

A WAR-TIME INDUSTRY.

Hundreds of millions saved from junk.

It took the great war to bring the junkman into his own, says the New York Ananist. The transformation of the bubble rag-and-bottle and old iron man of the care-free days of old into the modern captain of industry was commenced by the Kaiser—although he probably did not know it—in 1914, and now, with most of the world in the struggle, and metal of any and all kinds the most vital necessity in carrying it on, the transformation is complete. Its historian is a statistician of the United States Geological Survey, and his tale is told in a recent pamphlet published by that Government bureau, entitled "Secondary Metals in 1916." Secondary metals, it must be explained, are metals once worked up into industrial forms, worn out, thrown on the scrap heap, and reclaimed to another sphere of usefulness—what are commonly known as scrap metals.

The scrap metal trade in the United States, not so long ago, was on the outer fringe of respectability. Only a year before the European war began, a certain newspaper reporter, getting wind of a colossal scandal in the sale of various piles of junk from the Panama Canal Zone, and inquiring of a man in the trade, received the naive reply that he did not know anything about the story, but it was probably true, as there was only one honest man in the scrap metal trade, and he had retired from business some years before.

That has been changed, however, and despite shortcomings of the theory of "economic determinism," it appears that the chief factor in the rehabilitation of the scrap metal trade has been the increased price of metal of all kinds, which again is a direct consequence of the war. The scrap metal industry in the United States has in a few years grown to immense proportions, and there are several influential and prosperous trade journals, such as The American Metal Market, The Daily Metal Reporters, The Waste Trade Journal, The Metal Industry, and others, devoted entirely to its interests.

"The public," says the United States Geological Survey writer, "has been educated sufficiently to appreciate the importance of waste. The large manufacturing plants, foundries, and smelters have increased their facilities for segregating scrap metals, and have also adopted methods for decreasing melting losses. The use of magnetic separators has been largely extended."

Another interesting development of the new efficiency in this industry has been the use of presses for making solid blocks, or briquettes, of the light metal scrap, shavings and bits of sheet metal left from punching, etc., by which enormous quantities of this metal, formerly thrown away, or melted down by very wasteful methods, is saved. As a result of this general improvement, the amount of platinum, iridium, and palladium, formerly thrown on the national junk heap, recovered in 1916, amounted to about \$4,000,000, and the value of old jewellery, worn-out tooth fillings, silver spoons, and other gold and silver scrap, fully \$20,000,000, while in both these respects 1917 will probably show even greater savings.

These formed only a small part of the total in 1916, however, and the same proportion will, doubtless, hold true in this year. As a matter of record, the total value of recovered scrap metal of all kinds, in the United States, which in 1915 was \$114,304,930 and this was so far ahead of any other year on record that no comparison is possible—in 1916 more than doubled this enormous total, adding to the national wealth \$265,377,356.

Individual figures on various metals give even more striking examples of the economic importance to the nation of the once despised and humble junkman. Thus in 1916 no less than 350,000 tons of copper, most of it contained in brass, once thrown on the scrap heap, was remelted and restored to usefulness, and this was some 123,000 tons more than ever before had been recovered, besides being equal to about 37 per cent of the total amount of copper mined in the United States in the year. Moreover, 96,300 tons of lead—equal to 16.8 per cent of the total mine production of the country—was recovered from the junk heap; 115,000 tons of zinc, equal to 16 per cent of the amount of mined spelter during the year, and more than 17,000 tons of tin, which was equal to 24 per cent of the tin consumption of the country. This last item is particularly important, as the United States imports virtually all its tin, and this increased saving is consequently so much clear gain for the whole nation.

There are quite a number of curious stories con-

nected with this growth of an industry, among them the various ingenious inventions and expedients developed by engineers for recovering metal that was formerly thrown away or burned in furnaces. Thus 2,600 tons of tin were recovered from old tin plate, and the old tin containers, having had their plating sweated off and remelted, were themselves melted down and made into sash weights for windows. Some ingenious machinery has been invented for melting the tin off old tin cans by passing them through revolving, heated cylinders.

"There are as many romances in the utilization of waste," says the Geological Survey, "as there are in the discovery of new mines. The old pair of rubbers discarded may form a part of the next pair of rubber heels or door mat purchased. Rags thrown away are * * * reasonably sure of returning to usefulness in the form of writing paper, roofing felt, wiping rags, or waste for machinery, or as shoddy in clothing. If the public were better informed about the many industries partly or wholly dependent on junk * * * greater interest would be taken in the national propaganda of conservation, and this publicity would lower living costs."

IRON FAMINE IMMINENT.

The present supply of iron and also of steel is falling a long way short of meeting national requirements and the problem of how to increase production, which must be successfully solved if we are to win the war, is by no means a simple one, says the New York Journal of Commerce. As things stand to-day, blast furnaces in all iron producing sections of the country have fallen seriously behind in the fulfillment of their contracts with consumers, and instead of gaining are steadily losing ground.

The aggregate production is holding up it is true. In fact last month showed a slight gain over October, but when measured by demand it was pitifully small. The output for November was 3,295,794 tons, or 106,869 tons a day, as compared with 3,305,038 tons in October, or 106,550 tons a day. The increase in the average daily production as shown by these figures was only 309 tons, while for the entire month there was an actual decrease of 97,244 tons. At the November rate the production for the year would be 38,490,000 tons, as against a total production during 1916 of 39,400,000.

There are no reliable figures yet available, but it is fairly safe to assume that the demand for iron during the current year has increased at least 10 per cent over 1916. The result has been that there is not a ton of stock to-day in sellers' hands available for immediate delivery. As an illustration of the general situation, the American Warrant Company has cancelled its last warrant, which signifies that all reserve supply is completely exhausted.

When the prices of iron were high, as they were last spring and summer, every old furnace, some of them long out of blast, was at work again turning out iron as fast as the ore could be smelted, and even then they could not produce enough to satisfy the market. This was plainly evident when buyers paid as much as \$5 a ton for iron which a year previous could have been purchased for \$18 or \$19 a ton. At this time the demand was so great that production could barely keep pace with it. But a fairly large percentage was taken by dealers and speculators and held for an advance. Some of these men made comfortable fortunes out of iron within a few months and many more fortunes would have been made if the Government had not taken a hand in the situation and established a base price of \$33 per ton for foundry iron at the furnace. This was a reduction of about \$40 a ton from the prevailing prices of last August. When what is known as No. 2 foundry iron, which is the regular standard grade, touched \$50, demand was so great and the supply so limited that it was freely predicted that iron would go to \$75 a ton. It would undoubtedly have done so if not for the Government intervention.

But the drop in price was discouraging to production and some of the older, smaller and less favorably situated furnaces went out of blast. It was just as well that they did, because they would soon have been compelled to close perforce, as many of the best equipped plants in the country had to do because the supply of coke gave out.

Of late several furnaces have had to bank their fires for want of fuel. Some of these have been steel-makers who hitherto have produced their own iron. With output of raw material cut off they turned to the open market for iron, but failed to find it in quantities anyway sufficient to meet their requirements. As a consequence, we have a short supply of steel, and the spectacle is witnessed of mills trad-

ing steel bars for ingots, out of which to roll sheets and plates.

Foundrymen, too, who thought themselves safely covered by contracts have been obliged to comb the market for any odd lots they could find to meet the shortage caused by the failure of the furnaces to meet their obligations. But now nearby iron is practically impossible to obtain and the furnaces are so well sold up that they decline in most instances to accept any further orders for delivery before next July. They are even unwilling to enter upon engagements for the last half of 1918, because they are now being sorely tried to meet their current obligations, and fear they may be in no better position later on. It all depends upon the coke situation, and not knowing what that may be, they do not care to commit themselves.

Meanwhile, the consumers are absorbing all the iron that by any lucky circumstance happens to be thrown in their way. They are not in the least particular either about grade, quality or the location of the furnace. When they cannot get a low grade iron they take a high grade and cheerfully pay the difference in cash as well as heavy freight charges, when the furnace selling the iron is out of their district, or at a point far remote from their plants.

The established price, of course, puts an end to all speculative buying, but consumers are struggling to get their orders placed to cover the whole for next year, not because of any remote chance of a higher market but because they are anxious to secure whatever advantage there may be in a contract that at least assures a certain priority of shipment.

The cause of the shortage of iron to-day, as already stated, is a failure of the coke ovens to meet the demand for fuel. There is no shortage of coal from which the coke is made, but the operators claim they cannot get a sufficient number of workmen to man the ovens nor of cars to transport the coke to the furnaces. Until the labor situation is improved and adequate railroad facilities furnished for the coke ovens there is no prospect to increase the production of iron and steel now as urgently needed.

IRON AND STEEL IN CANADA.

The Mines Branch of the Department of Mines, Ottawa, has received from the producers complete returns of the production of pig iron in Canada and with the exception of two small plants complete returns of the production of steel ingots and direct steel castings during the first nine months of 1917.

The total production of pig iron during the first nine months was 895,307 short tons, as against 844,717 tons during the first nine months of 1916. The average monthly production in 1917 was 99,478 tons, as against an average monthly production throughout 1916 of 97,438 tons.

Furnaces were in blast at Sydney and North Sydney, N.S., Hamilton, Port Colborne, Sault Ste. Marie, and Deseronto, Ont. Small quantities of pig iron were also produced in electric furnaces from scrap steel at Orillia, Collingwood, St. Catharines, Toronto, Ont., and at Montreal, Que. The total quantity of pig iron thus produced in electric furnaces during the nine months was 9,983 short tons.

The total production of steel ingots and direct castings during the first nine months was 1,265,183 short tons, as against 911,054 tons during the first nine months of 1916. The average monthly production during the first nine months of 1917 was 140,576 tons as against an average monthly production throughout 1916 of 106,268 tons.

The production of steel in electric furnaces included above was 30,960 tons during the first nine months of 1917 as against a total of 19,639 tons produced throughout 1916. The production of steel in electric furnaces in September was over 5,000 tons or at the rate of over 60,000 tons per annum.

The monthly production—exports and imports during 1916 and 1917 are shown in the accompanying tables.

FORD FAVORS DAILY PAPERS.

The advertising manager of Ford Motor Co., says: "Nothing equals the daily newspaper as an advertisement medium. For the last six years the Ford Co. has touched nothing else and in one year alone we spent more than \$15,000,000 in advertising." In a comparison of the daily newspapers in 51 cities of the United States with the magazines published in the same cities the circulation of the papers shows 15,500,000 and the magazines 880,000. A page in two magazines would cost \$7,500 and like space in newspapers would cost less than \$6,000.—Boston News Bureau.