the use of the library.

4. The platoon library has the opportunity to reach the non-reading child. The platoon system brings every child regularly to the library and the library teacher attempts to arouse individual interest in reading.

5. Every child has a definite library time allotment. Grades one to three come once a week; upper grades at least twice. The lower grades hear nursery rhymes, folk tales and myths. The upper grades learn to use reference books, and time is given to all for discussion.

6. Regularly organized reference work develops a habit for careful and intelligent use of books. This involves notetaking and the ability to summarize the main parts of each paragraph read.

7. The effect of a well-lighted, inviting room, its book shelves comfortably filled with the best books in attractive bindings, creates a desire for extensive reading and for book discussion.

8. By establishing permanent reading habits, the library leads most children to better use of leisure time. From the standpoint of the community, an individual's use or misuse of leisure time is of paramount importance.

In schools which have not adopted the platoon system, small collections of books are sent to classrooms. Twice every month the Department of Work with Schools publishes a bulletin. This is usually a single page containing a pertinent list of books or a message from the library to the schools. Every public and parochial school in the city gets a copy. Many requests come from other cities for the School Bulletin, so that its distribution is wide. In districts remote from any branch library, the Department of Work with Schools does pioneer library work. A school is selected which is fairly accessible to the community. A permit to use the school quarters is secured, and library service is given during certain hours of the week, both to children of the school and to adults of the community, by a member of the Department of Work with Schools staff. There are, at present, seven such school deposit stations in the public schools: at the American Avenue School, Crescent School, Brookline School, Sunnyside and Morningside Schools, Ralston Elementary and Industrial School, and at the Penn School, and one parochial school.

Each year in May, a week is set aside which is known as Library Week in the Schools. At this time, teacher and librarian concentrate on how they can improve service between the two educational agencies. A different phase of book interest is stressed each year.

The Carnegie Library School, formerly known as the Training School for Children's Librarians, was founded in 1901. It was conducted as a department of the Carnegie Library of Pittsburgh until 1916. At that time it was made a separate department of the Carnegie Institute and the name officially changed to the one now in use. The Carnegie Library School was the first library school to give specialized training in library work with children and it is still particularly well known for its service in that field. Two other courses are at present included in the curriculum, general library work and library work with schools. The course is one year in length and students may specialize in the particular type of library work in which they are most interested.

Candidates for admission who are graduates of universities and colleges with a recognized high standard may be admitted without examination, if they possess the necessary personal qualifications for library work. Other candidates must present evidence of general education and experience sufficient to qualify them for the work of the course and must pass the required entrance examinations. Three years of college work or its equivalent is desirable.

The rapid development of library work has created a demand for trained librarians which it has not been possible to meet. It is a profession which offers many interesting opportunities to those who have the proper qualifications for the work.

CARNEGIE MUSIC HALL

Carnegie Music Hall contains a magnificent concert organ which compares with the greatest in the world in variety, refinements and nobility of tone. The director of music of the institute gives two public recitals on this organ each week through nine months of the year. One recital is given on Saturday evening at eight-fifteen, and the other at four o'clock on Sunday afternoon. Over two thousand recitals have been given since the opening of the music hall. During the Lenten season the director varies the program in that on Saturday evenings he gives a talk on a musical subject illustrated with selections either on the organ or piano.

Mr. Carnegie's purpose in causing the series of recitals to be instituted, namely "creating in the people a love for music," has been kept uppermost in mind at all times. In accordance with the founder's purpose, the musical policy of these free concerts has been shaped so as to coincide with his expressed view: they are not entirely entertaining, nor yet solely instructive; but seek to present such a discriminate combination of the two, as to invite at all times a genuine affection for the soulful language of tones, as expressed by the great masters of music.

For this reason these recitals do not address themselves to, or favor, any particular nationality, or period, or adherents of any special musical cult, or any particular faction or group representing a certain stage of musical appreciation. The purpose is rather to minister broadly to the musical needs of the community, the eye directed upward, yet not unmindful of those who, but for this provision, might not come under the refining and ennobling influence of music at all.

The sole item of equipment is the great concert organ, newly erected during the season of 1918. This medium of expression has triumphantly demonstrated its adaptability to each and every demand, artistic and utilitarian; its capability on every occasion to interest the people, the multitude as well as those of fine, sensitive discrimination. The present organ contains one hundred registers representing as many different tonal shades, produced in all by 7,669 pipes, not counting the bells, the chimes, and a concert grand piano. The inaugural recital of this great instrument took place on February 9, 1918.

DEPARTMENT OF FINE ARTS

It is the purpose of the Carnegie Institute in the field of Fine Arts to present for the education and pleasure of the people, collections of architecture and of sculpture, of paintings, graphic arts, and applied arts, and of all works of art expressing the qualities of beauty, grace, and harmony.

In the Halls of Architecture and of Sculpture there are exhibited supreme examples of the great periods of art. In the formation of these collections it was the definite purpose to create, by the dignity of the groups, an inspiring and uplifting sense of the glory of art, as represented by these masterpieces of all time.

The visitor may forget the historical data, but the impression will remain. To this end the great monuments, portals, and columns, and the groups of statuary have been arranged, not so much as individual examples, but as parts of consistent compositions, the position of each object having relation to the completed groups.

The Hall of Sculpture, beautiful in itself in proportion and design, with its white Pentelic marble columns and quiet green walls, creates at once an impression of harmony and beauty; and the statues and bas-reliefs installed there represent the beautiful in sculpture and illustrate the great periods of this art from its beginning to the end of the Roman period.

At the end of the hall, which opens on to the main corridor are statues and reliefs which come from Egypt and Assyria, Persia and Chaldea, and which belong to the earliest period. Here are severe and rigid figures, crude and primitive in form and modeling, yet possessing a mysterious and impressive dignity. To the period of early Greek art, of the seventh and sixth centuries, B. C., belong the Apollo from Tenea, the Archer, the Fighting Warrior, and the fragment of a bas-relief, Figure Mounting a Chariot. This was the period during which the sculptor by slow degrees perfected his art, securing first a greater degree of truth and realism, and later combining with these the supreme qualities of grace and distinction. The period of sculpture which is most completely represented is the period when the master sculptor, Phidias, was working in Greece. In the sculptured figures from the eastern pediment of the Parthenon, broken and fragmentary as they are, one sees the very perfection of the sculptor's art. Russell Sturgis said, "There is no sculpture in the world finer than this. Nude forms and drapery alike are the models of all perfection." These figures are installed on a long pedestal at one side of the hall.

The Aphrodite of Melos, and the Giustiniani Athena, which stand at either end of the central part of the hall, are examples of Greek art of the fourth century B. C.

In the Roman period, sculpture lost some of the wonderful charm of grace and beauty which characterizes Greek sculpture of the fifth and fourth centuries B. c., but it still retained great power and nobility. To this period belong the two statues of Augustus.

Adjoining the Hall of Sculpture is the Hall of Architecture. The impressive character of this hall will be felt by everyone who sees it. Here, in the presence of the great cast of the Facade of the Abbey Church of St. Gilles, one is impressed by the dignity and beauty of Romanesque architecture. So exactly does the clay-colored cast reproduce the stones and sculptures of the original that one seems to stand before the old French church itself. The three great doorways, with their round arches and sculptured decorations are beautiful in proportion and in design.

The other casts of doorways, columns, and monuments which are installed in the central part of the hall are so arranged as to give an impression of imposing dignity. To the right of the center of the hall are two Greek portals, and between them is the beautiful Greek monument of Lysicrates, mounted on its high base. On the right of the entrance is a tall Greek column with its capital and entablature, and on the left is a tall Roman column with its capital and entabla-To the left of the center of the hall is the Gothic ture. Portal of Bordeaux, with its pointed arch and sculptured ornament; and on either side of it are examples of Renaissance architecture. The details of architecture which are installed under the balcony are arranged in order of their period, beginning with the Egyptian at the right and ending with the late Renaissance at the left. This comprehensive, though comparatively small, collection of architectural details, combined as it is with the few beautiful representative examples of the various periods which are presented in all their imposing dignity, affords the student valuable opportunities for study, and yet gives to the casual visitor an impression of great beauty.

The paintings of the permanent collection represent the art of many lands. The collection is, therefore, broadly international in character. It is also contemporary, the oldest work having been painted within the past hundred years.

There are works representing France, England, Holland, Italy, Norway, Belgium, Russia, Germany, and Austria; but America is more adequately represented than is any other country. The American works represent in some measure the entire history of American art, beginning with the period of Benjamin West and ending with the present day.

French art is represented by such important paintings as "Evening in a Studio," by Lucien Simon; "The Mirror in the Vase," by Edmond Aman-Jean; "A Vision of Antiquity— Symbol of Form," by Puvis de Chavannes; "The Judgment of Paris," by Emile Rene Menard; "Christ and the Disciples at Emmaus," by Dagnan-Bouveret, and "Under the Willows," by Paul Albert Besnard.

The British painters, Sir Alfred East, Sir William Orpen, Sir John Lavery, Alexander Roche, and Maurice Greiffenhagen are each represented by an important canvas.

Two important paintings by Anton Mauve and a fine example of the art of Jacob Maris may be named as belonging to the art of Holland, and paintings by Ignacio Zuloaga, Joaquin Sorolla y Bastida, and Valentin de Zubiaurre to the art of Spain. Contemporary Italian painters are represented by Ettore Tito and Italico Brass.

Of the many fine examples of American art included in the collection, only a few can be mentioned here. The "Portrait of Sarasate," by James A. McNeill Whistler; the "Portrait of Henry Nicols," by Gilbert Stuart; "My Children," by Abbott H. Thayer; "Mother and Child," by George de Forest Brush; "The Wreck," by Winslow Homer; "River in Winter," by John H. Twachtman; "Afternoon near Arkville, New York," by Alexander H. Wyant are all paintings which are representative of the best in American art.

A collection of bronze statues and objects, reproductions of the bronzes from Pompeii and Herculaneum, casts of figures and reliefs by Saint-Gaudens, French, MacMonnies, Rodin, Barnard, MacNeil, and many others, for the most part contemporaries, and a large collection of photographs of the monuments and temples of Greece are also presented for exhibition in this department.

Among the possessions of the Carnegie Institute are large and important collections of rare prints, including an exceptionally complete collection of American wood engraving, groups of etchings by Charles Meryon and James A. McNeill Whistler, the "English Landscape Series" by John Lucas after Constable, and a collection of Japanese prints. The Institute also owns an important collection of original drawings, in which the fifty-eight drawings by Anton Mauve and forty-eight by old masters form notable groups. It is only possible to exhibit small groups of these prints, engravings, and drawings occasionally, since the exhibition galleries are almost continuously occupied by the permanent collection of paintings and by current exhibitions.

In addition to its permanent collections, the department seeks to arouse interest in the consideration of the modern evolution of art, its new trends, tendencies, and diverse manifestations. Therefore, throughout the year the department places before the public through special exhibitions many examples of the various phases and styles of achievement and experiments of the best modern art.

First of all in importance among the special exhibitions is the annual International Exhibition of Paintings which has been held each year since 1896 with the exception of the five years of the Great War. Averaging about three hundred paintings, these exhibitions have been recognized as among the most important held either in Europe or America. They present paintings representative of the best standards of art and taste, works both by artists of established reputation and by young men and women who have yet to become known in the art world. These exhibitions, which are in the nature of a clearing house of the best in American and European art, attract many critics, artists, amateurs, and dealers from all parts of the United States.

The twenty-seventh Carnegie Institute International Exhibition opened on October 18 and continued through December 10, 1927.

Of course, in a general way all the activities of the department are educational, but more than that, it strives to educate, in the stricter sense of the word, the young and old alike.

For the children the department conducts this work especially through the agency of the public and parochial schools, where it has proved of unusual importance in the development of public taste in the community. The students of the entire eighth grade of the public and parochial schools, numbering almost eight thousand, come three times during the school year with their teachers, as part of their school work, to study the permanent collections of the Department of Fine Arts.

For adults the main work of education consists of a series of morning and evening lectures given during the winter and spring in the lecture hall of the Institute. The majority of these talks are informal in character. The main purpose of the lectures is to popularize the refinements of life.

DEPARTMENT OF THE MUSEUM

The museum occupies the greater portion of the eastern side of the main building, with a floor space at its command of 152,074 square feet. In its activities it covers the natural sciences and the applied arts. Fifteen sections are already organized. This section covers mammals, birds, reptiles, and fishes.

The mammals are on the second and third floors. The museum has about 6,000 mammals, representing nearly 2,000 species. Here are the mammals collected by Childs Frick in British East Africa and Abyssinia, part of the Roosevelt East African collection, and many other notable collections made in both hemispheres.

Among the many groups may be mentioned the zebras, giraffes, wart-hogs, African buffaloes, antelopes, Buxton's koodoos, all shot by Childs Frick; the group of bears (Ursus gyas) obtained at Pavlov Bay, Alaska; the group of jaguars killed by John M. Phillips in Mexico; the group of black rhinoceroses, one shot by Colonel Roosevelt, the other by Childs Frick; the group of Steller's sea-lions; and the group of Alaskan fur-seals. One of the ornaments of the gallery is the white rhinoceros brought from Lado by the English traveler, Major Cotton, many years before Colonel Roosevelt visited that spot. Another interesting group is "The Camel Driver Attacked by Lions," by Jules Verreaux, awarded a gold medal at the World's Fair in Paris in 1869. This was the first specimen owned by the American Museum of Natural History and was subsequently turned over to the Carnegie Museum.

Among the important American groups are those of the Alaskan brown bear, the black bear, and the white-tailed deer from Pennsylvania.

The gallery of birds is located on the first floor of the museum. The study collection is on the third floor. The museum has over 90,000 specimens representing over 6,000 species. There are many beautiful groups, among them "Count Noble," the ancestor of the finest setter-dogs in America, putting up a covey of quails; a group of vultures settling upon the dead body of a wapiti; a group representing the pelicans on Pelican Island; and many others. A series of small habitat groups of birds has been planned. Three of these groups have been completed: the horned owl, northern raven, and blue goose.

As a whole the collection of birds is one of the most important in the new world. The celebrated Buller Collection. upon which Sir Walter L. Buller based his second edition of "The Birds of New Zealand," is here.

The gallery of reptiles is on the first floor in the southeastern corner of the building. The museum has over 9,000 specimens of reptiles, mainly from temperate North America, but there are many from Central and South America. Among the most striking groups are the diamond-back rattle snakes, collected in Texas, and the boa-constrictors from the Isle of Pines.

The hall of fishes occupies the southeastern corner of the building on the first floor. The great part of the collection of fishes and reptiles is contained in the so-called "Alcoholic Store-Room," annexed to the building as a precaution against fire. The museum has one of the most important collections of South American fishes and the largest collection of Japanese fishes in North America.

Here are the sponges, marine and freshwater shells, echinoderms, and other invertebrates. The exhibition series is located on the second floor in the southeastern corner, over the gallery of reptiles. Most of the collections are preserved in the Laboratory of Invertebrate Zoology, on the third floor.

The shells include various important collections containing the types and co-types of many species described by early American authors, and an enormous series of the Unionidæ of the Mississippi Valley. There are thousands of species of land and freshwater shells, and great collections of Crustacea, etc.

A few of the insects are shown on the second floor, but most of the collections are contained in the Laboratory of Entomology on the third floor. There are many thousands of species of butterflies in the collection deposited by Dr. W. J. Holland, director emeritus. The museum also owns the Coleoptera of North America gathered by the late Henry Ulke of Washington, 11,000 species, represented by 110,000 specimens; the Coleoptera assembled by the late Dr. John Hamilton of Pittsburgh; and vast collections of the insects of other orders made in all parts of the globe, acquired either by purchase or gift. There are not less than 1,500,000 specimens of insects, representing approximately 150,000 species, including thousands of types and paratypes. Part of the botanical collections are exhibited in the gallery of plants on the second floor, in the southwestern corner of the museum. The Herbarium, in the mezzanine, contain 150,000 species of plants systematically arranged and ready for consultation by students. It is one of the largest herbaria in North America.

The mineralogical collections are exhibited on the first floor in the Gallery of Geology and Mineralogy. The reserved collections are on the third floor. The minerals include the celebrated Jefferis Collection purchased by Mr. Carnegie. This collection contains many specimens orginally figured in Dana's "Mineralogy." One of the exhibits in this gallery is the group of stalactites and stalagmites obtained at Naginey, Pennsylvania.

The paleontological collections are among the most extensive, beautiful, and famous in the world. The mounted vertebrates are on the first floor. The invertebrates are on the second floor.

The collections include the great Bayet Collection, containing 120,000 specimens, being the largest and best collection representing the fossil fauna of Europe to be found in the New World. It has been said that "to study the mammals of the Miocene and the reptiles of the Jurassic one must visit Pittsburgh." Among the striking objects are the skeletons of *Camarasaurus* in the matrix, found in the National Dinosaur Monument in Utah, of *Apatosaurus louisae* named in honor of Mrs. Carnegie, and of *Diplodocus carnegiei*, named in honor of Mr. Carnegie. Copies of the latter have been presented to the National Museums of England, France, Germany, Russia, Austria, Italy, Spain, and Argentina.

Portions of these collections are placed in the gallery of avian anatomy already alluded to, and in the gallery of vertebrate anatomy, the latter adjoining the gallery of mammals. There are thousands of specimens.

The exhibits occupy almost the entire space on the third floor. Here is the largest collection of Costa Rican antiquities in the world. Here are large collections representing various North American tribes from Alaska to Panama; collections illustrating the manners and customs of the aboriginal people of the South Sea islands and of Africa. There are extensive Egyptian collections. One of the most striking objects is an Egyptian boat obtained from a burial crypt at Dahshur, Egypt, which was placed in the crypt where it was found, six hundred years before Abraham left Ur of the Chaldees to seek the Promised Land. There are many groups of Indians and one of the finest collections of Indian basketry in existence, deposited in the museum by the late G. A. Steiner.

The collection of coins and medals is extensive and includes the collection presented to the museum by Mrs. William Thaw, Jr., made by her husband; the collection presented by Harry J. Vandergrift; a collection made by Magnus Pflaum; the large collection of historical medals made by the late William M. Darlington and presented by his daughters; and numerous other collections, large and small, acquired by gift or purchase. Here is the collection of postage stamps made by the late Arthur Burgoyne, including the collection of Senator M. S. Quay, presented by him to Mr. Burgoyne,

The collections in these three sections are contained in the Gallery of Decorative Arts, on the first floor. They include thousands of specimens representing fictile and textile wares, both ancient and modern. Here a splendid collection of Anglo-American pottery assembled by Otto J. Bierly is displayed.

The collection illustrating the evolution of methods of transportation is on the third floor and contains a large series of models and many relics of historic interest, including the aeroplane on which Galbraith Perry Rodgers made the first flight across the continent of North America.

These collections are principally located on the first floor in the gallery of applied art and in the room set apart for the reception of the collections donated or deposited in the museum by H. J. Heinz. The collection of ancient Chinese and Japanese ivory carvings is notable.

Part of these collections are in the coin room on the first floor, and part in the gallery of applied arts. There are specimens of silverware, bequeathed by the late J. C. Grogan; a collection of old silver deposited by Herbert DuPuy; many Chinese and Japanese bronzes; a collection of old Japanese arms, deposited by Irwin Laughlin; and the Heinz collection of watches, which includes the gold watch which belonged to Admiral Nelson the hero of Trafalgar. One of the most attractive and valuable of the collections in this section is that recently presented by Mr. and Mrs. Herbert DuPuy, which besides a wonderfully extensive series of miniatures, is rich in enameled, inlaid, and carved boxes made of the precious metals.

Historical collections are preserved either in the library of the museum or on the third floor. Among the interesting historical objects is the skeleton of the horse upon which "Stonewall" Jackson was seated the night he was killed at Chancellorsville, a number of the cannon surrendered by General Burgoyne to General Gates at the battle of Saratoga, and the collections belonging to the Pittsburgh Chapter of the Daughters of the American Revolution.

The library of the museum is on the first floor. It contains the extensive private library of scientific works deposited by Dr. W. J. Holland, as well as the many thousands of volumes collected by the museum.

The museum publishes a series of octavo volumes known as the "Annals," and a series of quarto volumes known as the "Memoirs," besides annual reports and other occasional publications. The director emeritus of the museum is the editor of these publications.

From its inception the museum has carried on intensive studies in various fields and has been one of the leaders of research in America, especially in zoology, botany, and paleontology. The museum has either sent out or assisted in sending out many expeditions to various parts of the globe. A recent expedition from the museum traversed the interior of the peninsula of Labrador from south to north, the first time this feat was accomplished by white men. The results of the researches are in part embodied in the "Annals" and "Memoirs" of the museum.

Classes from the eighth grade of the public schools of Pittsburgh and schools of Allegheny county visit the museum every day of the fiscal year. They are given instruction in natural history by members of the museum staff detailed for that purpose. In addition to these, annually, hundreds of classes from the elementary and secondary schools of the region of which Pittsburgh is the center visit the museum.

The Carnegie Museum was the first institution of its kind in America to establish "Prize Essay Contests." The first of these was held in the year 1896. For a time the contest was discontinued but was revived in the year 1922, and is now held in conjunction with the Department of Fine Arts. The essays submitted in the last contest numbered over 2,000.

Traveling collections of mounted specimens are lent to public and private schools. Advanced students reading for degrees in course or preparing theses for post-graduate degrees are granted the facilities of the museum and are permitted to carry on work in the laboratories. Students from institutions of higher learning from all over the continent and from foreign lands have been welcome and have remained in residence for shorter or longer periods.

During the winter free lectures are given by noted scientists in the lecture hall of the museum on Thursday evenings and Sunday afternoons. Illustrated talks are also given on Saturday afternoons exclusively for children.

GREATER PITTSBURGH'S CHURCHES

There are more than 2,000 church properties within a thirty-mile radius of Pittsburgh, which have a valuation of more than \$100,000,000. This value averages about \$53 for each inhabitant of the district, and almost \$70 for each person affiliated with the churches. Of Greater Pittsburgh's churches, 561 are located in the City of Pittsburgh, and 1,301 in Allegheny County. The remainder of the total given as within the 30 mile radius are in portions of Butler, Beaver, Westmoreland and Washington Counties, within a circle extending 30 miles from the Pittsburgh court house. Proportionally the church population of Pittsburgh is one-fifth larger than that of the rest of the United States.

Almost a million and a half people are affiliated with the churches of Greater Pittsburgh. The church population of Greater Pittsburgh is larger than the combined population of the five states of Arizona, Delaware, Nevada, New Jersey and Wyoming. More than 2,200 clergymen conduct services in the community and religious instruction is given in Sunday schools with almost 450,000 Greater Pittsburgh's youths.

Allegheny County has more Sunday schools than any other county in the State of Pennsylvania. It has twelve schools where the regular attendance is over 500, and one with a registered list of 1,100 persons.

Greater Pittsburgh is the seat of bishops of the Protestant Episcopal, Methodist Episcopal, Roman Catholic and Greek Catholic churches.

Within the Greater Pittsburgh district the following enumeration of churches may be made: Roman Catholic, 300; Presbyterian, 275; Methodist Episcopal, 267; Evangelical Lutheran, 227; Baptist, 203; United Presbyterian, 178; Protestant Episcopal, 75; Hebrew, 62; Reformed, 48; Christian, 46; Greek Catholic, 45; Free Methodist, 32; African Methodist Episcopal, 31; Evangelical, 24; Methodist Protestant, 23; United Brethren, 21; Christian and Missionary Alliance, 16; Greek and Russian Orthodox, 14; Evangelical Church of North America, 10; Africian Methodist Episcopal Zion, 14; Reformed Presbyterian, 13; Church of God, 12; Spiritualist, 11; Primitive Methodist, 11; Christian Science, 10; Congregational, 22; Fentecostal Church, 7; Unitarian, 4; Church of the Brethren, 4; Seventh Day Adventist, 3; Church of Christ, 3; New Jerusalem, 2; others not enumerated 154.

The first formal religious services by white men were held in Pittsburgh in 1749 by Father Bonnecamps, a Roman Catholic chaplain attached to Captain Louis De Celoron's expedition. A few years later, when the French from Canada seized the fort at the Point, naming it Fort Duquesne, they had with them Father Deys Baron, a Roman Catholic priest of the Order of St. Francis. The French erected a chapel at the confluence of the Allegheny and Monongahela Rivers which they dedicated "The Assumption of the Blessed Virgin of the Beautiful River." In the archives at Montreal there is a register of the baptisms and deaths at Fort Duquesne. From the time the French evacuated the fort, the Roman Catholics in Pittsburgh had no resident pastor for a half century.

On November 24, 1758, the English flag was hoisted at the Point by Colonel Armstrong and a few days later a Presbyterian minister, who was attached to the expeditionary forces, conducted the first Thanksgiving Day services west of the A¹legheny Mountains.

Presbyterians were in Pittsburgh as early as 1758. The Presbytery of Redstone was organized in 1781 at the Pigeon Creek meeting house, Washington County. Three years later the Rev. Joseph Smith was sent by the Redstone Presbytery to preach in Pittsburgh, he thus becoming the first local resident minister of this denomination. In 1784 the Presbytery of Pittsburgh was incorporated. The Penn heirs gave a site to this denomination for religious purposes at Sixth avenue and Wood street. The first Presbyterian Church, a log structure, was erected in 1785. This property has remained the site of the First Church of this denomination in Pittsburgh.

FIRST NATIONAL BANK AT PITTSBURGH

In its long history, the First National Bank at Pittsburgh has been a conspicuous and important agent in the business of this city. Many of the firms and corporations whose activities have been delineated in this series of booklets which tell "The Story of Pittsburgh," have been aided by this institution, and some of them have grown from small to large concerns during the period of their connection with this Bank.

To these clients the thanks and best wishes of the Bank are extended, and to others the invitation is open to associate themselves with a Bank whose capital is sufficiently large to enable it to take care of all business, or every sort, offered to it, and whose facilities, at home and abroad, assure prompt action on all financial matters.

Many privileges are conferred upon you when you become a depositor in the First National Bank at Pittsburgh.

It receives your money, taking absolute care of it, and in its Savings Department pays Four Per Cent compound interest.

In its Checking Department, it pays out money on your order, enabling you to meet your bills by mail, thus avoiding the necessity of keeping money in the house, or carrying it in your pocket.

The Bank supplies you with check books, in which you can keep an accurate account of receipts and expenditures, returning to you cancelled checks, which are receipts for money paid.

It receives for collection checks given to you, on whatever bank they may be drawn, here or elsewhere, and places the proceeds to your credit. It collects coupons on Liberty and other bonds, without expense or trouble to you.

Its officers will give you expert advice on all financial matters, including the investment of money.

The Bank desires to call attention to the expert service of its Tourist Department, which is in the hands of men who have made this business their particular object for many years, and who regularly prepare their vacation programs for particular Pittsburghers. The Bank is the agent for all Ocean, Coastwise and Lake steamship lines, and can obtain for you the best accommodations. All details of travel are looked after. including the obtaining of passports, providing of Letters of Credit and Travelers' Checks, the buying and selling of foreign money, and various matters which add to the pleasure of travel.



Capital	\$6,000,000.00
Surplus	6,000,000.00 -
Undivided Profits and Reserves	1,817,054.45
Deposits	84,701,389.76
Resources	



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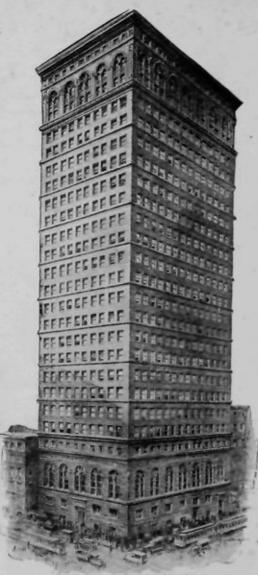
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FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Fifteen

Education Part Two



First National Bank at Pittsburgh April, 1928 This booklet, prepared and published by the First National Bank at Pittsburgh, Pennsylvania, is one of a series issued, from time to time, since August, 1919, portraying the various industries of the Pittsburgh district, with the intention of emphazing the importance of Pittsburgh as a commercial and financial metroplis. A large number of its many industries have been described in the booklets, of which fifteen have been published, to date. The following is a list of the subjects discussed, with the date of issue:

Vol. 1, No.	1—Introductory Booklet	August, 1919
Vol. 1, No.	2—Iron and Steel	September, 1919
Vol. 1, No.	3—Iron and Steel (Part 2).	January, 1920
Vol. 1, No.	4—Coal and Coke	June, 1920
Vol. 1, No.	5—Glass	December, 1920
Vol. 1, No.	6-Electrical Appliances.	March, 1921
Vol. 1, No.	7—Radium	August, 1921
Vol. 1, No.	8-Cement and Concrete	December, 1921
Vol. 1, No.	9-Clay Products.	December, 1922
Vol. 1, No.	10—Petroleum and Natural Gas	December, 1923
Vol. 1, No.	11—Petroleum and Natural Gas (Part 2)	. December, 1924
Vol. 1, No.	12—Food Products	December, 1925
	13-Diversified Products	
	14-Education	
	15-Education (Part 2)	

The Story of Pittsburgh Education PART TWO

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P ITTSBURGH contains so many educational institutions of importance that it is impossible to enumerate them all in one booklet. It has therefore been found necessary to issue Part Two on the subject of Education. Everything which may be taught in a great city may be studied and learned in Pittsburgh, from the fundamentals to the higher researches of education, including art, music, language and business in its various departments.

Outside of Pittsburgh proper and within the limits of Allegheny County there are many municipalities which maintain grade and high schools of the very highest type, but it is impossible to enumerate all of these institutions, although they are strictly within the Pittsburgh community, and are supported by Pittsburghers to a very large extent men and women whose business interests are located in the city proper, but who have made their homes in the outlying and suburban towns.

In this booklet many of Pittsburgh's educational institutions are detailed, but there are many others, among which may be mentioned American Institute of Banking, Pittsburgh Chapter, Alexander Hamilton School, American School, Artists' League, Artzberger Art School, Association Automotive Schools, Auto School, B'Nai Israel Hebrew Institute, Boyd Business College, Byron (Mary E.) School, Catholic Boys' School, Christensen School of Music, Christian Brothers' School, Community School, Comptometer School, Conley Business School, Convent of Mercy School, Curry College, Divine Providence Academy, East Liberty Business School, Flambard School of French, French Institute of Languages, Greer Business College, Hebrew Institute of Pittsburgh, the J. B. Hench School, International Correspondence Schools, Iron City College, Italian Institute of Languages, Keller Dressmaking School, Keystone Automobile Driving School, King's School of Oratory, Konner Private School, Lamb School for Stammerers, La Salle Extension University, Liberty School of Business, Mrs. Grace Thomas Martin's School, Martin School, Martin's Grace Secretarial School, Montes Spanish School, John P. Morris, (aviation), Morton School, Mount Immaculate Alpha School, National Salesmen's Training Association, North Side Business School, Pace Accountancy Courses, Pennsylvania State College, Pennsylvania Business College, Pittsburgh Academic and Business College, Pittsburgh Bible Institute, Pittsburgh College of Pharmacy, Pittsburgh League for Hard of Hearing, Pittsburgh Mechanical Dental School, Pittsburgh School of Accountancy, Pittsburgh School of Auto Engineering, Pittsburgh School of Lip Reading, Pittsburgh School of Speech, Pittsburgh Trade School, Radio Corporation of Pennsylvania, Reno Hall, Reformed Presbyterian Theological Seminary, St. Augustine's School, St. Bede's School, St. Canice's School, St. George's Convent, St. Mary's High School, St. Paul's Monastery, St. Peter's School, St. Philomena's School, Slone School of Popular Music, South Hills School of Music, Spanish Institute of Languages, Universal Chiropractic College, University School, Ursuline Academy, Ursuline Young Ladies' Academy, Virgil Piano School, Wallace Schools, Western Pennsylvania School for the Deaf, Edw. A. Woods School, and the various schools conducted by the Young Men's Christian Association and the Young Women's Christian Association.

THE CARNEGIE INSTITUTE OF TECHNOLOGY

"My heart is in the work," the motto on the seal of the Carnegie Institute of Technology, expresses Andrew Carnegie's attitude toward its founding. As he had himself experienced the struggles of a poor but ambitious young man to advance himself, he was inspired to make it easier for other young people to get an education along technical lines. In a letter to the mayor, dated November 15, 1900, Mr. Carnegie tendered to the City of Pittsburgh the money to establish a technical institution upon the condition that the city would provide a suitable location of ample size for future extensions.

On November 26 the mayor transmitted the communication from Carnegie to the members of the Select and Common Councils of the city. On December 15, Mr. Carnegie placed the technical schools under the direction of the board of trustees of the Carnegie Institute, and on January 28, 1901, the City of Pittsburgh accepted Carnegie's gift.

The work of organizing the Institute of Technology was committed to the care of Dr. Arthur A. Hamerschlag, who was appointed director. In 1918 his title was changed to president and he continued in this office until 1922, when he resigned. The rapid progress and expansion of the institute was due largely to his energy and foresight.

In the course of the year 1902 a site was selected, and in February, 1903, the trustees, meeting with a committee of Councils, approved a tract of 32 acres of land adjoining Schenley Park, near the Carnegie Institute building, as the home of the new institute. This was acquired by the city in September of the same year and tendered to the Carnegie Technical Schools. Mr. Carnegie then agreed to place at the disposal of the trustees of Carnegie Institute a sufficient fund with which to erect the necessary buildings.

In April, 1905, ground was broken and in October of that year the building now occupied by the college of industries opened its doors to students. As new structures were made ready for occupancy additional departments were inaugurated. In 1906 machinery hall of the College of Engineering was erected; in 1907 the building of the women's college, the Margaret Morrison Carnegie College; in 1908 the science building; in 1912 the College of Fine Arts, and in 1914 the central (administration) building. The Langley Laboratory of Aeronautics was erected for war-time instruction, and in 1924 the new gymnasium. Since the original grant the campus has been extended to include 52 acres and various buildings have been added, including dormitories for men and women, a library, inn, etc.

FIRST GRADUATION IN 1908

In June, 1908, the institute awarded its first diplomas, graduating students in chemical, civil, electrical, mechanical and metallurgical engineering from the College of Engineering, and students in architecture from the College of Fine Arts. On April 20, 1912, the name Carnegie Technical Schools was changed officially to the Carnegie Institute of Technology, and the institution received from the State of Pennsylvania a charter of incorporation with the power to confer degrees. The first degrees were given at the fifth commencement, in June, 1912.

The College of Engineering gives courses leading to the bachelor of science degree in chemical, civil, commercial, electrical, mechanical and mining engineering, and in chemistry, physics, and mathematics. A limited number of fellowships for a year's graduate work in mining and metallurgy are granted each year, for which the master of science degree is conferred. These fellows work in cooperation with the United States Bureau of Mines on research problems, and the results of their investigations, which are published, are recognized by the mining profession throughout the world as of great value.

A bureau of metallurgical research was established a few years ago, and it has already justified its creation. Many of the problems of the steel industry are brought to it for solution.

An international conference on Bituminous Coal was held at the Carnegie Institute of Technology in November, 1926, which was attended by over 1,700 delegates from all sections of the United States, Canada, Mexico, England, France, Germany, Belgium, Norway, Sweden, Czechoslovakia and Japan, representing states, cities, universities, learned societies, business and industry. A second International Conference on Bituminous Coal will be held under the auspices of the Institute in November of 1928.

The College of Industries, which is a pioneer in its field, gives the bachelor of science degree for four-year courses in building construction, works management, printing and industrial education. The aim of these courses is to furnish to



industry salesmen, executives and administrative officers, and the student specializes in the underlying science and technique of production, sales and management. Unusually complete shop equipment, combined with frequent visits to the industrial plants of the Pittsburgh district, are great aids in realizing the aims of the instruction.

FINE ARTS CO-EDUCATIONAL

The College of Fine Arts, which is co-educational, offers courses leading to the bachelor of arts degree in architecture, painting and decoration, music, drama and sculpture. The college is equipped with a library of the fine arts, a theatre, rehearsal, practice, exhibition, lecture, and drafting rooms, studios, collections of objects of art, etc. Frequent recitals and concerts by the orchestra are given by the students of the department of music. The department of drama gives about 100 performances of plays a season, which are attended by about 30,000 people. Scenery, costumes, lighting, as well as the acting, and in some cases the plays, are the work of the department. The students and graduates of the department of architecture have brought distinction to the institute by winning important fellowships and prizes in National competitions, and faculty and students in the department of painting and decoration contribute largely to the annual exhibition of the Associated Artists of Pittsburgh.

An important conference on the drama was held at the Carnegie Institute of Technology in November, 1925, which was attended by delegates from colleges, universities, the professional theatre, little or community theaters. From the interchange of views much information of value was secured.

The Margaret Morrison Carnegie College provides for the education of women for occupations in the home, teaching and the business world. It offers courses leading to the bachelor of science degree in household and costume economics, secretarial studies, general science, library and social work. The following motto of the college, written by the beloved Lucien Scaife, a former trustee of the institute, adorns the entrance to the building: "To make and inspire the home; to lessen suffering and increase happiness; to aid mankind in its upward struggles; to ennoble and adorn life's work, however humble, these are woman's high prerogatives." Instruction in this college is in many subjects modified from the traditional methods, in order to emphasize laboratory, studio and field work and to combine the training of mind and hand. Extensive laboratory equipment is provided for this purpose and frequent use is made of the opportunities offered by the city environment for bringing the students in contact with large scale operations, industrial or professional.

The division of general studies gives instruction in the academic branches in all the colleges.

In none of the phases of activity of this group of colleges is there ever absent a constant stimulating reaction from the Pittsburgh district as a dynamic background. Each year a large number of leading scientists, engineers, specialists, and executives from Pittsburgh companies give lectures in the class-rooms of the various colleges. As a part of its contribution to the community the Carnegie Institute of Technology shares with the people of Pittsburgh the lecture courses by eminent physicists, chemists and other scholars which are arranged yearly for its faculty and students, and members of the faculty act as consultants and work out problems for the industrial plants in the institute laboratories.

MR. CARNEGIE INTERESTED IN NIGHT SCHOOL

The night school, a phase of education in which Mr. Carnegie was deeply interested, has an enrollment of over 3,800. Most of these students work during the day in the industrial plants of Pittsburgh, over 1,200 firms being represented this year.

The day school has become international in its appeal, students being registered this year from China, Japan, Egypt, South Africa, India, Palestine, Canada, South America and many of the countries of Europe. The enrollment exceeds 2,400, which, with the night and part-time students, gives a total of 6,757. Each year in April the Carnegie Institute of Technology has a night "at home," when the people of Pittsburgh are invited to visit the college, where students are at work in all departments and special programs and exhibitions are arranged.

The endowment of the Carnegie Institute of Technology at the present time amounts to about \$15,000,000. An



Machinery Hall Carnegie Institute of Technology

arrangement has been made between the trustees of the Institute of Technology and the Carnegie Corporation of New York by which the sum of \$8,000,000 will be added to the endowment provided \$4,000,000 is contributed by the friends of the Institute of Technology. In other words, for every dollar that is subscribed the Institute of Technology will receive \$2 from the Carnegie Corporation. One-third of this amount may be in buildings; the other two-thirds must be applied to the endowment. This fund must be secured by 1946. The authorities of the institute are not looking forward to a policy of expansion. It is not expected that the enrollment will be permitted to grow much beyond the present number except in the evening classes, in which the students will be accepted up to the capacity of the shops, laboratories, and class-rooms. This number has already been reached in many departments.

In the field of research, the Carnegie Institute of Technology is devoting itself especially to metallurgy and coal. It is in these branches that it feels it can do most for the Pittsburgh district. At present it is approaching the study of these subjects partly from a theoretical point of view, but what is an abstraction today may be of great importance in a practical sense tomorrow.

The Institute of Technology enjoys noteworthy advantages through having as a background the city and district of Pittsburgh, the industrial production of which annually exceeds in its tonnage that of any other city in the world. The diversity and perfection of technological practice involved in this production and at the range of industries contributing to it are distinctive assets.

The City of Pittsburgh has reached its great importance as an industrial center largely through the application of scientific principles. It is, therefore, essential that its educational institution do all that is possible to advance the cause of science. The advantages that come to an industrial community through the presence of a great school of engineering are obvious. The necessity of encouraging work in the field of abstract research may not be so clear, but progress in technology in the long run can be achieved only through advancement in the fundamental sciences.

ARNOLD SCHOOL

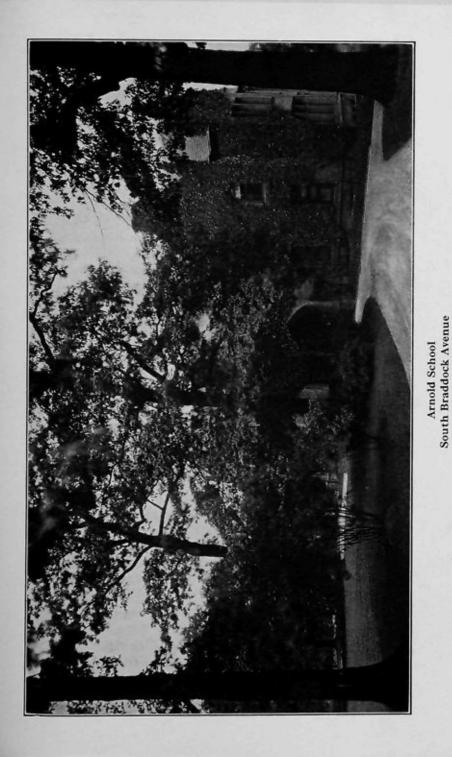
Arnold School, a college preparatory school for boys, because of its beautiful location on a seven acre site within the city limits, justly may be termed "A Country Day School in the City".

The school had its inception in the old George H. Thurston School which was founded in 1908, which was situated on the corner of Shady avenue and Aurelia street in the East Liberty district. Charles W. Wilder, Boston University A.B. and Harvard A.M., head of the school from 1915 to 1919, in the latter year, acquired proprietary rights to the school and renamed it Arnold School in honor of Rugby's most famous headmaster, Thomas Arnold, whose dominating personality not only revolutionized that famous school and changed the whole emphasis in the education of boys in England, but has been the inspiration as well of many headmasters and principals of successful boys' schools of America.

In 1923, the rapid growth and progress of the school made necessary a further reorganization and expansion. In the spring of that year, through the generous cooperation of a group of "incorporators" and "founders", so-called, composed of enthusiastic parents and supporters of the school's policies, the well-known Holmes estate, occupying an extensive tract between Braddock avenue and Richland lane was secured. Mr. Wilder's title to the school was assumed by a board of trustees, and on November 13, 1923, the school was established as a corporation of the first class, not operated for profit, to which corporation Mr. Wilder relinquished his financial control while remaining in charge of its administration.

During the five years on its new site and in its reorganized form, the school has come to have a national reputation as a college preparatory day school for boys. During the past year, for example, fifty percent of its graduates of the previous year, were, at mid-years maintaining honor standing in their respective colleges, including not only local and nearby institutions, but such colleges as Harvard, Yale, Princeton, Massachusetts Institute of Technology, Dartmouth, and West Point. Its recent growth and progress have been one of the most note-worthy events in the educational developments of Pittsburgh and have contributed to the process that is now making Pittsburgh a center of culture as well as steel.

The school now covers all the range of instruction from the first grade to college. It has two departments: Junior and Senior, respectively, the former being under the personal charge of George F. Whitman, A.B. Harvard '16, who has



been actively associated with the headmaster, Mr. Wilder, in the administration of Arnold School and its predecessor since 1917. These administrators are supported by a faculty of eleven men and two women.

The trustees of the school are: H. V. Blaxter, Arthur V. Davis, Joseph W. Kennedy, G. C. Kimball, W. B. Klee, Rt. Rev. Alexander Mann, D.D., John S. McCormick, T. E. McMurray, M.D., William L. Monro, J. W. Oliver, Cornelius D. Scully, J. Ramsey Speer, George R. Wallace, R. E. Withers, J. Merrill Wright.

Officers of the Board of Trustees are: president, G. C. Kimball; vice-presidents, H. V. Blaxter and R. E. Withers; treasurer, J. Merrill Wright; secretary, George F. Whitman. Executive Committee—G. C. Kimball, president (Ex-officio), H. V. Blaxter; George F. Whitman, secretary (Ex-officio), W. B. Klee, J. Merrill Wright, J. S. McCormick, R. E. Withers.

DUFFS-IRON CITY COLLEGE

Duff's College is the pioneer business training school in America. Few Pittsburghers realize the distinction that came with the establishment of this institution in 1839, when our fair city was about one-half square mile in area. The history of the growth of Pittsburgh and of Duff's College over more than a four score of years testify to the propriety of the slogan, "Pittsburgh Promotes Progress".

Peter Duff, the founder of Duff's College, was born in New Brunswick, Canada, in 1802. Early in life he became a prosperous merchant in St. Johns; but a conflagration in 1835 made him and many others bankrupt. After turning over all he had to his creditors, he set out in search of fortune anew in a strange land.

On his way to New Orleans, he was detained at Pittsburgh because of low water. His finances likewise being at low tide, he tried to get work in the offices of the various business houses of the day. Bookkeeping was not then, as it is now, a system, but his knack for systemization so impressed the business men that he was induced to begin private instruction for themselves and their clerks. He thereupon abandoned his plans to proceed to New Orleans, and in 1839 the first business training school of America had its inception in Pittsburgh at the corner of what is now First avenue and Market street.

His efforts were highly repaid by the interest and cooperation of enterprising merchants, and in the following year,



Duffs-Iron City College 424 Duquesne Way

1840, the school was incorporated by the Legislature of the State as "Duff's Mercantile College of Pennsylvania". The school grew in popularity and size, and after nearly twenty years, it was removed to Fifth avenue, where it located in the Hussey building. In 1858, William H. Duff succeeded his father and became principal of the college. Under his direction, the institution attained the leading rank among business colleges. Requiring larger quarters, the school removed to the Eichbaum building. Fifth avenue was the address of the school for over forty years.

In the latter location, another disastrous fire wiped out the school. However, Mr. Duff was not only a great educator, but an able financier. This combination of qualities, together with strict integrity and firmness of purpose, enabled him without delay to re-establish the college in its fourth location, in the Harper building at Liberty avenue and Eighth street.

A year-book, a cloth-bound volume of eighty pages, issued by the college while at this location, gives the names and addresses of graduates from practically every state in the Union. In 1904, the school was moved to the Irish building, where it remained for ten years. Two years after its location at this address, Mr. Duff decided to retire from the educational field, and on June 1, 1906, P. S. Spangler became principal of the college.

Mr. Spangler's educational background fitted him peculia^rly well for the office for which he was selected. His entire life has been devoted to public and private school work. His education was received in the public and normal schools of Pennsylvania, Otterbein University and Iron City College, where he received his technical commercial training. He was a member of the faculty of Iron City College, and was superintendent of the Commercial Department, for eight years previous to his election as principal of Duff's College.

In 1908, Duff's College secured control of the Iron City College, which was thereafter operated as a branch for specialized training in Gregg shorthand and secretarial duties and functions. In Duff's, Graham shorthand and typewriting had been introduced many years previous, but the growing popularity of the Gregg system made such a specialized school very desirable.

In 1914, Duff's College removed to the second and third floors of the Stanwix building, Penn avenue and Stanwix street. In 1921, control of the Martin Shorthand School was secured, and this was combined with the Iron City branch. The growth of the school became so phenomenal, that the combined quarters of the Iron City branch and Duff's were wholly inadequate, and it became necessary to seek more extensive space. In 1922, therefore, a four-story building on Duquesne way was acquired, and the three schools were consolidated and housed under one roof.

Few cities can pride themselves with a private school building so commodious, adequate and well arranged, as Pittsburgh can in the Duffs-Iron City College building. Nothing has been spared in making this building a model for business training. It contains 33,000 square feet of floor space, and is arranged in four wings, so that light is admitted to each classroom from three sides. On the first floor, in addition to the executive offices, are the library, a spacious foyer, an auditorium with capacity for 800 people, rest rooms, hospital, and cafeteria. The second, third and fourth floors are devoted to classrooms.

Duff's College, to-day, has an enrollment in excess of 1600 students annually, and a total registration of over 53,500 since its incorporation in 1840. The combined registration of Duff's College, Iron City College, and the Martin Shorthand school is approximately 116,500 students, exclusive of the enrollment of a branch of the college operated in Beaver Falls, Pa.

A faculty of twenty teachers is maintained under the direction of the following executive officers: P. S. Spangler, president and manager; M. S. Johnston, secretary and registrar; S. E. Bowman, treasurer and principal; J. Merle Baltzer, assistant principal; Karl M. Maukert, superintendent Bookkeeping and Accounting schools; J. Fred Gardner, superintendent Shorthand and Typewriting schools; M. E. Mattes, superintendent Finishing school.

It is a noteworthy circumstance that in the eighty-nine years of Duff's history, there have been only three men at the head of the college: the founder, his son, and the incumbent.

Mr. Spangler has been active in commercial school education nationally, having served officially with the National Commercial Teachers' Federation, National Association of Accredited Commercial Schools, and for a number of years was secretary of the Private School Managers' Association. He has been honored by the Presidency of the Eastern Commercial Teachers' Association, and is a past president of the Rotary Club of Pittsburgh, as well as a present member of the Committee on Education of the Chamber of Commerce.

ELLIS SCHOOL

The Ellis School was opened at its present location, 4860 Ellsworth avenue, September, 1916, with an enrollment of only 40 pupils. The aim of the school primarily is to prepare girls for college, and to give those not going to college a thorough training in an elective course of study. The first class of three girls was graduated in June, 1918. Since that time 64 girls have been graduated from the school and 42 of these have entered college.

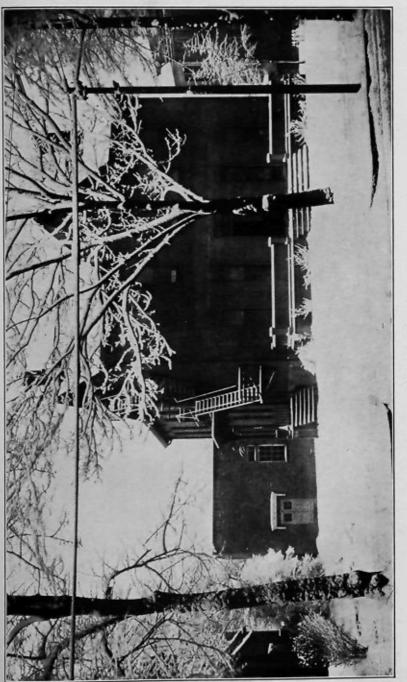
The French Club composed of advanced French students, meets monthly, and in this way its members become more conversant with the French language. The children of the primary grades are interested in their work through projects, hand work and industrial art. There is also a successful Art club and the annual Art tea is one of the interesting social events of the school. The Geography club adds interest to that subject and the work planned and carried out by the children.

This year the eighth-grade has published two issues of the *Ellis Chronicle*, and one issue of the *Freshmen Flurries* has also been published. These magazines add much interest to the English work. A large gymnasium and a study hall were added to the school building last summer, and have been of great value to the school work.

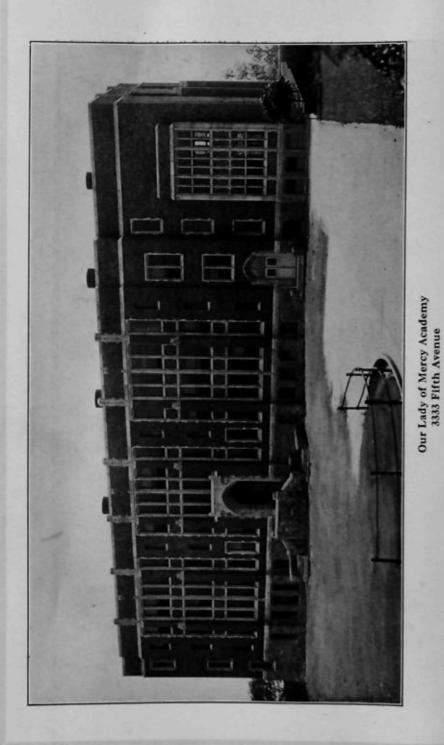
Sara Frazer Ellis, head mistress, and Marie Elder Craighead, associate head mistress, are assisted by a teaching staff of 14 women.

OUR LADY OF MERCY ACADEMY

A four-story brick building on Penn street became in 1843 the Mother House of the Sisters of Mercy; and it was there, the next year that Mother Francis Warde furnished two of its rooms and opened a select school for girls. In this humble beginning was laid the foundation of the present Mount Mercy Academy. To a new structure, erected at



The Ellis School 4860 Ellsworth Avenue



Webster avenue, the classes were transferred in 1850. As the student body increased from year to year, more spacious rooms and grounds were necessary. This necessity was satisfied in 1894, when the Academy found itself in the healthful and pleasant atmosphere of 3333 Fifth avenue. Here, for thirty years, the edifice, designed in French Renaissance, raised its towers and turrets far above the smoke and din of the city. But the night of October 24, 1924, witnessed the building aflame, and the grey dawn looked on its ruin. After this calamity, the convent library, study halls, and parlors accommodated the pupils; then on September 12, 1927, the classes were resumed in the new structure, designed in Collegiate Gothic.

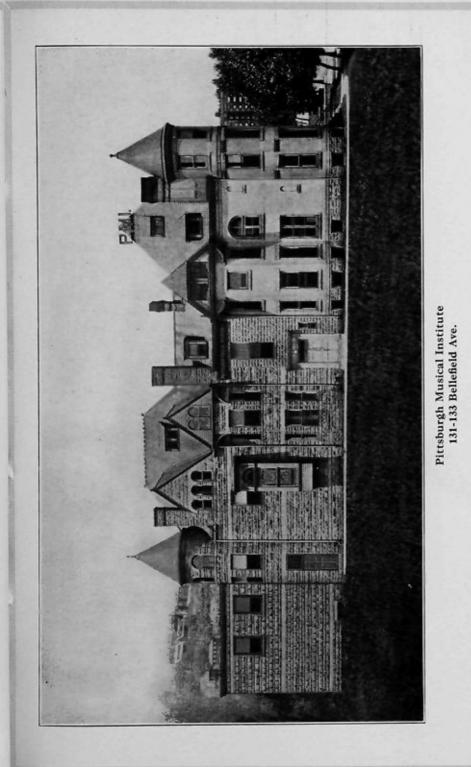
Our Lady of Mercy Academy is affiliated to the Catholic University of America, to the Department of Public Instruction at Harrisburg, and is in the Association of Secondary Schools of the Middle States and Maryland. Catalogues giving details may be had by applying to The Directress.

PITTSBURGH MUSICAL INSTITUTE, Inc.

What is perhaps not realized by many Pittsburghers is the fact that the Pittsburgh Musical Institute is one of the largest and most progressive music schools in the country. As a music school it has been conspicuously successful from its inception. It was incorporated in 1915 with about 150 students and a faculty of 18 teachers. It has grown so rapidly that in 1928 it has more than 2000 students and a faculty of 56 teachers, all specially trained for their work. For the first five years of its existence the Institute was located on Fifth avenue near the Masonic Temple, but in 1921 acquired its own building on its present location at 131-133 Bellefield avenue. Here are 36 teaching rooms and a recital hall with a fine three manual concert organ, and in another part of the building also a smaller organ for practice purposes. For the convenience of pupils living at a distance from headquarters the Institute maintains branch studios at Aliquippa, Ambridge, Bellevue, Butler, Canonsburg, Crafton (two studios), Dormont, Elizabeth, Monaca, Mount Lebanon, New Kensington, North Braddock, Pitcairn, Sewickley, Swissvale, Tarentum, and Wilkinsburg, where four studios are necessary to meet the growing response to well supervised music instruction. Within the city proper there are, besides the main school, studios at Squirrel Hill, Homewood, two at East Liberty, and two on the North Side, making it possible for children in these sections of the city to have the highest type of music instruction without the loss of time or the inconvenience and danger of traveling about the crowded city.

The Institute offers courses from the very beginning to the highest graded courses leading to graduation. Post graduate work is done here by many students from other schools. The aim of the Institute is to provide a complete musical education for its pupils, not merely instruction that leads to technical proficiency. To this end the Institute has two classes of students, regular and special. The former take the principal and all secondary studies with the required classes, while the special pupils take only one or more branches, such as piano, voice, violin or organ. An important feature is the supervision of the regular work of all pupils through special hearings by the directors or heads of the departments. For many years the directors have put special care and painstaking effort into developing better teaching and more rapid and thorough training for both children and adult beginners and those in the earlier grades and feel that they have been unusually successful in this department. Two of the outstanding developments sponsored by Pittsburgh Musical Institute in this field are the Visuola, or visual method for either private or class teaching, and the Helen Curtis class system, as used in the best music schools in this country and many of the public schools.

Many opportunities are given students for public appearances and in addition there are many faculty recitals presenting unusual programs. These recitals will pass a total of 800 by the end of the school year 1927-28. Important features are the P. M. I. Chorus and Orchestra, both large organizations and free to the students. Some of the recent outstanding performances by the chorus are "The Gondoliers," by Gilbert and Sullivan; "Martha", by Flotow (which was repeated two weeks after the first performance to accom-



modate those not able to get into the auditorium at the first presentation); "The Chimes of Normandy," by Planquette; and on May 2, 1928, the perennially popular "Mikado" by Gilbert and Sullivan, was given at Carnegie Music Hall. The orchestra is heard in several public performances each season in well selected programs featuring one or more wellknown soloists. All these choral and orchestra programs are free to the public. A notable feature the past season has been the series of five historical piano concerto recitals, which have been attended by large audiences. Each season also brings a series of illustrated program talks on the concerts given at the Mosque by the visiting orchestras, and the summer term of six weeks in June and July is featured by another series of six lecture recitals by the directors. In this connection it is interesting to know that P. M. I. was the first music school in the country to broadcast programs.

An important feature is the arrangement with the University of Pittsburgh for the exchange of credits whereby students can make music the major subject and receive from the University the A. B. degree.

All the affairs of the Institute are managed by the three directors, Dallmeyer Russell, William H. Oetting and Charles N. Boyd. This board is further supported by an advisory board consisting of Mrs. D. M. Clemson, Dr. Charles Heinroth, of Carnegie Institute; John A. Bell and Frank Milton Hunter.

THURSTON PREPARATORY SCHOOL

The Thurston Preparatory School, the pioneer private preparatory school for girls in Pittsburgh, was organized in the late eighties by Miss Alice M. Thurston and sent its first graduate to college in 1894. The Thurston school has a high standing in Pittsburgh and is also well known in educational circles elsewhere. Many of its graduates have entered college and a number of these girls have won high honors in these higher institutions.

For a number of years the school had its home on Penn avenue in East Liberty, but it soon outgrew its environment, and a specially planned fire-proof building was constructed for the school on Shady avenue. In later years a large additional wing was added for gymnasium and class rooms, and



Miss Alice M. Thurston, M.A., Principal Thurston Preparatory School 250 Shady Avenue

more recently a fine playground, adjacent to the school, has been acquired, where out-of-door recreation is possible for all classes. The school is organized systematically, from Montessori to college. The students of the Upper School have a choice of schedule between the regular preparatory work, which prepares for the College Board examination, and a general course which prepares the students to follow special lines of advanced study after graduation.

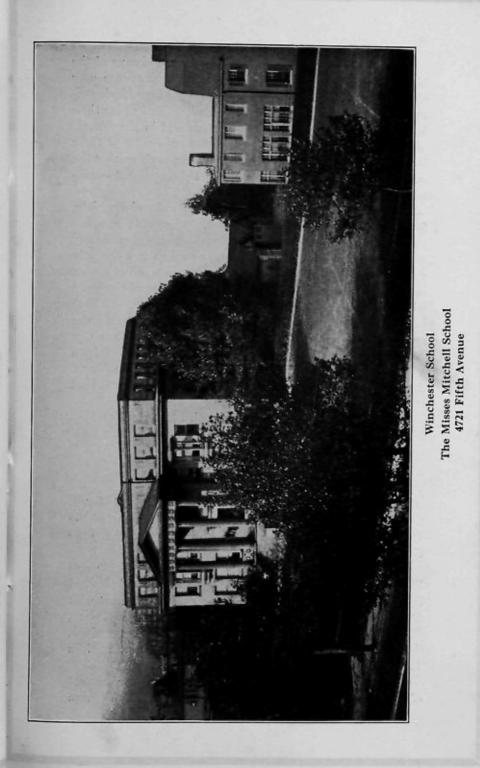
It may be said that the keynote of the school, from the first, has been individual development, although pupils are grouped in small classes. It is believed that such grouping tends to the development of enthusiasm and at the same time no child is lost sight of in his daily work. The aim of the school is not only to prepare its pupils for higher scholastic work, but to fit them for the responsibilities of home and civic life. A gratifying number of efficient women who are engaged in active work in the city, in business, in social, and in philanthropic effort, gained their early training in the Thurston School. The faculty consists of teachers of experience and special training. Regular work in gymnasium is provided for and there is a strong student government organization which works in harmony with the faculty.

Official Staff-Alice M. Thurston, M. A., Principal; Mary E. Kendrick, Secretary.

THE WINCHESTER SCHOOL

One of the best schools for girls in Western Pennsylvania, and which has had a most beneficial effect on the womanhood of Pittsburgh for over a quarter of a century, is the Winchester School, which is located in the residential portion of the city, in the Shadyside district.

The Winchester School, the Misses Mitchell's School, began its operations in 1902, with 40 pupils enrolled. Its first location was on Braddock avenue, in the East End of Pittsburgh, but its continued growth made a more central location advisable, and within a few years the school was moved to No. 4721 Fifth avenue, where a fine building was erected for its accommodation. A large playground and athletic field, extending to Clyde street, aids in the outdoor athletics of the students.



The ideals of the Winchester School were always of the highest levels, and the members of the faculty were ever chosen for their ability to measure up to the high ideals prevailing in the management of the school, as well as for their high standing in the world of education and in the departments they were chosen to teach. It was because of these ideals, and of the teachers chosen to inculcate them, that the school has prospered and expanded, until its present enrollment is between 250 and 300 girls.

The course of study is thoroughly practical and complete, for it takes children through the Montessori and kindergarten grades, and proceeds upward, through college preparatory work, which has become exceptionally well known throughout the United States, and Winchester students are welcomed in the highest institutions of learning. By June of this year, when commencement exercises take place, 474 girls will have been graduated by the Winchester School. Many of these graduates have successfully passed the courses of the larger Eastern colleges for women, having received degrees from Vassar, Smith, Mount Holyoke, Wellesley and Bryn Mawr. A smaller number have graduated from universities and art schools.

The Winchester is a private school, conducted by Miss M. A. Graham Mitchell.

PARK INSTITUTE

For a generation or two before 1889, the school that is now Park Institute was the preparatory department of the Western University of Pennsylvania, which later became the University of Pittsburgh.

In 1889 Professors Levi Ludden, Charles R. Coffin and Wm. D. Rowan, bought the Preparatory School and changed the name to Park Institute. A commercial department with day and evening sessions was opened at once by Mr. Rowan. The school has functioned as a business school ever since, the preparatory department having been discontinued in 1903.

There has been only one real change in the management of Park Institute in forty years. O. B. Hughes came from



Park Institute 8 W. North Avenue

the Bryant and Stratton Business College of Baltimore in 1901, to take charge of the commercial department. Mr. Rowan was the last of the original organizers to retire. He sold his interest to Mr. Hughes in 1909.

While Park Institute as a business school is not the oldest in the city, it is an outgrowth of a whole century of uninterrupted educational work. The changes in the personnel of the instructors have been very few. It seems to be a place where once one is placed he wants to stay. Leo C. Mueller, assistant manager, and Miss C. Minerva Brumbach, as secretary, have been rendering invaluable support and assistance in maintaining the high quality of the school since 1915.

The whole purpose of Park Institute is to give young men and women a superior training for the profession of Business, the most highly paid and fascinating of all professions. The result of these years of careful work in preparatory education fully justifies the efforts. In the city are hundreds of professional men, mostly lawyers and physicians, who took their college preparatory work in Park Institute a quarter of a century or more ago; but the number of successful business men and executives who owe their start in life to the lessons learned at Park Institute is much greater, for there has been a continual stream of young people of both sexes turned out every year from the school that has been "forty years on North avenue."

PITTSBURGH ACADEMY

Pittsburgh Academy owes its inception to J. Warren Lytle, 1854-1914, a pioneer in the field of secondary education in Pennsylvania. In 1882, then at the age of 28, Mr. Lytle perceived the need of a first-class college preparatory and business school that would combine educational and cultural advantages with efficient business training.

The first home of the Pittsburgh Academy was in a building known as Neville Hall, located at Fourth and Liberty avenues, in the "golden triangle" of Pittsburgh. Here a faculty of four capable and earnest instructors laid the foundation for the future greatness of the Pittsburgh



Mrs. J. W. Lytle "Mother" Pittsburgh Academy Academy. That the academy filled a definite need in the life of the growing industrial center was evidenced by the steady and marked increase in the enrollment of the student body, a tribute to the foresight of Mr. Lytle and to the methods of instruction employed at the Academy.

In 1896 Neville Hall was unable to accommodate the students who sought admission, and more spacious quarters became necessary. The buildings formerly occupied by the University of Pittsburgh, then known as the Western University of Pennsylvania, were secured and occupied until 1909, when this ground was taken for the new City-County building. The new and more centrally located May building then became the home of the Pittsburgh Academy.

Here a period of growth and expansion began which in 1915 necessitated securing larger quarters to accommodate the constantly increasing student body. An ideal location was selected in the most refined section of down-town Pittsburgh, 531 Wood Street. The building was entirely remodeled to suit the needs of the school.

That the ambitious dream of the founder has been more than realized is amply attested by the fact that over 11,000 men and women have been graduated from Pittsburgh Academy in the last 46 years, and today are successful ministers, lawyers, physicians, teachers, merchants, manufacturers, editors, bankers and men and women of affairs. The enrollment has twice doubled itself within the last five years, and the institution bids fair to witness a period of expansion and growth unexampled in its own history.

Herbert G. Lytle, A. B., is president and director; Rhuel Hampton Merrill, B. S., B. D., D.D., is president emeritus, and Mrs. J. W. Lytle is secretary. A large faculty has charge of the many departments comprised in Pittsburgh Academy's courses of instruction.

Mothers of students regard Mrs. J. W. Lytle, wife of the founder and mother of the present president of the Pittsburgh Academy, with the warmest affection. She is known as "Mother Lytle", and she never forgets a student or his school record. From her vast store of wisdom she advises graduates, encourages the students, and welcomes the strangers.

FIRST NATIONAL BANK AT PITTSBURGH

The facilities of the First National Bank at Pittsburgh are offered to those interested in education, whether as teachers or students, whether attending the greater institutions, or the public, private or parochial schools.

The Bank conducts Checking and Saving Departments, and maintains a friendly and constructive attitude to all its clients, inviting them to consult its Officials on all matters of finance, including investments and the sending of money abroad.

While the figures given below show that the Bank is qualified to handle with satisfaction the largest monetary transactions, small accounts are given the same painstaking care as those of the great corporations. Many of the Bank's largest accounts have grown from beginnings of very moderate proportions.

Many Pittsburghers never travel without asking the experts of the First National Bank's Tourist Department to arrange their programs. They can often suggest vacation plans which would not occur to the busy man or woman, and being agents for all Steamship companies, by Ocean or Lake, they are in a position to make selections of accommodations entirely in the interest of their clients. Their experience in this work guarantees satisfaction. All details of travel are arranged, including the procuring of passports, and the buying and selling of foreign money, as well as the issuance of Letters of Credit and Travelers' Checks.

TO DO

Capital	. \$6,000,000.00
Surplus	6,000,000.00
Undivided Profits and Reserves	1,817,054.35
Deposits	84,701,389.76
Resources	.106,716,001.57

DIRECTORS

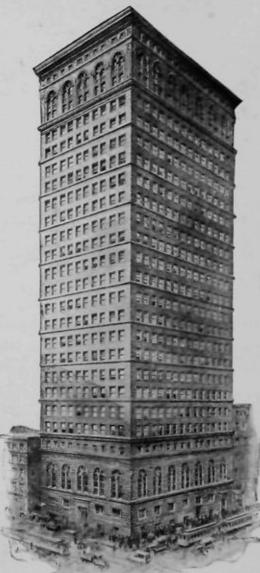
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P. W. DAHINDEN	Assistant Manager Foreign Department	
L PAUL FORD	Assistant Manager Foreign Department	

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

The Story of PITTSBURGH

Volume One Number Sixteen

Hospitals



First National Bank at Pittsburgh December, 1928 This booklet, prepared and published by the First National Bank at Pittsburgh, Pennsylvania, is one of a series issued, from time to time, since August, 1919, portraying the various industries of the Pittsburgh district, with the intention of emphasizing the importance of Pittsburgh as a commercial and financial metropolis. A large number of its many industries and altruistic enterprises, have been described in the booklets, of which sixteen have been published, to date. The following is a list of the subjects discussed, with the date of issue:

Vol. 1, No.	1—Introductory Booklet	August, 1919
Vol. 1, No.	2—Iron and Steel	. September, 1919
Vol. 1, No.	3—Iron and Steel (Part 2).	. January, 1920
Vol. 1, No.	4-Coal and Coke.	June, 1920
Vol. 1, No.	5—Glass	. December, 1920
Vol. 1, No.	6-Electrical Appliances.	March, 1921
Vol. 1, No.	7—Radium	August, 1921
Vol. 1, No.	8-Cement and Concrete	.December, 1921
Vol. 1, No.	9-Clay Products	.December, 1922
Vol. 1, No.	10—Petroleum and Natural Gas.	December, 1923
Vol. 1, No.	11—Petroleum and Natural Gas (Part 2)	. December, 1924
Vol. 1, No.	12—Food Products	.December, 1925
Vol. 1, No.	13—Diversified Products	. April, 1927
Vol. 1, No.	14—Education.	April, 1928
Vol. 1, No.	15—Education (Part 2)	April, 1928
Vol. 1, No.	16—Hospitals	December, 1928

The Story of Pittsburgh Hospitals

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THE most important step forward in Pittsburgh's medical history was made when the acquisition of the H. K. Porter property, in the Oakland district, enabled the School of Medicine of the University of Pittsburgh to bring into being a long cherished project—the formation of the Medical Center. Under the supervision of Dr. R. R. Huggins, dean of the School of Medicine, seven fine medical institutions, of widely diversified interests, have united to form this Medical Center. Most of these will be located on the University property, at Oakland, the first institution to be completed being the Children's Hospital. The others are all now carrying on the work of the Medical Center in their present localities, pending the building of their new homes.

Most of them will eventually be on the grounds of the University. They are: Children's Hospital of Pittsburgh, Presbyterian Hospital, Eye and Ear Hospital, Pittsburgh Free Dispensary and the School of Medicine of the University of Pittsburgh. The Elizabeth Steel Magee Hospital will continue to occupy its present well-equipped and beautiful home, and the Tuberculosis League Hospital, which has proved of inestimable value to Pittsburgh, will also continue in its present quarters.

Pittsburgh has every reason to be proud of its Medical Center, which promises to become one of the most important seats of research and discovery in preventive medicine in the United States. The Medical Center is the largest aggregation of hospitals in the city, but there are many other large, fine, well-equipped hospitals, carrying on their work alone, and each is a pride and a blessing to suffering humanity. Pittsburgh feels that there are no better hospitals in the country than those within her own domain.

ALLEGHENY COUNTY HOME AND HOSPITALS

The Allegheny County Home and Hospitals as established at Woodville, was created by an Act of the Assembly at the session of 1852 for the reception and accommodation of the poor of Allegheny county, exclusive of the City of Pittsburgh. The institution is located at Woodville, Pa., in Collier township, ten miles west of Pittsburgh, on the Washington branch of the Pan Handle Railroad.

There are three departments to the institution, viz.: the "Home," in which the aged and infirm are given care and hospital treatment; the hospital for mental diseases, and Hill Crest Sanatorium, where all patients suffering from tuberculosis are treated.

The original buildings for the Home department were erected in 1853. In 1910, these buildings were razed and replaced with a modern building and equipment. This department is caring for 750 patients, 150 of these requiring hospital care.

The department for Mental Diseases was erected in 1900. Prior to this time, Allegheny County maintained mental patients in the several State institutions. This is the largest department of the institution, having at the present time a population of over 1500 patients. In this department, there is a hospital unit of 100 bed capacity, complete in every detail in the way of laboratory, operating room, X-ray, violet ray, and hydrotherapy equipment. However, patients in all departments have access to the service of this hospital unit.

Prior to 1916, a camp was maintained for the treatment of tubercular patients, but in 1916, Hill Crest Sanatorium was erected. This building is located at an elevation of 1100 feet and provides for the accommodation of 350 patients. The farm in connection with the institution, comprises 1200 acres, on which is maintained a herd of 150 registered Holstein cattle, 500 Duroc-Jersey hogs, 6500 White Leghorn chickens and 18 head of horses. During the year 1927, the products of the farm amounted to \$60,000.

The Out Door Relief Department of the Institution functions through the offices of the Directors of the Poor, located in Room 536, Court House, Pittsburgh. This Department during the year 1927 distributed relief to the poor of the county amounting to \$140,000.

The management of the Allegheny County Home and Hospital is under the supervision of the Directors of the Poor, of which Maj. J. Clyde Miller of Homestead is president, H. H. Dixon of Millvale, vice president, and Dr. W. L. Henderson of East McKeesport, secretary. Dr. G. A. Mc-Cracken is superintendent.

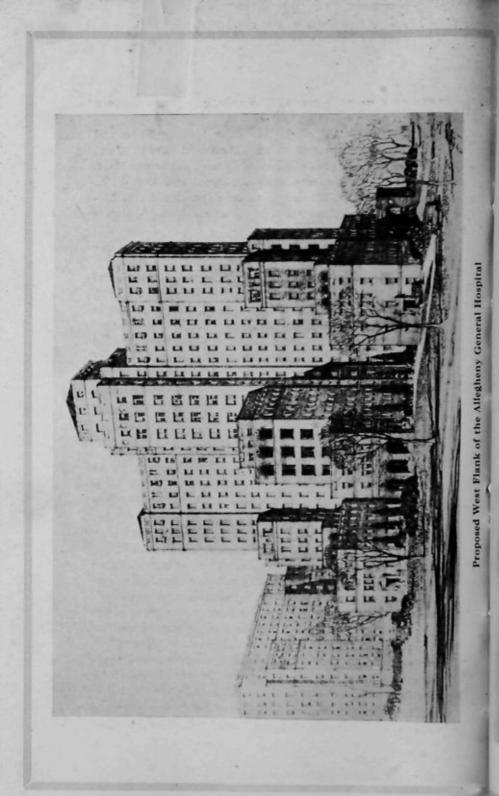
ALLEGHENY GENERAL HOSPITAL

The Allegheny General Hospital, on the North Side of the City of Pittsburgh, was incorporated December 4, 1882, and formally opened February 15, 1886. It was rebuilt in 1904. Its bed capacity in 1886 was 50, and this had increased to 405 in the year of 1927. The number of patients admitted in 1886 was 369, and this increased to 6550 in the 1926-1927 year, ending May 31. Expenditures in 1887 were \$20,177.82, and in the latest year named they had grown to \$628,749.08. The endowment fund in the first year was \$10,000, and this had increased by the end of 1927 to \$3,104,449.58; of this, \$712,024.58 was general, \$442,425.00 laboratory, and \$1,950.-000.00 in memorial and other special funds.

Illustrative of changed conditions, the annual report states that the actual average per capita per diem cost, 1886-1887, was 96 cents, while in 1926-1927 the actual average per diem cost was \$5.25.

Total patient days of treatment in the year ended May 31, 1926, were 119,654; patients' days in wards, 82,507; patients' days in private rooms, 37,147; total patients admitted to wards and private rooms, 6,550; patients admitted to private rooms, 3,912. The average stay of private room patients was a little more than 14 days, the average stay of ward patients a little over 21 days, and the average stay of hospital patients was a little over 18 days. The total number of free days service rendered over the past fiscal year was 50,271. These facts briefly stated, give an insight into the need of a hospital of this character on the North Side.

The School of Nursing has reached its 40th anniversary and has issued "The Stethoscope," which tells of its activities.



From an early period, nurses from this institution have given their services in the foreign fields, and at present the school is represented by graduates in India, Egypt, Abyssinia and Liberia.

Directors of the Allegheny General Hospital have been able, through the generosity of the Park and Chalfant families, and through the purchase of the Sawyer estate and sundry other plots of ground in the neighborhood of these properties, to acquire sufficient land in what is probably the most desirable location in the downtown section of the city of Pittsburgh, for the erection of a new Allegheny General Hospital, which will rank as one of the finest modern hospitals in the country.

The gift by the families named comprises about three acres on North avenue, facing the park, in the same district in which the institution has been serving for forty years. Other plots enlarge the site to 3.22 acres. The scheme for the new building provides for a building 250 feet long, 45 feet wide and 15 stories high, forming a central stem. This is to be flanked on either side by three projecting wings, one of nine stories and the other two of three stories each. From the north end of the hospital a connecting passage extends to the nurses' home, a nine story building 192 feet long.

The design of the hospital is based on the Lombard brick architecture of Northern Italy. The chief features of the plans provide for ample light and air, and the circulation between all departments, the horizontal travel having been reduced to a minimum by grouping everything around the main bank of elevators located at the very center of the building.

The William H. Singer Memorial Research Laboratory was founded by Mrs. Singer, widow of Mr. Singer, and by their children, G. Harton Singer, Mrs. W. Ross Proctor, and Mrs. Robert Milligan. After the completion of the building, at the northeast corner of Sandusky street and Park way, and its thorough equipment, the entire property was turned over to the board of trustees of the Allegheny General Hospital as a gift to that institution, provided that it should be used both as a research laboratory for the study of general medical and surgical problems, and as a means of furnishing the hospital with a high grade of routine laboratory work. The laboratory is a rectangular building of brick trimmed with limestone, and is 115 feet long and 60 feet wide. In addition to the three stories of height there is a large working basement.

The board of directors follows: Rev. Dr. Maitland Alexander, president; William C. Robinson, first vice president; H. L. Mason, Jr., second vice president; Edmund W. Mudge, third vice president; J. N. Davidson, treasurer; Edward G. Lang, assistant treasurer; C. F. Holdship, secretary. Other directors than above are: Henry Chalfant, Harry Darlington, Jr., Carroll P. Davis, George M. M'Candless, Walter S. Mitchell, Mrs. Henry R. Rea, J. Frederic Byers, B. F. Jones, Jr., Mrs. Robert Milligan, Lewis A. Park, G. Harton Singer, Sidney S. Liggett, Hon. Josiah Cohen, William G. Costin, Thomas A. McGinley, J. Denniston Lyon, Frederick C. Perkins, Mrs. W. C. Robinson and James Lyall Stuart.

Dr. G. Walter Zulauf is superintendent of the hospital, and Miss Lottie Darling, R. N., is superintendent of nurses.

ALLEGHENY VALLEY HOSPITAL

The Allegheny Valley Hospital, Tarentum, Pa., was established on January 21, 1909. The building used was on Second avenue and formerly known as the Barr Building. Mrs. Emily Hill was matron of the institution and Miss Chatham, head nurse. Many of the prominent ladies of the community loaned their services to the institution and they had many trials to contend with before it was properly organized. Nothing was too menial for these willing workers, and they did whatever they were called upon to do from scrubbing the floors to cooking the meals. To these noble women the community owes much. After two years the hospital was transferred to West Tarentum, where it remained until the new and present building was finished. which is located in Harrison township, Carlisle street, Natrona Heights. This was in June, 1919. The hospital is always open to the sick and injured of whatever race, creed or position. It is a 100 bed hospital.

The School for Nurses was established in May, 1910. The first class to graduate was in 1912. There were four graduates. The curriculum of the school is arranged for the three-year course, to meet the requirements of the State of Pennsylvania.

The hospital is fortunate in having a very fine staff of surgeons and physicians. Not only do these men take an active interest in the welfare of the hospital and their patients but also in the nurses. The training school is indebted to them for the unlimited time they have given to lectures to the classes on the various subjects of the course coming under their supervision, and the professional service rendered during illness. A \$110,000 nurses' home is being erected at the present time. This will be ready for occupancy July 1, 1929.

Board of Directors: John E. White, president; J. W. Stephenson, vice-president; Frank U. Bert, secretary; S. C. Hookey, Geo. H. Dickey, J. F. Trees, W. F. Detwiler, Earl McGraw, Walter Brinton, Thomas C. Conroy, Fred Laufer, C. K. Nichols, Paul F. Voigt, James Green, J. R. Rudert.

Cora B. Lash, R.N., is superintendent and Margaret P. Reed, R. N., superintendent of nurses.

BELVEDERE GENERAL HOSPITAL

The Belvedere General Hospital, located on Paulson ave., East End, Pittsburgh, was founded by Dr. G. Alvin, the present medical director, in 1921. In 1922 a charter was secured under the commonwealth of Pennsylvania, making it a community hospital, a charitable institution with a free dispensary, affording medical and surgical aid to the sick, injured, and disabled. A board of directors was appointed and a woman's auxiliary organized.

The hospital is well equipped with an X-Ray department, with a competent radiographer in charge, a drug department with registered pharmacists in charge. The operating room has all facilities for performing operations of any nature. In connection with the operating room there is a complete and most modern sterilizer.

The development of a perfectly functioning hospital having been made, the most urgent necessity remains to be faced, that is, more room to house those requiring admission. A floor was added to the institution last year, but we still need more room to relieve suffering of our fellowmen regardless of religion or creed.



Belvedere General Hospital 541 Paulson Avenue

If our friends who are able to contribute will help the institution, the management will be able to add an additional building to the hospital which will bring assistance and comfort to a greater number of unfortunates. In the face of many difficulties much advancement has been made in our work. A medical staff has been appointed to take care of the various departments. The free dispensary has been opened and a training school for nurses has been started. Group Medicine is practised in this Institution for the welfare of the patients. Several of the staff doctors competent in their respective field may examine the patient, and with the aid of (a) Clinical Laboratory providing chemical-bacteriological, serological, and pathological services; (b) X-Ray and Fluoroscopic services; (c) Physical Therapy service. With these diagnostic and theropeutic facilities available under competent supervision and with our aim to meet the requirements of the American College of Surgeons and the American Hospital Association, we are in a position to give the patients the best that medical science can offer.

The great work of the hospital is recognized by the State. Last session an appropriation was passed by the legislature of Pennsylvania, so the institution is under state control, having a member of the Department of Welfare to check up the work done by the institution, and a state auditor to audit the books quarterly.

The board of directors, the medical staff and the women's auxiliary are doing their share. Will you do yours and make this hospital, your institution, a success?

To the generous public and active friends who are helping this good cause, the board of directors extend their thanks for their good work and with hopeful confidence for future success.

Directors of the Belvedere Hospital are: S. W. Means, president; Dr. G. Alvin, first vice president; Dr. H. M. Goehring, second vice president; W. B. Sands, secretary; W. W. Johnston, treasurer; Hon. Clyde Kelly, Dr. J. S. Mackrell, Dr. W. H. Oyer and the Rev. De Francesco.

BRADDOCK GENERAL HOSPITAL

The first suggestion for a hospital for the historical town of Braddock came from the pen of a young newspaperman about 1890. Editorials on the subject came at infrequent intervals for the next few years. Then came an anonymous gift of \$200 with which to start a hospital fund. The women of the town took up the work in earnest and gave a bazaar which netted them \$3,500. The Hospital Association was formed and the raising of money began seriously. The Braddock Medical Society and the Braddock Board of Trade united their forces and funds, and together with the Hospital Association purchased the Mills homestead. Thus the Braddock General Hospital was launched in June, 1906.

The little hospital of 30 beds was soon inadequate to care for the needs of the community, and a new wing was built, adding 70 beds. This building was too soon overcrowded, and a second wing was built, making the bed capacity 125. The buildings were completely modernized and equipped with the many conveniences so essential to the success of an efficient hospital. During the past year a new department of Physical Therapy was opened and new X-Ray equipment installed.

The Braddock Hospital has a recognized training school for nurses, which graduates a class each year. A modern nurses' home was built in 1927 which enhances the comfort and pleasure of the students.

The hospital is governed by a board of managers consisting of seven business men of the community. These men unselfishly devote their time and energy toward keeping the hospital up to the necessary high standards required for service and recognition. The hospital is recognized by the American College of Surgeons and the American Medical Association, and is approved by the Pennsylvania State Board of Medical Education and Licensure.

Miss A. Grace Scott is the superintendent and the members of the board of managers are: George Watt, president; W. J. Tracey, vice president; H. J. Wagner, Titus Hodder, A. L. Lipsky, Walter Yenny, and J. A. Lawler. B. P. Byrgerson is treasurer and A. P. Roderus is secretary.

CANONSBURG GENERAL HOSPITAL

Situated on an elevation on the borders of Canonsburg, the Canonsburg General Hospital receives full benefit from the bright sunshine and the refreshing breezes. In the twenty-five years of its existence, the hospital has made wonderful strides, and from a hospital the size of the average home, it has grown until now it is a building four stories high, having accommodation for fifty-five patients.

Building plans are under way at the present time, which, when carried out, will add materially to the betterment of this splendid institution. The original hospital, now used as a nurses' home, is entirely inadequate to house the student and graduate nurses, and plans are being drawn at the present time to build a large and modern home at a cost of approximately \$45,000. This new nurses' home will conform in every way with State board regulations.

The Canonsburg Hospital School of Nursing is an accredited school offering a three year course, and is open to girls between the ages of eighteen and thirty-five years of age, having one year of academic high school work. Students are well cared for, and could not find more pleasant surroundings in which to study.

The institution is under the control of a board of directors, of which the officers are: President, J. H. McBurney; vice president, W. H. Dunlap; secretary, Charles Schade; treasurer, George McNutt. Olive McWilliams, R. N., is the superintendent, and Elizabeth Ralston, R.N., assistant superintendent, are assisted by a staff of five graduate nurses. There is an open staff of eighteen doctors, who are from Canonsburg and the surrounding towns. These doctors, in their faithful and competent work, make it possible for the the hospital to maintain its present high standard.

CHILDREN'S HOSPITAL OF PITTSBURGH

The Children's Hospital of Pittsburgh is free to every sick child regardless of color, race and creed, who is in need of aid, and is unable to pay for it. There are, also, attractive rooms for private and semi-private patients, and the kind of medical and surgical treatment that only a children's hospital can supply.

This hospital is the gift of over 22,000 citizens of Pittsburgh and neighboring towns, who, in 1924, gave sixteen hundred thousand dollars to build and equip it. The present or-



ganization is a continuation of the Children's Hospital that was opened in 1897 by a small group of men and women, who for so many years supported it entirely by their own contributions and those of their friends. Later it received State aid sufficient to pay about one-third of its expenses, and this was augmented in 1911 by the establishment of "Flower Day," on which the public of Pittsburgh and neighboring towns contribute most generously towards the needs of the Hospital. Private subscriptions and endowments very inadequately complete its support.

During the forty-one years of its existence, the Children's Hospital has aided, through its visiting nurses and Social Service Department, its dispensaries and hospital wards, over a hundred thousand sick children.

In November, 1926, the hospital moved into its new building, where with its greatly enlarged opportunities and facilities, it expects to stand second to none in children's hospital work. The building is modern throughout, unusually well equipped and attractively furnished.

The brick and stone building, standing on the ground of the University of Pittsburgh, is eight stories high, and is fire proof and practically sound proof throughout. It is surrounded by open spaces which give it an abundance of light and sunshine; while from its broad porches, which are accessible to every ward, the children have magnificent views of one of the most picturesque and beautiful cities of America, "Their own Pittsburgh."

The general plan of the building is as follows: The subbasement contains the boilers, ice plant, coal storage, incinerator and generator.

The basement contains the brace shop; here are made the braces for the patients in the hospital wards and for the dispensary patients. The braces are supplied at cost to the hospital and dispensary patients, when they can pay. The department also does brace work for outside physicians and so aids in its own support. On this floor is also a well equipped laundry, carpenter and paint shop, rest room for the help and general storage rooms.

On the floor above are the diet kitchen and milk laboratory, the main kitchens, dining rooms for staff, graduate and student nurses, a small dining room for guests and two dining rooms for the help.

The first (or main floor) contains the lobby, reception room, children's library, administrative offices and staff room. In another wing of this floor is the dispensary, with its social service department, record, registration, examining rooms and the pharmacy.

On the second floor is found a cheerful playroom with windows on two sides, also a large porch where all the ward children can come for fresh air and sunshine. This floor contains one ten-bed ward with glass partitions, eleven cubicle rooms, and a number of smaller wards. There is also on this floor, a complete operating room suite for tonsil and adenoid cases, an examination room, treatment and reception rooms.

The third floor is the infants' department. Here are found cubicle rooms, one large ward of ten cribs, with glass partitions, and three smaller wards. The dental, radiography, fluoroscopy, physiotherapy, photography departments and the reception room are in a separate wing of this floor.

The medical department for older children is on the fourth floor and contains a ten-bed ward with glass partitions, eleven cubicle rooms and three smaller wards. The resident physicians' quarters, the reception room and a large class room for medical students, occupy a segregated portion of this floor.

On the fifth floor are found the private and semi-private rooms. The private rooms open on porches where the children can be easily wheeled out through the windows that open to the floor. The laboratories, medical library, office and record rooms and a small reception room are situated on this floor.

The sixth floor is similar to the fifth except that on this floor are found the two major operating rooms, a sterilizing room, anesthesia and plaster rooms, together with the reception room, which is a feature on each floor of the hospital.

The seventh floor contains the superintendent's suite, instructors' offices and the teaching headquarters of the training school department. This includes the demonstration room (with an unusual equipment for practical nursing procedures), a class room, domestic science, bacteriological and chemical laboratories, entirely for the instruction of student nurses. The training school was founded in 1909. It is under the medical care of the staff, and the supervision of the superintendent of the hospital. Fourteen hospitals who send their students to the Children's Hospital for this special training, are affiliated with it. There has also been established a postgraduate course of instruction for graduate nurses interested in the special nursing care of children.

The eighth floor is planned for the care of contagious cases and contains four entirely separate units for complete isolation.

All the floors (with the exception of the eighth floor), are equipped with verandas of generous proportion—where the patients may have fresh air all day long.

The isolation ward has proved a very great success. No disease imprisoned there has ever dropped down into the wards. During the recent period of infantile paralysis in the city, over half the children attacked were cared for in the hospital, and its laboratories made a serum, which, if used during the first stages of the disease, seems to stay the progress of the paralysis. The hospital had a letter from the Board of Health, acknowledging the great indebtedness of Pittsburgh for this service, saying there was no other agency which could have rendered it.

Two wards have recently been supplied with Quartz-Lite, the ultra-violet ray glass, generously contributed by a member of the board of managers. This provides the patients with the health-giving properties of the sun, which are lost when ordinary glass is used. It is now contemplated to enclose a large outdoor balcony, on the seventh floor, with Quartz-Lite, to use as a solarium and outdoor room for the school, which averages over 40 pupils a day-eager, earnest, happy little people, putting forth every effort to learn, that they may go on with children of their own age when they are returned to the public schools, without the odium of "backward children" being attached to them. This school is the gift of the Board of Public Education to the hospital, and is the first to be opened in a Pittsburgh hospital. It is an outward expression of the fact Pittsburgh is keeping step with New York and other great cities in educational work.

The Solarium is much needed by these little patients, for the mental health of afflicted children that is provided by pleasant occupation is a stimulant to their physical progress. Our physicians consider that keeping them happy and interested in intellectual and occupational work is a necessary curative measure. It will cost \$25,000 to enclose this large porch and there are no funds now available, the hospital being now so deeply in debt. The public is urgently requested to contribute to this splendid work for the helpless and suffering children who so greatly need it.

The Nurses' homes are large, comfortable buildings, adjacent to the hospital, where the nurses are amply and comfortably cared for. The training school, always an index of the usefulness of a hospital, is constantly increasing, both in numbers and educational standards. There are more than 80 nurses in its different departments.

The medical and surgical care of the patients is in the hands of the hospital staff of physicians, consisting of about 50 specialists. H. T. Price, M. D., is medical director and chief of staff.

The active staff consists of: Dr. D. H. Boyd, Dr. J. K. Everhart, Dr. H. C. Flood, Dr. Z. R. Scott. The orthopedic staff has as chief of service, Dr. David Silver, with Dr. W. O. Markell and Dr. C. C. Yount as his active staff; Dr. E. W. Meredith and Dr. W. O. Sherman, surgical staff. Dr. J. R. Simpson is head of the oto-laryngologists. Dr. C. H. Henninger is the neurologist. Dr. Ralph V. Robinson is roentgenologist. The dispensaries have also a large and very competent staff of physicians, in the medical, surgical, skin, orthopedic, ear, nose and throat, nervous, mental and dental departments.

More than 2400 children have gone through its wards during the first year the hospital has been in its new building, and over 14,000 visits have been paid to its dispensaries. On October 26, 1927, the hospital suffered the very great loss of its much-loved superintendent, Mrs. Rye Morley Kinsey. She was a woman of charming personality and very great executive ability, and as the executive had made a name as a superintendent among the foremost children's hospitals of the country. Miss Laura B. Wilson, who was head of the training school for nurses, was acting superintendent until the arrival of Miss Pearl Braithwaite, the new superintendent, who came from the Children's Hospital of Cleveland.

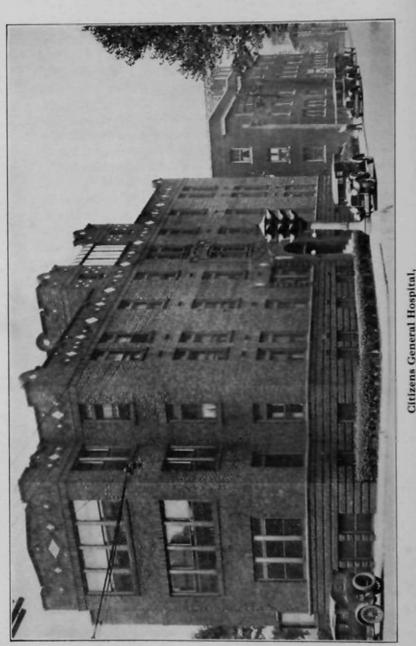
The following is the board of managers: Dr. Thos. S. Arbuthnot, president; H. V. Blaxter, first vice persident; Southard Hay, secretary; George W. M'Candless, treasurer; Mrs. Herbert DuPuy, chairman executive committee; Mrs. Benjamin Page, vice chairman executive committee; James W. Barber, W. W. Blackburn, Dr. John G. Bowman, Julian Burdick, William L. Clause, Mrs. D. M. Clemson, Mrs. O. M. Edwards, Jr., Miss Helen C. Frick, Mrs. William J. Holland, Mrs. W. Terrell Johnson, Mrs. Stewart Johnston, Francis A. Keating, W. B. Klee, Mrs. Joseph W. Marsh, Mrs. Grant McCargo, William L. Monro, Mrs. James D. Murray, R. B. Mellon, A. M. Imbrie, Mrs. W. H. Rowe, Mrs. W. A. Seifert, Mrs. William Henry Siviter, Mrs. J. Ramsey Speer, and Mrs. Henry Wittmer.

CITIZENS GENERAL HOSPITAL

In the spring of 1912 a small private hospital known as Trinity Hospital was started in the present residence of W. Riley Alter, Parnassus, Pa. By September of this same year Trinity Hospital, having failed financially, was taken over by four ladies, Mrs. T. E. McConnell, Mrs. F. J. McAllister, Mrs. J. H. Eckley and Mrs. G. B. Campbell. To these four ladies belongs great credit for their far-sightedness in continuing to operate Trinity Hospital until the whole community awakened to the need of a hospital in their midst. This need was recognized in December, 1912, when the citizens of New Kensington, Arnold and Parnassus incorporated the hospital and changed the name from Trinity Hospital to Citizens General Hospital, New Kensington, Pa.

The following were the first officers of the corporation: R. E. Withers, president; F. E. Pratt, treasurer, and George A. Clark, secretary.

The hospital continued to function in the Alter residence until the need of more room and facilities brought about the building of the present hospital at corner of Seventh street and Fourth avenue. The dedication of this



Citizens General Hospital, New Kensington, Pa. building took place October 10, 1915. Patients were moved into the building immediately following the dedication.

During October, 1922, a splendid nurses' residence, containing forty rooms, having been erected, was donated to the hospital by Mr. and Mrs. H. E. Kinloch of Parnassus.

Today Citizens General Hospital has a capacity of 100 patients and the need of additional rooms is most urgent. This need will have to be met in the near future in order to carry on the work in an acceptable manner. Within the hospital one finds every phase of hospital work being carried out. This is further supplemented by the training school for nurses. The hospital and training school respectively are approved by the American College of Surgeons and the Department of Education of Pennsylvania.

Members of board of trustees are: president, M. H. Mainwaring; vice-president, Frank Wolff; treasurer, F. E. Pratt; F. R. Alter, W. A. Thomas, H. Burns Smith, Julius Eiges, O. N. Shaffer, E. T. Conner, Wm. F. McCabe, T. R. Moore, F. R. Elwood, J. R. Copeland, W. L. Hankey, Mrs. D. A. Leslie and Mrs. Belle E. Kinloch. Officers of ladies' auxiliary are: president, Mrs. Belle E. Kinloch, first vicepresident, Mrs. J. L. Otterman; second vice-president, Mrs. R. S. Woodwood; secretary, Mrs. Fred King; treasurer, Mrs. F. S. Moran. Administrative officers of hospital are: William E. Barron, superintendent and secretary to board of trustees, and Miss Eva P. Craig, directress of nurses.

COLUMBIA HOSPITAL

The Columbia Hospital is now in the 38th year of its usefulness. It is located at Penn avenue and West street, Wilkinsburg, and is an institution of the United Presbyterian Church. It is the outgrowth of the Little Memorial Hospital, which was at first intended for use of the Orphans' Home children, and was located on the North Side, Pittsburgh, then the City of Allegheny. Dr. James Herron gave the deed of a valuable piece of property, and later came a bequest of \$15,000 from a prominent business man whose sister was a member of the board.

The beautiful and well-equipped Columbia Hospital was opened on June 1, 1906, but it soon became necessary to build additional rooms and a dormitory for nurses. The capacity at present is 196 beds, and a new addition is being built, to cost \$100,000, and providing 11 more rooms for patients.

Free patients admitted in the year ending October 1, 1926, numbered 743, requiring 11,145 days' treatment. The approximate money value of this gratuitous treatment was \$29,931.-80. The number of missionaries cared for was 22, receiving 447 days' treatment at a cost of \$2,926.40. The Out Patient Department rendered valuable service to meny who were able to pay a small fee and to those unable to pay anything. During the winter Sabbath services were conducted whenever the condition of the patients permitted. Columbia's School for Nursing is on the accredited list of the State of Pennsylvania.

The Columbia Hospital Auxiliary does valuable work in connection with the children's ward, providing Christmas trees, Easter baskets, and other means of alleviating affliction, and from time to time, girls of the auxiliary give the use of their motor cars to the social service workers.

Mrs. A. M. Scott is president; Miss Emma Mabon and Mrs. W. A. Krebs are vice presidents; Mrs. R. M. Douglas is recording secretary; Mrs. Ira Gribben is corresponding secretary; Mrs. S. A. Taylor is donation secretary, and Miss Mary L. McCance is financial secretary.

THE DIXMONT HOSPITAL

The first meeting with a view to the formation of a board of managers for the creation of a hospital, afterwards known as the Western Pennsylvania Hospital, was held in the Odeon Theatre building, Pittsburgh, by a group of representative citizens of Pittsburgh and vicinity, in 1847, and on March 18, 1848, the legislature passed an act incorporating the Western Pennsylvania Hospital. There was a provision in the act that upon the payment of \$100, life membership of the institution could be obtained. Nearly \$20,000 was raised at this meeting, and within two years two hundred and fourteen citizens had availed themselves of this privilege.

In 1848, at the time of the incorporation of the hospital, a tract of ground, containing twenty-four acres in the twelfth ward, City of Pittsburgh, was donated by Harmar Denny and E. W. H. Schenley, and their wives, for the purpose of the institution, and plans for the erection of this building were laid before the board during the year 1850.

The first annual meeting of the board of managers under the charter was held in the rooms of the Board of Trade April 18, 1848. The act of incorporation was submitted to the legislature by the managers, and approved by the Governor, Francis R. Shunk, March 18, 1848.

A building was erected and opened for patients in January, 1853, divided into medical and surgical wards, the first president being Thomas Bakewell, who served until 1856, when John Harper became his successor.

The legislature in 1855 appropriated \$10,000 with the understanding that insane patients should be admitted and receive treatment of a district comprising twenty-one counties in Western Pennsylvania. The legislature on March 18, 1856, appropriated \$20,000 to construct buildings to accommodate the insane, but a proviso in the act prevented the expenditure of the appropriation for a site. Miss Dorothy Lynde Dix, who was then at the height of her fame as a humanitarian, was solicited to come to Pittsburgh to give her advice for a suitable location.

During the year 1854, 52 insane patients had been under treatment. The board now became satisfied that cases of insanity could not be treated successfully in a hospital open for the admission of other patients, therefore, a tract of land was purchased confronting the Monongahela River, comprising the property now occupied by the Carnegie Steel Works, known then as the Edgar Thompson Steel Works. After the purchase of this property it was thought inaccessible, so far removed from Pittsburgh, that the land was sold and another tract was purchased confronting the Ohio river at a point eight miles west of Pittsburgh, now known as the Dixmont station. Later on three adjoining tracts of land were bought and the tracts united consisted of three hundred and fiftyfive acres. In honor of Miss Dix the place was named Dixmont, which name has been adopted for the railroad station at this point. Miss Dix later on made her home at the institution, living there for a period of thirteen years.

The work for the erection of the new building for the care

of the insane was started May 1, 1860, and on July 19, the cornerstone of the new building was laid when appropriate ceremonies in the presence of a large concourse of friends of the institution from various parts of the State were held.

The new department for the insane was erected and opened for the reception of patients November 11, 1862, and one hundred and thirteen patients were transferred to it from the Western Pennsylvania Hospital in the Twelfth ward of the City of Pittsburgh.

Since the opening of the institution for the insane up to June 1, 1926, 15,287 patients have been admitted. Of this number 3,558 have been restored, 4,515 improved, 1,387 unimproved and 4,736 died. The normal capacity of the hospital at the present time is 675 patients. Just now it is housing within its doors 1038 patients.

In 1907 the Department for the Insane was granted a separate charter, and was afterward known as the Dixmont Hospital for the Insane. In 1921 the managers petitioned the Court of Common Pleas for a decree whereby the words "for the insane" could be removed from the corporation of the institution. This petition was granted by the court May, 1921, the name of the hospital being changed to "The Dixmont Hospital."

The hospital is governed by a board of directors. The actual management is vested in an Executive Committee chosen by the Directors. The annual meeting of the corporation is held in December, at which time the directors appoint all officers for the ensuing year. The executive committee meets every month at the office of the hospital, and upon the call of the secretary special meetings are held in Pittsburgh.

The main building stands upon a tract of ground commanding a beautiful view of the surrounding country for miles, and at an elevation of 180 feet above the Ohio River.

The building is of the old-style Kirkbride plan, brick with stone trimmings, three stories in height, with four cross wards four stories in height, the wings extending out from the central or administrative building on either side. The building is 750 feet front and is old-fashioned in construction. The corridors are 12 feet wide with bed rooms for patients opening into them. The building is practically fireproof. The railroad runs along the base of the hill, also, the Lincoln Highway leading from Pittsburgh.

In the rear of the building is a large two-story brick utility building. It is fireproof in construction, and contains the general kitchen, dining rooms, dining rooms for employees, refrigeration ice-making plant, cooling rooms, bakery, storeroom, etc., In it is located the hydrotherapy department.

In addition there are separate buildings for the care of the tubercular patients, beautifully located upon the hill-side above the main building.

A large brick building known as the Annex building, three stories high, with general dining room in basement, accommodates 125 patients. It is beautiful in design, having large roomy porches that are enjoyed by the patients during the pleasant weather. The nurses' home is brick and very complete and attractive and well furnished. In addition to these buildings there are three cottages for the housing of the quiet patients.

All the out buildings of the hospital are complete and well equipped for the purpose for which they are designed, and in providing an efficient and capable management in their respective departments. All buildings are furnished with an abundant water supply for all purposes from the power plant, also, electric light, steam heat, etc.

The farm while hilly in character, had been brought to a wonderful state of productiveness, providing an abundance of vegetables, berries and the more staple crops, and the very well cared for orchards provide an abundance of fruit. The farm is well equipped with the latest and best farm machinery. The farm buildings are in good order. The orchards, farm lands, and well kept roads on the property show the care bestowed upon them, and the farm has been visited from time to time by representatives of the State Department of Agriculture.

The greenhouse furnishes cut flowers and plants for the wards, as well as the beautiful flowers that adorn the lawns surrounding the institution. There is also a well established nursery.

From the beginning of the hospital every effort has been made by the managers and officers to promote the highest interests of the institution, in affording every possible means known to medical science for the comfort and relief of those entrusted to its care. It is gratifying to note the interest so manifest in the managers, a number of the managers of the present day being the grand-children of the founders. The hospital was one of the first in the country to introduce a training school for nurses. The service this single department has rendered not only to the mentally ill, but to all classes of suffering, is recognized throughout the State; the graduates from the school occupying many positions of trust and responsibility in not only Pennsylvania, but in other States, and during the World War many of its graduates were in the service in this country, as well as in the hospital at the front and in the larger cities in the countries involved.

The medical service is aided by a well equipped laboratory. During the history of the hospital it has had but nine presidents; Thomas Bakewell, John Harper, John A. Harper, Robert Pitcairn, William M. Kennedy, Charles C. Townsend, R. B. Mellon, James H. Reed and David A. Reed, the position being occupied at the present time by the Honorable David A. Reed, a grandson of the former Superintendent Joseph A. Reed, and a son of the former President James H. Reed.

The hospital has had but two superintendents. Dr. Joseph Allison Reed having been chosen to that position in 1857, and who continued office until his death November 6, 1884, and the present incumbent, Dr. Henry A. Hutchinson.

THE EYE AND EAR HOSPITAL

On May 20, 1895, the Eye and Ear Hospital came into existence, and its first home was 945 Penn avenue. A little blind girl who came to the attention of one of the women founders was the generating spark which led to the busy organization of the present day.

The following persons met and signed the application for the charter and became the first board: Mrs. C. C. Beggs, Mrs. H. C. Beggs, Mrs. Francis Childs, Mrs. A. P. Childs, Jr., Mrs. M. L. Dallneyer, Mrs. F. A. Dilworth, Mrs. J. Duncan Dithridge, Mrs. William Flinn, Mrs. John B. Herron, Jr., Miss Mary E. McCandless, Miss S. H. Killikelly, Mrs. Emmet Queen, Mrs. W. H. Rowe, Mrs. M. Trump, Mrs. S. D. Warmcastle, Mrs. C. A. Wishart, Miss Mary Webb, Dr. C. A. Wishart and Dr. Joseph E. Willetts.

During its first year 497 patients received treatment and 111 operations were performed. There were 1749 consultations. Dr. James H. Lippincott was the first chief of staff and Dr. C. A. Wishart was the first president of the board of managers. In 1905 the hospital moved to its new building at 1945 Fifth Avenue, and need for expanding facilities made an addition to the structure necessary three years later. Its present capacity is 55 beds, but urgent need for improved facilities has made it wise for the hospital to become a part of Pittsburgh's Medical Center, on the University site, in Oakland. The first state aid was received in 1896 and amounted to \$3000. In the last fiscal year, ending May 31, 1927, 2607 patients were cared for, 2411 operations were performed, and the dispensary and emergency departments treated 26,460 patients. In its new location it will have approximately double its present capacity and will be closely related to other hospitals of the group and to the University Medical School and laboratories.

The following is the board of managers: President, Mrs. Wm. M. McKelvy; vice-president, Mrs. Wm. Scott; vicepresident, Mrs. Howard B. McClintic; vice-president, Mrs. Howard B. Scull; treasurer, John E. Crawford; endowment treasurer, J. Farley Walton; secretary, Mrs. Thomas R. Robinson; Mrs. Chas. Arbuthnot, Jr., Mrs. William W. Blair, Miss Elizabeth Childs, Mrs. J. G. Beal, Mrs. J. H. Creighton, Mrs. Chas. Dahlinger, Mrs. F. Albert Dilworth, Mrs. G. G. Henderson, Mrs. R. R. Huggins, Mrs. Robert J. McKay, Mrs. John Murtland, Mrs. Gail Nutty, Mrs. E. N. Ohl, Miss Anne H. Robinson, Mrs. Wm. B. Rodgers, Mrs. Geo. W. Reed, Mrs. Wallace H. Rowe, Mrs. John McC. Wilson, Mrs. J. F. Walton, Jr., Dr. Ewing W. Day, Dr. W. W. Blair.

Advisory committee—Joseph Horne, Wm. H. Robinson. Honorary Member, Mrs. Harvey M. VanVoorhis; University dispensary auxiliary, Mrs. Wilmer M. Jacoby; superintendent, Miss Adelaide B. Cushing, R. N.; superintendent of dispensary, Miss Gladys W. Johnson. Hospital Staff—Chief of Staff, Dr. E. W. Day. Ear, Nose and Throat—Dr. Ewing E. Day, Dr. J. Homer McCready, Dr. John R. Simpson, Dr. Ellen J. Patterson, Dr. A. A. MacLachen, Dr. K. M. Day.

Eye—Dr. W. W. Blair, Dr. W. E. Carson, Dr. Stanley Smith, Dr. C. E. Curry, Dr. S. L. Koch, Dr. J. C. Markel, Dr. C. W. Jennings. Medical consultants—Dr. James P. McKelvy, Dr. Lawrence Litchfield, Dr. J. I. Johnston, Dr. Nelson Clark; Children—Dr. James K. Everhart; Surgery— Dr. E. W. Meredith; Gynecologist—Dr. E. R. Huggins; Pathologist—Dr. E. W. Willetts; Roentgenologist—Dr. G. W. Grier; Genito-Urinary—Dr. George Holliday; Neurologist—Dr. George Wright; Dermatologist—Dr. W. H. Guy; Anaesthetists—Miss Mary Ellen Jarvis, R. N., Miss J. F. Davidson; Dentist—Dr. R. Roderic Byron.

Assistant Staff—Ear, Nose and Throat—Dr. J. M. Conway, Dr. G. C. Todd, Dr. F. V. Lichtenfels, Dr. N. A. Fischer, Dr. T. B. McCollough; Eye—Dr. J. G. Linn, Dr. C. L. Reed, Dr. J. S. Plumer; Post Graduate—Dr. G. D. Conwell, Dr. Henry Kitlowski, Dr. Wm. G. Waddell.

HOMESTEAD HOSPITAL

The Homestead Hospital of Homestead, Pennsylvania, was incorporated as a general hospital in December, 1903, at the request of twenty subscribers, composed of the most prominent women of the community, who, with the welfare of the district at heart, realized that one of the most valuable assets to any group of people banded together as a borough, is a hospital. The first board of directors was composed of fifteen women.

The property selected as the hospital site was located at the southeast corner of Hays street and Ninth avenue, then a private residence. This residence was remodelled and additions built, and very soon the Homestead Hospital of Homestead was functioning. Until 1924, the hospital had a capacity of thirty-five beds.

Since the growth of a community and its surrounding territory requires growth in the housing problems, so must this growth be taken care of, so far as the hospital capacity is concerned. With this need in view, a committee of citizens began a campaign for funds with which to build and equip a new hospital, and in 1924 this dream was fully realized, when on the 28th of February, patients were carefully transferred to their new beds in the new building.

The new edifice was made possible by the generous response of the citizens of the district, as well as the companies and corporations. The hospital is now located at 1,800 West street, Homestead, and has a total capacity of 150 beds. The location is ideal, since it overlooks the surrounding countryside, and is far enough from the business districts to insure as much quiet as is humanly possible. There are no high buildings, or even private residences, close at hand, so that the patients may have the benefit of all the fresh air possible.

The people of the community also deserve much credit, as the rooms, wards, solariums, etc., were furnished by private families and organizations and their names appear on beautiful bronze plates on the doors. The furnishings were selected by the hospital committees and the price submitted the donors. The X-Ray room and its full equipment was the gift of Lawrence C. Phipps, and is considered one of the most complete, for hospitals of this capacity, in Western Pennsylvania.

Since the occupancy of the new building, the need of a fully equipped laboratory was felt, and in 1927 the Fred E. Mesta Memorial Laboratory was erected on the third floor of the left wing. This laboratory is complete in every detail and is one of the most valuable assets now in possession of this hospital. Mr. Mesta was a member of the board of directors and the gift is from his widow, Mrs. Cora Mesta.

The Homestead Hospital Training School for Nurses was begun in 1909 and the first graduating class, composed of one student, was graduated in 1912. This year, 1928, eight were graduated. This training school is accredited in the State of Pennsylvania and its graduates are eligible for State examination to qualify as registered nurses. The course is for three years and the requirements are one year high school credit more preferable. In the fiscal year ending May 31, 1928, there were twenty-five student nurses in training and eleven graduate nurses employed in the hospital.

Our greatest need is a nurses' home. At present the nurses occupy one wing of the hospital, so that our total bed capacity is reduced until another building is furnished. The following statistics for the fiscal year ending May 31, 1928, are given: Number of full pay in-patients treated, 1199; number of part pay in-patients treated, 72; number of free in-patients treated, 498; total number of in-patients treated, 1769; number of full pay in-patient days, 10,715; number of part pay patient days, 1,556; number of free patient days, 7,082; total number of patient days, 19,353.

The names of the present board of directors are as follows: R. H. Watson, president; C. F. Botsford, secretarytreasurer; Hugh O'Donnell, Hugh Nevin, John Bell, Mrs. Virginia Schuchman, Mrs. Nettie LaCossitt, Mrs. F. B. Sheaffer, John Forbes, Morris Half, Thomas Ingram, Harry Wahr, T. J. Jamison, John McConegly, James C. Kuhn.

INDUSTRIAL HOME FOR CRIPPLED CHILDREN

The Industrial Home for Crippled Children was founded by Mrs. Frederick O. Houghton, nee Mary Irwin Laughlin, who desired to ameliorate the condition of crippled children. Mrs. Houghton's contribution was a memorial to her father and mother, Mr. and Mrs. Irwin B. Laughlin, and to her aunt, Miss Annie M. Bissell. In November, 1902, the Home was founded as the Memorial Home for Crippled Children, with Mrs. William Thaw as its first president. In addition to establishing an endowment fund, Mrs. Houghton gave a piece of land on Denniston avenue on which to build a home.

The board of managers, March 31, 1905, voted unanimously to continue the work in the name of the Industrial Home for Crippled Children. The charter, granted January 20, 1906, states that the Industrial Home for Crippled Children was founded for the purpose of maintaining a home for the care and education of crippled children. In a broader sense this means to provide the best medical, surgical, and physical care; to give the children an all-round education; to prepare them for a vocation; and to help them find suitable positions when they leave the home. The home is nonsectarian. To be admitted a child must be a resident of Pennsylvania, a cripple who will improve physically and orthopedically, and one who can be educated and trained to be selfsupporting.

The desire to understand the problems of physically handicapped children and to recognize the responsibility to them, has brought about a full program, which includes physical, educational, and spiritual training. In natural situations and in an atmosphere of intelligent love, the selfpity maintained by some of the children has changed to ambition, and the exaggerated attitute toward their physical defects has lessened. The children have hope for a life of usefulness, which helps them to gain a sense of self-respect and to be resourceful. Their recreation hours are filled with wholesome organized play, and with an abundance of music, which stimulates physical and mental action, and gives a feeling of contentment and joy.

Dr. James O. Wallace, the orthopedic surgeon in charge, gives generously of his time to the care of the children, and performs orthopedic operations in the Children's Hospital and the Mercy Hospital. The children return to the home for convalescent care. Daily treatments are carried on under the direction of an orthopedic nurse and a trained physiotherapist. A staff of physicans is responsible for the physical welfare of the children. The dental clinic is under the direction of Dr. W. E. Friesell, of the University of Pittsburgh.

A brace shop is a valuable asset to the home, as it provides children's braces and the means for immediate and careful adjustment of them. It is partially maintained by the sale of braces made for patients of several orthopedic surgeons.

The grade school of the home is part of the City School system, and is a training center with three student teachers under the direction of Miss Margaret A. Frew, principal, and Miss Anna K. Shirley, supervising teacher. Children confined in the infirmary are given bedside instruction. Vocational training in printing is given. The I. H. C. C. School News, which is edited and published monthly by the children, is entering upon its sixth year. Musical therapy is one of the educational influences which directs the emotional energy of the children. Children are given individual instruction in piano and violin, and group instruction in other instruments and in voice. There is a school orchestra made up of older children, and a toy-symphony orchestra, in which even the smallest children are taught to play rhythmic instruments. The children 's Annual Christmas Cantata has been given in Carnegie Music Hall since 1924.

Vocational guidance is aiding each child to find his particular niche. Among the alumni are teachers, stenographers, bookkeepers, salesmen, printers, seamstresses, and elevator operators.

Gifts and bequests from interested friends, and an appropriation from the state are received. In addition small amounts for board are accepted from parents, counties, and welfare organizations.

Miss Frances E. Shirley is superintendent of the home.

The officers of the board of managers are: Mrs. Samuel A. McClung, president; Mrs. John W. Lawrence, first vicepresident; Mrs. William L. Mellon, second vice-president; Mrs. James B. Laughlin, third vice-president; Mrs. Wallace Rowe, fourth vice-president; Mrs. W. Terrill Johnson, treasurer; Mrs. James Magee, assistant treasurer; Mrs. James C. Rea, recording secretary; Mrs. Donald C. Hamilton corresponding secretary.

ELIZABETH STEEL MAGEE HOSPITAL

The Elizabeth Steel Magee Hospital was founded by the late Hon. Christopher Lyman Magee, of Pittsburgh, who in his will, left his entire estate, including his homestead of ten acres, located in the residential section of the city in the Oakland district, for the building, equipment, and endowment of a hospital to be erected in memory of his mother. The administration of Mr. Magee's estate was intrusted by his will to a board of thirteen trustees. His surviving widow was left the income of his estate during her life. On the homestead was located a large, frame dwelling, and this residence was altered and equipped as a temporary hospital, and was opened January 19, 1911, for the reception of patients. Im-



mediate preparation was begun for a permanent building, and ground was broken for it January 12, 1914. The hospital has accommodations for 140 adult patients and 80 babies. The accommodations include both private and ward service.

Mr. Magee did not specify the exact nature of the hospital which he wished to be built. The original intention was to build a general hospital. Investigation, however, revealed the fact that the need of a general hospital was not apparent, and inasmuch as a clause in the will distinctly specified that there be admitted to the hospital "all females who applied for admission thereto for lying-in purposes," it was decided, on this basis, which was the only definite provision of the will, to build a hospital exclusively for women. The hospital was completed and patients were admitted into it October, 1918. The hospital cares for obstetric and gynecologic cases, and is a teaching and research institution as well, being connected with the Medical School of the University of Pittsburgh.

For a period of time during the war, the hospital was given over to the Government for the care of the soldiers. In January, 1921, it was reverted to its original status, and has from that time cared for women and children. For the past two years the need of larger accommodations has been felt, and the board of trustees decided to add another wing to the hospital which will afford more ward beds and small rooms for the accommodation of persons of moderate means. The need for this sort of accommodation is growing daily. The new wing is progressing rapidly, and it is hoped that by April it may be completed and ready for occupancy.

Board of Trustees, Hon. Robert S. Frazer, president; James M. Magee, secretary; Malcolm McGiffin; George Mc-Candless; Lewis M. Plumer; Col. O. S. Hershman; Roy A. Hunt, William D. Evans, Rt. Rev. Hugh C. Boyle, Rt. Rev. Alexander Mann, John A. Bell, William McConway, Jr. Alexander Mann, John A. Bell, William McConway, Jr., and Robert W. Flenniken. Superintendent, Miss Jessie J. Turnbull.

Staff Members are as follows: Active Staff: Dr. R. R. Huggins, Medical Director, gynecology; Dr. B. Z. Cashman, gynecology; Dr. S. A. Chalfant, gynecology; Dr. H. A. Miller, obstetrics; Dr. C. J. Barone, obstetrics; Dr. W. S. McEllroy, chemistry; Dr. Davenport Hooker, anatomy; Dr. G. R. Lacy, pathology and bacteriology; Dr. C. C. Guthrie, physiology; Dr. M. Cohen, pathology; Dr. G. W. Grier, roentgenology.

Consulting Staff, Dr. H. T. Price, department of pediatrics; Dr. J. D. Heard, medicine; Dr. E. W. Meredith, surgery; Dr. David Silver, orthopedics; Dr. W. W. Blair, eye; Dr. E. W. Day, nose and throat; Dr. T. M. T. McKennan, neurology; Dr. C. H. Henninger, phychiatry; Dr. W. H. Guy, dermatology, and Dr. W. P. Walker, dentist.

Mckeesport hospital

At a meeting of the McKeesport Chamber of Commerce, the question of a hospital for the city and vicinity was raised, and a committee was appointed to raise the necessary money for the building and equipment. The hospital was organized and opened on April 8, 1894. It was chartered by the Court of Allegheny County for charitable and educational purposes, and not for profit.

Since the opening date, the hospital has continued as a general hospital and training school for nurses. New additions have been added, and at the present time can accommodate two hundred patients in private and ward service. Soon we shall have ready for occupancy a new maternity home, with a forty bed capacity, and which is modern and first class in every respect.

The hospital is ranked as "A" Class by the State Board of Medical Education and Licensure. It carries the "first" rating by the College of Physicans and Surgeons, and the training school also comes under the "A" Class rating. It has an able staff, is well equipped, and recognized as a first class institution.

The hospital is managed and operated by a board of trustees who are elected each year by the contributors. The names of the trustees are as follows: Dr. J. W. Fawcett, president; H. R. Stuckslager, secretary and treasurer; R. C. Painter, vice president; F. T. Nason, R. M. Baldridge, C. R. Shaw, J. P, Nill, J. J. Boax, W. A. Cornelius, J. D. Cowan, J. S. Mack, J. F. Woodward, E. W. Pitts, E. R. Crawford, S. M. Cooper.

MERCY HOSPITAL

Viewing the Mercy Hospital as it stands on Pride and Stevenson streets, a beacon of light, as it were, to the sick and suffering, it is difficult to picture it as ever being located in a rural district, in the midst of fields and trees. Yet, this was a reality, when in 1847 this noble work was begun by the Sisters of Mercy. The labor was begun in temporary quarters, for the sisters, realizing the need of a hospital in the city felt that they could not wait for the new building which was being erected. Scarcely were they established in 1848 in their present site, when an epidemic of typhus broke out in the city. Many of the victims were cared for by the sisters, and we have statements showing that eight of the sisters succumbed to the disease.

The original Mercy Hospital building, which was opened in 1848 involved a cost of \$15,000. It rose three stories and had a capacity of sixty patients.

In 1849, smallpox became prevalent in the city. It seemed providential that this institution should have been founded just in time to meet the needs of the people. Once more the sisters were called upon to give relief, and as before, they were not found wanting. At this time, Pittsburgh had no municipal hospital, but the sisters met the situation and handled it with admirable dexterity.

When in 1854, cholera visited the city, they had profited by their former experience and were prepared. For weeks the sisters toiled for the sufferers taking rest only when nature demanded it. Only one male attendant remained to bury the dead, the rest having fled, panic stricken. At this period, it is true that advances were being made by science, but to no effect, for in 1872 came another epidemic of smallpox.

During the Civil War, the sisters took charge of the work in the West Penn as well as in the Mercy. A detachment of sisters from Pittsburgh also took charge of Stanton Military Hospital, Washington, D. C., from 1862-65. Sister Madeleine is the sole surviving member of that group.

In 1882 with the assistance of many generous friends, plans were made for enlarging the Mercy Hospital. It increased its capacity to 150, having added 4 general wards, 15



Locust and Stevenson Streets View of the Mercy Hospital



South East Wing, Mercy Hospital

private rooms, a mortuary chapel room and other improvements. Demands became greater as the years went on, and in 1900 the annex was erected, bringing the bed capacity to 300. In 1901 a new story was built and in 1902 plans were made for the erection of the large Pride street annex, which was ready for occupancy in 1918. It is 9 stories high, 260 feet long and 60 feet wide. Six operating rooms and one emergency room connect with the X-ray plant.

Let us consider the capacity of the Hospital today. The present bed capacity is 625. From June 1, 1926, to May 31, 1927, 10,680 patients were admitted and cared for and of these 2,350 were treated free and 5,126 were treated for part pay. During the same time 5,622 operations were performed and 382 births and 501 deaths, were recorded.

The latest addition to Mercy Hospital is the completion of the new School of Nursing at a cost of \$1,100,000. This school is the most modern of its class. It is nine stories in height, and containing well equipped class rooms, laboratories, a splendid auditorium and gymnasium, as well as sleeping apartments and recreation room for the nurses.

Having traced the history of the Mercy Hospital in a brief yet comprehensive way, we shall leave it to continue its work of charity and love. It stands today a tribute to kindly hearts and when it outgrows its present quarters, as even tually it will, a future generation will carry on its activities.

THE MONTEFIORE HOSPITAL

The Montefiore Hospital came about through the inspired efforts of a small group of interested high-minded public spirited women of the Ladies' Hospital Aid Society. As early as 1898, the project was under discussion. Finally, on June 16, 1908, the Montefiore Hospital and Training School for Nurses was established at 3000 Center Avenue, according to the laws of the State of Pennsylvania.

Beginning with the structure in which only forty-five patients could be cared for, its capacity was increased to the present number, namely, sixty-five. Within the walls of this little hospital, an enduring task has been accomplished in the care of sick and suffering humanity. Several years ago the present structure and its general setup had proven to be inadequate to meet the needs of the community served. In 1924 a campaign to raise money to build a new institution was launched and carried out with marked success.

A new hospital is now in process of construction in a block bounded by Fifth avenue, Darragh and Chesterfield streets. This construction is being carried on under the direction of Schmidt, Garden & Erikson, the well known architectural firm of Chicago, with Dr. S. S. Goldwater, director of Mt. Sinai Hospital, New York City, as hospital consultant.

The plan calls for a hospital of some two hundred bed patient capacity. Its construction will be of the most modern type including all such service facilities as laundry, powerplant, etc., Teaching units for the training school of nurses will be developed. The clinical laboratories, including the X-ray department, pathological and bacteriological laboratory, a department for the study of diseases in metabolism, will all be available. A division devoted exclusively to the study of diseases of the heart and blood vessels is planned.

The architects' completed ideal is shown below.

There will be a large out patient department and social service group which will face the Fifth avenue side of the hospital. It is anticipated that the New Montefiore Hospital will be open for the reception of patients during the summer of 1928.

The hospital has been standardized under the plan formulated by the American College of Surgeons. It is recognized and accredited by the American Medical Association and the American Hospital Association. It is open for interneships on the basis of regulations laid down by the State Board of Medical Education and Licensure. The training school for nurses is conducted according to the requirements of the State Board of Nurse Examiners.

The officers of the Montefiore Hospital Association of Western Pennsylvania are as follows: President, A. C. Lehman; vice president, Benjamin L. Hirshfield; vice president, J. H. Frank; vice president, Charles Dreifus; secretary, Charles H. Sachs; treasurer, Aaron Cohen; superintendent, C. H. Pelton, M. D.

OHIO VALLEY GENERAL HOSPITAL

The Ohio Valley General Hospital was orginally called the McKees Rocks General Hospital, having been opened in the autum of 1900. The site was purchased in that year by Dr. S. M. Black, because of its healthful location and central position for the town and its important industries. Later it was decided to incorporate the company, because the operation of the hospital was unsuccessful financially, and the stock was sold to local residents. This plan was carried out in 1903, and since that time the directors have spent much money in supplying the hospital with the many modern equipments which have become a necessity.

The hospital is located at Park Way, Norwood, McKees Rocks. The number of patients admitted in 1926 was 916; free hospital days, 4,525; pay hospital days, 4,680; part pay hospital days, 1,573; dispensary cases, 84; eye clinic, 563 patients, 594 treatments; general clinic 1,348 patients, 2,298 treatments.

Frank J. Lanahan is president; Joseph B. Reed, vice president; David E. Shannon, secretary, and Joseph M. Hall, treasurer. Directors are Mrs. Miles Bryan, Mrs. J. J. Shannon, Mrs. Margaret C. Schiller, Mrs. George J. Geisler, Mrs. John H. Humes, Frank S. Black, C. W. Wrenshall, W. F. Brunner, V. B. Edwards, Samuel Werlinich, Louis Young, John A. Berner, William N. Herbst, Peter Blaskovich. Laura M. Snyder, R. N., is superintendent. The out-patient department is in charge of Miss Carolyn Robelen, supervisor. Through the efforts of the Tuberculosis League, a committee of McKees Rocks and Stowe township women, a dental clinic is maintained, free to the school children of the community.

PASSAVANT HOSPITAL

Passavant Hospital, on Reed and Roberts street, near Center avenue, Pittsburgh, was first known as the Pittsburgh Infirmary. Its founder was the celebrated philanthropist, Rev. W. A. Passavant, D. D., pastor of the First Lutheran Church. The original location of the infirmary was in Allegheny at the foot of Montgomery's Hill. A rented house in the spring of 1848 was selected for the purpose of caring for the sick and needy but no patients were admitted until the spring of 1849.

When the city of Pittsburgh was celebrating the return of the soldiers from the Mexican War, Dr. Passavant found three soldiers sick with fever neglected in the boats at the dock. With the aid of a theological student, Asa Waters, he transferred them to the vacant infirmary, where, in the absence of nurses, the doctor himself with Mr. Waters nursed them back to health.

In the summer of that year cholera suddenly made its appearance at different points on the river; a number of these patients were admitted to the infirmary. This caused so great a panic that the neighbors threatened to stone the building and Dr. Passavant was obliged to load his patients into a wagon and seek a safe refuge for them before night. He sought guidance in prayer and God led him across the city to Lacyville, where he found room for his wagon load of patients in Dr. Lacy's Female Seminary, which was empty at that time. Dr. Passavant bought this building together with a garden, for \$5,500, and after four deaconesses arrived from Germany to carry on the work, the Pittsburgh Infirmary was dedicated on July 17, 1849, to be a refuge for the worthy sick of every religion, color or race.

In 1850 the field adjoining the infirmary, containing upwards of four acres, was purchased for the sum of \$12,000. Of this that portion bordering on Dinwiddie street was divided into 28 lots and sold for \$500 a lot to pay for the property. A new infirmary building, 60x40 feet and four stories high, was erected in 1851 on the newly purchased land. The accomodations it afforded were for forty patients, besides room for the sisters, of which there were five. Sister Louisa Marthens of Pittsburgh was the first American deaconess to enter. This new building cost \$8,000 and is still used as a part of the hospital. The number of patients admitted in 1852 was 272. Expenditures for the entire year were \$2,432.35. The most interesting years were 1853 and 1854—when admissions for the two years amounted to 536—of those 38 were typhoid; 21 smallpox and 64 cholera patients. We find that of the cholera patients, 36 recovered.

The years following the Civil War were specially trying. For a time during this period the infirmary was used by the Government as a marine hospital for the men stationed at this port—but during the year between 1887 and 1892 the infirmary was closed.

In the year 1892, four thousand dollars was spent in thoroughly cleaning and reconstructing the building so that it was again ready for admission of patients in 1893. Sister Katherine Foerster took charge of the infirmary at this time, and won many friends for herself and the institution by her cheerful loving service. There were not many patients admitted the first years after the reopening—as physicians wanted more modern equipment and buildings, the old being inadequate. Accordingly plans were begun for a new addition, but the death of Dr. Passavant in 1894 hindered the completion of these plans for a time. Rev. Wm. A. Passavant, Jr., his successor, at once began a campaign for making the fiftieth anniversary of the deaconess's work in America.

In 1899 an addition, costing \$54,000, was added to the old infirmary, which is the middle section of the present hospital building, and the name was changed from Pittsburgh Infirmary to Passavant Hospital as a memorial to its founder. The bed capacity was now 80. We note that admissions for the first year were 285 and the expenditures \$5,980.84.

In 1902 a laundry building was erected and also a nurses' training school established; 1904 saw the sisters' house and nurses' home erected, also power plant installed. In 1908 a new laundry with servants' dormitory was erected. The old building was remodeled for laboratory and men's dormitory. In 1914 the hospital was again too small, and a campaign was launched in 1916 for funds for another addition. This was erected in 1917, cost \$190,000, and increased the bed capacity to 153 beds. Since the establishment of the training school 211 nurses have graduated. Eighty-six doctors have served as internes.

A fair estimate of the present work of the hospital can be obtained from the statistics of one year: Number of patients cared for, 3,331; nursing days, 43,233; pay nursing days, 28,- 568; part pay nursing days, 4,846; free nursing days 9,819; dispensary visits, 12,552; emergency cases, 1,611.

The hospital and the training school are found on the accredited list of those belonging to the state of Pennsylvania.

The board of directors are: L. H. Gethoefer, president; William Steinmeyer, secretary; L. H. Kerr, Jas. W. Henry, A. B. Sheets, M. Schreiber and J. B. Tonkin. F. R. Babcock, president and chairman of the board of directors, died December 8, 1927, and Mr. Gethoefer was elected president.

There are at present three Lutheran deaconesses from the Milwaukee Deaconess Motherhouse stationed at the hospital, but the service rendered is the same as at the time of its beginning, nonsectarian, a place of refuge for the sick and needy regardless of creed, color or race.

THE PASTEUR INSTITUTE

The following brief history of the Pasteur Institute was prepared by Dr. A. Leteve, director of the Pasteur Institute and French Consular Agent in Pittsburgh. Much has been omitted, which, if included, would necessitate more extensive explanations, and thus call for the preparation of a book or set of books, dealing with the Pasteur Institute alone, which is known and recognized throughout the world.

When in 1884 it was announced to the world that a preventive treatment against rabies (hydrophobia) had been obtained, astonishment and delight succeeded. For this announcement was made by a man who proved that his theories and practice were absolutely true and correct. The theory of the oxidation by air had been beaten to pieces by the scientists of the times and the fermentation theory was recognized. As soon as we knew that rabies could be prevented by an attenuated virus (vaccine), the followers of this man, with his authorization, went throughout the world to apply his method to attenuate the sufferings of humanity Many other methods have been established but none as successful as his.

A Pasteur Institute is not only for the treatment of rabies but for the preparations of vaccines and anti-toxins against the disease infections of the human race. The human race has to fight against the diseases of the world. Pasteurians endeavor to take care of all infectious diseases and help the man and his domestic animals to live. And to do this a regular living material must be used in order to carry out what the master has given—the principle of Louis Pasteur.

In 1889 Paul Gibier arrived in New York with Dr. A. Leteve, ex-aide d'anatomie et ex-interne des Hopitaux de la Faculte de Medicine de Lille, France, as director of laboratories, and started the Pasteur Institute of New York. Ten years later Dr. A. Leteve came to Pittsburgh, and started, with the help of the Sisters of Mercy, the Pasteur Institute at the Magee Pathological Institute of the Mercy Hospital. At this time the virus vaccine was received from Dr. Calmette, then director of the Pasteur Institute at Lille, France.

The Pasteur Institute being necessarily an independent institution, a separation from the Mercy Hospital was made in 1919. Since 1924 the office of the Pasteur Institute of Pittsburgh, Pa., has been located in the Descalzi Building at 1004 Wylie Avenue, with Dr. A. Leteve, consular agent of France and also the Director of the Pasteur Institute of Pittsburgh, in charge, and Walter B. Willis, director of laboratories.

The record of this Institute in Pittsburgh and its treatment of rabies is widely known, having a percentage that is really enviable and astonishing in comparison with others who treat these cases, in fact, a mortality of 1/2 of 1%.

These few words are given in case of a supposed infection of rabies:

(1) A person or persons bitten by a dog, no matter how small the wound, should keep the animal under observation for 14 days, because the salvia of the animal is infectious six days, at least, before it shows any sign.

(2) After two weeks if the dog or animal shows no sign the person is safe, but it is to be recommended that the wound be considered infectious and treated as such by a regular physican.

Records of the Pasteur Institute have been preserved by the Mercy Hospital, and a treatise of the subject is given by Leasure K. Darbaker, Ph.G., Phar. D., head of the Department of Pharmacognosy and Bacteriology of the Pittsburgh College of Pharmacy, University of Pittsburgh, in his "A Manual of Histological Pharmacognosy and Bacteriology."

PITTSBURGH HOSPITAL

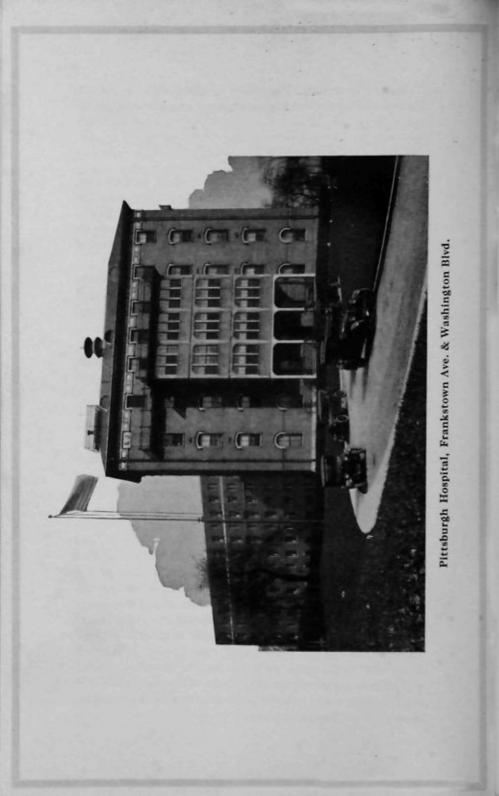
Thirty-three years ago on Stanton avenue, in East end, Pittsburgh, a small dwelling house was equipped with ten beds and called by the dignified name of a hospital. In the prophetic visions of a devoted sisterhood there was seen in the dim future a magnificent structure of brick or stone, of which this humble house was the nucleus.

Immediately the seed began to grow and four months after the opening in May, 1895, the "Hospital" was moved to Collins avenue, and six beds were added for the sick and afflicted.

January 14, 1898, a charter was obtained and the institution was then known as the Charity Hospital of Pittsburgh. Later the name Pittsburgh Hospital was substituted, and was maintained by voluntary contributions.

The names of the first chosen directors were: C. M. Schwab, E. M. Bigelow, Titus Berger, W. H. Keech, Charles D. Callery, Charles A. Fagan, E. J. Vilsack, J. D. Murdoch, Hugh Murphy, Thomas McNeil and Aloysius Frauenheim.

After a short time on Collins avenue quarters became inadequate and a new property was purchased. This was the old Finley homestead, surrounded by seven acres of beautiful ground, facing on Beechwood boulevard and Frankstown avenue. Here twenty patients were provided for, and accommodations made for a larger number of nurses. But prophetic vision did not fail, and the great hospital of the dreams and hopes of the Sisters of Charity had not vet taken material form. Ground was broken, and in December, 1904, a large modern hospital of fireproof construction was erected. The old building was remodelled to serve as a nurses' The clinical laboratories were opened January 1, home. 1905, and in the same year a complete X-ray laboratory was installed, not only for the benefit of the members of the staff, but for many outside physicans as well, who brought their patients for examination.



The interior of the institution is light and airy, and modern conveniences of every sort are provided. There are perfectly equipped operating rooms with floors of marble and cemented white tile, lighted by side and skylights. There is a pharmacy provided over by a registered pharmacist, while small emergency drug rooms on each floor are at the the ready service of physicans and nurses. Apart from the main hospital are the pathological and bacteriological research laboratories, for the scientific investigation of disease processes.

However, with all these facilities for tending the "broken members of humanity," it was found necessary to provide space, because the Pittsburgh Hospital admits within its walls, without exception, the sick of all races and creeds. At times the percentage of free or charity patients has reached one-half of its activities.

In 1925 ground was again broken for the hospital annex. This building is a handsome yellow brick structure, seven stories high, matching in design the older building to which it adjoins. On the top floor the obstetrical department was installed. On the floors below, seventy-four rooms were provided, being furnished by voluntary contributions, each room has a lavatory. The first floor is used for the nurses' cafeteria, the enlarged X-ray department, the cystoscopic room, the electro-cardiograph, etc. On the ground floor there is the large free dispensary and the Out-patient Department.

The hospital can now accommodate 200 patients, has a nurses' training school of 70 and a medical staff of 33.

A year ago an apartment house of thirty rooms on Meadow and Lincoln streets was bought as an additional home for the increased number of nurses. A new up-to-date home, large enough to adequately house all the nurses, is at present the problem the management is trying to meet.

A social service department has been established, studying and reporting personality and environmental difficulties that often affect the health of patients. However, only cases where medical needs are evident, are carried by this department. Seemingly the dream of thirty-three years ago has completely come true, but not yet—the spirit of the Pittsburgh Hospital is the spirit that animates the city itself, for its vivifying principle is progress. The old Scottish motto, "Hazard yet Forward," still animates the board of trustees, as it did in 1895 when ten beds were made ready in the small house in Stanton avenue.

The present officers and directors are:—Jas. F. Keenan, president; John S. Herron, vice president; J. B. Lawler, secretary-treasurer; Sister M. Marcella, superintendent; directors: John E. Born, C. E. Lott, G. G. O'Brien, W. J. Strassburger, Jos. G. Vilsack, John F. Casey, W. S. Mc-Clintock, E. H. Swindell, J. Frank McKenna, Thos. E. Doyle, John S. Herron, J. B. Lawler, and Jas. F. Keenan.

PITTSBURGH CITY HOMES AND HOSPITALS

The Pittsburgh City Homes and Hospitals, located at Mayview, Pa. formerly known as "Marshalsea," occupy a tract of land containing one thousand and one acres, in South Fayette and Upper St. Clair townships, Allegheny county, approximately fifteen miles southwest of the City of Pittsburgh, near the Washington County line, on the Panhandle division of the Pennsylvania Railroad. The institution property and the institution are under the direct control of the Department of Public Welfare of the City of Pittsburgh, Mrs. Enoch Rauh being the director of that department and James S. Hammers, M.D., the medical director and superintendent.

Mrs. Enoch Rauh was appointed director of the Department of Charities by Mayor William A. Magee, in 1922, and by an act of the Legislature of 1923 the name of this department was changed to the "Department of Public Welfare."

Historically, Pittsburgh's first alms house is said to have been located at the foot of "Coal Hill," on the Monongahela River. It was the oldest house standing in 1832. This building was a small log house, "with two large chimneys," but no further history seems to be obtainable concerning it. The borough of Pittsburgh was incorporated in 1804, and in 1813 the "Humane Society" was organized. This was probably the first organized charity in the City of Pittsburgh In 1843 the "Pittsburgh Poor House" at Homestead was incorporated, for the care of the indigent poor of Pittsburgh, and in 1879 the city first began to care for its mentally ill at the Homestead institution. In 1893 the Pittsburgh Homes and Hospitals were built at Mayview, comprising at that time an administration building, a male and female asylum for the indigent insane and a male and female home for the indigent poor. Since then many additions have been made and at this time—1928—there are eleven new buildings under construction, as authorized by the "Two and a Half Million Dollar Bond Issue of 1926."

The function of the Pittsburgh City Home and Hospitals consists of four radically different types of services: First, hospitals for the mentally ill; second, homes for the indigent and aged; third, a tuberculosis group; fourth, a general hospital.

The mental hospitals are caring for 2114 patients at the present time,—1203 men and 911 women, and comprise four large buildings, two buildings assigned for the male cases and two for the female cases. The medical treatment provided in the mental department is of the same high type as that carried on in several State hospitals, owned and maintained by the State of Pennsylvania. When the new buildings are completed and further contemplated additions are made, (including a psychiatric hospital) we believe this institution will rank among the first in the country.

The general hospital of 240 beds is carrying on a work identical to that carried on in any general hospital in the city, comprising as it does operating rooms, diagnostic clinics, an X-Ray department, mechano-therapy, eye, ear, nose and throat clinics,—in fact all of the special treatments which go to make up a complete hospital. Much of the splendid work done in this hospital is due to the very valuable services rendered by nineteen of Pittsburgh's foremost physicans who give their services without recompense to this great work.

An accredited nurses' training school functions as a part of the hospital and is valuable adjunct to the institution. The Pittsburgh City Homes and Hospitals at Mayview has been approved by the American College of Surgeons and the Pennsylvania State Board of Medical Licensure. The wards are large, light, airy, well ventilated, nicely painted, and the equipment of the various departments is on a par with that of any other general hospital. The old "Poor House" is rapidly passing, for complete surveys of such institutions show that the inmate is usually there because of some physical disease or because of an inferior mental development. Therefore, the medical treatment has been instituted with the idea of restoring such as can be returned to some useful occupation.

The tubercular department functions as a tuberculosis sanitarium, with all the equipment and appurtenances necessary to it, comprising as it does 100 beds, which are filled constantly. Necessary additions must be made to this department in the near future.

As an adjunct to the above mentioned departments, the Pittsburgh City Homes and Hospitals carries on many other activities, namely, its own electric plant, its own power plant, its own cold storage and refrigeration plant, its own coal mine, its own fire department, its own dairy and piggery, large vegetable gardens and farm.

PITTSBURGH HOMOEOPATHIC HOSPITAL

The Pittsburgh Homoeopathic Hospital, located at Center and Aiken avenues in the heart of the East End residence district, and in one of the most accessible spots in the city, is among the oldest of Pittsburgh's hospitals. It has had a continuous active existence since 1866, hence is antedated by but two of the many institutions which now serve the sick of our city and district.

Originally situated on Second avenue near Smithfield, the hospital was moved to the East End many years ago, and for the past two decades has occupied a large area south of Center avenue and west of Aiken. This strategic location, and the reputation of a staff which has been consistently far above average, has resulted in a constant tax upon the facilities of the Homoeopathic, so that its capacity has had to be increased from time to time. In 1924 through the generosity of its friends, a six-story wing was added which increased the capacity of the plant to approximately 325 beds. The hospital at the same time greatly improved its laundry, servants' quarters and power plant. There is a well equipped nurses' home and training school fronting on the Aiken avenue side of the property.

The first school for nurses between the Allegheny mountains and Chicago was opened in the Pittsburgh Homoeopathic Hospital in 1884. This department has maintained a high reputation, its graduates being in demand over a wide area, and many of them having become connected in positions of responsibility with other ranking institutions of the district.

At the present time this is the third most important Homoeopathic hospital in the United States, exceeding in its size all save those in Philadelphia and New York.

The members of the Board of Trustees are: James H. Hammond, president; Hon. Henry Cooper, first vice president; Reade W. Bailey, second vice president; B. R. B. Townsend, secretary; R. H. Youngman, treasurer; C. Bernard Shea, James E. MacCloskey, Jr., Alfred G. Kay, T. J. Gillespie, George H. Neilson, R. V. Bingay, Dean R. Wilson, H. C. McEldowney, Raymond Willey, George P. Berger, Frank Semple, Jr., A. K. Oliver, H. R. Hilliard, Charles H. Kline, J. P. McKinney, Jr., T. Raymond Evans, D. M. Clemson, William M. Furey, E. W. Crellin.

The women's board is headed by: Mrs. S. N. Benham, president, Mrs. J. H. Hammond, vice president, Mrs. T. J. Gillespie, secretary; Mrs. F. T. Hogg, treasurer.

Henry G. Yearick is the director of the hospital.

PITTSBURGH MUNICIPAL HOSPITAL

The Pittsburgh Municipal Hospital is located at the corner of Bedford avenue and Francis street, on a high elevation overlooking the down town district and the Allegheny river, with a view of the North Side. It is operated under the direction of the Director of the Department of Public Health. Four resident physicians render professional services, and in all cases referred to the hospital by reputable physicians, an invitation to the attending physician is extended by the staff to assist in the care of their cases.

The hospital has undergone during the preceding year a complete remodeling and renovation. There can be established complete segregation for all types of diseases handled. It is the fifth largest hospital in Pittsburgh, having a capacity for 250 patients. It is not a charitable institution, although no citizen, ill with any of the diseases cared for in the hospital, is permitted to pay either for hospital care or nursing or physician's services. The reason for the operation of the hospital by the Department of Public Health is the prevention of disease, by isolating those suffering from serious, communicable diseases, and keeping them apart from well people where they would most probably infect others. While admission of patients to the Muncipal Hospital is made on request of the physician in attendance, the Department of Public Health, under certain conditions, may demand hospitalization of any serious communicable disease, if they have become public menaces because of failure to maintain proper quarantine, or because of poor housing, or bad hygienic conditions, or lack of care. All cases of smallpox are immediately removed for isolation to the Municipal Hospital, where they are given expert handling by physicians and nurses familiar with the disease. Among other diseases handled here are diphtheria, scarlet fever, erysipelas, infantile paralysis and cerebro-spinal fever.

Dr. R. G. Burns, director of the Department of Public Health, is superintendent, and Dr. J. S. Baird is chief of the medical service.

THE PITTSBURGH SKIN AND CANCER FOUNDATION

The Pittsburgh Skin and Cancer Foundation, located at 3400 Forbes street, was organized on February 12, 1923, and incorporated under the laws of Pennsylvania on April 16, 1923 Its policies are under immediate control of the board of directors, who are assisted in the actual carrying out of its purposes by the women's dispensary board and the medical and surgical staff. The operations of the Foundation are among patients who are unable to pay for services. Its work is supported by contributions from its board members, from industrial organizations, and from its membership campaign.

The reason for organizing the Foundation was to focus the attention of the medical profession and the laity on cancer. Special hospitals, special educational propaganda, special dissemination of knowledge, and special interest were necessary to cope with the varied and increasing disasters which cancer produces

The economical phase of the burden of cancer is important. The disease, coming as it does in adult life, draws upon the resources of heads of families, incapacitates the father or the mother, in each case a contributing wage-earner, and disturbs the harmony and financial equilibrium of families who, under ordinary circumstances, are able to meet the demands of the upkeep of their homes. An additional burden unlooked for, unprovided for in the past, causes an upheaval. How much more true is this in families who, even under ordinary circumstances, cannot maintain their social equilibrium without help? At the present rate of increase, its effect on man-power in industry must be seriously felt in time. Should not the burden be distributed more equally on all members of society?

The purpose of this organization is to find ways and means of bringing the patient in contact with the physician at the time when early signs of cancer develop. It is knowledge of symptoms of this type, signs of the nature indicated, which should be disseminated. It would seem almost a repetition to say that it is the general public who should be acquainted with these indications, and it is the purpose and the aim of the Pittsburgh Skin and Cancer Foundation to place this knowledge where it will do the greatest amount of good. This phase of the work is undertaken as the propaganda or educational function through social service agencies, men's and women's clubs, personal contact with patients, their families and friends, so that the community will be informed of the war on cancer.

A great many advances are necessary to combat this disease more successfully. These advances can only be

gained by observation of a great number of cases, by study of the mode of its advent, by the full knowledge of its course, by the appreciation of all the co-operating agencies which bring it about and maintain it and eventually lead to the destruction of the human being who is the host of its parasitical tendencies. Authorities in public health work state definitely that no more important field of preventive medicine and of curative medicine exists, that no better results can be looked for in any form of medical work.

Officers and directors are as follows: James Hay Reed, Founder; Arthur E. Braun, Acting President; Roy A. Hunt, Treasurer; J. G. Hamilton, Assistant Treasurer; Mrs. George L. Collord, Secretary; Mrs. George B. Berger, Jr., Rt. Rev. Hugh C. Boyle, Louis Brown, L. H. Burnett, Harmar D. Denny, Jr., Mrs. John C. Dilworth, Joseph Dilworth, Leon Falk, Berthold Floersheim, Rev. Dr. A. C. Howell, Mrs. John W. Lawrence, W. L. Mellon, Miss Helen Blanche Rauh, David A. Reed, Mrs. J. D. Tilford, Mrs. William P. Witherow.

PITTSBURGH TUBERCULOSIS HOSPITAL

The City of Pittsburgh maintains the Tuberculosis Hospital, not as a charitable institution, although patients are not permitted to pay for care in the hospital or for professional services rendered. It is operated under the direction of the Director of the City Department of Public Health, primarily as a major item of preventive medicine in the control and prevention of tuberculosis in Pittsburgh.

One of the main objects is the hospitalization of infectious cases or individuals who are a menace to their families and others with whom they may come in contact. The hospital aims not only at the restoration to health of such individuals, but their isolation until such time as they are no longer capable of transmitting the disease to others, or until education in preventive measures has rendered them harmless to society.

The City of Pittsburgh completed the main buildings of the Tuberculosis Hospital in the year 1915 with a capacity of 150 patients. During the years 1923 and 1927, additions were erected, increasing the capacity to 300 patients. This hospital is located on a plateau known as the Leech farm, off Washington boulevard, and directly opposite Highland Park. The site contains approximately 100 acres and is very beautifully situated for a hospital of this nature.

Besides the treatment of pulmonary tuberculosis, provision has been made for the treatment of pre-tubercular children—not tuberculous, but in extremely poor physical condition, and having had one or both parents die of tuberculosis. Here they are cared for and built up physically during their stay and educated by a school teacher furnished by the Board of Public Education.

A considerable amount of recreation facilities are provided for the inmates of this institution. A moving picture program is displayed twice a week, in a specially erected theatre, with a seating capacity of 300. Each patient has an individual radio receiving set at his bed. Beautiful porches and reclining chairs are provided for the open air treatment. Frequent entertainments are given by local and professional talent.

The management of this institution comes under the direct supervision of the Director of the Department of Public Health of the City of Pittsburgh and the personnel is comprised of a superintendent, a medical staff, a nursing staff and a large group of orderlies and attendants, all specially trained in their line of work.

The Pittsburgh Tuberculosis Hospital is the first hospital erected in any city in Pennsylvania for the treatment and prevention of tuberculosis.

Joseph Shilen, M.D., is superintendent. R. G. Burns, M. D., is director of the Department of Public Health.

THE PRESBYTERIAN HOSPITAL

The Presbyterian Hospital claims its field of service, in its charter granted by the Commonwealth of Pennsylvania, May 4, 1895, "for the purpose of affording medical and surgical aid to sick and disabled persons of every creed and nationality, together with the ministration of the Gospel."

The present officers are: Dr. W. L. McEwan, president; John McCartney Kennedy, vice president; and Dr. Charles L. Chalfant, secretary. The president of the board of trustees is Ralph W. Harbison, with T. Chalmers Darsie and Dr. James A. Kelso, vice presidents; J. C. Boyer, secretary, and the Potter Title and Trust Company, treasurer.

The superintendent, Miss Mary B. Miller, has served as executive head of the institution for nine years. The present building provides for two hundred beds, and through rooms, wards and dispensaries, treats about 14,000 cases per annum. The staff is selected by the board of trustees of the hospital from doctors nominated by the medical department of the University of Pittsburgh.

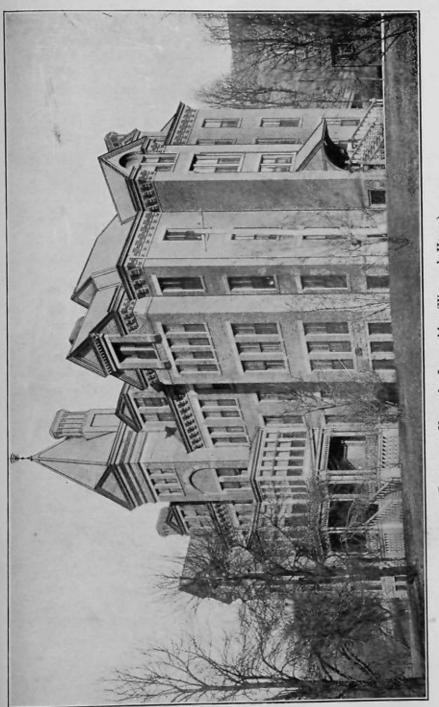
About one-third of the work is of a charitable character, and as the institution receives no State aid, fifty thousand dollars per year must be raised by popular subscription.

In the new Medical Center, the Presbyterian Hospital will be the central building, and general hospital of a group of six or seven institutions. The proposed new structure will cost over five million dollars, and the new nurses' home nearly a million. About one-third of the needed money is already available for the new project and the trustees are planning to complete the collection of the necessary funds for these new buildings. The whole Medical Center, when completed, will represent a cost of upwards of fifteen million dollars, and will give Pittsburgh one of the best medical groups to be found in America.

PROTESTANT HOME FOR INCURABLES

The Protestant Home for incurables, the only institution of its kind in Pittsburgh, is located at 5500 Butler street. It was incorporated December 31, 1883, having been founded by Jane Holmes for the purpose of providing a home for persons suffering from incurable disease. The total number of patients cared for is 349, and there were 48 patients in the home on August 15, 1928.

Among the patients now being cared for are Mary Elkins, admitted April, 1888; Julia Heldt, admitted November, 1895; William Metz, admitted October, 1897; Sadie Gregg, admitted November, 1904; Katie Haupt, admitted May, 1910, and Eliza Fangmeier, admitted November, 1911.



Protestant Home for Incurables (Women's Home)

The 53 beds now in the home are not sufficient to meet the demand for this sort of work among the incurably ill and needy residents of the city, as is amply proved by the number of applications received annually. The work should be greatly extended.

At present there are 18 patients in wheeled chairs, 10 bed patients, 4 on crutches, 5 using canes, 3 totally blind and many quite helpless. The oldest patient is 93 years of age, and the youngest is 40. One woman has been a patient for 40 years, two women over 30 years, one for 24 years, three over 15 years, two for 12 years and three for 10 years.

Religious services are held every Sunday afternoon, by ministers of various denominations. A prayer service is also held on Friday of each week. Pastoral calls are frequently made on individual patients.

Every effort has been made by the board of managers to avoid appealing to the general public for funds. During the last ten years expenses have increased steadily, until the income is quite inadequate. In order that the work may not be curtailed, will not the people of Pittsburgh meet this emergency in their usual generous spirit? An increased endowment of \$300,000 would enable the home to meet the annual expenses.

The president is Mrs. H. H. McClintic; secretary, Mrs. William E. McKelvy; advisory board, William H. Stevenson, John C. Slack, John S. Craig, and Robert D. Book.

Following are the names of the managers: Mrs. Robert D. Book, Mrs. William F. Bickel, Mrs. John S. Craig, Miss Katherine Creighton, Mrs. H. W. D. English, Mrs. Grant Dibert, Miss Bessie Stephenson, Mrs. E. S. Weimer, Mrs. E. B. McRoberts, Mrs. W. W. Martin, Mrs. O. H. Jones, Mrs. Frank B. Bell, Mrs. W. W. Kerr, Mrs. Joseph A. Kelly, Mrs. Susie K. Leech, Mrs. William Boyd, Jr., Miss Eleanore Sawyer, Miss Annie D. Robinson, Mrs. C. L. Wooldridge, Miss Eva W. Wallace, Miss Julia Wattles, Mrs. Dwight Winter, Mrs. T. J. Gillespie, Jr., Mrs. Charles S. Wunder, Mrs. Robert Swan, Jr., Miss Margaret McCance, Miss Ester J. Gregg, and Mrs. James C. Burt.

ROSELIA FOUNDLING ASYLUM AND MATERNITY HOSPITAL

The Roselia Foundling Asylum and Maternity Hospital is located at Cliff and Manila streets, Pittsburgh. It was established by the Sisters of Charity on July 16, 1891, in a little home on Forbes street, not far from the site of the present magnificent St. Paul's Cathedral. In a few months the need for its service became so apparent that it was necessary to secure far more commodious quarters.

In 31 years it has cared for 5,195 women and 10,546 children, and is now receiving yearly approximately 100 little waifs, securing permanent homes for these children, where they can develop into useful Christian men and women. It provides for the unfortunate girl and her innocent offspring and cares for mothers and their children who have no means.

Creed, color or previous condition erects no barrier for admission to Roselia. The secondary purpose of the institution is to provide professional attention and tender but scientific care for married women, before, during and after maternity women who, for one reason or another, are either homeless or cannot, for various causes, receive in their homes the attention which their condition demands.

The Senior Staff of physicians are: Dr. J. P. Hegarty, Dr. C. F. Bietsch, Dr. P. W. Bushong, Dr. J. Donald Iams, Dr. H. C. Flood, Dr. C. P. MacDonald, Dr. N. C. Miller, Dr. J. W. Robinson, Dr. L. L. Schwartz, Dr. H. H. Sullivan, Dr. E. A. Weisser.

The Junior Staff is: Dr. J. H. Carroll, Dr. Theo. Elterich, Dr. LeRoy Foster, Dr. B. J. McCormick, Dr. M. S. Redmond, Dr. D. H. Rhodes, Dr. T. R. Quinn.

The Board of Directors are: Mr. John F. O'Toole, president; Mr. Wm. P. Lange, vice president; David L. Lawrence, secretary; W. C. McEldowney, treasurer; John Campbell, E. L. Connely, Col. J. L. Costello, Hon. J. J. Coyne, Joseph F. Joyce, Hon. Jos. Marcus, Hon. John M. Morin, Hon. F. J. Harris, Mr. Charles M'Inerney, Mr. D. F. Shanahan, J. Howard Devlin, Attorney.

Ladies of Charity Officers are: Miss Mathilda O'Hara, president; Mrs. C. Lawrence, Sr., first vice president; Mrs. Robert Walsh, second vice president; Mrs. John Boyle, third vice president; Mrs. Harry Hunter, fourth vice president; Miss Katheryn Griffin, secretary; Mrs. Isaac Mamaux, treasurer; Mrs. Wm. Smith, publicity; Mrs. John Finn, Mrs. Thomas Ford, Mrs. E. A. Hufnagle, Mrs. Wm. Labge, Mrs. John Lloyd, Mrs. James Loftis, Mrs. Joseph Murphy, Mrs. Charles Reel, Mrs. George Walker.

ST. FRANCIS HOSPITAL

St. Francis Hospital was started in a little frame house in Thirty-seventh street, in 1865, with three Franciscan sisters in charge. The staff was obtained by calling in doctors of the neighborhood when physicians were needed. Through the smallpox epidemic which swept Pittsburgh from 1866 to 1872 the institution directed attention entirely to contagious cases. At that time Lawrenceville was the residential section of the city, and the work being done in the tiny hospital caused business men of the district to realize how badly more facilities were needed. They purchased a few acres of land on which a frame building stood, and moved the sisters into these quarters, where they were able to care for a larger number of patients. The institution soon began to function as a general hospital, and equipped itself according to the ideals of modern medical science.

Through the sixty years that St. Francis Hospital has operated, the calls for aid have mounted constantly until it is now caring for more than 600 patients daily in buildings that were intended for a much smaller number. More than 10,500 persons sought health in this hospital during the past year. More than 3,000, admittedly too poor to pay, were given every necessity that money bought for others, to say nothing of those treated in the free dispensary department. The bedpatient service was 31 per cent free, while 77 per cent of all patients treated were cared for without charge. The registered capacity of the hospital is 600 beds, but 709 patients have been treated at one time by placing cots in the aisles of wards, and by putting beds in the public corridors. Delays of three weeks have been necessary before patients could be admitted but no destitute sick or those needing emergency attention

U а 100 St. Francis Hospital Forty-fifth Street

have ever been refused. Three thousand meals are being served from a kitchen built and equipped for less than half that number.

In the free dispensary 22,137 were treated during the last year; thirty-nine doctors are engaged in the 14 departments of the dispensary alone. Operating cost of the institution is nearly \$600,000 a year with an annual deficit of about \$80,-000. There is an endowment of approximately \$80,000.

The facts given, which could be largely supplemented, show the need of much larger quarters. It is estimated that it will require \$1,500,000 to the point of bringing its buildings to meet only its present needs, and the effort to obtain these funds in now in progress.

Charles A. Muehlbronner is president of the board of directors; Hon. Charles H. Kline is vice president; Sidney F. Heckert, Sr., is secretary-treasurer. The officers of the staff are: Dr. C. H. Henninger, president; Dr. J. K. Everhart, vice president, and Dr. A. J. Bruecken, secretary.

ST. JOHN'S GENERAL HOSPITAL

The need of a hospital in the lower section of Allegheny, now the North Side of Pittsburgh, in the Wood's Run district, was long felt before the founding of St. John's in 1896. In that year St. John's General Hospital was established on Mc-Clure avenue, by the deaconesses or Lutheran sisters in charge of St. John's Lutheran Home, and the late Dr. W. J. Langfitt. It was proposed to use a site on the grounds of that home, which consisted of two and one-half acres. The charter was obtained March 28, 1896.

Before the completion of the building, which is now the Administration building, a contract was awarded for an annex, to contain public wards. May 12, 1896, is still remembered by the old timers of Wood's Run as the memorable "May Day," on which St. John's opened its doors to receive the sick and wounded. No distinction was shown by the Lutheran deaconesses as regards religion, nationality or color. After their departure the management of the hospital was placed in the hands of lay people. Later the hospital came under the care of the Sisters of Divine Providence, under the approval of the bishop of Pittsburgh, the Rt. Rev. Regis Canevin. Five sisters of this order took charge on September 8, 1915, and since then the small band has expanded into a community of 23. Under the superintendent of the hospital, there are, in the several departments, sister-supervisors to whom is granted the fullest measure of liberty in dealing with the problems peculiar to their departments.

During the past year 2,996 patients were admitted and 38,801 days of hospital service rendered; of these, 10,010 were free service days.

The new nurses' home was formally opened on May 31, 1927. The Sleeping rooms contain Simmons steel furniture, consisting of bed, chiffonier, bed-side table and chair; all woodwork is walnut finish. The reception room was completely furnished by R. V. Bingay, while one living room was furnished by Dr. W. S. Langfitt and the other by Samuel Rubin. The bedrooms were furnished by various doctors and friends of the hospital.

The board of directors consists of Edward Gwinner, president; J. J. Flannery, Jr., vice president; W. S. Langfitt, M. D. secretary; Charles Monheim, treasurer; R. V. Bingay, Herman Stratman, W. F. Stadtlander, D. B. Oliver and H. M. Reed.

ST. JOSEPH'S HOSPITAL

St. Joseph's Hospital, situated between Twenty-first and Twenty-second streets, Pittsburgh, was called into being, nearly a quarter of a century ago by an appeal from a number of South Side people who felt the need of such an institution in that locality. The Sisters of St. Joseph gladly responded and notwithstanding many delays and disappointments, finally succeeded in securing the old Haberman homestead. This was thoroughly renovated and equipped for hospital work and formally opened September 20, 1904.

The beginning was very humble, the capacity being only twenty-four beds. As time went on and the inadequacy of accommodations became more apparent the erection of a larger building was undertaken. In 1908 the old building was razed and the present structure erected, the sick being housed meanwhile in the adjoining building. On February 2, 1911, the new hospital was opened to visitors, and shortly thereafter active work was begun. The total number of house patients admitted during this year, 1911, was 386.

The institution has constantly grown until at present it is impossible to accommodate all those who request treatment. The total number of patients admitted during the year 1927 was 2825, an increase of more than 600 per cent over 1911. However, it is hoped that this condition will be relieved in the near future, a large plot of ground in Brookline having been purchased recently. Plans for a well equipped, modern hospital and nurses' home are under consideration.

The following comprise the Board of Directors: W. H. Simmons, president; Thomas L. Kane, secretary; J. A. Bleichner, treasurer; Joseph Dieterle, Harry Eichleay, Dr. J. P. Kerr, Joseph Trautwein, Daniel Winters, Robert Douglas, Charles E. Meyer, George Bauer, Daniel M. Hamill.

Staff Members: Dr. C. D. Arthur, Dr. H. J. Benz, Dr. F. M. Caldwell, Dr. F. A. Hartung, Dr. A. H. Kraft, Dr. J. P. Kerr, Dr. C. E. McKee, Dr. J. P. Saling, Dr. I. B. Whitehead, Dr. R. J. Behan, Dr. N. H. Bennett, Dr. T. P. Cochran, Dr. A. R. Hampsey, Dr. W. H. Kirk, Dr. E. C. McAdams, Dr. J. Rockman, Dr. G. J. Wright.

Assistant Staff: Dr. L. G. Beinhauer, Dr. R. M. Heath, Dr. M. A. Hodgson, Dr. O. L. Marks, Dr. E. O. Pearson, Dr. J. J. Weber, Dr. A. W. Duff, Dr. J. D. Howard, Dr. H. P. Kohberger, Dr. B. J. McCormick, Dr. N. J. Resmer.

ST. MARGARET MEMORIAL HOSPITAL

St. Margaret Memorial Hospital was founded by the will of John H. Shoenberger, one of Pittsburgh's pioneer steel men, who died in November, 1889, and who provided for the formation of a corporation for the erection and maintenance of a Protestant Episcopal Church Hospital, in memory of his deceased wife, Margaret Cust Shoenberger. The site of the hospital, on Forty-sixth street, above Butler street, was a part of the summer residence of Mr. Shoenberger and his wife. at practically full capacity. A training school for nurses is a part of the hospital.



St. Margaret Memorial Hospital 265 Forty-sixth Street It was found by the trustees that the sum named in the will (namely, \$450,000, of which \$250,000 was postponed to be paid out of the residuary estate after final settlement,) was inadequate for the proper maintenance of the hospital, and the trustees therefore decided to postpone the opening of the institution until the accumulation of the endowment would furnish a sum reasonably commensurate with the cost of operation.

The hospital was formally opened for the reception of patients on October 1, 1910, and since then has been maintained at practically full capacity. A training school for nurses is a part of the hospital.

The officers are: C. L. Snowdon, president; A. M. Scully, vice president and counsel; E. H. McKinley, treasurer; N. P. Hyndman, secretary.

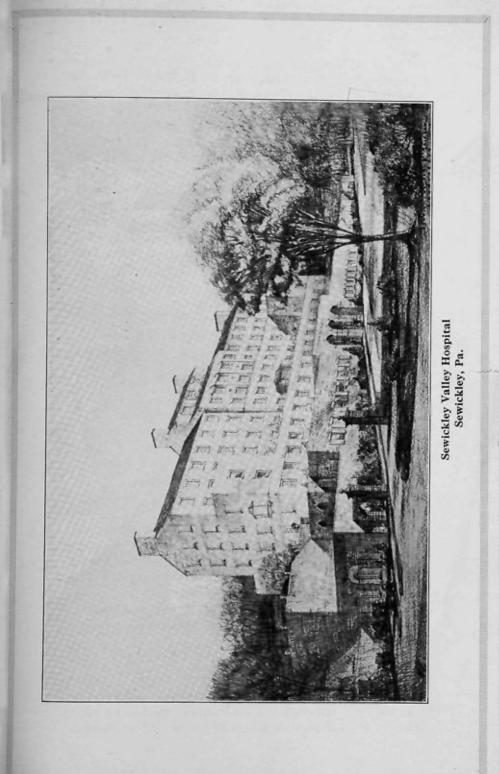
The board of trustees consistes of C. L. Snowdon, A. M. Scully, E. H. McKinley, N. P. Hyndman, J. Stuart Brown, H. H. McClintic, George P. Rhodes, A. L. Humphrey and F. A. Leovy.

SEWICKLEY VALLEY HOSPITAL

The idea of a hospital for the Sewickley Valley originated with the Ladies' Aid Society about 1902, was temporarily dropped and revived about 1905, when Mr. and Mrs. Henry W. Oliver generously gave over four acres of land as a hospital site. This acted as a great stimulant and enabled the project to go forward. The building was dedicated July 20, 1907.

The first officers of the board of trustees were as follows: George E. McCague, president; W. L. Clause, vice-president; George H. Clapp, secretary; T. H. B. McKnight, treasurer. The first officers of the board of managers were: Mrs. L. Halsey Williams, president; Mrs. Henry R. Rea, first vicepresident; Mrs. Arthur B. Starr, second vice-president; Mrs. S. L. Seymour, corresponding secretary; Mrs. John D. Carson, secretary; Mrs. A. C. Robinson, treasurer.

The first board of trustees were as follows: George E. McCague, I. B. Chantler, M. D., Rev. F. F. O'Shea, Jas. H. Willock, Edward A. Woods, Alfred B. Harlow, W. L. Clause,



Edward O'Neil, A. J. Armstrong, R. H. Boggs, DeW. B. Nettleton, M. D., Jas. W. Arrott, Charles Watts, George H. Clapp, S. C. Applegate.

Present trustees of the Sewickley Valley Hospital Association are:

C. A. Cooper, Wayne Cornelius, R. W. Harbison, C. P. McLaughlin, H. R. McMahon, F. L. Sage, G. K. Wright, L. C. Beall, W. A. Campbell, W. Heber Dithrich, Arthur L. Lowrie, B. Scott McFarland, A. C. Robinson, Robert Trimble, Charles W. Brown, James C. Chaplin, George H. Clapp, W. L. Clause, Charles L. McCune, L. D. Reilly, Walter J. Wilson. Officers are: Wilson A. Campbell, president; William L. Clause, Wayne Cornelius, W. Heber Dithrich, and Walter J. Wilson, vice-presidents; George H. Clapp, secretary; Robert Trimble, treasurer.

Officers of the board of managers are: Mrs. L. Halsey Williams, honorary president; Mrs. Henry R. Rea, honorary vice-president; Mrs. George L. Craig, president; Mrs. Frank Scott Willock, first vice-president; Mrs. William Marcelin Scaife, second vice-president; Mrs. Henry W. Wickenhiser, third vice-president; Mrs. B. Scott McFarland, fourth vicepresident; Mrs. Charles H. Little, treasurer; Miss Emily K. Lippincott, recording secretary; Miss Anne Semple, corresponding secretary. The superintendent is Miss W. Maud Newman; assistant superintendent, Miss Clara L. Street.

Officers of the active staff are: H. H. Meanor, M. D., president; C. B. Forcey, M. D., vice-president; M. R. Feltwell, M. D., secretary and treasurer.

In the first full year of operation, cost per capita was \$2.45. Now it is \$4.53. In that first full year there were 5609 bed days. For the past year total bed days were 16,677. The new hospital is to contain approximately 115 beds—the present one having only 57 beds.

After moving into the new building, the present hospital building will be used for nurses' dormitories and class rooms.

SHRINERS' HOSPITAL FOR CRIPPLED CHILDREN

A tract of land comprising twelve acres was purchased in 1925 by Syria Improvement Association (the holding company for Syria Temple, A.A.O.N.M.S.) located on Stanton avenue, Pittsburgh, adjoining the Stantion Heights Golf Club, for a unit of the Shriners' Hospitals for Crippled Children, which will be built as soon as money is available. The building depends entirely upon the income which the board of trustees may receive from the Imperial Council. The income they are now receiving is only sufficient to operate the eleven hospital units that are now in existence.

At present time, cases from this district are being treated at the Philadelphia unit of the Shriners' Hospitals for Crippled Children, and also at the Children's Hospital of Pittsburgh in Oakland and the Industrial Home for Crippled Children on Denniston Avenue.

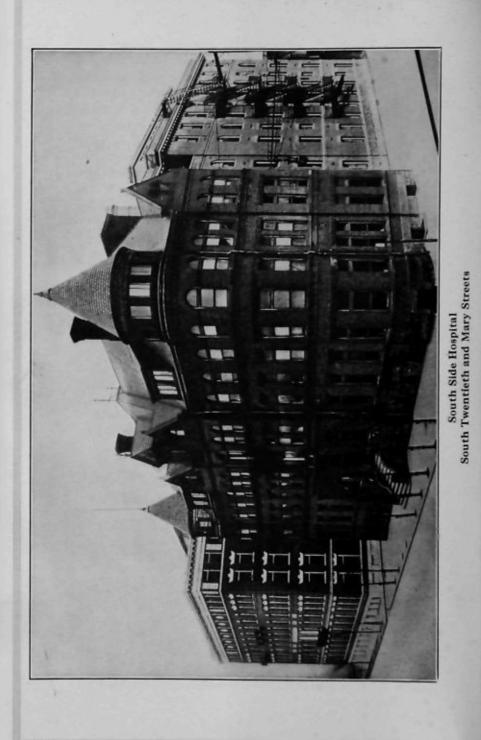
THE SOUTH SIDE HOSPITAL

In April, 1889, a boy about sixteen fell from the second story window of his home and fractured his hip. Passersby carried him to the office of Dr. John Milton Duff. Dr. Duff had made frequent attempts to interest the people of the South Side in a general hospital, without success. After the boy had been treated and taken to his home, Drs. Duff, Thomas and Arnholt gathered a few of the prominent men of the neighborhood and they decided to rent a three story brick building with store front on South Twenty-second street, a responsibility and on June 11, 1889, opened a hospital of thirty beds.

The officers for the new hospital were: Hon. Fred Gearing, president; Thomas Sankey, vice president; John Milton Duff, M. D., treasurer; Edgar A. Mundorf; secretary. The directors were: Hon. Fred Gearing, John E. Cook, Capt. A. E. Heisey, Martin Frank, James Felker, Dr. J. D. Thomas, Dr. Fred Koehler, Thomas Sankey, Dr. J. M. Duff, John Lewis, John Gray, Dr. M. A. Arnholt, J. O'Connor Campbell and Samuel Miller.

At the directors' meeting in October, 1889, it was reported that 75 patients had been cared for. By the end of June, 1891, over 1100 had been admitted and cared for and one-half of the patients seeking admission were turned away because of want of room to accommodate them.

A charter was granted by the courts in 1890 in the name of the South Side Hospital of Pittsburgh, Pa. On April 29,



1891, at the request of the board of directors, three hundred women met in the Odd Fellows Hall, and organized the Ladies Aid Society of the South Side Hospital and this organization has been one of the greatest factors in the financial development of the institution.

The work of the hospital grew so rapidly that in 1892 it was necessary to plan for a new building. The present site at South Twentieth, Mary and Jane streets, was selected and purchased for \$20,000 and a \$100,000 hospital built. The new hospital was ready for occupancy on December 1, 1893, and the description of it in the fifth annual report describes it as "the finest and most complete hospital in the State." The bed capacity was seventy. In 1895 a training school for nurses was opened.

In the report of Dr. A. J. Barchfeld, president of the board in 1903, he made an appeal to the public to help the hospital build a new wing and home for nurses. He says in this report, "The South Side Hospital is recognized as the only institution of its kind south of the Monongahela and Ohio rivers in Allegheny county, which territory contains a population of over 200,000 souls." His appeal was answered by Mrs. Amelia N.S. Oliver and her children, Mrs. Amelia Neville Crittenden, Mrs. Frances Oliver Johnson, Mrs. Edith Oliver Dusmet and D. Leet Oliver, as a memorial to husband and father, the late James Brown Oliver. This building was opened in March, 1909. The old building now became the administration building, while the new Oliver Memorial Annex made it possible to care for over two hundred patients.

With increased accommodations for patients, the need for a nurses' home and pathological research laboratory was greater. The Laboratory, the gift of Nathaniel Holmes, was opened in 1910. In 1913 a nurses' home at a cost of \$63,000 was built. In 1914 the horse-drawn ambulance was replaced with an automobile ambulance. In 1917 a large solarium was erected on the roof of the Oliver Memorial Building by Mrs. Amelia N. S. Oliver and furnished by Mr. and Mrs. W. J. Crittenden.

The first officers of the Ladies' Aid Society were: Mrs. J. S. McMillin, president; Mrs. J. W. Riddle, vice president; Miss E. J. Wallace, vice president; Mrs. G. B. Sweeney, re cording secretary; Mrs. John Alldred, corresponding secretary; Mrs. M. B. Redman, treasurer. The first money raised was \$600 on subscription books; \$600 was cleared at a lawn fete held August, 1891, at the residence of J. McD. Bryce, Mt. Oliver. A fair was held at the auditorium where over \$8,-000 was cleared and a lawn fete at the Knox mansion, the residence of Mr. Grimes, enabled them to clear \$1,000.

The present valuation of land and buildings is upward of \$1,000,000. There is a daily average of 151 patients, a 70 per cent of occupancy. The average stay of patients is 12 days. Charity work is 32%; 60% of the work is surgical.

The hospital is greatly in need of enlargement, approximately 100 more private rooms being needed, and a drive for funds is now being formed. New buildings, which will bring the valuation of the property to \$2,500,000, are required, and these buildings can be erected on ground already owned and adjoining the hospital. The lack of space for private rooms and for ward patients much handicaps the hospital. If the staff is to retain interest in the institution, there must be room to take care of their patients. A new obstetrical department, with an adequate nursery for babies, is needed, for present facilities are antiquated. Other needs are an enlargeed laboratory, additional X-ray rooms, operating rooms, dispensary for the out-patient department and additional space for nurses. The nurses' school has greatly increased in the last two years and now numbers 69 pupils.

In the year ending May 31, 1926, the number of full-pay hospital days was 13,030; part-pay hospital days, 24,520; free hospital days, 17,674; total, 55,225.

General officers are: J. E. Roth, president; Daniel Beech, vice president; James A. Henderson, treasurer; John Jenkins, secretary. Directors are: J. E. Roth, John M. Phillips, Daniel Beech, John Jenkins, John C. Dilworth, James A. Henderson, W. J. Crittenden, George H. Stengel, J. B. Yohe, Charles J. Moye, John F. Semmelrock, George M. Laughlin, Jr., A. W. Roberston, Charles A. Brooks. Harry W. Dunlop, one of the directors died recently. Dr. C. M. Thomas is President of the Medical Staff; Miss Jeannette L. Jones, R. N., is superintendent.

SUBURBAN GENERAL HOSPITAL

On July 7, 1903, nine persons met at the office of Dr. W. W. McCleary in Bellevue, to discuss the propriety of establishing a hospital for the locality lying west of Allegheny City, embracing particularly the boroughs of Emsworth, Ben Avon, Avalon and Bellevue, but in general to serve all regardless of locality who may desire any treatment the hospital affords.

On July 10, 1903, a permanent organization was effected by the election of the following directors and officers: Directors, L. K. Porter, W. W. McCleary, W. B. Kirker, Stephen Newburn, William Martin, W. P. Kuipers, W. H. S. Thomson, Alex. H. Hamilton and John Shannon. Officers: president, William Martin, vice president, L. K. Porter; secretary, W. W. McCleary, and treasurer, John Shannon. Suburban General Hospital was charted as a general hospital, for charitable purposes, to be supported by voluntary contributions. The charter provides for a school for nurses.

The hospital is located in Bellevue, on what was commonly known as the James S. Brown property. This was purchased from the Dawson heirs for \$15,000. It contained $3\frac{1}{2}$ acres, and a commodious frame dwelling of twelve rooms. The building was furnished and equipped for hospital purposes, capacity twenty beds. It was formally opened to the public September 14, 1904.

The first staff physicians appointed were, Dr. W. W. McCleary, Dr. C. C. Croft, Dr. W. J. K. Snyder and Dr. John S. Donaldson.

The first ambulance was presented to the hospital September, 1904, by W. B. Rodgers. The school for nurses was opened 1906 with two student nurses. The Ladies' Advisory Board was organized in 1906 with twelve members. The first State appropriation was received in 1906, \$6000, for two years.

The rapid growth of the hospital service soon required a larger building. There were no funds available for building purposes. W. P. Fraser, of Ben Avon, was impressed by the work of the hospital and its worthy needs, and in 1911 he gave \$35,000 for the erection of a new building. This is known as the Jane Fraser Memorial Building. It was presented to the public January, 1912. Capacity, sixty beds. Four years later a small addition was added to the building, making it a seventy bed hospital. For a number of years this hospital building not only took care of the sick and injured in the community but was the center of medical and nursing education of the North boroughs.

In 1919 a separate three story brick building was erected. This contains a modern laundry, employees' quarters and garage.

In 1920 the hospital again outgrew its capacity. There were insufficient beds to take care of the sick in the community. The directors held a financial campaign in October, 1923, for funds to build a new addition; \$85,000 was subscribed. Of this \$65,000 was received; \$125,000 was issued in hospital bonds, and \$100,000 sold to finance the new addition. This was opened September 6, 1926. Approximate cost \$200,000. It is a modern fire proof structure, and contains thirty private rooms, three four bed wards and three bed wards, two childrens' wards, nursery, sun-parlors, utility and service rooms, main kitchen and dining-rooms, power and refrigeration plant. The record of the hospital has been one of steady progress. From a twenty bed hospital to one hundred and twenty-five beds, of which fifty are private rooms.

The present service of the Suburban General Hospital embraces the following: medical, surgical, obstetrical, eye, ear, nose and throat, and children's diseases, with X-ray and pathological laboratories, dispensary and ambulance service.

The hospital is a member of the American Hospital Association. It is approved by the American College of Surgeons and endorsed by the Chamber of Commerce of Pittsburgh.

Twenty two thousand patients have been cared for by the hospital. The present assests are approximately \$500,000 with a yearly expenditure of about \$125,000. The personnel is composed of the following: thirty student nurses, four graduate nurse supervisiors, one night supervisor, one anaesthetist, one laboratory technician, a dietitian, directress of nurses, house-keeper, resident physician and student interne, bookkeeper, stenographer, engineer and twenty domestic employees. Report of the fiscal year 1926-1927 shows the following service: patients admitted, 1936; full pay days treatment, 13,-921; part pay days treatment, 503; free days treatment, 1788; total number of days treatment, 16,312; surgical operations, °26; anaesthetics, 827; laboratory examinations, 5530; obstetric cases, 189; X-ray examinations, 470; ambulance calls, 195; dispensary cases, 243.

The board of directors are: president, M. J. Slattery, vicepresident, Robert A. McCrea; secretary, Alexander Stewart; treasurer, Peter Gray; W. B. Rodgers, R. L. Thompson, J. W. Vickerman, L. K. Porter, Edward Sutter, W. A. Jones, G. C. Gerwig, W. P. Fraser, A. G. Liddell and J. D. Hills, D. D. Eva M. Braun, R. N., is superintendent.

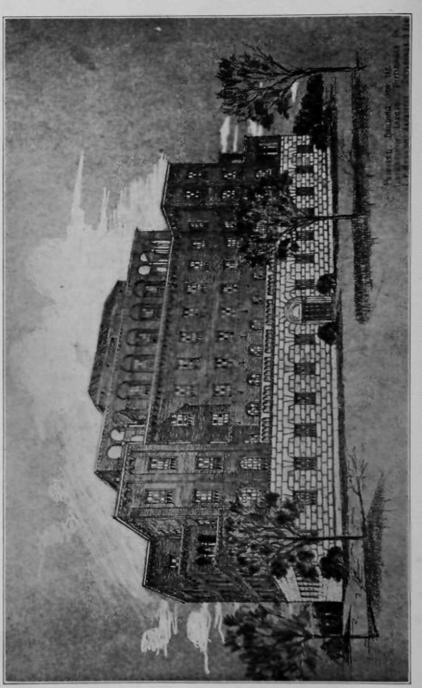
The present staff doctors are: D. A. Atkinson, C. C. Croft, W. B. Denslow, R. E. Davison, J. S. Donaldson, A. H. Elliott, J. C. Gamble, A. H. Gross, J. C. Kelso, G. C. Kneedler, J. J. Kvatsak, D. G. Lerch, J. L. McBride, C. F. Metzger, C. K. Ownes, E. H. Ramsey, D. W. Seville, W. B. Shepard, E. H. Sloan, W. J. K. Snyder, E. L. Sutton, G. H. Walker, J. C. Welch, H. E. Woelfel, F. L. Schumacher and Zoe Allison Johnston.

The Ladies Advisory Board has forty members. Mrs. Nellie E. Robertson is chairman. Their work has been crowned with great success. A large amount of money has been raised by them. The work of the Home and Hospital Club, the Jane Fraser Club, the Avalon Hospital and Relief Club, The West View Suburban Hospital Club, and other organizations and clubs in the North boroughs have aided greatly in advancing the hospital. The needs of the hospital constantly increase. There is still much to be done. The most urgent needs at present are a nurses' home and an isolation building.

The remarkable history and growth of Suburban General Hospital is an evidence of its high standing in the community it serves. It successful development is due to the public spirit and support.

TUBERCULOSIS LEAGUE

Many noted health authorities the world over agree that tuberculosis is the greatest single factor destructive of the the health of a city's population. Up to the year 1906, Pitts-



Proposed Building for the Tuberculosis League

burgh was without a single weapon with which to fight this scourge; there was not even one bed available for caring for the sick consumptive. The death-rate was appalling.

Most great movements owe their existence to the enthusiastic sponsorship of one individual. The Tuberculosis League of Pittsburgh owes its existence to one man's personal realization of the sorrow tuberculosis can bring to a single family; this man, Otis H. Childs, decided that such a devastating disease should no longer be allowed full sway over the helpless lives of his fellow Pittsburghers. Early in 1906 he secured the co-operation of other far-sighted and humanitarian citizens such as R. B. Mellon, Edward A. Woods, H. K. Porter, J. M. Jenkinson, Robert L. Martin, and John Bindley, and the institution was organized and chartered under the name of the Pittsburgh Sanatorium. The original incorporation was to found and maintain an institution for the study. treatment and prevention of tuberculosis in man. Funds were to be secured by voluntary subscription. The name was subsequently changed to the Tuberculosis League of Pittsburgh, which opened its doors February 1, 1907, with five departments, including the hospital, dispensary, laboratory, educational and administrative divisions, all housed in the former residence of William McConway on Bedford avenue at the top of Herron hill. Mr. McConway had generously offered the use of this large frame dwelling rent free for four years, if at the end of that period the League would purchase it. The hospital commenced with twenty beds, and increased its capacity to eighty the following year, with the erection of five "shacks." These were donated by Wallace H. Rowe, Mrs. Alexander Laughlin, Jr., the Allegheny General Hospital, Mercy Hospital and West Penn Hospital. Two of these shacks are still in use. The hospital now has 110 beds.

During the first year, 800 patients were examined by the dispensary department. Many of these were visited in their own homes by league nurses, who taught the sick consumptives how to care for themselves and to keep from infecting their families. Necessary supplies, such as sputum cups, gauze, and often milk and eggs were provided these patients.

In the first annual report of the league, mention is made of 134 talks given by the league to the school children of the city. It is a source of gratification that the Tuberculosis League of Pittsburgh was one of the pioneers in establishing health talks in public and parochial schools. The scheme adopted was so successful that it was not only awarded an honor at the International Congress on Tuberculosis held in 1908, but adaptations of the Pittsburgh plan have been followed by many other cities.

In addition to the hospital, dispensary and school work, six popular pamphlets dealing with tuberculosis were prepared, and thousands of copies distributed free. Considering the financial difficulties under which the new organization was laboring, all these achievements in the first year of its existence represented a tremendous amount of effort on the part of all connected with the institution.

In September, 1908, the Tuberculosis League of Pittsburgh opened the second open air school in America. The school at first consisted of five children, all patients in the hospital; the teacher herself was a patient, teaching the children at first only half a day. Outside pupils were quickly added, making it necessary in 1909 to employ a full time teacher, whose salary the Civic Club paid for two years.

Beginning in 1910 and continuing to the present time, the Board of Education supplied a fully qualified teacher, furnished an up-to-date school room, and books. The Ogontz Society has each year, contributed funds for the services of a full time nurse, and the League serves a hot noon-day lunch, with milk in the morning and afternoon. The day pupils are supplied with carfare, when necessary. There is a daily attendance of between 30 to 40. Children are recommended for admission by school doctors or nurses. Although these children are all predisposed to tuberculosis, in the 20 years of its existence, no graduate of this open air school has succumbed to the disease.

As a result of this pioneer open air school, a number of others have been opened in various parts of the city, under Civic Club auspices, and then in each case taken over by the Board of Education.

With thousands coming to the dispensary for advice and treatment, it was found imperative in 1909 to erect a separate dispensary building. This was done with the assistance of the Dispensary Aid Society, a group of prominent young women. During the fifteen years of its existence, this one dispensary alone has given advice and furnished free treatment to approximately 30,000 people.

In 1914 a power and service building was erected. Aside from housing the power plant, laundry, kitchen, etc., the upper floor of this building houses a well equipped laboratory which makes thousands of diagnostic analyses each year. The free public health library and the offices of the county director and of the educational director are also on the second floor of this building. The year 1917 saw the completion of a new building for women and children, which was badly needed. Aside from the forty-two beds on glass enclosed porches, the recreation rooms, etc., this building also houses the open air school.

With the war came the problem of the tuberculous ex-service man. Our already overflowing hospital could not adequately house the consumptive soldiers who were coming to us. In 1920, through the efforts of a Pittsburgh paper, a fund was started to build a pavilion for the soldiers which was completed and dedicated in 1921. Three hundred and eighty men were hospitalized during the five years until the opening of the new government hospital at Aspinwall. This building is now used for men patients. About 1,500 ex-service men were also treated in the dispensaries during this period.

The Tuberculosis League of Pittsburgh has been conducting a drive for funds to build a new building to replace the old McConway residence, now very antiquated, a fire-trap, and impossible to keep in the hygienic condition necessary to a hospital. That building has been razed, and construction of the new building, which will cost about \$600,000, is in progress.

To briefly summarize the yearly work of the institution: the hospital last year cared for 370 bed patients, who spent a total of 45,094 bed-days in the institution; 36,366 of these bed days were entirely free of cost. In the main dispensary and five sub-dispensaries, 7,310 persons received free examination and treatment, and 4,656 more were visited in their own homes by League nurses. The educational department gave 990 health lectures before various audiences, a total of about 100,000 persons hearing the talks. All the public and parochial schools in the city and many in the county were visited by a special worker who talked to the children and teachers. Public health nurses in training received special courses in tuberculosis, as did the medical students of the University of Pittsburgh. The county organizer visited 130 districts in Allegheny county and helped them with their health problems. The health library served many people in the community as well as giving daily aid to the Tuberculosis League's own staff.

As a result of twenty years' continuous struggle against tuberculosis, the mortality rate has been reduced in Pittsburgh from 146.2 per 100,000 population in 1908, to 73.3 in 1927, which means a saving of many hundreds of lives in this locality. Much work still remains to be done, however, as the disease is preventable, and through health education and co-operation on the part of the public, this great scourge which last year killed over 1000 in Greater Pittsburgh may be wiped from the face of the earth.

UNITED STATES MARINE HOSPITAL

Pursuant to Act of Congress approved March 3, 1837, a board of Army medical officers was designated by the Secretary of War to select and recommend locations for Marine Hospitals. These recommendations were followed, with the exception that the hospital recommended for Wheeling, W. Va., was built instead at Pittsburgh, Pa. The site for the hospital in Pittsburgh was purchased in 1842 and was located on the Ohio river below Allegheny City. Building was not begun until 1845 and owing to the very small appropriation available, it was soon expended and work was interrupted The building was completed in 1851. until 1849. The location was unfortunate and the property was sold in 1875. The building had become dilapidated and unfit for the purpose, and the location of a blast furnace on one side of the grounds and a rolling mill on the other resulted in the hospital being filled with smoke and soot, whichever way the wind blew, and the noise was a great annoyance to the sick. It was proposed to utilize the proceeds of the sale of the property toward the construction of a new hospital, of pavilion type of thirty bed capacity, with a small detached ward for treatment of patients with contagious diseases.

The sale price was \$57,554.57, and a new site was purchased for \$30,000. By a decision of the Comptroller of the Treasury, the balance of the sale price of the old building could not be used for construction of a new building, so it was recommended that an appropriation be asked of Congress for construction. During the fiscal year 1881 an appropriation of only \$7,000 became available for building a small cottage hospital. Considerable delay occurred in securing from the State Legislature a ceding of jurisdiction over the property. This was eventually secured, but the building was never built, and Mercy Hospital continued to care for service patients until the present hospital was opened. Meanwhile patients were being cared for under contract with the Pittsburgh Infirmary, and an out-patient office being rented in a building at Sixth and Smithfield streets. In 1884 the care of Service patients was transferred to Mercy Hospital, the cost being 94 cents a day.

On March 13, 1891, fire destroyed the Germania Bank building at the corner of Wood and Diamond streets, in which the out-patient office of the service was located at the time. Everything was lost, including all previous records. Temporary office rooms were rented at 666 Wood street until March 7, 1892, when the out-patient office was moved to the Federal Building.

On October 15, 1902, a commission was appointed to examine various sites offered for a Marine Hospital which was authorized by Act of Congress March 31, 1902. The commission finally recommended the transfer to the Treasury Department of about five acres of the old Arsenal Reservation at Fortieth street and Penn avenue as a site for the hospital, and the transfer of this property was authorized by Act of Congress approved March 3, 1903, and consummated by William H. Taft as Secretary of War on the seventh of May, 1904. The boundaries of this parcel of land are described in the official transfer document as follows:

"Beginning at a point where the northerly side of Penn avenue meets the westerly side of Fortieth street and running thence northwesterly along the westerly side of Fortieth street, 593 feet to the stake; thence southwesterly at right angles to Fortieth street 500 feet to the easterly side of Thirty-ninth street; thence southwesterly along the easterly side of Thirty-ninth street, 275 feet to the northly side of Penn avenue; thence along the northerly side of Penn avenue 592 feet to the place of beginning, containing not to exceed five acres."

An appropriation of \$125,000 was made available by Congress, and after some delay, occasioned by the opinion of the then Secretary of Treasury, Leslie M. Shaw, that there was not need for a Marine Hospital in Pittsburgh, bids were opened on August 20, 1908, and the contract for the building was awarded at a cost of \$91,188, and the corner stone was laid December 16, 1980, the Association of Masters, Mates and Pilots performing the ceremony.

The new hospital was opened on October 22, 1910. Four patients were transferred from Mercy Hospital; one too ill with typhoid fever to move was left there. Surgeon James A. Nydegger was in command at the time of opening. About August 1, 1915, patients were transferred to St. Francis Hospital and the Marine Hospital became a laboratory for the investigation of occupational diseases. It was reopened as a hospital on November 1, 1916, and has been so occupied to this date.

The following have served in charge of the station:

Name and Title	From	ı To
J. M. Stoner, Asst. Surgeon	1891	Jan. 21, 1893
Dr. S. N. Pool	Jan. 21, 1893	Feb. 13, 1893
C. B. Young Asst. Surgeon	Feb. 13, 1893	March 11, 1893
J. A. Nydegger, Asst. Surgeon	March 11, 1893	May 2, 1894
B. W. Brown, Asst. Surgeon	May 2, 1894	Sept. 12, 1894
Edgar Strayer, Asst. Surgeon	Sept. 12, 1894	Dec. 12, 1894

Eugene Wasdin,		
Asst. Surgeon	Dec. 12, 1894	July, 8, 1897
C. H. Garner,		
Asst. Surgeon,		
(Temporary)	Dec. 3, 1896	Jan. 4, 1897
G. L. Hays,		
Act. Asst. Surgeon	July 8, 1897	March 18, 1898
C. T. Peckham,		
P. A. Surgeon	March 18, 1898	May 19, 1899
H. C. Russell,		
Asst. Surgeon	April 6, 1899	May 6, 1899
R. C. Craig,		
Act. Asst. Surgeon	May 19, 1899	Dec. 2, 1901
F. W. Mead,		
Surgeon	Jan. 16, 1902	Dec. 16, 1905
A. C. Smith,		
Surgeon	Dec. 16, 1905	Died January 15, 1909 by fall from horse.
J. M. Gassaway,		norsei
Surgeon, (Temp).	Jan. 9, 1909	Jan. 15, 1909
O. F. Konantz,		
Act. Asst. Surgeon	Jan. 15, 1909	March 18, 1909
J. A. Nydegger,		
Surgeon	March 19, 1909	May 3, 1911
J. B. Stoner,		
Surgeon	May 3, 1911	April 10, 1915
Robert Oleson,		
P. A. Surgeon	April 10, 1915	July 22, 1915
J. W. Schereschensky,		-
Surgeon	July 22, 1915	Oct. 3, 1918
	July 22, 1915	000. 0, 1010
J. B. Stoner,	0 1 0 1010	1
Surgeon	Oct. 3, 1918	April 30, 1920
H. B. Fralic,		
P. A. Surgeon	April 30, 1920	May 1, 1922
C. H. Gardner,		
Senior Surgeon	May 1, 1922	To date

The out-patient office went through vicissitudes of location during this time, but in September, 1925, was moved from the hospital where it had been from November 18, 1918, back to the Federal building, where newly renovated and equipped offices were ready for the purpose.

UNITED STATES VETERANS' HOSPITAL

Pittsburgh may well point with pride to the new United States Veterans' Hospital No. 103, Aspinwall, Pa. It is beautifully located at an elevation of nine hundred and forty feet, overlooking the Allegheny river as it winds its course to the Ohio. The advantage of this location is its pleasant isolation close to the city, yet removed from the beaten path. One feels somehow close to nature, which is a large factor in creating contentment. There is a tranquillity, beauty and quiet communication in the surroundings of green fields, splendid trees with its bird and small animal life, its clear atmosphere and sunlight, that combines an environment which promotes healthful improvement.

No other government has provided such splendid system of relief and institutional care for its war veterans. This Government provides hospitals for the care of the tubercular, shell shock and mental, for general medical and surgical. In fact, institutions for the care of all classes of disabled ex-service men or women of all wars.

The United States Veterans' Hospital No. 103 at Aspinwall, Pa., is maintained by the United States Veterans' Bureau for the care and treatment of ex-service men suffering from tuberculosis. The hospital was formally dedicated on July 25, 1925, under the auspices of the American Legion, at which time General Frank T. Hines, Director of the United States Veterans' Bureau, United States Senator David A. Reed, and many prominent men and women of Pittsburgh and vicinity, were present. The hospital was opened for the reception of patients on October 16, 1925.

The construction itself consists of numerous buildings, large and small, of brick, tile and concrete, fireproof, situated on a tract of one hundred and forty-seven acres, composed of a main building, officers' quarters, nurses' home, attendants' quarters, warehouse, garage, laundry, heating and engineering plant, sewer disposal plant with shops for engineers, carpenters, plumbers and painters, also a large recreational building consisting of an auditorium with a seating capacity of 400, a stage fully equipped with scenery, moving picture screen, booth and machine, school rooms, complete library and reading room, barber shop, canteen, occupational therapy, etc.

It can never be said that the United States Government is either indifferent or negligent in caring for its disabled ex-service men, for besides compensation of service connected disabilities, it provides hospitalization for those who need it, free of charge, and a system of war risk insurance which is at actual cost.

In devising a system of relief that has never been attempted or equaled anywhere before, the Veterans' Bureau has spent approximately the staggering sum of \$64,000,000 in hospital construction and the end has not yet been reached. Here, not only are disabled bodies rehabilitated, but the mentality is improved by maintaining a corps of aides who teach useful and diversional occupations as well as academic courses, and a library, which during the fiscal year just closed, had a circulation of 10,000 books of fiction and non-fiction.

The plant is a model small borough with its water, sewer and lighting systems, fire and police departments, maintenance of buildings, roads, streets and grounds. It has a complete modern laundry, central heating and engineering plant, warehouse, retail and wholesale stores, garage and chauffeurs with transportation service.

The hospital maintains a complete staff of full-time professional tuberculosis experts, roentgenologist, dentist, pathological and bacteriological laboratories, physiotherapy department, eye, ear, nose, and throat clinic, with consultants in all specialties, dietitians, aides, graduated, registered nurses, orderlies and attendants.

In addition to a thoroughly complete professional operating staff and equipment, there is an administrative staff which includes the auditing and disbursing departments so that accounts may be paid immediately.

The hospital is organized on strictly practical business principles and operates with its own individual budget. While the hospital is not yet completed, the unit operating paid 1613 vouchers, discounted its own accounts and by prompt payment a savings of \$1404.07 was made besides obtaining low and reasonable prices.

The amount of allotment, salaries and expenses, for the fiscal year 1926, was \$258,612; the amount of allotment, medical and hospital services, for the fiscal year 1926, was \$167,-218, a total sum of \$425,830, made available to the prosperity of Pittsburgh and vicinity. There is liberated from this Governmet activity, which includes compensation, salary and bureau expenses, approximately \$40,000 monthly. The following represents the investments at this hospital: Land and improvements, \$125,000; buildings and plants, \$1,157,208.88; improvements and replacements, \$28,805.32; equipment, \$154,394.98; total, \$1,465,409.18.

The majority of the staff and personnel reside upon the station which has a total population of approximately four hundred and fifty to be provided for. The professional and administrative staffs consist of the following officers: Medical officer in charge, Dr. Henry Rolf Brown; clinical director, Dr. James M. McNall; business manager, Frank L. Payne; property custodian, Everett M. Aten; chief nurse, Florence H. Yeiter; chief dietitian, Elizabeth Rugh; occupational therapy director, Eunice M. Cates; chief engineer, Herbert L. McNulty; personnel officer, Murial A. Johnson; special disbursing agent, Nell M. Greely; auditor, Ina A. Gallagher; librarian, Ruby K. Ahern; pharmacist, James J. Deeney.

THE WESTERN PENNSYLVANIA HOSPITAL

In 1847, after the people of Pittsburgh had for many years felt the need of a general hospital, several prominent citizens met in Odean Hall on Fourth avenue, in order that such an institution might come to be an actuality.

A constitution was drafted, one extract from which will serve to show the ideals as expressed by its founders: "Resolved that in establishing a hospital we desire to make it a general one. We disclaim all sectarian preferences and cordially invite all of every sect and denomination to unite with us in founding one general hospital, which shall be worthy of our city and vicinity and the age in which we live."

The hospital, one of the three oldest in this city, was incorporated March 18, 1848, and by 1850 work was started on the building, the site being a twenty-two acre plot at Twentyeighth street, which had been donated by Harmer Denny, Captain and Mrs. Schenley.

In March, 1853, the erecting and furnishing of the building was completed at a cost of approximately \$40,000 and the hospital was opened for the reception of patients. During its first year 172 medical and surgical patients and 26 insane patients were admitted.

Within one year the number of charity patients, particularly in the insane wards, had increased to the point where it was necessary to seek aid from the State for maintenance of these unfortunates. The ever increasing number of these patients soon overcrowded the hospital, thus making necessary the erection of a new building. The location that is now Dixmont was chosen for this purpose and in 1862 the structure was sufficiently completed that all the insane patients were transferred.

About this time, the exigencies of the Civil War became so real and pressing that the management tendered the Government the free use of the hospital and its grounds, so that the sick and wounded of that terrible conflict might have the proper care. Immediately after the Civil War the hospital resumed its former activities, having performed a national service and receiving the thanks of the nation. From 1862 until 1910, in addition to hospital services, it served the community by distributing coal to the needy poor under the Brewer and Crawford funds, for which it was trustee.

The hospital at Twenty-eighth street and that at Dixmont continued under one general board of managers, with distinct executive committees, until July 27, 1907, when both institutions were granted new charters by the Legislature. The parent hospital retained the name of The Western Pennsylvania Hospital, while the other became the Dixmont Hospital for the Insane.

With rapid growth of the city population, the hospital had to be enlarged from time to time, the cost of these additions being generally met by the managers themselves and their friends, with occasional aid from the State. But in spite of the fact that the old building was constantly improved it gradually began to show its age, was expensive to keep up, and a constant source of complaint by patients and their friends on account of its remoteness from the street cars and the fatiguing hill to be climbed, to say nothing of its being no longer adapted to modern scientific treatments. After mature deliberation it was decided to build upon a new site.

The old athletic field of the Pittsburgh High School, facing Friendship park, containing about three and one-half acres, was purchased in the fall of 1906, and upon this ground was erected the present structure which conforms in every way to the needs of a modern hospital, both as regards sanitary arrangements and scientific equipment. The matter of financing the construction of the new building was a problem which presented many difficulties, but the outcome of the project did not remain long in doubt, for the well-wishers of the institution responded readily.

On January 1, 1912, the new plant was formally opened and a public inspection invited. This invitation brought forth a remarkable response, it being estimated that from 15,000 to 20,000 persons viewed the hospital on the afternoon of that New Year's day. Two months were occupied in installing the equipment, furniture and necessary supplies, and on March 11, 1912, the 219 patients in the old buildings, with the nurses and employees, were transferred without accident to the new hospital, which had cost somewhat over a million dollars to erect and equip.

In its first year in the new building the hospital admitted 5,570 patients, while during the fiscal year, which ended May 31, 1927, there were 9,846 admissions. During the seventynine years of the hospital's existence 208,703 patients have been admitted for treatment.

The nurses were housed in quarters in the power building and in six private houses in the neighborhood. This was most unsatisfactory, and the need for a nurses' dormitory became more pressing each year. However, it was not until the early part of 1920 that the hospital felt financially able to undertake the project. In March of that year a plot of ground facing Friendship park and extending from Millvale avenue to Gross street was purchased for this purpose. Upon it was erected a fire-proof, six story brick building, having 250 individual rooms with hot and cold running water, adequate bath and toilet facilities, a large auditorium, library, sun porches and roof garden. An underground passage connects it with the hospital. The building was completed and ready for occupancy May 1, 1923, at a cost, with furnishings, approximating \$671,000.

With the passing of the years and the growth of the hospital, the need for expansion in the laboratory was felt to such a degree that in 1925 the board of directors set itself the task of raising funds for this purpose. A semi-public appeal followed which met with such a whole-hearted and generous response from friends and well-wishers of the institution, that the new laboratories wing became a certainty. The contract for erection was let in February, 1926, and the new building, which stands upon the site orginally intended for a nurses' home, was officially opened October 20, 1927.

This new plant brings together all the various laboratory activities of the hospital and contains the departments of pathology, bio-chemistry, bacteriology, diagnostic X-ray, deep therapy, physiotherapy and electrocardiograph. There is a new metabolic pavilion and kitchen, and a new children's pavilion entirely separate from other activities. Thirty-four private rooms have also been included, the income from which will aid in maintaining these laboratories and in providing for the necessary research work. With these additional accommodations for patients, the hospital's capacity is 600 beds.

The present officers and directors of the hospital are: Officers: James R. Mellon, president; James D. Hailman, first vice-president; James W. Macfarlane, M. D., second vicepresident; George D. Edwards, treasurer; C. W. Orwig, assistant treasurer; M. H. Eichenlaub, secretary; Henry G. Wasson, solicitor; Fidelity Title and Trust Co., custodian. Directors—Wilson S. Arbuthnot, Charles D. Armstrong, Michael L. Benedum, Arthur E. Braun, George S. Davison, George D. Edwards, A. Rex Flinn, John G. Frazer, James D. Hailman, Howard Heinz, James H. Lockhart, Albert J. Logan, James W. Macfarlane, M. D., James R. Mellon, Mrs. W. H. Normecutt, C. C. Sandels, M. D., Henry G. Wasson, John S. Weller, Mrs. John Woodwell.

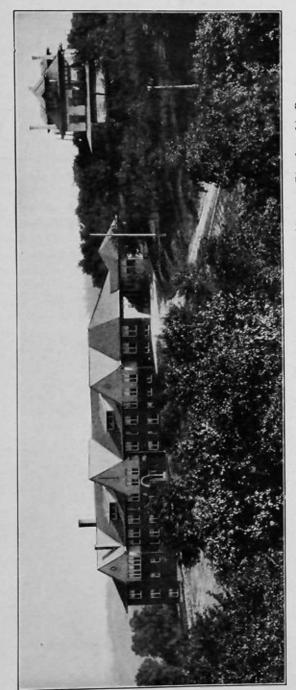
ZOAR HOME AND MATERNITY HOSPITAL

Zoar Home, with its 6 acres of ground, is beautifully situated upon the slopes of Allison Park (Greater Pittsburgh) Allegheny County, Pennsylvania. The commodious main building, flanked by the beautiful nurses' home, isolation building and laundry, attracts ready attention.

Its primary object is to save children and to give these tiny waifs a chance in life. Its mission is unique in charitable institutions, in that no woman or child is turned from its doors if they are in need of sympathetic help. Babies and cases which other hospitals must refuse, are welcomed here, and the great Christian heart of the institution goes out to the unfortunate mothers (married and unmarried) who seek the sheltering care which the home affords. It welcomes all, without regard to race, color or creed, realizing that its work is done in the name of Him who "made of one blood all the nations of the earth," and the only password of admission is the need of the care and ministrations for which the home was founded.

Religious services are held in the chapel every Sabbath afternoon, conducted by ministers of the various denominations in the neighborhood, thus sustaining the Christian atmosphere in the home, as well as impressing those whose religious life has been sadly neglected and adding new courage and hope to those who have known better things.

Zoar Home is a nonsectarian institution with lofty Christian ideals. It is supported by the charitable public because of its high character and splendid work. It is doing work that few institutions care to do, and doing it in a spirit of unselfishness; it is doing it because the saving of a child's life is worth while; they believe that a child with such handicaps as children have that enter the Home should have chance for life and health—God's great gift to humanity. They believe that a child is the nation's chief asset, and that the saving of the life of a child is a service well worthy of the effort.



Zoar Home for Mothers, Babies and Convalescents, Allison Park, (Greater Pittsburgh), Pa.

The Zoar Home has a social department, and guests and children have to apply to this department when, so far, no other organization has made a thorough investigation of their need of shelter. It co-operates with different welfare organizations in this work. Children who can be placed in private homes for adoption are under the strict supervision of the home's physicians before being allowed to leave the institution.

A training school for nurses was established the second year of the institution's existence for the purpose of training young women to care for these little lives in a scientific manner. A staff of physicans co-operate with the management of the Institution to further this most needed work.

Since the opening of the home in 1915 to January 1, 1928, it sheltered 2,079 infants. Mrs. E. Schmitz is the manager.

THE FIRST NATIONAL BANK AT PITTSBURGH

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Financial business of every kind is handled by the experts of the First National Bank at Pittsburgh. Its facilities cover every department of domestic and foreign banking, and its officers give their advice as freely and as cheerfully to the person who opens a small savings account as to the treasurer of a great corporation, whose financial dealings are large and comprehensive.

This institution has established direct banking connections in all parts of the World, which are a great convenience in the handling of documents pertaining to Foreign Commercial Transactions.

All branches of International Banking are completely covered by our facilities.

We issue drafts and make payments in all parts of the World.

We handle Trade and Bankers' Acceptances.

All languages are spoken in this department.

Officers of this institution are trained bankers with a wide experience, and its directors are successful men in a large variety of enterprises, affording a broad scope of business knowledge.

Capital	\$6,000,000.00
Surplus	6,000,000.00
Undivided Profits and Reserves.	
Deposits.	75,534,434.37
Total Resources	

DIRECTORS

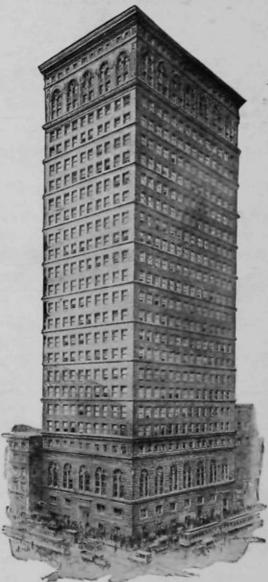
ROBERT WARDROP, Chairman of the Board

P. W. MORGAN, Vice Chairman of the Board FRANK F. BROOKS President W. D. GEORGE Real Estste J. H. HILLMAN, JR. Chairman of the Board, Hillman Coal & Coke Co. A. L. HUMPHREY President, Westinghouse Airbrake Co. D. T. LAYMAN, JR. ... Henry Phipps Estate F. H. LLOYD Retired Merchant A. M. MORELAND Retired Manufacturer P. W. MORGAN President, First National Bank, Wilmerding, Pa. George E. PainterVice President, Union Storage Co. E. W. PARGNY President, American Sheet & Tin Plate Co. WM. A. RENSHAW Vice President, Kuhn-Renshaw, Inc. A. C. ROBINSON President, Peoples Savings & Trust Company ISSAC M. SCOTT. President, Wheeling Steel Corporation CLYDE C. TAYLOR Vice-President and Cashier VERNON F. TAYLOR Banker and Oil Operator, Indiana, Pa. BENJAMIN THAW Trustee, Thaw Estate ROBERT WARDROP, Director of Federal Reserve Bank of Cleveland and Vice-President, Peoples Savings & Trust Co. E. T. WHITER Vice-President, Pittsburgh, Penna. R. R. Co. JOHN M. WILSON President, National Supply Co., Pittsburgh, Pa.

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FRANK F. BROOKS	President.
CLYDE C. TAYLOR	Vice-President and Cashier
J. Howard Arthur	
HENRY K. HOLMES	Assistant to the President
WILLIAM H. FAWCETT.	Assistant Cashier
THOMAS B. HUDSON	Assistant Cashier
Grier C. Orr	Assistant Cashier
John DeM. Werts	Assistant Cashier
Oscar Wilson	Assistant Cashier
Wm. J. Frank	
P. W. DAHINDEN	Assistant Manager Foreign Department
I. PAUL FORD	

FIRST NATIONAL BANK AT PITTSBURGH, PENNSYLVANIA



FIFTH AVENUE AND WOOD STREET CONVENIENT FOR YOU

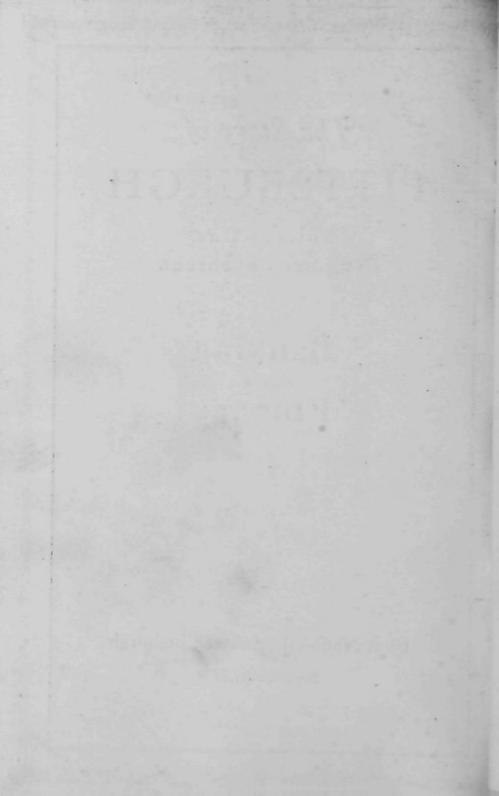
The Story of PITTSBURGH

Volume One Number Seventeen

> Banking and Finance



First National Bank at Pittsburgh September, 1930



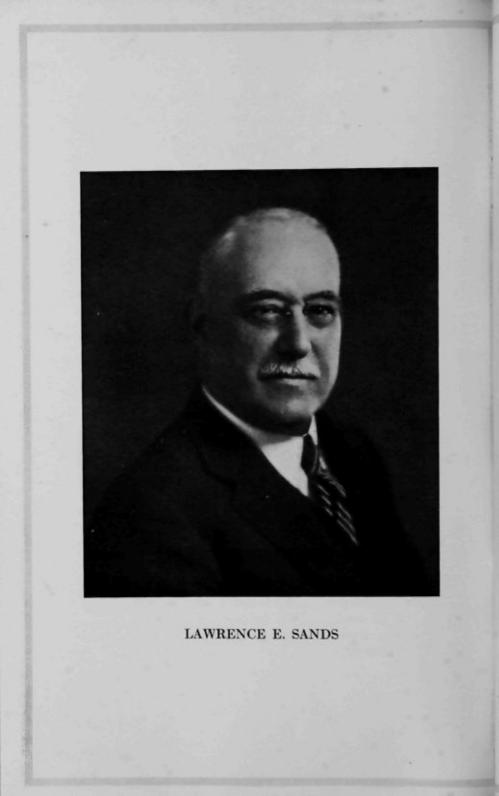
In Grateful Appreciation

This booklet is the concluding one of a series issued by the First National Bank at Pittsburgh, pointing out the various phases of our community's industrial, business and cultural importance.

If the series has quickened civic pride on the part of those who have read these books, the object of their issuance will have been fulfilled.

Deep and sincere appreciation is hereby extended by the officers and directors of the First National Bank to the many individuals, corporations and civic organizations which have made the series possible through furnishing the necessary data, without which it would have been impossible to attempt this work.

The First National Bank at Pittsburgh believes that the scope of its activities is beyond the routine mechanics of banking. It feels that it can discharge its full duty to the community which enables it to thrive only by active participation in and co-operation with all worthy projects designed to promote the economic progress of the Pittsburgh community.



Lawrence E. Sands

HE late Lawrence E. Sands, former President of the First National Bank at Pittsburgh, conceived the idea of publishing the booklets entitled "The Story of Pittsburgh" and the Directors of the First National Bank believe it most appropriate to publish the following resolution concerning their esteem of his qualities as a man and a leader:

RESOLUTION

At a regular meeting of the Board of Directors of the First National Bank at Pittsburgh, held Tuesday, October 30, 1928, the following Resolution was unanimously adopted: *Whereas*, The Board of Directors of the First National Bank at Pittsburgh receive with profound sorrow the sad news of the death on October 19, 1928 of

MR. LAWRENCE E. SANDS

President and a Director of this Institution

Therefore be it

Resolved, That this Board record its enduring gratitude for the many achievements by him.

Endowed with extraordinary gifts touching life at many points, his accomplishments in every field were marked by force of mind, tenacity of purpose and loftiness of aim.

As President of the First National Bank at Pittsburgh, he lived to see it invested with international renown, taking its place among the great Banks of the world. A work so extensive and so monumental, could only have been wrought by one who was able to inspire others. His democratic spirit made itself felt far and wide throughout the entire organization and his personality and comradeship inspired his army of employees to give the Bank its best. The breadth of this conception reveals the nature of a mind which enriched itself through contact with all that is best in human endeavor. His kindliness and affections were deep and permanent.

WE, his colleagues of the Board of Directors of the First National Bank at Pittsburgh, knew, as few others could, his sincerity of purpose and we revere his memory.

The foregoing Resolution having been adopted, it was further resolved that a copy be transmitted to the family of Mr. Lawrence E. Sands with the deep sympathy of all the members of this Board.

> F. F. BROOKS P. W. MORGAN GEO. E. PAINTER

Foreword

SAN

HE Officers and Directors of the First National Bank at Pittsburgh, after issuing for some years the series of booklets under the general title of "The Story of Pittsburgh," desire to express their gratification at the reception of these publications. They have been received with pleasure and read with deep interest by persons familiar and by persons heretofore unfamiliar with Pittsburgh's importance. Those familiar with certain manufactures and products of the city have been pleased to learn of other important interests in which this city excels; and those familiar with many details of known businesses, but quite unfamiliar with other important efforts of the City's progressive residents, have been made aware of the amazing reaches made by its business and professional men in these lines not generally known.

The result has been to vastly increase the general knowledge, both at home and in distant localities, of the important position which Pittsburgh occupies. This city is recognized as "The Workshop of the World," but its efforts are not solely directed to the production of manufactured goods which go to all portions of the earth. It was long ago called "The Iron City," but such a designation now would be far too narrow to apply appropriately to its activities. The booklets of the First National Bank have detailed not only Pittsburgh's importance in the ordinary metals, but have shown its commanding position in many other activities. Petroleum and natural gas, aluminum, cement, cork, electrical machinery, radio devices, fire brick and other clay products, glass of every variety, railway materials and safety devices of the very best kinds, steel cars, tin plate, vanadium, white lead and paints, tobacco and the products of tobacco, and good products of every variety, include some of the more important of the City's manufactures.

The closing booklet of the series relates to the high position Pittsburgh holds in Finance, and brings the series to an end, marking the city's splendid celebration of the completion of the nine-foot channel in the Ohio River, establishing Pittsburgh's supremacy as a port. This channel is a \$100,000,000 project, linking this city by water with such distant points as New Orleans, St. Louis, Kansas City and Minneapolis, and providing navigation through the whole twelve months of the year.

The Story of Pittsburgh Banking and Finance

SOME FACTS TO SUPPORT THE SLOGAN "PITTSBURGH PROMOTES PROGRESS"

HE national and international economic importance of Pittsburgh is supported by many interesting facts concerning various phases of its business activities.

The fifty-four State Banks and Trust Companies located within the city limits show, at the December 31, 1929 statement, total resources of \$683,180,943, surplus and profits of \$118,302,895, deposits \$516,406,463.

The seventeen National Banks within the city proper, at December 31, 1929 statement call, show resources of \$588,882,004, surplus and profits \$51,932,536, deposits \$462,287,764.

The summary of these figures for both state and national institutions shows:

Total Resources	\$1,272,062,947
Total Surplus and Profits	170,235,431
Total Deposits	978,694,227

The above statistics do not include the many prosperous banks in the outlying districts and adjacent towns, which constitute Pittsburgh as it should be considered in any economic analysis of its importance.

Obviously, the banking strength of any city is a major factor in its development, as the entire business structure depends upon banking resources for the necessary operating capital.

The tendency of business enterprises to consolidate for economies in production, overhead and marketing has created a demand for larger units of credit. As the lending power of banks is limited to a defined percentage of assets, the considerable number of bank mergers effected in the Pittsburgh district during the past few years testifies to the alertness of local financiers to keep apace with requirements of their customers, and to anticipate the further growth of the district.

A recent business survey of the Pittsburgh metropolitan district furnishes figure proof that "Pittsburgh Promotes Progress" is not a mere slogan.

Pittsburgh's population is growing faster than Philadelphia, Buffalo, St. Louis, New York and Boston. In the past eight years population has increased at the rate of 15% according to estimates of the census bureau.

Pittsburgh's industrial production is appraised at more than one billion, five hundred million annually.

The annual wage and salary roll of the Pittsburgh area is \$328,000,000.

\$1,125,000,000 is the estimated capital investment in the mills, factories, mines and quarries of the metropolitan area—showing an increase of about 25% during the past decade.

Mills and factories of Metropolitan Pittsburgh manufacture approximately \$393,000 worth of goods per plant, leading the industrial establishments of almost every other similar community in the United States.

Workers in Pittsburgh plants earn on an average of \$1,444 a year per man, leading Philadelphia, Boston, St. Louis and Baltimore. Approximately \$505 is now on deposit in Savings Accounts of the Banks of Metropolitan Pittsburgh for each resident of the community, and it is estimated by the Pennsylvania Department of Internal Affairs that savings have increased in the district by 113% since 1919.

Pittsburgh retail stores sell each year an average of approximately \$431 for each resident of Allegheny County.

New building construction in the Pittsburgh District is larger in volume than in the metropolitan area of almost any other city in the United States. \$50,000,000 was spent for new buildings and repairs in Pittsburgh for 1928—representing approximately 6,000 jobs.

Pittsburgh Bank Clearings show a gain of 39% in the last seven years. Bank clearings figures are a true barometer of business activity.

Pittsburgh income tax payers number 78 to each 1,000 residents, as against 72 for Detroit, 39 for Cleveland, 48 for Philadelphia, 62 for St. Louis, and 64 for Boston. This leadership indicates that prosperity is widely distributed among the families of the district.

Pittsburgh is one of the country's leading life insurance centers, indicating a fine sense of moral responsibility on the part of citizens, in addition to widespread individual prosperity.

It is undeniable that there is new civic consciousness throughout the district. Leaders in all lines of activity are displaying faith in team work to make secure Pittsburgh's right to be considered as one of the world's great cities. STATEMENT OF CONDITION OF NATIONAL BANKS AS OF DECEMBER 31, 1929.

	DEPOSITS	SURPLUS & PROFITS	TOTAL RESOURCES
Bank of Pittsburgh, National Association	51,215,857	\$ 5,097,979	\$ 63,514,139
Diamond National Bank	23,408,042	2,397,873	27,746,256
Duquesne National Bank.	8,697,441	1,177,186	12,095,418
Exchange National Bank.	8,481,904	1,082,971	12,296,029
Bank.	59,504,013	7,144,850	77,082,002
	72,169,017	7,502,475	93,848,197
	2,387,108	370,125	2,961,233
Forbes National Bank.	3,452,789	310,751	4,363,540
Highland National Bank	4,339,784	295,025	5,105,339
Keystone National Bank	8,629,124	1,405,521	11,213,995
	157,079,257	13,742,791	192,501,392
Monongahela National Bank	13,982,936	2,260,000	20,913,051
National Bank of America	6,457,837	742,042	7,642,168
Pennsylvania National Bank	1,762,592	390,597	2,519,297
Second National Bank	7,296,752	1,414,072	9,385,178
Third National Bank	5,910,841	430,000	7,750,624
Union National Bank	27,512,475	6,168,278	37,944,146
	\$462,287,764	\$51,932,536	\$588.882.004

STATEMENT OF CONDITION OF TRUST COMPANIES AS OF DECEMBER 31, 1929

American State Bank & Trust Company2,049,568Bank of America Trust Company237,776Bloomfield Trust Company2,056,609City Deposit Bank & Trust Company16,999,214
, 2, 16,
-
25,262,713
13,092,072
11,220,556
192,813
Fidelity Title & Trust Company. 17,847,056
3,035,013
Hazelwood Savings & Trust Company
2,987,903
McGillick Savings & Trust Company

Manchester Savings Bank & Trust Company	3,553,514	463,440	4,267,115
Merchants Savings & Trust Company.	1,195,204	98,119	1,443,323
Metropolitan Savings Bank & Trust Co.	3,014,242	182,259	3,405,460
Oakland Savings & Trust Company.	6,041,965	653,275	7,018,776
Pennsylvania Trust Company	5,041,607	757,955	6,707,443
Peoples-Pittsburgh Trust Company	56,159,196	14,735,547	77,923,570
Peoples Trust Company of Pittsburgh	3,967,239	447,655	4,837,965
Potter Title & Trust Company.	8,801,082	975,616	11,049,482
Provident Trust Company	1,451,053	327,782	1,928,852
Real Estate Savings & Trust Company	5,104,914	210,000	6,067,248
South Hills Trust Company	1,925,421	306,167	2,427,307
St. Clair Savings & Trust Company.	2,693,748	327,780	3,326,776
Terminal Trust Company	564,207	75,795	770,857
Union Trust Company	150,719,117	58,902,597	217,786,246
Washington Trust Company	10,033,931	1,300,000	12,537,172
West End Savings Bank & Trust Company.	4,939,219	760,847	6,021,837
William Penn Trust Company	1,831,476	223,802	2,323,084
Workingman's Savings Bank & Trust Co.	12,347,383	2,567,672	15,515,268
*	\$398,523,463	\$106,240,326	\$546,628,879

STATEMENT OF CONDITION OF STATE BANKS AS OF DECEMBER 31, 1929

1	DEPOSITS	SURPLUS & PROFITS	TOTAL RESOURCES
All Nations Deposit Bank.	1,846,467	\$ 89,898	\$ 2,233,065
Allezhenv Valley Bank	4,101,592	350,000	4,563,111
Arsenal Bank	1.723,401	319,934	2,233,335
ed Savings	2.543.388	258,420	2,980,375
	1,819,550	152,244	2,095,210
Bank	42,668,660	3,708,668	46,394,967
	2,461,629	246,326	2,913,212
sank.	4.955,657	465,844	5,996,548
	766,099	1.104.585	2,295,736
	510.185	16,181	628,760
e Bank	427.686	5,686	432,372
ank	4,337,601	222,035	4,745,956
ron & Glass Dollar Savings Bank.	4,569,642	636,637	5,805,272
0	212.743	2,785	278,994
Ohio Vallev Bank	2.320.511	198,957	2,745,530
Bank.	2,494,429	297,479	2,911,294
	633,797	32,632	784,981
Bank.	1,414,602	51,308	1,752,312
	904,595	65,011	1,180,713
Sheraden Bank	1.117.762	139,534	1,317,385
Bank.	32,184,164	3,024,212	37,062,958
Deposit Bank .	3,868,840	674,193	5,199,978
81	\$117.883.000	\$12.062.569	\$136.552.064

NATIONAL BANKS, TRUST COMPANIES, AND STATE BANKS AS OF TOTAL DEPOSITS, SURPLUS AND PROFITS, AND RESOURCES OF DECEMBER 31, 1929

& PROFITS RESOURCES	4 \$ 51,932,536 \$ 588,882,004	3 106,240,326 546,628,879	0 12,062,569 136,552,064	7 \$170,235,431 \$1,272,062,947
Deposits	National Banks 8462,287,764	Trust Companies 398,523,463	State Banks. 117,883,000	\$978,694,227

THE FOURTH FEDERAL RESERVE DISTRICT

The Fourth Federal Reserve District comprises Ohio, Western Pennsylvania, parts of West Virginia and Kentucky, and three large cities—Pittsburgh, Cleveland and Cincinnati.

When Cleveland was selected as the seat of the Fourth Federal Reserve District, Pittsburgh was keenly disappointed and appealed to the Federal Reserve Board, as provided for in the Federal Reserve Act. After hearing the claims of both Cleveland and Pittsburgh, the Board decided not to change the selection. Though Pittsburgh outranked Cleveland in gross business, in bank clearings and in other particulars, these considerations did not avail.

The following table, furnished by the Statistical Department of the Federal Reserve Bank of Cleveland, shows the relative importance of the resources of the Pittsburgh member banks as compared with the total resources of all member banks in the Fourth District.

MEMBER BANKS — TOTAL RESOURCES

	FOURTH DE	STRICT	Pittsbu	RGH
	Resources	No. of Banks	Resources	No. of Banks
December 31, 1921	\$2,774,786,000	883	\$626,175,000	26
December 29, 1922	3,197,957,000	880	702,956,000	26
December 31, 1923	3,382,284,000	877	717,767,000	26
December 31, 1924	3,629,945,000	871	803,988,000	24
December 31, 1925	3,778,228,000	863	799,300,000	20
December 31, 1926	3,894,009,000	856	837,067,000	20
December 31, 1927	4,061,785,000	835	862,237,000	18
December 31, 1928	4,223,070,000	816	878,966,000	18
December 31, 1929	4,255,209,000	795	988,709,000	26

The following table clearly emphasizes the importance of Pittsburgh as a financial center. It shows the bank clearings of Pittsburgh compared to the bank clearings of the Fourth District, comprising fifteen cities, for the years 1921 to 1929.

BANK CLEARINGS

Fourth District

		Touren District
Year	Pittsburgh	15 Cities
1921	\$ 6,808,000,000	\$16,339,000,000
1922	6,758,000,000	16,429,000,000
1923	8,213,000,000	19,459,000,000
1924	8,037,000,000	19,023,000,000
1925	8,857,000,000	20,823,000,000
1926	9,198,000,000	21,583,000,000
1927	9,289,000,000	22,013,000,000
1928	9,453,000,000	22,741,000,000
1929	10,162,000,000	

PITTSBURGH'S CAPITAL INVESTMENT

Approximately \$1,125,000,000 is invested in the mills, factories, mines and quarries of the Metropolitan Area of Pittsburgh, it is shown by the newest study to be completed by the Department of Internal Affairs of the Pennsylvania State Government.

Capital investment is growing rapidly in the area. Four years ago, the total was approximately \$1,104,000,000 compared with \$902,000,000 eight years ago and with \$888,000,000 twelve years ago. Thus it is shown that in slightly more than one decade the investment has grown approximately twentyfive per cent. In few industrial communities is it found worth while to invest money as rapidly.

It is reasonable to assume that this capital investment will show a consistent growth. This observation is based upon a natural assumption that so long as America grows the demand for Pittsburgh products will increase apace with natural consumption. Pittsburgh is strategically located for the economic acquirement of the iron ore and coal used in its major productions, and has adequate transportation facilities, both by rail and by water.

The natural advantages of the city are decided factors in its favor for the attraction of new industries, and the alertness of its leaders in recognizing the necessity for a diversification of its industrial output promises a healthy growth for the future.

PITTSBURGH'S INCREASE IN SAVINGS

Approximately \$505 is now on deposit in savings accounts of the banks of Metropolitan Pittsburgh for each resident of the community, it is estimated on the basis of thrift gains of the past few years.

The area's gain in per capita savings is shown in records collected by the Department of Internal Affairs of the Pennsylvania State Government. This gain is shown year by year in the following table in which the averages for 1928 and 1929 are unofficial estimates:

	Per Capita	Increase Above		Per Capita	Increase Above
1919	\$237	000%	1925	378	59
1920	273	15	1926	397	67
1921	273	15	1927	433	83
1922	326	37	1928	469	97
1923	338	43	1929	505	113%
1924	353	49			

PITTSBURGH'S INCOME TAXPAYERS

Seventy-eight of each 1,000 residents of Pittsburgh receive sufficiently large incomes to require them to file tax returns with the Federal Government at Washington.

Pittsburgh leads the principal industrial cities of the nation in the number of income taxpayers in proportion to population, it is shown by the newest analysis to be made by the U. S. Treasury department.

Detroit has 72 income taxpayers to each 1,000 residents, Boston 54, St. Louis 62, Philadelphia 48 and Cleveland 39.

Pittsburgh's leadership in this respect indicates that prosperity is more widely distributed among the families of that city than among those of the other industrial communities listed above.

THE PITTSBURGH STOCK EXCHANGE

Eight years after the first oil well was drilled in Pennsylvania, at Titusville, by Col. E. L. Drake, the oil traders organized under the name of the Pittsburgh Brokers Association. The Pittsburgh Oil Exchange was really the first organized market which had a home, being formally organized with a membership of one hundred and eighty on July 25, 1878, with Capt. George W. Cochran as president, Jonathan Gallager as vice president, W. N. Riddle as treasurer and S. M. Willock as secretary.

The Pittsburgh Petroleum Exchange succeeded the Pittsburgh Oil Exchange and was incorporated January 23, 1882, and organized July 7, 1883, with C. W. Batchelor as president, B. W. Vandergrift as treasurer and J. I. Buchanan as secretary. It formally opened its new building April 21, 1884. It was incorporated with an authorized capital of fifteen hundred shares and every applicant for membership was required to own not less than five shares. A clearing house was put in operation to facilitate handling the increasing volume of business and the first annual statement, issued in 1885, reported clearances in eight months of eight hundred and fortythree million, four hundred and sixteen thousand barrels of petroleum, averaging about four million barrels daily. The purpose of the organization, as stated in the charter, was "the establishing and maintaining an exchange for the protection and encouragement of the petroleum business in the city of Pittsburgh." This was later amended on January 11, 1886, when the name of the institution was changed to "The Pittsburgh Petroleum, Stock & Metal Exchange," to read: "The purpose for which this corporation is formed is the establishing and maintaining an exchange for the protection and encouragement of trade and commerce in the city of Pittsburgh."

With the advent of gas stocks in 1886 and 1887, and the development of rapid transit facilities in Pittsburgh, necessitating the issuance of securities and a market for them, and with the passing of oil interests into the control of the Standard Oil Company, trading in oil gradually diminished and the brokers gave more attention to stocks. In 1893 trading had fallen off to an extent that depreciated the value of the stock of the exchange and ultimately there was held a sale of the property at public auction August 17, 1893.

At a meeting of former active members of the old exchange on March 26, 1894, and at subsequent meetings, The Pittsburgh Stock & Oil Exchange was formed with Henry M. Long as president, S. S. Pinkerton as vice president and John B. Barbour as secretary and treasurer. On July 25, 1896, the official title was changed to The Pittsburgh Stock Exchange. Nine months after its organization its recorded transactions showed seventy-five thousand, one hundred and one shares of stock and \$304,000 of bonds. The exchange first leased quarters in the Union Trust Building, formerly the Pittsburgh Petroleum Exchange; afterward removed to the Citizens Insurance Building, and in June, 1895, returned to the Union Trust Building. A fire October 29, 1897, caused them to obtain rooms in the Commercial National Bank and in April, 1901, a removal was made to the Pittsburgh Bank for Savings Building. In the fall of 1902 the Mechanics National Bank Building was offered for sale. An option was secured by the exchange so that if the property could be purchased for \$300,000, and thirty additional memberships sold to finance the purchase, the exchange would buy the building for a permanent home. This was done. The membership of this new organization, originally limited to fifty, was increased to seventy-five and in December, 1895, to one hundred, and there is now a membership of one hundred and fifteen.

In the early stages of its development The Pittsburgh Stock Exchange restricted its sessions to brief periods in the morning and afternoon, but with the increase in business the time devoted to each official call was extended from fifteen to thirty minutes and the number of sessions was increased to three per day. Later an urgent demand arose for more frequent quotations and on February 10, 1902, the exchange inaugurated daily continuous sessions. Since May 1, 1923, transactions have been recorded only in the listed securities of The Pittsburgh Stock Exchange.

The value of the exchange in the matter of establishing official quotations, which are recognized by the courts, as well as by the banks and individual investors, and the ap-

preciation of its functions by corporations, is reflected in the steady increase in the number and variety of stocks and bonds regularly listed and thereby made eligible for daily recorded prices. Today the official list comprises a total of one hundred and four issues of stocks and fifty-one issues of bonds; these securities having an approximate par value of \$830,000,000. The appreciation of the general investing and trading public of official listing is also expressed in many ways. Such securities command relatively higher values over unlisted securities. and they enjoy greater marketability. The official prices established on the exchange are invaluable in the making up of income tax returns, values of collateral for bank loans, the settling of estates and the establishing of a recognized basis in closing accounts involving stocks and bonds. The requirements for listing corporation securities, including the maintenance of transfer and registrar offices, and the protection against irregularities in new issues of additional capital, constitute a convenience as well as a protection for investors holding such securities.

Throughout its long and progressive career The Pittsburgh Stock Exchange has enjoyed the confidence and support of the leading financial institutions of Western Pennsylvania, and its services have been appreciated not only by the investors at home, but by those all over the country who have become interested in the securities of local industrial corporations. During these thirty years it encountered the financial and economic disturbances which occurred in this country and abroad, and on only two brief occasions was it deemed advisable to suspend its active functions. Thus, during a depression which became acute in the latter part of 1907, and extended into 1908, The Pittsburgh Stock Exchange was closed from October 23, 1907 to January 26, 1908. Again at the outbreak of the World War, an event without parallel in modern history, the local exchange, following like action by similar bodies all over the United States and in Europe, temporarily suspended daily sessions, closing on July 31, 1914, but resuming regular business on December 2 of the same year. At no time in the history of stock exchanges and other financial organizations have they been under closer public scrutiny than during the past ten years. At no time also have

greater efforts been sincerely made to modernize methods, increase the facilities for serving the public, and raise the standards of membership and business conduct than within this period. It may be said that The Pittsburgh Stock Exchange is in the vanguard of these movements, and that the constant aim of its directors and officers is to carry out the legitimate purposes for which it was organized and chartered.

THE PITTSBURGH CLEARING HOUSE

The Pittsburgh Clearing House Association was organized June 19, 1865, by eighteen banks of Pittsburgh, and began operations February 5, 1866. Its first president was John Harper, and Robert M. Cust was the first secretary.

The original location was on Fourth Avenue, Pittsburgh, but at present it is doing business in the Mellon National Bank Building in Pittsburgh.

The first day's exchanges, on February 5, 1866, amounted to \$153,567.95, according to information furnished by the Pittsburgh Clearing House. In 1866 the exchanges totaled \$83,731,242.17; in 1900, \$1,615,641,592.19; and in 1927 \$9,289,443,577.19.

The original members of the association were:-

The Bank of Pittsburgh, National Association, N. Holmes & Sons, The Union National Bank, German National Bank, First National Bank, Third National Bank, Exchange National Bank, Allegheny National Bank, Tradesmens National Bank, Mechanics National Bank, Merchants and Manufacturers National Bank, Iron City National Bank, Farmers Deposit National Bank, Peoples National Bank and Citizens National Bank, the First National Bank of Allegheny and the Pittsburgh National Bank of Commerce—seventeen in all.

In the panic of 1873 and the period of readjustment that followed, not one of the sixteen national banks was forced to suspend.

At the close of 1929, the Clearing House had nineteen members-namely,

Bank of Pittsburgh N. A. Exchange National Bank

First National Bank at Pittsburgh Third National Bank Farmers Deposit National Bank Union National Bank Second National Bank of Allegheny Diamond National Bank **Duquesne National Bank** Monongahela National Bank Mellon National Bank **Keystone National Bank** Federal Reserve Bank-Pittsburgh Branch Union Trust Company **Commonwealth Trust Company** Colonial Trust Company Fidelity Title & Trust Company Peoples-Pittsburgh Trust Company

Nothing reflects more dramatically the consistent growth of Pittsburgh business than a comparison of the annual totals of the Pittsburgh Clearing House. The following table shows the definite upward trend of dollar transactions going through the Clearing House.

1866\$	83,000,000
1867	97,000,000
1868	115,000,000
1869	156,000,000
1870	178,000,000
1871	215,000,000
1872	284,000,000
1873	295,000,000
1874	257,000,000
1875,	233,000,000
1876	224,000,000
1877	223,000,000
1878	189,000,000
1879	217,000,000
1880	297,000,000
1881	389,000,000
1882	483,000,000
1883	497,000,000

1884	469,000,000
1885	356,000,000
1886	409,000,000
1887	511,000,000
1888	581,000,000
1888 1889	654,000,000
1890	786,000,000
1891	679,000,000
1892	759,000,000
1893	665,000,000
1894	652,000,000
1895	746,000,000
1896	745,000,000
1897	819,000,000
1898	975,000,000
1899	1,528,000,000
1900	1,615,000,000
1901	2,047,000,000
1902	2,147,000,000
1903	2,356,000,000
1904	2,063,000,000
1905	2,506,000,000
1906	2,640,000,000
1907	2,743,000,000
1908	2,064,000,000
1909	2,361,000,000
1910	2,587,000,000
1911	2,520,000,000
1912	2,798,000,000
1913	2,932,000,000
1914	2,625,000,000
1915	2,666,000,000
1916	3,402,000,000
1917	4,021,000,000
1918	5,761,000,000
1919	7,276,000,000
1920	8,982,000,000
1921	6,808,000,000
1922	6,864,000,000
1923	8,212,000,000

1924	8,036,000,000
1925	8,856,000,000
1926	9,197,000,000
1927	9,289,000,000
1928	9,452,000,000
1929	10,162,939,970

Through the courtesy of the Clearing House, we are enabled to append the largest daily exchanges during the last ten years-

June 18,	1918	\$62,500,000
June 18,	1919	43,900,000
Nov. 6,	1920	42,000,000
Jan. 3,	1921	45,172,000
Nov. 13,	1922	39,606,000
Feb. 2,	1923	42,800,000
Jan. 2,	1924	42,245,000
Jan. 2,	1925	42,450,000
May 10,	1926	48,400,000
Feb. 1,	1927	57,200,000
July 3,	1928	61,400,000
Feb. 2,	1929	52,662,000

No sketch of Pittsburgh's financial position is complete without tribute to the name Mellon. It symbolizes vision, courage and constructive work of the first magnitude in behalf of Pittsburgh's rise and growth. Pittsburgh is proud that Andrew W. Mellon, the most illustrious of American financiers, developed his brilliant capacities in a Pittsburgh atmosphere. His father before him, with fine vision and high courage, sponsored many of the then infant industries which have grown to world dominion. His sons have carried his banner to new heights. After sound judgment has been justified by colossal achievement, it is easy to minimize the courage and faith of early years, but when the final word is written, it will be recorded that the pioneering spirit of the Mellon family seeded the field of Pittsburgh's greatness. They have justly earned the prestige and affluence which their high genius has earned. Well may it be said that their work has been and is constructive in the highest sense of the word. Through their brilliantly conceived financial operations they have given to the Pittsburgh community more in economic opportunity and advancement than they will ever receive for themselves in a material way.

THE ASSOCIATED BANKS

During the past ten years an important factor in the Pittsburgh financial situation has been developed through the group known as The Associated Banks. To July, 1930, the following units comprise this group:

First National Bank at Pittsburgh Peoples-Pittsburgh Trust Company Peoples-Pittsburgh Trust Company—East End Branch First National Bank of Wilkinsburg Oakland Savings & Trust Company Peoples Trust Company of Pittsburgh Metropolitan Savings Bank & Trust Company Dormont Savings & Trust Company Terminal Trust Company Peoples-Pittsburgh Trust Company—Squirrel Hill Branch

The combined resources of the group, at the time of this writing, are more than \$220,000,000.

The First National Bank at Pittsburgh and the Peoples-Pittsburgh Trust Company are the parent institutions.

The development is in keeping with the trend of consolidation in the interests of greater service and economy.

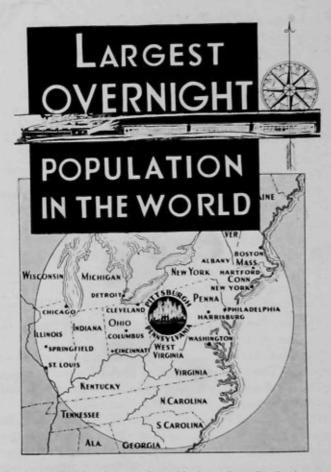
The Associated Banks, with the exception of the branches, operate as independent units, their affairs being directed by local boards, conversant with the necessities of their localities.

It has been the policy of the Associated Banks to employ resources, whenever possible, for the economic development of local business interests and the welfare of the local citizenry.

That this policy is well understood and appreciated is evidenced by the consistent record of growth and earnings.

The expansion of the consolidated group has been marked with conservatism, and it will be observed that the location of the various units are in strategic position to serve the various important sections of the Pittsburgh District.

To Mr. J. H. Hillman, Jr., must go the credit for the vision and sagacity responsible for the conception and development of the Associated Bank Group.



The City of Pittsburgh is most favorably situated as a distributing center. The distribution of population around the city is (according to 1920 census):

Within	30	miles	-1,800,000	people	(84	cities and	towns)
	50	6.6	- 2,750,000	1.0	(119	cities and	towns
	100		- 5,400,000	-44	(211	cities and	towns)
**	200	**	-13,600,000		(382	cities and	towns)
	500	•1	-64,000,000		(1563)	cities and	towns

Within 500 miles of Pittsburgh is 57.1% of the population of continental U. S. and 47.7% of the population of the Dominion of Canada.

Within 30 miles of Pittsburgh the population (1,800,000) equals the combined population of Arizona, Delaware, Nevada, New Mexico and Wyoming.

The fact that our city is within easy reach of so great a percentage of population, in addition to the fact that it is adequately served by many major railroads, supports the right of Pittsburgh to expect consistent growth of its manufacturing and mercantile establishments.

PITTSBURGH A LEADER IN CONSUMER BUYING POWER

No survey of Pittsburgh's financial standing would be complete without emphasizing our city's importance as a retail trade center.

Space prohibits the listing of the many retail establishments which cater to the needs of the Pittsburgh population, so only the twelve leading department stores are listed herewith in alphabetical order:

Some of Pittsburgh's Leading Department Stores

Boggs & Buhl Campbell's Dept. Store Frank & Seder Gimbel Brothers, Inc. Harris Dept. Stores Co. Joseph Horne Co. Kaufmann Dept. Stores, Inc. Lewin-Neiman Co. Meyer Jonasson & Co. McCreery & Co. Oppenheim Collins & Co. The Rosenbaum Co.

Pittsburgh is generally recognized as one of the important retail centers of the country. It has been frequently said and is undoubtedly true that the volume of Pittsburgh department stores' sales per capita is the largest in the country. This is explained in part by the great trading area adjacent to Pittsburgh, which gives it a sales volume considerably in excess of other cities of similar rank.

It is estimated that the gross volume of Pittsburgh's larger department stores, twelve in number, is in excess of \$150,000,000 a year. It is estimated that the retail sales volume of Pittsburgh's department stores has increased approximately 35% since 1920—a sure indicator that Pittsburgh's economic strength is in the ascendency.

Pittsburgh's retail stores sell each year an average of approximately \$431 worth of goods for each resident of Allegheny County, which county represents the steel city's trading area. In Philadelphia County, the corresponding per capita sales amount to \$419 or \$12 less than in Pittsburgh. On the same basis, sales in the trading areas centering at other industrial communities of the state are as follows: Reading \$376, Altoona \$344, Erie \$292, Wilkes-Barre \$247 and Scranton \$229. The Harrisburg area equals Pittsburgh in sales with a per capita of \$431, but this is the only community in the state which even approaches Pittsburgh.

Consumer buying power measures the well being financially of the great mass of residents of any community. Pittsburgh's leadership indicates that the average family of this city is able to afford more comforts and luxuries than its counterpart in other large cities.

A BRIEF HISTORY OF THE FIRST NATIONAL BANK AT PITTSBURGH

The First National Bank began business in 1852 as The Pittsburgh Trust & Savings Company.

When the National Banking Act of February, 1863, was pending in Congress, application was made for a national charter, which was granted August 5, 1863, and three days later The First National Bank of Pittsburgh began business with a capital of \$500,000. It was the first bank in Pittsburgh to avail itself of the new national bank law, and one of the first in the nation, its charter being No. 48.

In 1854 the bank moved to Wood Street near Fifth Avenue, and in 1858 purchased its present site. In 1871 the old First National building, still well remembered by many Pittsburghers, was erected, being torn down in 1909 to make way for its present structure, originally five stories but extended to twenty-six stories in 1911.

In 1902 it purchased and absorbed the Mechanics National Bank and increased its capital to \$1,000,000. In 1906 the Industrial National Bank was absorbed and in 1913 the institution was consolidated with the Second National Bank of Pittsburgh. The corporate title was changed in 1918 to The First National Bank *at* Pittsburgh.

In 1921 the Peoples National Bank was purchased and the capital increased to \$5,000,000, later increased to \$6,000,000 in 1926 by the declaration of a 20% stock dividend.

The institution is one of the largest of its kind in the United States, and its scope extends beyond the local confines.

It operates a Commercial, Foreign Exchange, Steamship, Savings, Safe Deposit, Trust and Bond Department, and numbers among its clients some of the outstanding corporations in the Western Pennsylvania District.

Its Directorate is composed of representative business men, leaders in the foremost manufacturing and mercantile lines in the Pittsburgh District, under whose guidance the institution has become one of Pittsburgh's major financial units.

At present the authorized and outstanding capital stock of the institution is \$6,000,000, par value \$100. It has been paying dividends at the rate of 10% annually, with extra dividends of 2% per annum, payable quarterly. Its statement of June 30, 1930, showed:

Capital	6,000,000.00
Surplus	6,000,000.00
Undivided Profits and Reserves	2,987,010.96
Deposits	80,607,267.11
	102,078,666.67

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Carbon Steel Co., alloy and special analysis steel	3	Jan. 1920
Carnegie, Andrew, philanthropist	2	Sept. 1919
Carnegie Dept. of the Museum.	14	Apr. 1928
Carnegie Dept. of Fine Arts	14	Apr. 1928
Carnegie Institute	14	Apr. 1928
Carnegie Institute of Technology	15	Apr. 1928
Carnegie Music Hall	14	Apr. 1928
Carnegie Steel Co., iron and steel.	5	Sept. 1919
Castalia Portland Cement Co., cement	8	Dec. 1921
Children's Hospital of Pittsburgh	16	Dec. 1928
Citizen's General Hospital, New Kensington, Pa	16	Dec. 1928

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12	Dec. 1925
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3	Jan. 1920
16	Dec. 1928
	Jan. 1920
3	Jan. 1920
12	Dec. 1925
5	Dec. 1920
	12 3 3 16 3 3 12

D

Damascus Bronze Co., bronze and babbit metals	13	Apr. 1927
Darlington Brick and Mining Co., face brick	9	Dec. 1922
Department Stores	17	Sept. 1930
Dixmont Hospital, Dixmont, Pa.	16	Dec. 1928
Duffs-Iron City College, commercial college	15	Apr. 1928
Dunlevy-Franklin Co., hams and bacon	12	Apr. 1925
Duquesne University	14	Apr. 1928

Е

Edgewater Steel Co., steel tires, forgings, ingots	3	Jan. 1920
Elizabeth Steele Magee Hospital.	16	Dec. 1928
Ellis School, girls' preparatory school	15	Apr. 1928
Entress Brick Co., brick	9	Dec. 1922
Eye and Ear Hospital.	16	Dec. 1928

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Firth-Sterling Steel Co., tool and die steel	3	Jan. 1920
C. L. Flaccus Glass Co., bottles and jars.	5	Dec. 1920
Flannery, Joseph M., radium manufacturer.	7	Aug. 1921
Flannery Bolt Co., flexible stay-bolts.	3	Jan. 1920
Fort Pitt Bedding Co., bedding materials	13	Apr. 1927
Fort Pitt Malleable Iron Co., malleable railroad car		
castings	3	Jan. 1920
Fort Pitt Steel Casting Co., steel castings	3	Jan. 1920
Fourth Federal Reserve District	17	Sept. 1930
Freedom Oil Works Co., oil, gasoline.	11	Dec. 1924
Frick, Henry C., coke manufacturer	4	June 1920

G

Glass Golden-Anderson Valve Specialty Co., automatic control	3	Dec. 1920
valves	13	Apr. 1927
Greater Pittsburgh Churches	14	Apr. 1928
Gulf Oil Corp., oil, gasoline	11	Dec. 1924

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Harbison-Walker Refractories Co., fire brick	9	Dec. 1922
Hardie Bros. Co., candy	12	Dec. 1925
Harmony Creamery Co., dairy products	12	Dec. 1925
Heinz Co., The H. J., food products.	12	Dec. 1925
Heppenstall Forge and Knife Co., forged products and		
knives	13	Apr. 1927
Hermes-Groves Dairy Co., dairy products	12	Dec. 1925
Hillman Coal and Coke Co, coal and coke	4	June 1920
Homestead Hospital, Homestead, Pa	16	Dec. 1928
O. Hommel Co., The, bronze powder	13	Apr. 1927
Hubbard & Co. and Subsidiaries, spades, shovels and		
tools	3	Jan. 1920
I		

Industrial Home for Crippled Children	16	Dec. 1928
Italian Sausage and Provision Co., meat packing	12	Dec. 1925

J

K

Keystone Driller Co., contractors supplies	13	Apr. 1927
Kier Fire Brick Co., fire and silica brick	9	Dec. 1922
Kittanning Brick and Fire Clay Co., face building brick.	9	Dec. 1922

L

LaBelle Iron Works, iron and steel	3	Jan.	1920
Ladd Water Tube Boiler Co., steam boilers	13	Apr.	1927
Lanz Brick and Tile Co., The M., common and face brick	9	Dec.	1922
Lockhart Iron and Steel Co., steel bars	8	Jan.	1920
Lutz and Schramm Co., pickles and preserves	12	Dec.	1925

м

McAleenan Bros. Co. McAleenan Corp.	13	Apr. 1927
McCullough-Dalzell Crucible Co., crucible steel manu-		
facturing	3	Jan. 1920
McFeely Brick Co., brick	9	Dec. 1922
McKeesport Hospital, McKeesport, Pa	16	Dec. 1928
McKeesport Tin Plate Co., tin plate	3	Jan. 1920
McKinney Manufacturing Co., wrought iron hardware.	13	Apr. 1927
Macbeth-Evans Glass Co., illuminating and industrial		
glass	5	Dec. 1920
Manufacturers Light and Heat Co., oil and gasoline	10	Dec. 1923
Mellon Institute of Industrial Research	14	Apr. 1928

М	Vol.	Date
Mercy Hospital	16	Dec. 1928
Mesta Machine Co., heavy machinery	3	Jan. 1920
Miller Saw-Trimmer Co., printers' machinery	13	Apr. 1927
Miller Sons Co., The A. D., oil, gasoline, grease.		Dec. 1923
Monongahela Iron and Steel Co., melting bar	3	Jan. 1920
Montefiore Hospital	16	Dec. 1928
Morris and Bailey Steel Co., cold rolled strip.	3	Jan. 1920
N		
National Biscuit Co., baking	12	Dec. 1925
National Casket Co., burial supplies	13	Apr. 1927
National Fire Proofing Co., glazed and unglazed tile	9	Dec. 1922
National Lead and Oil Co., painter's white lead and oil.	13	Apr. 1927
National Tube Co., pig iron.	S	Jan. 1920
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Ohio Fuel Corp., gas	11	Dec. 1924
Ohio Fuel Oil Co., oil		Dec. 1924 Dec. 1924
	11	Dec. 1924 Dec. 1924
Ohio Fuel Supply Co., gas Ohio Valley General Hospital, McKees Rocks, Pa		Dec. 1924 Dec. 1928
Oil Well Supply Co., driller's and oil field supplies	16	
Oklahoma Natural Gas Co., natural gas	13 10	Apr. 1927 Dec. 1923
Oliver Iron and Steel Co., bolts, nuts, rivets.		Jan. 1923
Our Lady of Mercy Academy, school for girls	3	Apr. 1920
Our Lady of Mercy Academy, school for girls	15	Apr. 1928
Р		
Parish Schools of Diocese of Pittsburgh	14	Apr. 1928
Park Institute, business school	15	Apr. 1928
Passavant Hospital	16	Dec. 1928
Pasteur Institute	16	Dec. 1928
Pennsylvania College for Women	14	Apr. 1928
Pennsylvania Lubricating Co., oil and grease	11	Dec. 1924
Penna. Salt Mfg. Co., salt	13	Apr. 1927
Petroleum and Natural Gas		
Philadelphia Co., public utilities, gas & electricity	10	Dec. 1923
Phoenix Glass Co., illuminating glassware.	5	Dec. 1920
Pittsburgh, introductory bulletin.	1	Aug. 1919
Pittsburgh Academy, preparatory & business college	15	Apr. 1928
Pittsburgh's Capital Investment	17	Sept. 1930
Pittsburgh City Homes and Hospitals	16	Dec. 1928
Pittsburgh Clay Pot Co., glass melting pots	9	Dec. 1922
Pittsburgh Clearing House	17	Sept. 1930
Pittsburgh Coal Co., gas, coking, steam coal	4	June 1920
Pittsburgh Cold Rolled Steel Co., cold rolled strip steel.	3	Jan. 1920
Pittsburgh Gear and Machine Co., gears and chain drives	13	Apr. 1927
Pittsburgh Homoeopathic Hospital	16	Dec. 1928
Pittshurgh Hospital	16	Dec. 1928
Pittsburgh Iron and Steel Foundries Co., alloy steel	3	Jan. 1920

Pittsburgh Lamp, Brass and Glass Co., lamps, signal		
lamps and glassware	5	Dec. 1920
Pittsburgh Malleable Iron Co., malleable castings	3	Jan. 1920
Pittsburgh Municipal Hospital	16	Dec. 1928
Pittsburgh Musical Institute, Inc.	15	Apr. 1928
Pittsburgh Oil and Gas Co., oil, gas and gasoline	10	Dec. 1923
Pittsburgh Plate Glass Co., plate glass	5	Dec. 1920
Pittsburgh Provision and Packing Co., meats	12	Dec. 1925
Pittsburgh Rolls Corp., rolled steel	3	Jan. 1920
Pittsburgh Skin and Cancer Foundation	16_	Dec. 1928
Pittsburgh Stock Exchange	17	Sept. 1930
Pittsburgh Steel Co., wire, nails and fencing	3	Jan. 1920
Pittsburgh Testing Laboratory, testing and analysis	13	Apr. 1927
Pittsburgh Theological Seminary, United Presbyterian		
Seminary	14	Apr. 1928
Pittsburgh Transformer Co., electric transformers	13	Apr. 1927
Pittsburgh Tuberculosis Hospital.	16	Dec. 1928
Presbyterian Hospital	16	Dec. 1928
Presbyterian Seminary	14	Apr. 1928
Pressed Steel Car Co., freight cars	3	Jan. 1920
Protestant Home for Incurables.	16	Dec. 1928
Public Schools of Pittsburgh	14	Apr. 1928
Pure Oil Co., oil and gasoline	11	Dec. 1924

R

Radium	7	Aug. 1921
Republic Iron and Steel Co., iron, steel and bolts.	3	Jan. 1920
Reymer and Brothers, Inc., candy	12	Dec. 1925
Rieck-McJunkin Dairy Co., dairy products	12	Dec. 1925
Roselia Foundling Asylum and Maternity Hospital	16	Dec. 1928

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Suburban General Hospital, Bellevue, Pa.	16	Dec. 1928
Superior Steel Corp., hot and cold rolled strip steel	8	Jan. 1920
Swift and Co., meat packing	12	Dec. 1925
T		
Thurston Preparatory School, preparatory school for		
girls.	15	Apr. 1928
Transcontinental Oil Co., oil	11	Dec. 1924
Tuberculosis League of Pittsburgh	16	Dec. 1928
U		
Union Drawn Steel Co., steel.	8	Jan. 1920
Union Natural Gas Corp., gas	11	Dec. 1924
Union Steel Casting Co., special steel casting.	8	Jan. 1920
Union Switch and Signal Co., switches, signals, lamps.	6	Mar. 1921
United Engineering and Foundry Co., iron and steel		
manufacturing equipment.	13	Apr. 1927
United Presbyterian Seminary	14	Apr. 1928
United States Bureau of Mines, experimental station.	14	Apr. 1928
United States Glass Co., pressed blown glassware	5	Dec. 1920
United States Marine Hospital	16	Dec. 1928
United States Steel Subsidiaries, steel, coal and coke	4	June 1920
United States Veterans Hospital, Aspinwall, Pa.	16	Dec. 1928
Universal Portland Cement Co., cement	8	Dec. 1921
University of Pittsburgh	14	Apr. 1928
v		
Vitro Manufacturing Co., enamels	13	Apr. 1927
w		
Ward Baking Corp., baked goods	12	Dec. 1925
Washington Tin Plate Co., tin plate	3	Jan. 1920
Waverly Oil Works Co., oil and gasoline	10	Dec. 1923
Weaver, Costello and Co., Inc., candy	12	Dec. 1925
Weirton Steel Co., iron and steel.	3	Jan. 1920
West Penn Steel Co., open hearth sheet bars	3	Jan. 1920
Western Pennsylvania Hospital	16	Dec. 1928
Western Theological Seminary, Presbyterian seminary.	17	Apr. 1928
Western Pennsylvania School for the Blind	14	Apr. 1928
Westinghouse, George, inventor.	6	Mar. 1921
Westinghouse Air Brake Co., air brakes, compressors	6	Mar. 1921
Westinghouse Union Battery Co., batteries	6	Mar. 1921
Winchester School, girl's school.	15	Apr. 1928
Witherow Steel Co., concrete bars	3	Jan. 1920
Wolfe Brush Co., paint and industrial brushes	13	Apr. 1927
Woodings Forge and Tool Co., railway tools	13	Apr. 1927
Z		
Zoar Home and Maternity Hospital	16	Dec. 1928

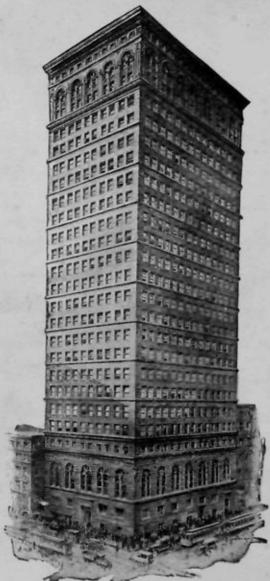
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