

USE AND GRAD WITH OF H T A T A I S T I C A L I N S T R U M E N T S

By CHARLES W. HOWARD.

In going over the list of those who showed their faith in Chattanooga by establishing industries I am impressed with the fact that I have forgotten the men who really gave us the industrial importance we enjoy today. So in this article I am going to ease my conscience by naming the owners, when possible, of early Chattanooga industries.

Two rail lines, the Western & Atlantic and the Nashville, Chattanooga & St. Louis, were completed into Chattanooga by 1850. The Memphis & Charleston, now the Memphis Division of the Southern Railway, Stevenson, Ala., to Memphis; the Southern Railway to Knoxville, then known as the East Tennessee, Virginia & Georgia; the Selma, Rome & Dalton, now the Georgia Division of the Southern; the Alabama & Great Southern (Wills Valley Line), now the New Orleans Division of the Southern; the Cincinnati Southern Railway, Chattanooga to Cincinnati, now controlled by the Southern; the Chattanooga, Rome & Columbus, now the Central of Georgia; the Chattanooga Southern, now the Tennessee, Alabama & Georgia, and the Chattanooga Belt Line, promoted, built and first operated by the late C. E. James, all came in due time, and with them a rather complete recognition that Chattanooga was the center of an enormous tonnage of iron ore and coking coal, important factors in the production of pig iron and kindred products when linked up with ample transportation.

Chattanooga could now build a duplicate of New York's finest building, and, outside of the hardware, would not need to go beyond our immediate manufacturing district for building material, except for marble, and even on that would have a freight haul of less than a hundred miles. Our production of high-pressure water pipe has been continuous since 1877, with scarcely a break in daily production. We are large producers of cast-iron soil pipe, possibly the second largest in the country, and no city of the United States has a larger output of hosiery than Chattanooga.

Start of Roane Iron Company.
The Roane Iron Company was organized in 1867 with a capital of \$100,000. The incorporators were W. O. Rockwood, A. R. Forsythe, J. T. Wilder and D. E. Rees, all of Indiana; John N. Lloyd of Cincinnati and H. S. Chamberlain.

Mr. Rockwood, the first President, was succeeded in 1871 by W. P. Athburn. He retired in 1880 and was succeeded by Captain H. S. Oberlin, who served until his death in 1921. He was succeeded by W. P. Montague, who served until his death in 1921. He was succeeded by E. O. Wells, who retired on account of ill health in 1925; and the second generation of Chamberlains (Morrow) came in as head of the first institution south of the Ohio River successfully to produce pig iron with coke. The company has been in existence and in continuous operation for sixty-one years, unquestionably holding the record over all other blast furnaces operating strictly on pig iron.

In 1870 the Roane Iron Company acquired the Government-owned rolling mill in Chattanooga. Between that time and 1882 a goodly portion of the product of the Rockwood furnace was shipped by river, Rockwood Landing to Chattanooga, and used in the Roane Iron Company's rolling mill, located about where the Dickey Clay Products Company is now operating.

With the completion of the Cincinnati Southern Railroad this pig iron reached the rolling mill by rail transportation on a freight charge, as the writer recalls, of 45 cents per ton. This mill rolled iron rails. With the advent of the Bessemer steel rail the company was forced to close down. The open-hearth method of converting Southern pig for the manufacture of steel had not then been discovered. Had this method of steel-making been five or six years earlier, or had the Roane company been able to hold out that length of time, Chattanooga would unquestionably have been the first to produce steel rails in commercial quantity.

In looking over the Board of Directors of the Roane Iron Company one is impressed with the character of the men:

W. P. Rathburn, Dudley Baldwin, George Wheeler, W. O. Rockwood, David M. Key, A. R. Forsythe, E. M. Winchester, John L. Divina, David E. Rees, S. H. Bennett, J. W. Adams.

The Wason Car Works, established in 1873, was bought in by H. Clay Evans in the '80s. After years of successful operation it was sold to the Lucy Manufacturing Corporation and is now a part of that organization.

Rathburn and the Montagues.
In looking over the names of those active in the early struggles of Chattanooga for recognition as a producing point, none appears more frequently than those of W. P. Rathburn and D. P. and T. G. Montague. Messrs Rathburn and T. G. Montague were bankers. They backed industrial enterprises when the management was satisfactory and the product could be produced out of near-by raw material. There were not many of the going institutions of the '70s and '80s that could not be traced to the advice and financial help of these two pioneer bankers of Chattanooga.

D. P. Montague, a brother of T. G., was a manufacturer, whose enterprises usually prospered. He was identified with a number of productive organizations. Not only Chattanooga, but the entire South as well, is indebted to him for establishing the fact that our Southern clay and shales could be worked up into desirable products.

He organized the Fire Brick Company in 1871, with a daily output of 5,000 brick. Some years later he added to the product vitrified sewer pipe and became one of the most successful producers of this commodity in the country. Under his management the plant became the largest of its kind, and for many years dominated the Southern and Western fields.

Mr. Montague finally sold his plant to W. S. Dickey of Kansas City, who still operates it, as well as its sister plant across the line in Georgia. His product was proof that the Chattanooga shale and clay were ideal raw material for the production not only of vitrified sewer pipe, but also of high-grade face-building brick, roofing tile and wainscoting. As a result we have the Daisy Tennessee plants, shipping their commodity to almost every State in the Union, while Chattanooga brick are given preference over almost any similar product in the country.

Etna Foundry Organized.
The Etna Foundry Company was organized by G. W. Wheland and commenced business in Chattanooga in 1874. This is now the Wheland Company, which operates its Lukey plant, producing oil well machinery. The combined plants cover what is equal to three city blocks, while the old Etna foundry occupied not more than 3,000 square feet.

With one exception, G. W. Wheland is the only manufacturer of the '70s spared to see Chattanooga grow in productive importance. He still takes an active part in the management of the company's great plants. His two sons, Z. W. and E. F. Wheland, are in charge of the active management.

In 1873 T. A. Snow and William Ashley, former Nashville men, came to Chattanooga and established the Ware Cornice and Sheet Metal Company. This business is now known as the Tom Snow Heating and Roofing Company.

T. A. Snow succeeded to the business a few years after it came to Chattanooga. The T. A. Snow Company was noted for the excellence of its work. In the early '80s it commenced the manufacture of the first range with hot-water back produced in the South. It was known as the Southern Queen, and covered everything from the family size to hotel requirements. At the beginning of this enterprise the castings were jobbed to different foundries in the city. Later a foundry plant was established at East Chattanooga. It was operated as a range-casting plant there for some years, and now, after being greatly enlarged, is occupied by the Chattanooga Implement and Manufacturing Company.

In 1874 Captains H. F. Temple and J. F. Shipp organized the Southern Pump and Pipe Company. Captain Temple had served in the Federal



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Army and Captain Shipp in the Confederate. Their products were wooden pumps and pipe. The business prospered until the flood of 1875 swept away their plant, which was then located on the river bank on the west side of Cameron Hill.

After the flood they gathered up what little that was left, secured temporary quarters in the Wason Car Plant and carried on operations there until their new plant was completed on Chestnut Street. The advent of the iron pump and wrought pipe forced them to abandon the wooden line. They then commenced the manufacture of furniture under the name of the Chattanooga Furniture Company. Captain Shipp retired and Captain Temple and his two sons, Morris E. and W. T., carried on the business, gradually working from medium-priced to highly furnished dining room furniture.

Enterprise Founded in 1865.
In 1865 the firm of Loomis, Hart & Stewart was organized as a sawmill concern. The firm name was later changed to that of the Loomis & Hart Furniture Company. John A. Hart, a former Federal soldier, served a term as Mayor of Chattanooga. A. J. Gahagan became associated with this company and was active in its interest for many years. A few years ago the name of the concern was changed to that of the Tennessee Furniture Corporation.

In 1874 A. Fasnacht located his carriage works in Chattanooga, and for fifty-four years no change has been made other than the addition to the name of the concern. A Fasnacht & Sons. So far as the records of this company, the Roane Iron Company, the Robert Scholze Tannery, the Chattanooga Saw Works and the J. W. Wells Brick Company are the only ones to retain the original names from incorporation to the present time.

The Chattanooga Iron Company, organized in 1874, later became known as the Chattanooga Iron and Coal Company. It went out of blast about 1915 and never resumed operation.

In 1876 David Giles and C. B. Bester, former residents of Nashville, came to Chattanooga and organized the David Giles Company, manufacturing high-pressure water pipe, the first plant of its kind south of the Ohio River. They were successful. The name was changed in 1882 to that of the Chattanooga

Foundry and Pipe Works. The concern is now known as the United States Cast Iron Pipe and Foundry Company, and is managed by J. T. Giles, son of David Giles.

In speaking of this enterprise, J. T. Giles says: "My father started in the foundry business in Nashville in 1866 with a very small capital. He commenced building in Chattanooga early in 1877. The plant was completed the same year. It carried only one pit and that took up nearly half of the building, the rest of the space being used for general job work. The pipe business began to grow and another pit was added, which extended the building toward Whiteside Street. In 1882, the business having grown, George E. Downing, M. Liewellyn and Eugene Thomason became connected with the organization."

This plant grew with the needs of the country. In 1890 it commenced the production of large-sized pipe. This unit was located at Bridgeport. The business was operated successfully, but in 1909, after a larger plant was built near Cravens, the Bridgeport plant was moved from Bridgeport to Chattanooga. All this time the plant was under the management of David Giles. At his death his son, J. T. Giles, succeeded him as resident manager.

In 1876 C. C. Lewis commenced the manufacture of saws. He was succeeded by E. W. Borcharding in 1881. The original name has been continued and the concern is being operated today as the Chattanooga Saw Works, with E. W. Borcharding as manager.

Scholze Tannery Established.
In 1873 Robert Scholze opened his first shop. It was known as Robert Scholze's Tannery. He operated this plant successfully until the time of his death. The plant has grown from a small affair to one employing several hundred men. It is still in operation under the same name and is managed by Robert Scholze's son, George W. Scholze.

In 1876 J. B. Hoyt's tannery was located in Chattanooga. Later it was known as the Fairweather & LaDew Tannery. The concern is now known as the Union Tanning Company.

In 1868 J. T. Cahill started a little foundry, known as the Chickasaw Iron Works, about where the Tivoli Theatre is now. Its only products were sashweights, skillets and pots and rough casting job work. Cahill's business prospered. He bought

the lot on what is now the corner of Chestnut and Thirteenth Streets, where he erected a one-story frame building and built up a very successful business.

His health becoming impaired, he decided to take in additional management and capital. J. J. Mahoney had been with Cahill, and the two decided to organize a stock company to be known as the Cahill Company. The capital was fixed at \$50,000. F. H. Caldwell came into the company at this time. Only half of the capital was paid in, and no other actual money was ever put into the business, all improvements and expansion coming out of the profits. The officers of the company were: J. T. Cahill, President; Frank Caldwell, Secretary and Treasurer, and J. J. Mahoney, Superintendent.

It Is a Far Cry From the Easy Flatboat Days to the Beehive Activity of the Present

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At that time they produced nothing but architectural iron work, sidewalk grating and marbled iron mantels. As a side line, they were the first manufacturers of Ross Meehan brakeshoes. A year or so later, after taking on the brakeshoes, James Meehan, General R. W. Healey and Edward Herron, all of Cincinnati, organized the Ross Meehan Foundries Company. Mr. Herron was the father of Ed. Herron, our former Commissioner of Fire and Police. This was the great plant of the Crane Company of Chattanooga started, the Crane Company later purchasing outright the Cahill Foundry Company.

It is well to remember, according to Mr. Caldwell, that this business was started with \$25,000. Crane's later investment and the concern's Chestnut Street property, which they retain, will, together, run into six or seven million dollars.

Production of Artificial Ice.
In 1875 J. M. Beath commenced here the production of artificial ice. His plant was on the ground now occupied by Sterchi Brothers' Broad Street store, and its capacity was four tons a day. If not actually the first, it was at any rate among the first ice plants in the South. After numerous enlargements and alterations the plant finally formed the nucleus of what is now the Atlantic Ice and Coal Company.

In 1872 the Soddy Coal Company commenced the operation of its mines at Soddy, Tenn., shipping its coal to Chattanooga by the large steam Tennessee Horse Power Company and built a 30,000 horsepower project at Parkersville on the Ocoee River, sixteen miles east of Cleveland. With a view to following the advent of abundant electricity, the company completed a second Ocoee River plant in October, 1913.

Although the Parkersville development was the first to be placed in operation, it was not the pioneer power project in the State, since work was begun in 1905 by the Chattanooga and Tennessee River Power Company on a 37,500 horsepower project at Hales Bar, thirty-three miles by river below the city. J. C. Guild, Chattanooga engineer, conceived the idea of a private corporation furnishing the money and securing power rights from the Government in return for improvements to navigation. C. E. James became interested in the work, Congress passed the necessary enabling act and financial backing was secured from Anthony N. Brady of New York City. Power from this plant was delivered to Chattanooga in November, 1913.

Additional Plants Erected.
The Tennessee Power Company in 1916 completed a fourth hydroelectric plant on the Caney Fork River in Middle Tennessee. Auxiliary steam plants were erected at Parkersville in 1916 and at Hales Bar in 1924, and the Tennessee Electric Power Company, which was formed by consolidation of the various local utilities in June, 1922, now has a total of 294,912 horsepower available in resources. This is almost equally divided between hydro and steam capacities, assuring an ample power supply under all conditions, the figures being 144,812 horsepower hydroelectric and 150,100 horsepower steam.

Current is furnished to Nashville, Knoxville, Chattanooga and more than one hundred other communities in the State. In 1927 there was a total of 29,773 electric meters in use in Chattanooga, and the total requirements of the city for lighting, power and street railway purposes amounted to 183,956,354 kilowatt-hours, which figure is unequalled by any city of similar size in this part of the country.

The evolution of Chattanooga's street railway system is also worthy of consideration. In 1880 the system was covered in a line from what is now Main Street to Water Street on Market, a distance of about one and a half miles. The property consisted of four cars and eight mules. The rail used on the line was a combination of sixteen pounds to thirty pounds per yard.

In 1888 this line was electrified, and through succeeding years the service was extended by various companies to the different sections of the city, all properties being consolidated in 1905. Today the Tennessee Electric Power Company has seventy-six miles of modern-equipped roadbed, using 100 to 122 pound steel rail, crossties ties and thermite-welded joints. A goodly portion of the present roadbed is laid in concrete. The surface line and the incline to the top of Lookout Mountain are also the property of this company, and service is also maintained over four motor coach bus lines to the city's rapidly expanding suburban districts. In 1927 total passengers carried by street cars and buses amounted to 16,588,649.

Tennessee's Natural Resources.
Few States are so blessed as Tennessee in diversity and quantity of natural resources. According to the United States Bureau of Mines, the State in 1924 produced \$37,066,000 from the sale of raw, semi-finished or finished products derived from barytes, bauxite, cement material, clay, coal, coke, copper, gold, iron ore, pig iron, lead, lime, manganese ore, phosphate rock, silver, marble, tripoli and zinc. Nine million dollars of this amount was for coal and \$431,682 for iron ore.

Of the total value given by the Bureau of Mines, Hamilton and adjoining counties have produced fully 50 per cent.

In addition, we have within a short freight haul of Chattanooga, high-grade kaolin, for the manufacture of pottery; Fuller's earth and silax. This latter material is being produced in Bradley County, just across the line from Hamilton, and is being shipped

in quantities to Eastern and western markets. These natural resources in locality are much like the Chatterbox—only valuable as we are. Our clays are being used extensively with the exception of kaolin, which is being used in a big way for coal ore deposits, of which we have large quantities. Disinterested State Government geologists who made extensive research into what we have in the immediate vicinity of Chattanooga, commercially value more than four billion tons of ore. Cut it down to, say, one carrying 34 per cent. of iron ore have: Red iron ore, 1,000,000 tons; brown iron ore, 225,000 tons; and coal, 25,400,000,000 tons. If these properties were located any one of a half dozen North Western States, they would work for the people who live on the properties rich on a royalty of 5 cents per ton, who owners of iron ore properties innesota are being paid 50 cent per ton for ore that carries a transition charge from the mine furnace in the Ohio Valley of per long ton.

If the Chamber of Commerce Community Advertising Association will close shop for one year devote the running cost of the institutions to an exhaustive search these facts can be proved.

Coal, Iron Ore and Limestone.
I find in a souvenir volume by Thomas E. Murray in May the occasion being the meeting of the Society of Mechanical Engineers statement on minerals. It is worth repeating: "The coal, iron ore and limestone of the Southern mineral region close together, intermixed at times, in an area of approximately 24,000 square miles; square miles of this area is limestone reach of Chattanooga. "In the region penetrated by Tennessee railroads and the Tennessee River, there is a supply of greater than Great Britain before her measures were touched a miner's pick, and more iron limestone and marble than was in the United Kingdom, and more than in any other country. There are now mined in this area that is tributary to the Chattanooga annually about 2,100,000 tons of coal and 600,000 tons of iron ore. In an equal to one-third of this Georgia produces 65,000,000 tons annually; larger, produced 100,000,000 tons bituminous and anthracite last year. "The coal is bituminous, of average grade, chiefly of good quality, of it excellent. High quality gas coal are in great abundance. In Sevier and other counties, 100 m or so north of Chattanooga, a vein to the Cincinnati South rail, crossties ties and thermite-welded joints. A goodly portion of the present roadbed is laid in concrete. The surface line and the incline to the top of Lookout Mountain are also the property of this company, and service is also maintained over four motor coach bus lines to the city's rapidly expanding suburban districts. In 1927 total passengers carried by street cars and buses amounted to 16,588,649.

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I find in a souvenir volume by Thomas E. Murray in May the occasion being the meeting of the Society of Mechanical Engineers statement on minerals. It is worth repeating: "The coal, iron ore and limestone of the Southern mineral region close together, intermixed at times, in an area of approximately 24,000 square miles; square miles of this area is limestone reach of Chattanooga. "In the region penetrated by Tennessee railroads and the Tennessee River, there is a supply of greater than Great Britain before her measures were touched a miner's pick, and more iron limestone and marble than was in the United Kingdom, and more than in any other country. There are now mined in this area that is tributary to the Chattanooga annually about 2,100,000 tons of coal and 600,000 tons of iron ore. In an equal to one-third of this Georgia produces 65,000,000 tons annually; larger, produced 100,000,000 tons bituminous and anthracite last year. "The coal is bituminous, of average grade, chiefly of good quality, of it excellent. High quality gas coal are in great abundance. In Sevier and other counties, 100 m or so north of Chattanooga, a vein to the Cincinnati South rail, crossties ties and thermite-welded joints. A goodly portion of the present roadbed is laid in concrete. The surface line and the incline to the top of Lookout Mountain are also the property of this company, and service is also maintained over four motor coach bus lines to the city's rapidly expanding suburban districts. In 1927 total passengers carried by street cars and buses amounted to 16,588,649.

Tennessee's Natural Resources.
Few States are so blessed as Tennessee in diversity and quantity of natural resources. According to the United States Bureau of Mines, the State in 1924 produced \$37,066,000 from the sale of raw, semi-finished or finished products derived from barytes, bauxite, cement material, clay, coal, coke, copper, gold, iron ore, pig iron, lead, lime, manganese ore, phosphate rock, silver, marble, tripoli and zinc. Nine million dollars of this amount was for coal and \$431,682 for iron ore.

Of the total value given by the Bureau of Mines, Hamilton and adjoining counties have produced fully 50 per cent.

In addition, we have within a short freight haul of Chattanooga, high-grade kaolin, for the manufacture of pottery; Fuller's earth and silax. This latter material is being produced in Bradley County, just across the line from Hamilton, and is being shipped

in quantities to Eastern and western markets. These natural resources in locality are much like the Chatterbox—only valuable as we are. Our clays are being used extensively with the exception of kaolin, which is being used in a big way for coal ore deposits, of which we have large quantities. Disinterested State Government geologists who made extensive research into what we have in the immediate vicinity of Chattanooga, commercially value more than four billion tons of ore. Cut it down to, say, one carrying 34 per cent. of iron ore have: Red iron ore, 1,000,000 tons; brown iron ore, 225,000 tons; and coal, 25,400,000,000 tons. If these properties were located any one of a half dozen North Western States, they would work for the people who live on the properties rich on a royalty of 5 cents per ton, who owners of iron ore properties innesota are being paid 50 cent per ton for ore that carries a transition charge from the mine furnace in the Ohio Valley of per long ton.

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