The Rambler Writes of Old Avenue Shops and Hotels

IN carrying along the story of Pennsylvania avenue from the incorporation of Washington city in 1801 up to about 1820 the Rambler in last Sunday's narrative mentioned a number of names and places which must have been familiar to the older generation of Washingtonians. That was not because the memory of any Washington man of today reaches as far back as 1820, but because many of the men who were identified with the Avenue as early as 1820 lived for a good many years after that date.

Reference to the snuff, tobacco and fancy goods store at the northwest corner of the Avenue and 12th street, which was kept by P. L. Duport and Lewis Johnson, certainly recalled memories of a man who became rich and distinguished, was identified with a large number of local enterprises and who lived until August 22, 1872. That was Lewis Johnson. He was born in St. Mary's county, Md., in 1790, and came to Washington in 1810, obtaining a position as clerk in the old Union Hotel, in Georgetown. There lies before the Rambler an account of the career of Mr. Johnson published by The Star the day after his death, and the following is extracted from that account:

Some time after securing a situation as clerk in the Union Hotel he obtained a position with Garrett, McKenney & Woodward, Georgetown merchants, and in 1822 he established himself in business as the proprietor of a variety store at the corner of Pennsylvania avenue and 12th street. About 1830 he moved his store to a house on the north side of the Avenue near the corner of 11th street. He retired from business in 1839, but a few years later, becoming weary of an inactive life, he entered into partnership with Nicholas Callan in the agency business and in 1846 Mr. Johnson, with Stanislaus Murray, Edward Simms and John Purdy, established the Washington Savings Bank. In 1858 that house was merged with the firm of Lewis Johnson & Co., the company being David Walker and Lewis Johnson Davis. Lewis Johnson was a soldier in the war of 1812, a member of the Washington city councils for many years, a director in the Chesapeake and Ohio Canal Company, for thirty years a director in the Bank of the Metropolis, one of the original directors of the Fireman's Insurance Company of Washington and one of the early members of the Oldest Inhabitants' Association.

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Mr. Johnson's first wife was the daughter of P. L. Duport, with whom he was interested in the quaint little fancy and tobacco store at the northwest corner of the Avenue and 12th street. A year or two ago the Rambler wrote of George Mattingly, one of the early steamboat and realty men of the District, and whose last surviving child, Mrs. Cordelia Marsh, passed away last week. In gathering facts for that story the Rambler visited the Mattingly family lot in Mount Olivet cemetery, and noted that close to it was the Lewis Johnson lot. In that lot the Rambler copied the following inscriptions:

Sacred to the Memory of Anna, the Devoted and Beloved Wife of Lewis Johnson, who departed this life on the 17th of January, 1858, aged about 70 years.

Sacred to the Memory of Peter Lanarin Duport, a native of Paris, France, who departed this life April 18, 1841, in the 70th year of his age, and Charlotte McNeill, his wife, daughter of Gordon McNeill, Esq., born in Dublin, Ireland, who died Dec. 5, 1837, aged 73 years. This stone is erected by their affectionate and only child, Anna Johnson, who emigrated with them to America in 1790.

Sacred to the Memory of Susan H. Johnson, wife of Lewis Johnson, who departed this life May 5, 1861, aged 65 years.

In the Johnson lot the Rambler also noted the tombs of William F. Leach, who died March 10, 1900; Mary E. Leach, who died in 1915, aged eighty-two years, and Charles Strahan.

Another of the Avenue notables mentioned by the Rambler last week was Roger C. Weightman, who, in 1820 and for a number of years preceding, had his home at the northeast corner of Pennsylvania avenue and 6th street, the site of the old house now being covered by the National Hotel. Mr. Weightman erected on the Avenue front of his land a row of small buildings which were used as shops. The National Hotel covers the site of that row. Some time ago, in The Star file of 1872, the Rambler came upon the following under the date of July 1:

Gen. R. C. Weightman, one of our oldest and most estimable citizens, is lying at the point of death at his residence on 20th street between G and H. His attending physician, Dr. Maxwell of the Navy, believes that he cannot long survive.

Gen. Weightman was born in Alexandria in January, 1785, and is therefore in his eighty-eighth year. He came to Washington in 1801 and obtained employment on a local paper as a printer. Some years later he was elected public printer, and accumulated some money and erected a row of buildings on what is now the site of the National Hotel. He was elected mayor of Washington in 1830 and was re-elected. He became cashier of the Bank of Washington, and in 1851 was appointed chief clerk of the patent office by Commissioner Ewbank. Under a change of administration he was reduced to a second-class clerk in the patent office and served in the library of that office. He was removed by Commissioner Fisher in 1870.

In 1861 he was commissioned brevet major general of the militia of the District of Columbia by President Lincoln, and reorganized the militia. He became poor through his generosity, and Alexander R. Shepherd, then vice president of the board of public works, gave him a position in that office, which he filled up to the time of his fatal sickness. He was in the battle of Bladensburg. He married the youngest daughter of Col. Samuel Hanson of Washington, who died in the 60s.

* * *

It was probably the Washington City Gazette on which Gen. Weightman obtained his first employment in Washington. That paper was published by William and Jonathan Elliot, and George Watterston was the editor. Later it was bought by Daniel Rapine, who was the first mayor of Washington under the charter of 1812, the charter under which the mayor was elected by the city council instead of being appointed by the President.

When Mr. Weightman became prominent in local politics he was in the book and stationery business, having bought the store of William Duane at the northwest corner of the Avenue and 6th street. Under the administration of Mayor Rapine Mr. Weightman appears in the common council with George Blagden, the president; William Worthington, Toppan Webster, William P. Gardiner, James Hewitt, Thomas H. Gilliss, Edmund Law, Elexius Middleton, Matthew Wright, John Dobbyn and John W. Brashears.

Under the first three of the four terms of Mayor James H. Blake—1813, 1814 and 1815—Mr. Weightman was president of the common council, having among his associates on the board of aldermen and in the council Alexander McCormick, James Hoban, William Waters, Peter Lenox, James Hewitt, William Emack, Joseph Cassin, John Davis of Abel, William Worthington, Richard S. Briscoe, John Graham, Charles Glover, Thomas H. Gilliss, Edmund Law, Elexius Middleton, Thomas Howard, Shadrach Davis, Thomas Halliday, George McCauley, Joseph Gales, jr.; Toppam Webster, George Way, William Knowles, James M. Varnum, William H. Lyles, Buller Cocke, John G. McDonald, James Thompson, Joseph Mecklin, Samuel Burch, James Young, Thomas Dunn and Israel Little. He was a member of the board of aldermen in 1820 and 1821 in the administration of Mayor Samuel N. Smallwood, and associated with him were aldermen and councilmen whose names are still familiar to Washington people, among them being William W. Seaton, William Prout, Nicholas L. Queen, Daniel Carroll of Duddington, Charles W. Goldsborough, Thomas Carbery, John Strother, Hanson Gassaway, Barton Milstead, Benjamin Burch, John P. Ingle, James H. Handy and George Blagden.

Mr. Weightman was elected mayor in 1824, 1825 and 1826, and among his aldermen and councilmen were Charles Glover, William M. Seaton, George Watterston, Peter Force, Grifith Coombe, Adam Lindsay, Peter Lenox, William Gunton, Matthew Hines, Edward Simms, James Larned, John Coyle, jr.; William H. Gunnell, Jonathan Prout, James Carbery and others whose names are not quite so familiar to present-day Washingtonians.

The Rambler, as he constructed a list of the business houses and the residents along the Avenue from the Capitol to the Treasury in 1820, has constructed a list of the business houses and offices of professional men on the Avenue in 1840-1845, and most of these business places and offices continued on the Avenue until the civil war, and some of the names survive to this day.

* * *

Among the business houses were those of A. Green, auctioneer, in Concert Hall building, north side between 6th and 7th streets; John E. Morse, billard parlor, one door west of Fuller's Hotel, and Walter Stewart, billiard hall, a few doors west of Fuller's Hotel, north side between 14th and 15th; Will Adams, newspapers and periodicals, Elliot's building, north side between 3d and 4½ streets; Garrett Anderson, bookseller, north side between 11th and 12th; William F. Bayly, bookseller, north side between 11th and 12th; G. Brooke & Co., books, Avenue and 15th; Thomas Berry, marble mouments, near 13th, adjoining the National Theater; T. Purcell, china and glass, opposite Brown's Hotel; William B. Todd, hatter, Concert Hall building, six doors west of Brown's; DeCamp & Tretler, bookbinders, Avenue and 11th; Edward Hall, grocer, north side between 7th and 8th; National daguerrian gallery, Concert Hall Building; E. Wheeler, hardware, south side, near the corner of 7th; Mann's cash store, north side, two doors west of 4½; Newton & Lewis bookbinders, over Templeman's book store, one door east of the Odeon; Haslup & Weeden, coachmakers, Avenue and 13th, south side; John T. Downs, candy and cigars, north side between 9th and 10th; Francis Y. Naylor, stove manufactury, south side near 3d; Douglass Moore, paperhanger and upholsterer, north side between 9th and 10th; Chauncey Warriner, watchmaker, north side east of Gadsby's and the St. Charles Hotels; Campbell & Coyle, hardware, opposite Brown's; L. S. Beck and J. H. B. Beck, housefurnishings, south side between 9th and 10th; Adams & Co.'s Express, north side between 3rd and 4½; M. Dulany, drugs and paints, Avenue and 4½; P. H. King's Congress Hotel, formerly Jewett & King's, opposite Coleman's Hotel; P. W. Fuller, druggist, Avenue and 12th; John Byrne, bootmaker, adjoining the National Theater; John P. Pepper, marble yard, south side, east of Coleman's Hotel; Benjamin Homans, auctioneer and commission merchant, north side, between 10th and 11th.

Then there were S. Masi's jewelry and fancy store, east of the National Hotel; Andrew R. Jenkins, Metropolis House, at the Avenue and Jackson alley; Brown's Indian Queen Hotel (the Metropolitan); A. Fuller & Co.'s City Hotel, at the Avenue and 14th, on the Willard corner; Miss Morley's millinery store, on the north side, near 9th; M. H. Stevens and Emmons, successors to Fish & Co., hat and fancy goods, under Brown's; D. A. Hare, seal engraver, south side, near the corner of 12th; William McL. Cripps, chair and sofa factory, 11th street, five doors north of the Avenue, the site now covered by The Star building; Joseph R. Thompson, tailor, under Coleman's Hotel; Henry Kuhl, candy store, between 12th and 13th; Young & Steer, tailors, one door east of Brown's; Woodward & King's American hardware house, between 10th and 11th; W. B. Lewis, "clothing and shirt depot," north side, between 11th and 12th; John Reese, clock and watchmaker, between 12th and 13th; John W. Baden, successor to R. M. Waring, hardware, south side, three doors west of 6th; Mme. Delarue, millinery, between 12th and 18th; James Davis, tavern, corner of the Avenue and 6th; Richard I. Davis, music store, south side, between 10th and 11th; James H. Davis, printing office, north side, between 3rd and 4½.

Washingtonians with good memories will recall Hope Dawson's coffee house, on the north side between 14th and 15th; Mark Dubant's barber shop, north side between 12th and 13th; Francis A. Dunn's tobacco store, north side between 2d and 3d; W. Egan & Son's dry goods store, south side between 6th and 7th; Mrs. Elmer's tobacco shop, north side between 14th and 15th; Englehard's drug store, south side between 9th and 10th; Robert Farnham's stationery store, northeast corner of the Avenue and 11th; William Fischer's stationery store, north side between 11th and 12th; Fitzgerald's Tavern, north side between 3d and 4½; James Galt, clock and watchmaker, north side between 9th and 10th; J. W. Gaither's jewelry store, south side between 12th and 13th; Z. D. Gilman's apothecary shop, north side between 6th and 7th; Thomas B. Griffin's shoe store, north side between 9th and 10th; Mrs. Sarah Hamilton's millinery shop, south side between 9th and 10th; Andrew Hancock's coffee house, south side between 12th and 13th; T. R. Hampton & Son's bookshop, north side near 3d; Andrew Hoover, shoemaker, south side between 6th and 7th; B. L. Jackson Bros., grocers, south side between 6th and 7th; Robert Keyworth, jewelry, near 9th; Kinchy's candy shop, south side between 10th and 11th; F. C. Labbe, dancing teacher, south side near 15th; Joseph Lafontaine, confectioner, north side between 3d and 3d; James H. Lusby's shoe store, north side between 3d and 4½; Michael McDermott, coachmaker, south side, corner of 3d; James McGrath's Washington Coffee House, southwest corner of the Avenue and 9th; S. Masi's boarding house, southeast corner of the Avenue and 4½, and the Masi jewelry stores between 4½ and 6th and 9th and 10th; Middleton & Beall, grocers, south side near 6th; William M. Morrison's book store, north side between 6th and 7th, near the center of the block; Selby Parker, fancy store, north side between 9th and 10th; Richard Patton, mathematical instrument maker, south side between 10th and 11th; John Allen's dry goods store, north side near 10th; George Allen's dry goods store, north side between 11th and 12th; Samuel Bacon & Co., grocers, southeast corner of the Avenue and 7th; Baltimore and Ohio railroad depot, corner of the Avenue and 2d; Darius Claggett's dry goods store, corner of the Avenue and 9th, and Joseph Beardsley's candy store, the north side between 12th and 13th.

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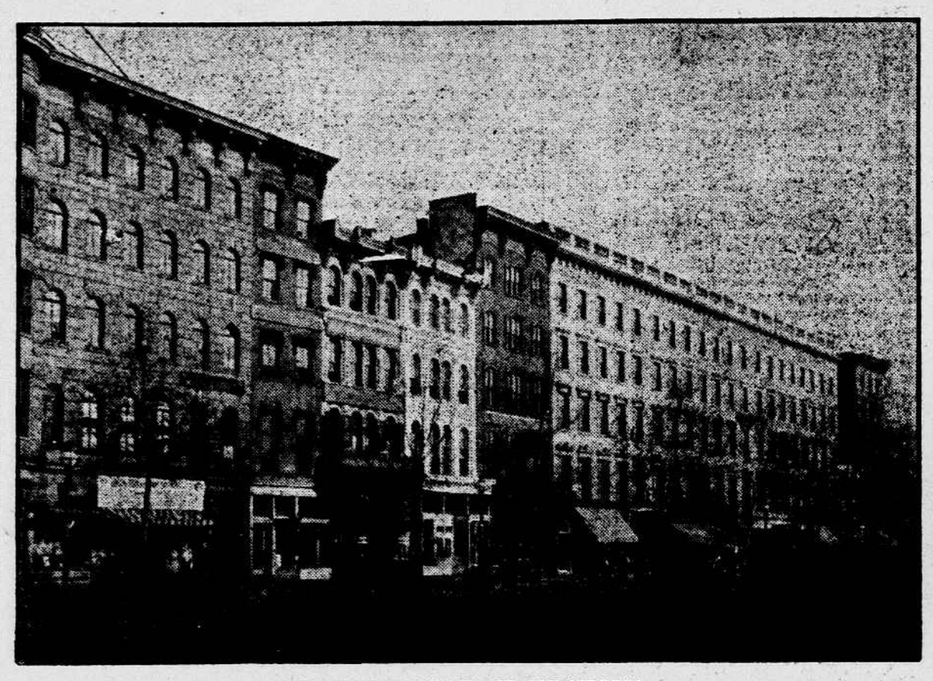
A few of the other business places were those of Semmes & Murray, grocers; Charles Stott's drug store, northeast corner of the Avenue and 7th; John Sergeant's bookbindery, north side between 11th and 12th; M. A. Pilling's "trimming store," north side between 11th and 12th, and Joseph Pilling's leather store, near 6th; Polkinhorn & Campbell's trunk and harness store, near 6th, and Provost & Wallingford's billiard saloon, on the north side near 4½.

Among the lottery offices on the Avenue were those of J. H. France, John France, James France, Henry Howison and John W. Maury. The tailors, in addition to those mentioned, were Duvall & Bros., Christian Eckloff, Samuel Fowler, George A. Knott, Lane & Tucker, Lusby & Duvall, W. T. Jennings & Co. and Owens, Evans & Co. The physicians were C. Boyle, C. H. Van Patten, James C. Hall, H. Haw and Spencer Mitchell. Among the Avenue claim agents were Charles De Selding, William A. Bradley, T. L. Thruston and L. Blanchard True.

The boarding houses between 3d and 4½ were those of Mrs. Matilda Hamilton, Mrs. Holmead and Mrs. A. H. Scott; between 4½ and 6th those of Mrs. E. T. Arguelles and Mrs. Gassaway, and between 6th and 7th those of Mrs. Mary Adams, Mrs. E. Harrison, Mrs. Leedburg, Mrs. Middleton, Mrs. M. E. Morgan and Mrs. Isabella Walker.



SQUARE BETWEEN 6TH AND 7TH STREETS.

SQUARE BETWEEN 9TH AND 10TH STREETS.

Commercial Future of Italy Hangs in the Balance

BY CHARLES M. PEPPER.

GERMANY'S trade policy is in the background of the Italian military situation. Berlin information by way of Copenhagen has stated that in the midst of the general exultation an increasing amount of attention is devoted by the newspapers to the growing difficulties of re-establishing German foreign trade after the war.

This is frank admission that Germany is looked upon as an outlaw in commerce as well as in war. It is pointed out that the diplomatic breaks with the Latin American countries and with China, while they may have no serious military significance, are bad signs for the future when Germany seeks to find foreign markets. In the case of China there is the admission that with Japan as one of the allies, German commerce is going to have a supremely difficult task to re-establish itself in the orient.

More hope is expressed regarding South America, but even here a note of pessimism is raised. The conclusion which seems to be carried in the German newspaper articles is that Germany must make the most of the European continental situation to compensate for the lean years that are ahead in regaining overseas trade. Much is hoped from Russia. That situation for the present, however, has to be left to itself. In the meantime attention is turned to Italy.

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Frank recognition must be given to the economic value to Germany of the armies which she has been able to pour over the Alps and the Italian territory she has been able to occupy. This is regardless of the final outcome of the supreme struggle in arms on the northern plains.

It is assumed by economists who study trade and industrial conditions that, aside from any direct military advantage of a temporary character, Germany expects to reap permanent commercial advantage by curbing Italy's trade aspirations. Whatever the outcome of the ultimate peace negotiations may be, Italy's future in commerce and industry has been seriously clouded by the recent reverses. The irridentists, who sought the restoration not only of the Trentino and the Alpine territory held by Austria, as well as Trieste, the queen city of the Adriatic, were moved more by sentiment than material considerations. But Italian statesmen who directed Italy's foreign policy, knew that the realization of this dream rested on industry and trade.

They looked for a new industrial Italy, with a widened commercial intercourse, as the principal benefit of regaining the territory held by Austria and of extending territorial dominion across the Adriatic into the Albanian mainland and in the islands of the Ionian sea.

The Tripoli territory in Africa, which was wrested from Turkey by force of arms, was the beginning of that expansion. Trentino and Trieste and the Albanian coast and islands in the Ionian were to be its natural complement, which would satisfy the national aspiration for a greater Italy. How much of that is forever past the future must determine, but unquestionably a great diplomatic and military issue is involved in the status of Italy as determined by the German military occupation.

To Germany it is of supreme importance to keep Italy in the state of economic dependency, which was her condition before the war. It is essential that Genoa and Trieste be kept under control as the arteries of commerce for south Germany. Nor is it possible, under any conditions, for Austria, as well as Germany, to depend entirely on the North sea and the Baltic as outlets for her trade activities. A very respectable portion of Austrian commerce before the war was through these ports. Trieste was Austrian, and, therefore, to all intents and purposes, was German.

Genoa was, is and will be Italian, but as a port Germany's facilities were as free and full as that of any port on the Mediterranean, while Austria was not concerned with any place except Trieste.

This is the first consideration which the German industrial autocracy will have in mind in connection with the military movements and their bearing on ultimate peace. To them Genoa and Trieste are the vital issue of the military campaign.

Conservative statesmen in the councils of the entente allies, notwithstanding the horror which Germany's atrocities have produced throughout the civilized world, have been ready to recognize this situation. It was they who discouraged the talk of an economic war to the death after the war of arms. They were willing that, in the final adjustment, Germany should be assured of free access to the Mediterranean.

When Gen. Cadorna's aggressive military operations were at the highest and there seemed a possibility of his taking Trieste, it was recognized that, while this was highly desirable from the military point of view, its possession by Italy might cause some embarrasment in the ultimate diplomatic settlement.

Trieste is so overwhelmingly Italian in population, and natural sentiment clusters so strongly around it, that once occupied by an Italian army no government at Rome which proposed to abandon it in a peace settlement would be able to stay in power over night. Yet, it was recognized that to deprive Austria of Trieste was to shut her up, and that this would mean no lasting peace for either her or for Germany.

The neutralization of Trieste in so far as related to commerce was one of the suggestions put forward as a means of solving the intricate problems that would arise in the peace negotiations. This might or might not have suited Italy, but since the allies have been directing her military operations they may be expected to have something to say about the directions which her peace policy shall take in reference to Trieste and the Adriatic.

It may be assumed that all the allies, no less than Germany, will now be giving close thought to Italy's industrial and commercial status after the war. Previous to hostilities Italy was pretty largely under the domination of German finance. The Germans were interested in the principal Italian banks, and many of the leading industries of the country, although nominally Italian, in reality were German. It was this German financial influence that was the most potent instrument of Berlin in the early days of the war, when the allies were exerting themselves to secure her support.

After it was found that popular sentiment in Italy never would acquiesce in going to war as an ally of the central powers, Berlin diplomacy was exerted to keep Italy neutral. The popular will, however, prevailed, and in spite of the German financial grip Italy ranged herself on the side of the entente allies. British statesmen recognized that something more than war loans were necessary to meet the situation. They knew that Italian industries would need aid during the war, and that when peace came the need would be more urgent in order to keep Germany from regaining what she had lost.

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A plan was devised for the British financing of Italian trade. A company was formed in England, known as the "Anglo-Italian Corporation," with the purpose of gaining a foothold in the Italian markets, as well as of controlling industrial enterprises. The British government became in effect a partner in this corporation, since it advanced part of the capital.

A similar corporation was formed in Italy, which had the backing of the Italian government, although no subsidy was provided. The directorates were interlocking, but the real control remained in England. Not much has been heard of the workings of this corporation because they have been subordinated to military necessities, but it is in existence and is declared to be ready for business after the war.

Discussion of the relative financial influence of Germany and England in Italy reverts somewhat to the scope of the industrial enterprises that may be fomented, as well as to the markets of the country.

Italy lacks the raw material of basic industries, which are comprised in the category of iron ore, coal and copper. Industrial coal is an expensive proposition. Before the war the bulk of it was imported from England, although the United States, which was sending coal for the state railways and for the navy, also was beginning to supply some of the industrial plants. With coal having to be imported, and with no iron ore, the limited possibility for iron and steel enterprises is apparent.

Notwithstanding the lack of extensive copper deposits, Italy had developed an important electrical industry. Its products found a market in Europe as well as in South America. The importation of copper from some of the overseas countries, including the United States, formed one of the elements of Italy's foreign commerce.

The textile industries were well developed. Italy used a part of her raw silk production in fine manufactures. She also developed a very successful cotton industry. Some of the raw cotton was imported from the coarse fiber of India, some from the fine Egyptian grade and some from medium grades of the United States.

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Italy's imports consisted of various foodstuffs and of miscellaneous articles, in addition to primary raw materials, such as copper and coal. Though some wheat of a high quality is raised in Italy, it is far from being sufficient to supply the entire population. Large quantities have to be imported. In normal years this came from Rumania and Russia, from the Argentine Republic and from the United States.

The Italian merchant marine was extensive enough to serve as cargo carriers for these imported food products, as well as for the distribution of the tropical agricultural products which were exported, although the shipments were not confined to vessels under Italian flags since England, Germany and France shared in the traffic.

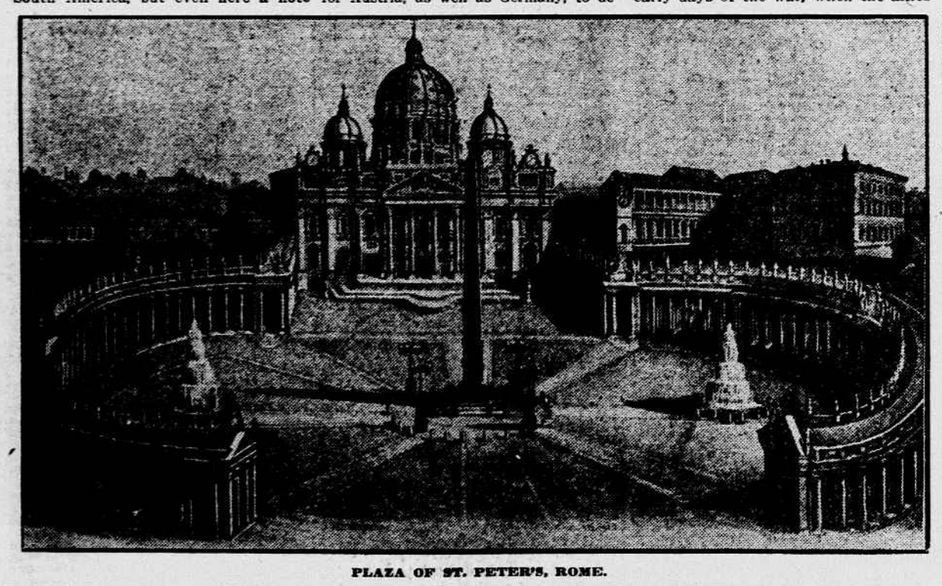
The silk crop was one of the most important of Italy's export crops, as well as of domestic utility. The olive crop was largely exported in the form of olive oil. The citrus fruits found a market in the United States and in European countries. Last year's silk crop and lemon crop, it was understood, were financed by the British government, possibly with some help from the United States, in order to keep them from falling into the hands of the Germans.

During the period when Gen. Cadorna was making his advances into Austrian territory and the possibility of a German invasion was remote, Italian statesmen busied themselves with formulating a commercial policy which was in consonance with the "greater Italy" of which they dreamed. They planned for Italy to become a commercial power, which would place her on a plane with other countries of Europe.

It was assumed that trade relations with the Levant, where there are large Italian colonies, would become much enlarged, and that Constantinople would be the center of Italian trade in the near east. Their plans also included expanded business through the Suez and the far east, closer trade intercourse with England and more extended markets in South America, as well as in the United States. It was assumed that with increased territory there would be a natural expansion of the trade of that territory.

In pursuance of the general policy, a commission was making a study of the commercial treaties which Italy had in force. All of these were to be abrogated and a new series negotiated which would be of a broader character, based on Italy's enhanced industrial and commercial status.

This means that Italy will look to the United States. This country already has made a heavy investment in the form of war loans. American capitalists may find it desirable to supplement these government loans by investments of a private nature. That is the natural basis for increasing the trade of the United States with Italy.



PLAZA OF ST. PETER'S, ROME.

A Million Workmen Making Steel for Use in the War

(Copyright, 1917, by Frank G. Carpenter.)

GARY, Ind., 1917.

I HAVE come from the iron mines at the head of Lake Superior on a vessel loaded with ore to the great steel plants here at the foot of Lake Michigan. My steamer had a cargo of 12,000 tons. She unloaded this in less than five hours and the ore is already on its way to the furnace. By the time this letter is published it will have been made into steel, and will have gone out with other sister cargoes into steel rails, big guns and shells and the thousand and one other forms in which Uncle Sam is using steel in our fight with the Germans. Last year, when we were still out of the war, we sold to England and France four or five million tons of steel shells and 766,000,000 pounds of barbed wire for entanglements. That steel would have filled a train of fifty-ton cars as long as from New York to Chicago, and the barbed wire would have been enough to build a nine-strand hog-tight fence around the world on the line of the equator. Those were the sales of one year and of only two items. They were made when we had not yet begun to fight. Now, we are in the struggle with every atom of muscle and every bit of machinery we can command. The government is taking the produce of all the steel plants, and the output will be greater than ever before. The plants are now backed by more than four billions of capital. Every worker in steel and iron has been drafted into the industrial army and we have today more than a million such men in the ranks.

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Away down here at the foot of Lake Michigan are two of the biggest camps of this army of iron and steel. Although officered by the United States Steel Corporation, they are now under the government and they are fighting the battle after the most improved methods of modern efficiency. It is to show you something of what they are doing that I have come here to South Chicago and Gary. But first let me show you how strategically the two camps are located and how well they are fitted for waging the war. They are situated on the deep waters of Lake Michigan, where the ore from the mountains of Lake Superior can be shot from the ships almost into the furnaces, where coal and limestone can be cheaply secured and where the steel products can be rapidly transported to any part of the world.

The South Chicago plant is a part of the city of Chicago. This section has about eighty thousand inhabitants, and the most of them are supported by the steel works. The town of Gary is just across the Indiana boundary, about thirty miles from Chicago. It has fifty-five thousand inhabitants, and there are about twelve thousand men at work in the mills and the furnaces.

The South Chicago plant is that of the Illinois Steel Company. Its buildings already cover about four hundred acres, and it has more than twice as much more land adjoining it which will eventually be used for the works. The Gary plant belongs to the Indiana Steel Company, another branch of the United States Steel Corporation. It is already three miles long and a mile and a quarter in width, and this whole territory is covered with structures that are very mountains of steel. The towers and turrets of its furnaces stand out like mighty castles against the sky and its huge buildings are filled with masses of machinery that seem to move on ball bearings. A network of railroad tracks runs in and out through the works, and great pipes of steel, some of them so large that a Pullman train could pass through them without touching the walls of the pipe, wind in and out, close to the ground and high above it, carrying millions of feet of gas to the various parts of the works. I do not know the cost of the South Chicago plant, but it has run far up into the tens of millions of dollars. The machinery of the Gary plant alone has cost more than one hundred and forty millions, and the United States Steel Corporation is now spending millions more in connection with it.

Today, owing to the demands of the times, new construction is going on at both plants. Gary is building four new blast furnaces and a great establishment for making wheels of forged steel. She is putting in fourteen boilers to utilize the waste heat of her open-hearth furnaces and is installing new engine shops, new boiler shops and other works for increasing the by-products. At the Illinois steel plant they are installing electric open hearth furnaces, extending their foundries, building great gas-driven blowing engines and adding to their establishments for turning out Bessemer steel.

I despair of making you see the immensity of these mighty creations and the wonderful equipment they furnish for fighting the war. Take the blast furnaces. The Illinois and Indiana steel companies have twenty-nine, which are now blazing away night and day. They work holidays and Sundays, year in and year out, and since they have been built many of them have been smelting iron continuously for 98 per cent of their running time.

Each of these furnaces is as big around as a haystack and as tall as an eight-story house. It has four great stoves, almost as big and twenty feet higher, which heat the air blast to a temperature of from twelve hundred to sixteen hundred degrees before it is forced into the furnace, and it holds a charge of about seventeen hundred tons of ore, limestone and coke, which this heat turns to liquid.

These furnaces have each cost in the neighborhood of a million dollars to build, and they would cost two or three times that if constructed today. They are the best of their kind and those of the Illinois Steel Company alone are now turning out more than two million tons of pig iron a year.

I shall not describe the process of smelting. The story of pig iron has often been told. The object of the furnace is to rob the ore of its oxygen and other impurities and leave only the iron. This is done by dropping alternate layers of coke, limestone and iron into the mighty towers and admitting at the bottom a hot blast, which melts the whole into one liquid mass. Of this mass the iron, on account of its weight, drops to the bottom of the furnace and the impurities of the ore and the limestone float like soapsuds on top. Then by making a hole in the furnace just above the surface of the iron, the impurities can be drawn off in the form of slag, and later on, from a lower hole the pure pig iron can go out the same way.

This process is old, but the machinery with which it is carried on at Gary and South Chicago is new. Almost all the work is done by machinery. The ore, limestone and coke are carried up in skip buckets which take less than a minute to raise their contents from the ground into the furnace. A single load is from fifteen to thirty thousand pounds, and the pulling of a lever raises this to the height of eighty feet and drops it into the furnace. It requires two tons of ore for each charge. The limestone and coke go the same way, and the furnace is practically filled with the aid of one man. The handling of the iron and slag as they come from the furnace is largely done by machinery, and iron, steel and electricity do most of the work.

Steel making is rapidly becoming an exact science and everything is tested by chemical and physical analysis. The ore is analyzed when it comes from the mine, and it is analyzed again at the furnaces. The limestone is analyzed and so is the coke, and when the pig iron flows forth a sample is taken from every forty-ton ladle and carried away to the laboratory to see that it is exactly right for the making of steel. There are more than one hundred chemists at Gary alone, and there is practically an equal number at South Chicago. Their work goes on day and night and they aid in the experiments made for saving the waste as well as to the bettering of the steel.

Few people realize how closely the great industrial plants of today watch the pennies, and how much they will spend to save a fraction of a cent in a process. Last year the Illinois Steel Company spent one million dollars on its docks that it might save forty-five minutes unloading each steamer. They will spend thousands of dollars to save cents, provided they think the saving will continue, and, at South Chicago and Gary they are now coining millions out of the stuff that only a few years ago floated away on the air. The gas from these furnaces formerly went to waste. Today it is saved, and used for heating the stoves which furnish the blast and for running the machinery of a whole plant. It goes to the boilers, where it generates steam, and to gas engines which are used for blowing air and generating electric power. In one station at the Illinois steel plants I saw 8,000 horsepower created in this way, and I went through large rooms where dynamos were running through the waste gas of the furnace.

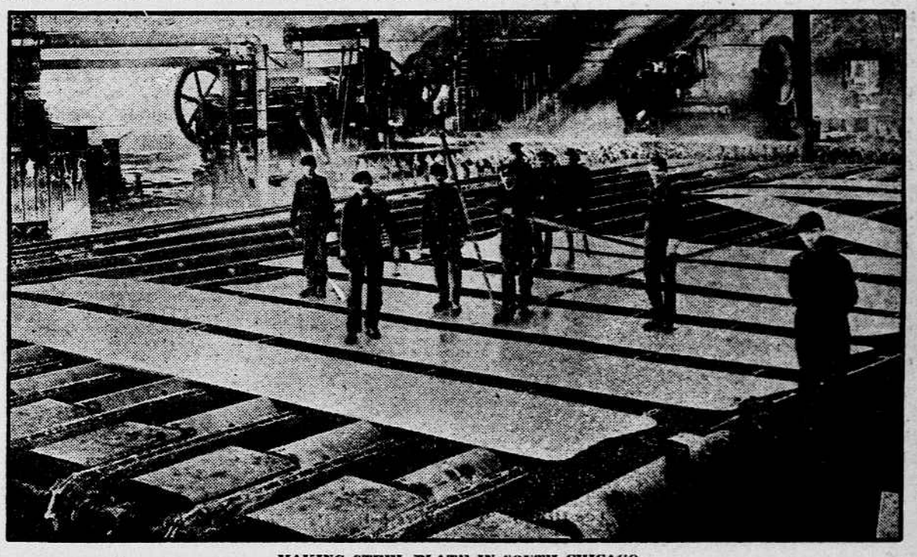
One of the latest things in gas saving is washing this gas from the smelting in order that the iron dust in it may be saved and melted over again. In this process the gas is passed through water which washes it, the iron dust falling to the bottom in the form of a flour. It is too fine to be smelted, but it is put through processes which transform it to lumps the size of a peanut or larger. These nuts can then be turned back into the furnaces, and made into steel.

One of the great problems of steel-making has been the waste which has passed off into slag or refuse of the furnaces. Until recently this has all gone to waste and you may see great mountains of it still lying about the iron works in different parts of the country. During my stay at Birmingham I saw them using this slag for making building brick and sulphate of ammonia. The latter is an excellent fertilizer, and the president of the steel plant there told me it has become a valuable by-product. Here at the foot of Lake Michigan the steel plants use their slag for making cement, and this has been done at other plants of the United States Steel Corporation. The slag, as it flows out in a mass of liquid fire from the furnaces, is dropped into water in such a way that, instead of becoming a solid rock, it turns into granules or a powder not unlike sugar. It is on about the same principle that shot are made by dropping the molten metal from a great height in the shot-tower. In this powdered form it is mixed with limestone, an equal part of lime being added, and it then becomes the very finest of Portland cement.

The war is rapidly increasing the by-product coke ovens. I found this so in Alabama, and it is being carried on to an even greater extent at the foot of Lake Michigan. There are by-product coke plants at both South Chicago and Gary. The Gary plant is one of the largest in the country. It consumes 10,000 tons of coal every twenty-four hours, and the coal is the best that can be obtained. It comes from the Pocahontas mines, the quality of which is equal to that of the Cardiff mines of England.

And now let me tell you something about the soldiers of this great branch of our industrial army. As I have said, there are more than a million iron and steel makers now in the ranks and they are among the most efficient of our troops here at home. There are more than 250,000 men in the employ of the United States Steel Corporation alone, and here at the foot of Lake Michigan they have twenty or thirty thousand working away in the plants I have described. A large number of the men are foreigners, many being Russians and Poles. They are nearly all patriots, and they are subscribing liberally to the Red Cross funds and the liberty bonds. When the Y. M. C. A. raised its first war fund of $3,000,000, $3,000 was expected from South Chicago. The matter was brought before the employes of the Illinois Steel Company there, and it was suggested that each of them give the pay of one hour a month for the term of eight months. Nearly every employe promised to do this, and the result was that they raised $26,000 instead of three thousand.

FRANK G. CARPENTER.



MAKING STEEL PLATE IN SOUTH CHICAGO.