

Photograph from Bethlehem Steel Co.

Pig Iron Piled in Storage

# Pig

By CHARLES FITZHUGH TALMAN

**T**HE most important species of pig is not packed at the stockyards. It flows, a torrent of potential railroads, bridges, sky-scrapers, steamships, automobiles, tin pans, and carpet tacks, from the fertile fire of the blast-furnaces. The stream is ceaseless, but its volume is ever-changing. And thereby hangs a well-worn tale.

The output of pig iron depends upon the demand for steel. The latter depends upon the amount of new construction undertaken. Lastly, new construction fluctuates with business prospects. Such, at least, is the conventional chain of reasoning, leading to the conclusion that pig is the most diagnostic product of industry. One of our leading trade journals publishes from time to time a "Blast-Furnace Business Dial." The dial is graduated in accordance with the assumption that when sixty per cent of the country's blast-furnaces are in operation business conditions are normal. The index of this diagram is set to correspond with the latest monthly report of blast-furnace activity. The Department of Commerce publishes statistics of pig-iron

production at the head of its list of "business indicators."

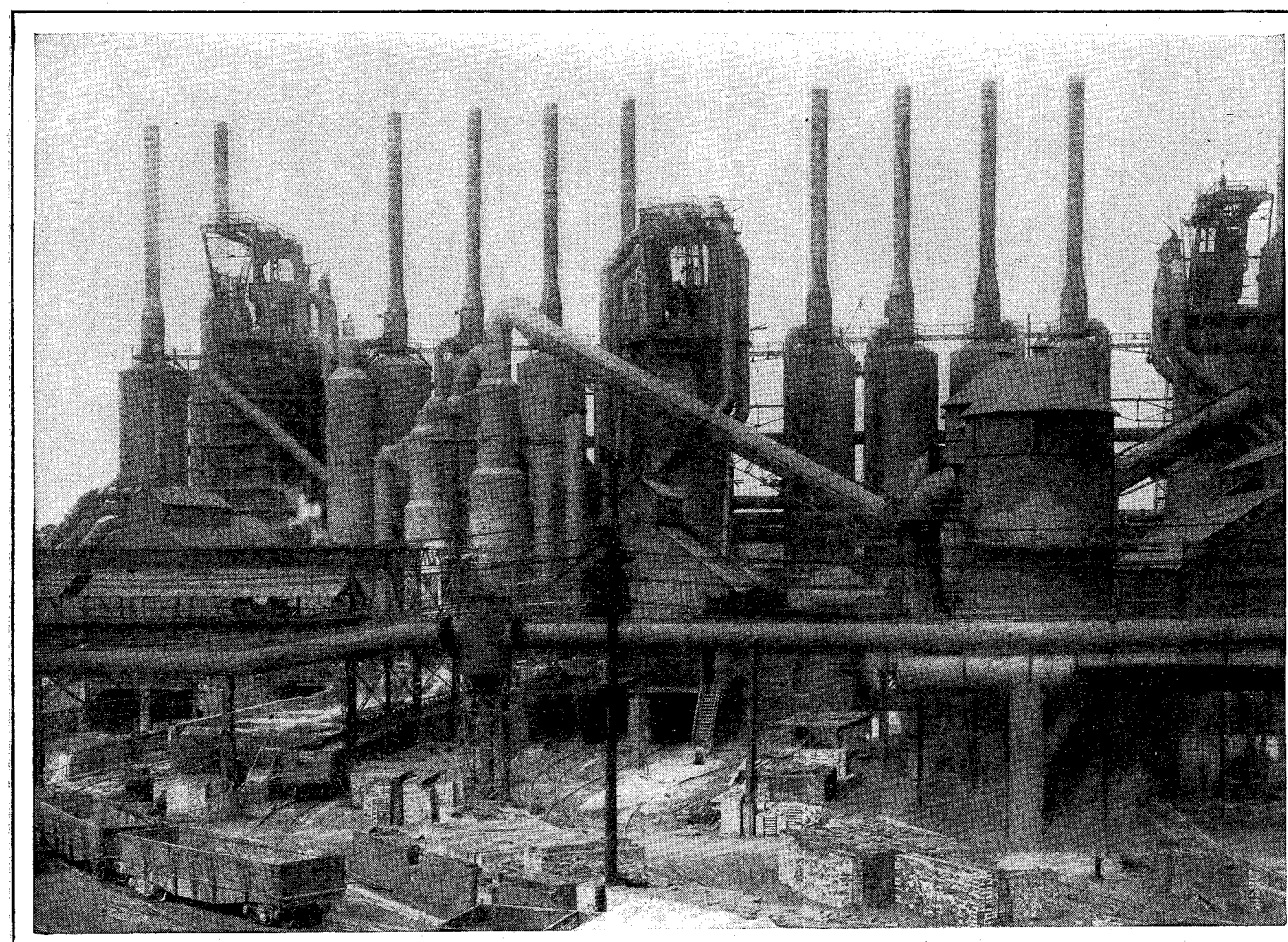
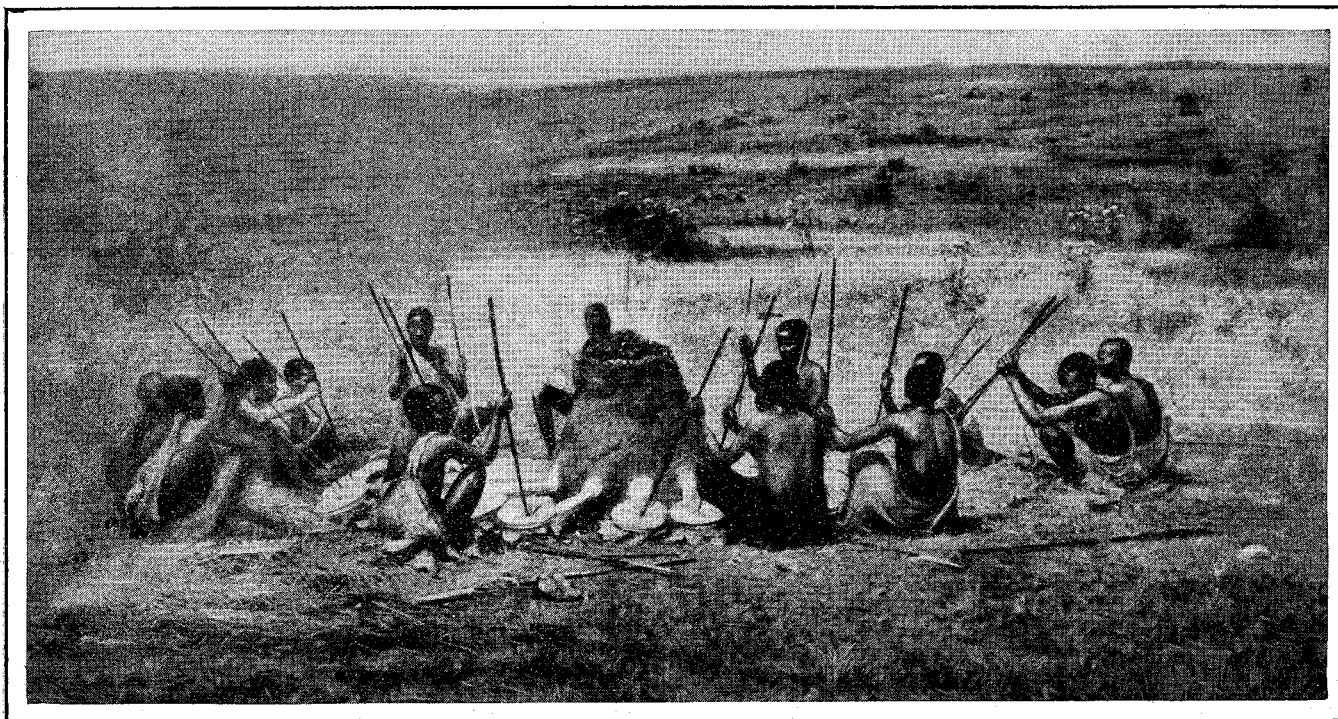
Economists and business wiseacres are always talking about pig. One wonders how many of them visualize clearly and correctly the commodity itself, as apart from mere rows of figures concerning it. How many of them have ever seen it made? How many know anything about the physical aspects it assumes, or realize that it is not a single product, but a large group of products, each of which serves a particular use in the versatile art of making iron and steel?

The very dictionaries are all at sea about pig iron. They would have us believe—and the educated public at large probably does believe—that this material is invariably cast into solid blocks, known as "pigs." As a matter of fact, less than half the total output is ever solidified at all. The commonest fate of smelted iron nowadays is to be charged by the gallon, so to speak, into a huge vessel called a "mixer," which, in turn, feeds it to a battery of steel furnaces. It never cools or hardens until it has been metamorphosed into steel. Solid

pig still takes the traditional form of semicylindrical bars. Its diversity is not in its shape, but in its composition. Both solid and liquid pig irons are made in a great number of standard and special varieties in response to the manifold needs of the foundry, the puddling furnace, and the steel mill. The list includes foundry pig, malleable pig, Bessemer pig, basic pig, mottled pig, ferro-silicon pig, gray forge iron, ferromanganese, spiegeleisen, and so forth, besides the irons which foundrymen, as a rule, order by chemical formula—specifying the percentages of phosphorus, sulphur, silicon, and the like.

While pig is hardly a familiar sight to most people, the places where it is made are known to everybody, at least through pictures. The architecture of the modern blast-furnace is distinct and unmistakable. If, however, you suppose that this structure is as common a *motif* of the industrial landscape as the coal tipple and the oil derrick, you will be astonished to learn that all the blast-furnaces in this country number barely 450, and of this small number several





Upper photograph from U. S. Bureau of Mines; lower from U. S. Steel Corporation

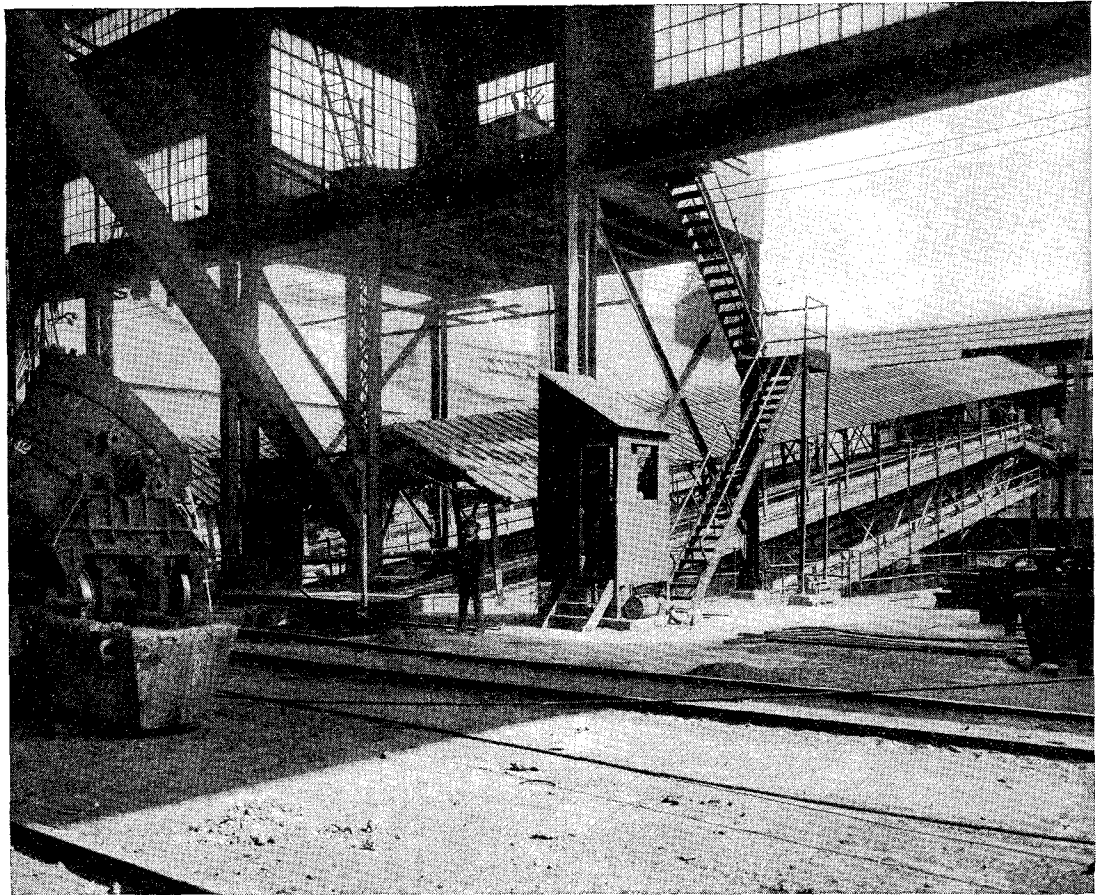
#### Blast-Furnaces : A Record of Progress

The upper picture, from a painting at the Washington office of the United States Bureau of Mines, shows South African natives smelting iron by a process which, though primitive, does not belong to the earliest stage of iron metallurgy. The first smelting was done with no other draught than that afforded by the winds of heaven. The introduction of the goatskin bellows was a notable advance. In the process here illustrated each man works two bellows alternately, so as to maintain a continuous draught. The furnace is a mound of baked mud, and the iron ore is heated in contact with glowing charcoal. Below is an ultra-modern furnace plant, typical of those erected in recent years at the southern end of Lake Michigan. Three furnaces are seen. The cylindrical structures with tall smokestacks are the "stoves" in which the air blast is heated. In front are the dust-catchers and washers for cleaning the gas generated in the furnaces as a by-product of the smelting process. This gas is used for heating the stoves, driving the blowing-engines, and many other purposes

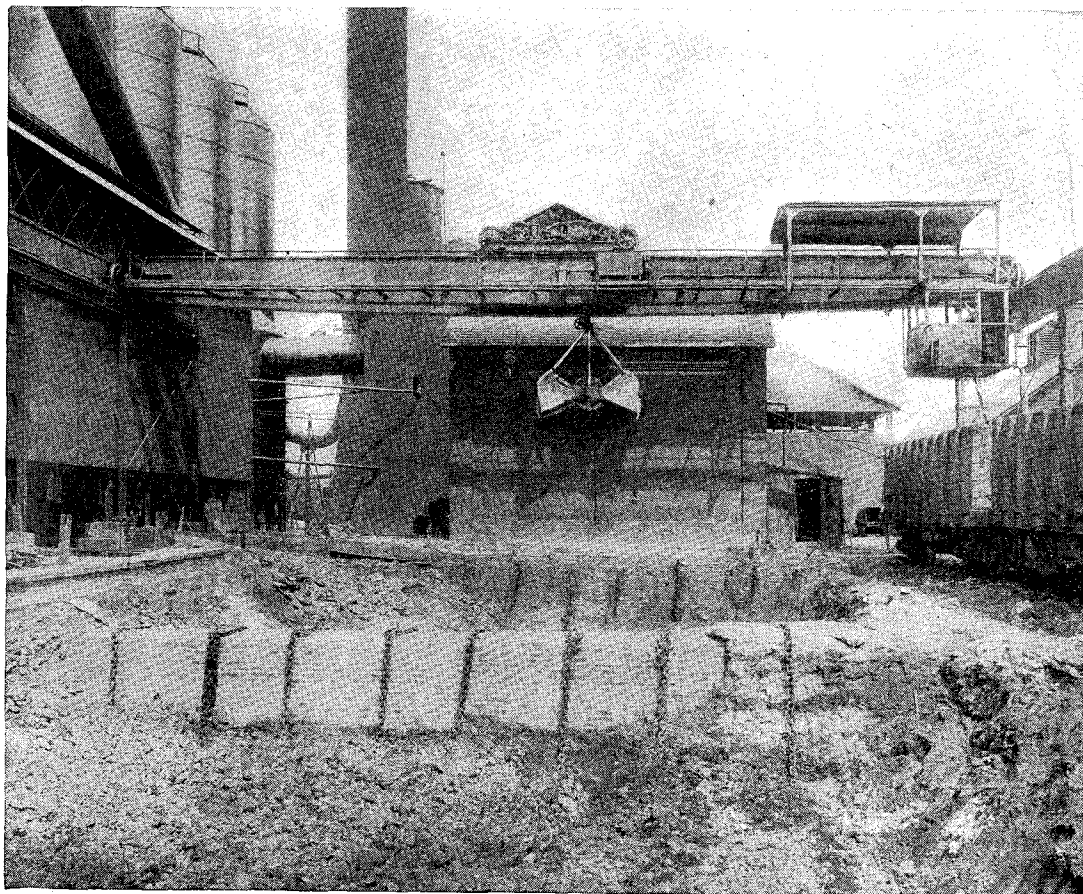


### The Pig-Casting Machine

According to the older method of making pig iron, the molten metal as it comes from the blast-furnace flows into sand molds laid out on the floor of the cast house. The mass of metal filling each mold is called a "pig," while the metal filling the channels connecting a number of molds is called a "sow." The newer method, herewith illustrated, saves both space and labor. The metal is poured from a ladle (seen at the left) into a series of iron molds carried on an endless chain. The molds travel slowly, and the pigs are cooled partly by the air and partly by a bath or spray of water. When they reach the upper end of the incline, they fall into cars. Three or four times as much pig iron is now cast by machine as by means of sand molds



Photograph from Bethlehem Steel Co.



Photograph from Toledo Crane Co.

### Slag Pit at a Blast-Furnace

Blast-furnace slag used to be one of the commonest and most unmanageable waste products of industry. The problem of the iron smelters was to get rid of it with as little expense and trouble as possible. Like nearly all other industrial wastes of yore, it is now a source of profit. Of the 20,000,000 tons of slag produced annually at American blast-furnaces, fully sixty per cent is now sold commercially, and the time is probably near when all of it will be turned to account. It is used as road metal, railroad ballast, and concrete aggregate. Much goes into Portland cement, some into mineral wool. Paving blocks and roofing are made of it. Even the heat of the molten slag as it comes from the furnace has been used to generate steam. The picture shows one of the many ways in which slag is handled at furnace plants. Chains are laid in the pit and the slag is then run into it. After the slag has hardened the chains are pulled through it to break it up. It is then loaded into cars



are, in a majority of cases, grouped at a single plant.

The most paradoxical fact of all about blast-furnaces is that there are fewer of them in the country to-day than

there were three-quarters of a century ago. Of course, the individual furnace has grown vastly in size and has been fitted out with marvelous mechanical accessories for speeding production.

Thus, despite the reduction in number, they are supplying our fortunate Nation with some thirty or forty times as much prosperity in the shape of pig.

# My Neighborhood

By EDWARD CORSI

Edward Corsi finds in the polyglot boarding-house of New York the makings of the America of to-morrow. It is an article to make Americans of the old stock pause and think

WE were discussing America and American literature over a cup of black coffee in one of the many Italian coffee-houses of the neighborhood. My friend, a bohemian of decided literary tastes, did most of the talking, and evidently enjoyed it. With that cynicism characteristic of the East Side intellectual—too often an indication of dreams unrealized—he reviewed many of our “best sellers,” passing on from Sinclair Lewis’s “Main Street” to the Great American Novel.

“In my opinion,” he said, “when that novel comes to be written its background will not be Main Street, but the East Side of New York. Its central figure, furthermore, will not be a Babbitt or a New England farmer or a Kentucky colonel, but an immigrant’s son, a child of the melting-pot.” He sipped his coffee, puffed at his cigarette, and continued: “While Main Street is American, the East Side, with its peoples from many lands, speaking many tongues, and gradually building a civilization which, in the end, will be ours and not Europe’s, is America. It is the America of to-morrow, or, if you please, America in the making. And the Great Novel, to be true to life, to outlive its author and its age, must deal with and interpret that America.” He looked squarely at me, his eyes asking, Isn’t it so?

MY friend is a unique character, very interesting and very entertaining. Without him and his like the coffee-houses, barber-shops, and “wine basements” of the neighborhood would not be the “intellectual” centers they are. He is the Benvenuto Cellini of Little Italy. The words of wisdom that fall from his lips are manna to ignorant minds eager for knowledge. But, though unique as a character, there is nothing unique or strange about what he says of America. In this respect he speaks the mind of his audiences. America, when all is said and

done, is but a great melting-pot, a “polyglot boarding-house,” and nothing else. Why, then, shouldn’t the East Side be the background for the Great American Novel when it comes to be written? Is not the East Side America?

THAT such should be the opinion of my neighbors is strange, but not unexplainable. There is, and can be, but one America to the immigrant (just as there is one Europe to most Americans), and that is the “America” with which he has come in contact. There is no other. The American people are to most of my neighbors either Indians, whom they have never seen except in the movies, or “Americans” of their acquaintance, newcomers like themselves. I have lived with immigrants all my life, worked with them, am an immigrant myself. And I know how strictly encompassed is the outlook that shapes their opinions and controls their judgment. The great open spaces of the West, real as they may be to Westerners, are but screen pictures to New Yorkers who have lived their whole lives in the shadows of sky-scrapers. Workers living in the mining towns of Pennsylvania or West Virginia or on the farmlands of the South and West may not know, and do not know, the congested streets, the dingy tenements, and the busy sweatshops of the East Side, but to the Italian mother on Mulberry Street, imprisoned in her four-room flat, or to the overworked Jewish tailor on East Broadway there is, and can be, no America without them. Their “America” is a hodgepodge of toiling millions, tenements, crowded subways, busy sweatshops, and fenced-in playgrounds—in other words, the East Side.

My neighborhood is on the East Side. Two hundred thousand men and women in a territory less than one square mile in size. Albany, Omaha, Spokane, Reno, Sacramento, and Richmond are but hamlets compared to this city within a city.

Nowhere in America is congestion with its inevitable poverty, disease, and crime more pronounced, nor life with its interminable ebbs and flows more strenuous. The lower East Side (we are on the upper East Side) questions our claim to greatest congestion. Perhaps it is right. To the victor the palm when the truth is known! But the lower East Side will concede us, we hope, one honor at least—that of having the most populated block in the city, in the country. Of this we are proud. Five thousand human beings in one city street; as many as fifteen to a four-room flat; two, three, and even four hundred to a tenement intended for fifty!

WHEN William Kieft was Governor of Nieuw Amsterdam, a few years before Peter Stuyvesant came on the scene, old Dr. Johannes de la Montagne, founder of Nieuw Haarlem, wrote to a friend overseas that his village, now my neighborhood, had no less than “thirty male residents, mostly heads of families and freeholders.” That was quite a number for those days! Later on, when the dignified Washington made love to pretty Marie Philipse (here in my neighborhood) and Nieuw Amsterdam had become New York, the modest village had grown to a fair-sized town. It remained as such until America’s gates, in the decades following the Civil War, were thrown open to the breadwinners of the Old World. Then the change came. The newcomers not only dispossessed the old stock, but transformed the quiet-living American community into a noisy miniature Europe of their own.

And so is my neighborhood to-day—a miniature Europe, a little world of tenements and tenement-dwellers, in which every nation of the Old World is represented, every language spoken, every faith professed. Even the Dutch remain, just a handful of them, and their Reformed church stands, dilapidated but