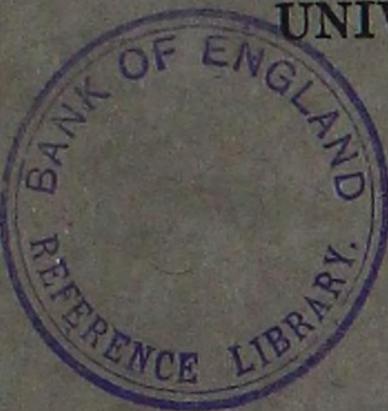


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THE BELGIAN IRON AND STEEL INDUSTRY

BY

A. DELMER

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THE BELGIAN IRON AND STEEL INDUSTRY

By A. DELMER

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N.B.—The ton used in this Memorandum is the
metric ton of 2204 lbs.

THE BELGIAN IRON & STEEL INDUSTRY

By A. DELMER.

I.—GENERAL SUMMARY.

IRON has been produced and worked in Belgium for a very long period. A great number of forges were formerly scattered throughout the southern part of the country, which is a somewhat hilly region, covered with forests, studded with small superficial deposits of iron and watered by rapid streams. Thus the iron-masters found there the fuel, ore and motive power which they needed.

The concentration of the iron and steel industry in the valleys of the Sambre and the Meuse, principally in the vicinity of Charleroi and Liège, towards the beginning of the nineteenth century was the result of the deforestation of the country, of the exhaustion of iron deposits, and, above all, of the use in the metal works of coal and coke which was produced in the coalfields of Hainault and Liège.

The great Belgian iron and steel establishments are of long-standing origin; they are the result of the development and fusion of small forges where iron was puddled and forged a hundred years ago. It is on account of this origin that many of them are composed of several works separated by a river, a railway, roads or building land.

Nearly all the factories were demolished by the Germans during the war, some of them to the foundations. They have been reconstructed and are now provided with modern equipment.

Production in 1924, compared with that of the year 1913, proves that the Belgian industry has recovered and even exceeded its former vigour.

PRODUCTION IN BELGIUM.
(000 tons.)

Year.	Pig Iron.	Steel Ingots.	Finished Rolled Products in Steel and Iron.	Steel Castings.
1913	2,485	2,405	2,162	62
1924	2,824	2,803	2,322	71

This result is the more conclusive as the year 1913 was the record pre-war year.

The Belgian works form part of the group of iron and steel regions of Continental Europe which work the phosphoric ore (*Minette*) of Lorraine. Their share in the output of this

group was about 10 per cent. before the war; it has risen since the war and reached about 15 per cent. in 1924. This greater share is the result not only of the growth of Belgian output, but also of a diminution in French and German output.

MEAN ANNUAL PRODUCTION OF PIG IRON
(000 TONS) IN THE PRINCIPAL REGIONS USING
LORRAINE ORE.

Region or Country.	1901-10.	1911-13.	1924.
France—North	427	810	602
Belgium	1,317	2,277	2,824
Rhenish Westphalia	4,629	7,548	6,250*
France—East	2,127	3,321	3,091
France—Lorraine (disannexed)	2,143	3,416	2,984
Grand Duchy of Luxemburg...	1,326	2,176	2,157
Sarre	872	1,297	1,348
Total	12,841	20,845	19,256
Belgium's share as % of total Belgium and Luxemburg	10.3	10.9	14.7
000 tons	2,643	4,353	4,981
% of total	20.6	20.9	25.9

* Approximate.

It must not be forgotten that on May 1st, 1922, the Grand Duchy of Luxemburg, a large producer of pig iron and steel, was united to Belgium, and that the importance of the Union Économique belgo-luxembourgeoise on the world steel-market is so much the greater since the consumption of pig iron, iron and steel within the area of the union is very slight on account of the limited extent of territory and the small number of inhabitants. Therefore, the Union exports great quantities of iron and steel, representing about three-fourths of the production (76 per cent. in 1924); exports are only to a very small extent balanced by imports of pig iron and finished rolling-mill production.

UNION ÉCONOMIQUE BELGO-LUXEMBOURGEOISE
(1924).

	Exports (000 tons).	Imports (000 tons).
Pig iron.....	130	327
Finished pig iron	29	4
Semi-finished products :		
Iron bars, steel ingots, slabs, blooms, billets, sheet bars	801	36
Finished rolled products.....	2,441	151

The iron and steel concerns may be grouped in two categories—producers and re-rollers. The producers own the blast furnaces, steel works and rolling mills; several of them possess also collieries and cokeries within the country, iron mines and factories abroad, especially in France and Luxemburg. These great undertakings, ten in number, were constituted in most cases at the beginning of the nineteenth century by the amalgamation of works and expanded by the absorption of other enterprises. Side by side with these powerful producers, a great many re-rollers work the iron and steel. These transformers run the factories where iron was puddled some years ago, but where now only scrap and semi-finished products of the steel works are used in making finished steel. There must be added to

this group of re-rollers a large number of small steel works attached to the engineering works to run off steel castings.

The following table shows the output of the different types of establishment in 1924.

Unit (000 tons).	Pig Iron.	Steel Ingots.	Puddled Iron.	Finished Rolled Iron and Steel.	Steel Castings.
(A) Producers	2,824	2,719	—	1,907	15
(B) Transformers:					
Steel Works	—	84	—	135	3
Rolling Mills	—	—	26	76	—
Iron Works...	—	—	—	204	—
Rolling Mills	—	—	—	—	—
Steel Foundries	—	—	—	—	53
Total ...	2,824	2,803	26	2,322	71

II.—PRODUCERS.

The pig iron and steel production works are localised in three parts of the country; around Charleroi, round Liège, and in the south of the province of Luxemburg. With the Charleroi group must be included the Clabecq works in the south of Brabant.

The first two groups are “on coal,” the third near the deposits of the “Minette.”

The importance of each of these three groups is not the same. Considered solely from the point of view of pig iron production, the least important group, that of Luxemburg, has made more progress than the others for some years.

PIG IRON PRODUCTION.

(000 tons.)

Year.	Charleroi.	Liège.	S. Luxemburg.
1913	1,362	966	157
1924	1,418	1,101	305

This fact proves that conditions for output are becoming more favourable near the iron mines.

For finished products, works in the coal area have the advantage. Since the war the Athus-Grivegnée Company has abandoned pig iron production at Liège and built blast furnaces in Luxemburg, estimating that the disadvantage of separating processes would be compensated by the advantages of the proximity of the furnaces and the iron mines.

For the whole output of the iron and steel trades, the production of the three groups is as follows:

1924.	Pig Iron.	Steel Ingots.	Iron and Finished Rolled Steel.	Steel Castings.
Charleroi	1,418	1,301	954	5
Liège	1,101	1,257	940	10
Luxemburg	305	161	13	—
Total	2,824	2,719	1,907	15

CHARLEROI GROUP.

The works in this group belong to eight companies. The two most important—the *Providence* and the *Sambre et Moselle*—each produced in 1924 more than 300,000 tons of pig iron.

Four other companies—the *Usines Métallurgiques du Hainault*, the *Société Minière et Métallurgique Alliance Monceau*, the *Hauts-Fourneaux, Forges et Aciéries de Thy-le-Château et Marcinelle* and *Clabecq*—each produced from 150,000 to 200,000 tons of pig iron. The works of *Boël*, *Châtelineau* and of *Moncheret* produced less than 100,000 tons.

La Providence possesses two factories in France, at Hautmont and at Rehon, iron mines in Lorraine, coke ovens and certain interests in collieries in Belgium. Their principal branch is at Marchienne-au-Pont (Charleroi): four blast furnaces.

Sambre et Moselle possesses a large factory at Montignies-sur-Sambre, with coke ovens. They purchased some years ago the small colliery of Hyon-Ciply to the south of Mons: four blast furnaces.

Les Usines Métallurgiques du Hainault are situated at Couillet; they have amalgamated with the rolling mills of Baume (La Louvière). They are part-owners of the collieries of Bois de St. Chislain and the Levant of Mons. They possess coke ovens and four blast furnaces.

La Société Minière et Métallurgique Alliance Monceau is the amalgamation of two concerns. They work collieries and possess mines in the Grand Duchy of Luxemburg: two blast furnaces.

Les Hauts-Fourneaux, Forges et Aciéries de Thy-le-Château et Marcinelle have a share in the Belgian coalmines, cokeries and iron mines in France (Briey) and in Luxemburg: three blast furnaces.

Clabecq is a prosperous works situated between Brussels and Charleroi. It works, with the Solvay company, the coke factory at Vilvorde: two blast furnaces.

The firm of *Châtelineau* has coke ovens, two blast furnaces, steel works and rolling mills.

The factory of *Boël* at La Louvière, like those of *Moncheret*, have respectively two and one blast furnaces, a steel works and a rolling mill.

LIÉGE GROUP.

The two principal producers in this group—*Cockerill* and *Ougrée-Marihaye*—each produce 370,000 tons of pig iron per annum. The *Aciéries d'Angleur et Espérance-Longdoz* have an output of nearly 200,000 tons of pig iron. The *Société d'Athus-Grivegnée*, working near Liège on the pig iron and semi-finished products of the Luxemburg works, produces 160,000 tons of finished steel.

The *Société Cockerill*, one of the oldest and most important in the country, possesses collieries at Seraing (Liège), in Campine and at Mons; coke ovens and iron mines in Lorraine, in the Grand Duchy of Luxemburg and in Spain. It has, in addition to its blast furnaces, steel works and rolling mills in Seraing, important construction works and a naval dockyard at Hoboken near Antwerp. It owns a steamship line (Antwerp-London): six blast furnaces at Seraing.

The *Société d'Ougrée-Marihaye* has works in France (the blast furnaces of Chiers and Virian-Molhain) and at Rodange in Luxemburg, collieries near Mons, at Ougrée and at Seraing (Liège), iron mines in France (Briey) and Luxemburg. Its establishment at Ougrée includes coke ovens, blast furnaces, steel works and rolling mills, which form the principal part

of its industrial sphere. Six blast furnaces at Ougrée.

The *Société des Aciéries d'Angleur*, which has just amalgamated with the *Société des Charbonnages belges* (Mons), has two factories near Liège, that of Tilleur and that of Renory. Four blast furnaces.

The *Société d'Espérance Longdoz* possesses cokeries, iron mines in France, and two factories, one at Liège and the other at Seraing. Three blast furnaces.

The *Société d'Athus-Grivegnée* has at Liège only a cokery, a Martin open-hearth steel works and rolling mills. It is in Luxemburg at Athus that their blast furnaces and Thomas works are situated. They have recently absorbed the Steinfort works at Luxemburg, which include three blast furnaces and a Martin open-hearth steel works with an electric furnace.

LUXEMBURG GROUP.

The only works of importance are those at Athus of the *Athus-Grivegnée* company referred to above. The Musson and Halanzy companies each possess only two blast furnaces and produce almost exclusively foundry phosphoric pig iron.

SUPPLY OF IRON ORE.

Iron ore is practically no longer mined in Belgium. The numerous *surface* deposits of limonite (brown hematite) to which the forges of the Ardennes owed their origin are exhausted. The bed of the Devonian oolitic hermatite, formerly worked in the valley of the Meuse between Namur and Huy, is found at too great a depth and in ground where costly pumping is necessary. The superficial bed of ore in the grasslands of Campine is worked out in the best parts, and the limonite still extracted is used almost solely for the purification of gas from the coke ovens. Finally, the northern edge of the Minette area, which extends a little into Belgium over the Luxemburg frontier, furnishes only poor siliceous ore, which can be used only in mixtures.

Belgian metallurgists have therefore to import the ore they require. It is imported chiefly from the Minette area, *i.e.* from France (Plateau de Briey, Lorraine and vicinity of Nancy) and from Luxemburg. They purchase also in Sweden. Ores for hematite iron are obtained from Spain.

The following table gives the origin of the ores used during 1924:

SUPPLY OF IRON ORE IN 1924.

	(000 tons).
France	5,417
Grand Duchy of Luxemburg	1,131
Total Minette	6,548
Sweden	530
Belgium	94
Spain	36
Norway	3
Algeria	1
Total	7,212

If account is taken of the iron content of the ores as well as scrap iron and slag, these different sources of supply contributed to the production of pig iron as follows :

Year 1924.	Production of Pig Iron.	
	(000 tons).	%
Minette	2,170	77
Swedish ore	300	10
Belgian ore	30	1
Spanish ore	20	1
Scrap, slag, etc.	300	11
Total	2,820	100

Thus the Belgian iron and steel industry depends mainly upon the uses of the oolithic ore of Lorraine (Minette). The distance from the Charleroi and Liège works to the centre of the Minette area (Briey) is 240-250 kilometres (150 miles). Transport is almost exclusively by rail. The price per unit of iron is lower for Minette than for any other ore.

Nearly all the Belgian works possess mines or shares in mines in the Minette deposits and need to purchase very little ore.

The Swedish ore is of a special nature with a high iron content which increases the output of the blast furnaces. It reaches Belgium via Antwerp. Since the war, scrap and slag constitute a fairly high percentage of the blast furnace mixture.

SUPPLY OF FUEL.

Belgian producers do not find within the country all the coking fuel which they need. The seams of bituminous coal are largely exhausted at Liège. There are none at Charleroi; coking coal comes from the south and east parts of the central area and from the south of the Mons area. To supply the coke ovens of the country, bituminous coal is brought from Great Britain and Germany, a little also from France and the Netherlands. Foreign coal is often mixed with Belgian.

The following table gives some indication as to the supply of coke for the Belgian blast furnaces.

COKE CONSUMPTION.

(000 tons.)

1924.	Charleroi.	Liège.	Luxemburg.	Total.
Coke, foreign	321	210	121	652
Coke made in Belgium from foreign coal	733	513	220	1,466
Total of foreign origin	1,054	723	341	2,118
Coke—total consumption	1,513	1,092	408	3,013
Percentage of foreign origin...	70	66	84	70

The development of the coal industry in Campine will partially free the Belgian metallurgists of their dependence upon the foreigner.

All the Belgian factories possess coke ovens. They recover the bye-products of distillation, and use the gas.

PRODUCTION.

(a) *Pig Iron.*

Using chiefly phosphoric ore from Lorraine, the blast furnaces produce mainly iron for Thomas (basic) steel. The Luxemburg works produce likewise a large amount of foundry phosphoric pig iron. A single blast furnace, in the Liège area, produces hematite and manganiferous pig iron.

PRODUCTION OF PIG IRON IN 1924.

(000 tons.)

	Liège.	Charleroi.	Luxemburg.	Total.
Foundry—phosphoric	9	—	96	105
Foundry—hematite	44	—	—	44
Forge	2	—	—	2
Basic	1,025	1,418	209	2,652
Ferro-Alloys	21	—	—	21
Total	1,101	1,418	305	2,824

(b) *Steel Ingots.*

Nine-tenths of the steel produced in Belgium is from Thomas converters, the remaining tenth is produced by the open-hearth process. The production of steel by electric furnace is still of little importance.

STEEL PRODUCTION IN 1924.

(000 tons.)

	Liège.	Charleroi.	Luxemburg.	Total.
Thomas converter	1,023	1,263	161	2,447
Open hearth	226	38	—	264
Electric furnace ...	8	—	—	8
Total	1,257	1,301	161	2,719

(c) *Finished Steel.*

The table in the next column gives details of the finished products of the rolling mills of the Belgian producing firms in 1924.

(d) *Finished Iron.*

The same works produced in 1924 several thousand tons of finished iron.

OUTPUT OF FINISHED IRON IN 1924.

	Charleroi.
Merchant (rounds, squares, flats)	19,000 tons
Special shapes	6,000 „
Total	25,000 tons

OUTPUT OF FINISHED STEEL IN 1924.
(000 tons.)

	Liège.	Charleroi.	Luxemburg.	Total.
Merchant (rounds, squares, flats) ...	267	363	—	630
Special sections (angles, etc.)	35	114	—	149
Girders and U's ...	49	150	—	199
Rails	134	92	—	226
Railway accessories (plates and fish-plates)	25	19	—	44
Sleepers	34	—	—	34
Tyres and axles ...	26	7	—	33
Wire rods	117	8	13	138
Hoops (for packing)	—	26	—	26
Rods (for reinforced concrete)	22	51	—	73
Plates :				
Thick (3 mm. and over)	115	57	—	172
Average (1-3 mm.)	58	40	—	98
Thin (under 1 mm.)	56	—	—	56
Other steel	2	2	—	4
Total	940	929	13	1,882

III.—RE-ROLLERS.

There are four other classes of works manipulating iron and steel, apart from the big producers; works engaged in (a) producing some steel, but mainly re-rolling steel purchased from producers; (b) producing puddled bars and re-rolling iron and steel; (c) re-rolling iron and steel only; (d) producing iron and steel castings only.

(a) *Steel Works Rolling Mills.*

Three of these are in the province of Hainault, near Charleroi, the fourth at Bruges.

They work Belgian pig iron and a little foreign pig iron and waste and scrap in open-hearth furnaces. They produced in 1924, 84,422 tons of steel ingots.

Their output of finished rolled products is given in detail below.

PRODUCTION OF THE STEEL WORKS ROLLING MILLS IN 1924.
(Tons.)

<i>Finished steel :</i>	
Merchant (rounds, squares, flats)	34,490
Special shapes (angles, etc.)	10,815
Girders	2,080
Tyres and axles	6,287
Large plates	4,295
Thick plates (3 mm. and over)	22,400
Medium plates (1-3 mm.)	33,540
Total	113,907
<i>Finished Iron :</i>	
Merchant (rounds, squares, flats)	20,390
Special shapes	930
Total	21,320

(b) *Iron Puddling Works and Iron and Steel Rolling Mills.*

There now exist in Belgium only three

iron puddling furnaces, supplemented by rolling mills where the iron and steel are worked. These three establishments are situated in Hainault.

In 1924 thirteen puddling furnaces were working, compared with 110 in 1914. They used Belgian and foreign pig iron and scrap. Their output of puddled iron bars was 25,930 tons.

Iron puddling, already replaced in other countries for some time by the working of pig iron and scrap in Martin furnaces, has been continued in Belgium on account of the excellence of the very able and cheap labour. Post-war conditions are causing the disappearance of iron puddling.

The rolling mills attached to the iron works produced in 1924, 42,450 tons of finished steel and 34,430 tons of finished iron.

PRODUCTION IN 1924 OF THE ROLLING MILLS OF THE IRON WORKS.
(Tons.)

<i>Finished Steel :</i>	
Merchant (rounds, squares, flats)	21,790
Special shapes (angles, etc.)	14,450
Girders	690
Rails	1,220
Railway accessories (plates and fish-plates)...	1,470
Hoops	1,250
Large sheets	1,580
Total	42,450
<i>Finished Iron :</i>	
Merchant (rounds, squares, flats)	26,160
Special shapes	8,270
Total	34,430

(c) *Rolling Mills (Proper).*

Of the sixteen rolling mills proper in activity in 1914, five are situated near Charleroi, one at Mons, one in the province of Namur and nine in the valleys of Honyoux, l'Ourthe, la Vesdre, near the Meuse, and around Liège.

The Charleroi works produce chiefly merchant iron and steel. The Liège are sheet rolling works, mainly for sheets under one millimetre thick.

The raw materials are the semi-manufactures (blooms, billets, slabs and sheet-bars) supplied largely from abroad, and Belgian iron bars and scrap and waste.

The output is given in detail in the adjoining table.

(d) *Steel Foundries.*

Fifteen steel foundries transform steel in small converters and in small Martin furnaces from Bessemer pig iron purchased from abroad. Nearly all these steel foundries are situated in

ROLLING MILLS—OUTPUT.
(Tons.)

<i>Finished Steel :</i>	
Merchant (rounds, squares, flats)	5,768
Special shapes	8,670
Railway accessories (plates and fish-plates)...	1,377
Large plates	13,815
Thick sheets (3 mm. and over)	1,347
Medium sheets (1-3 mm.)	12,811
Thin sheets (1 mm. and under)	42,355
Total	86,143
<i>Finished Iron :</i>	
Merchant (rounds, squares, flats)	108,797
Ingot iron	142
Thin sheets	9,172
Total	118,111

the province of Hainault, in the neighbourhood of La Louvière (centre).

In 1924 their output rose to 53,378 tons of steel castings.

This industry is associated with engineering, and particularly with the manufacture of railway material.

IV.—RECORD OF PRODUCTION AND PROGRESS DURING RECENT YEARS.

In 1924, which was a record year, the Belgian works produced :

2,824 thousand tons of pig iron.
2,803 " " steel ingots.
2,124 " " finished rolled steel.
198 " " " " iron.
71 " " steel castings.
2,393 " " finished iron and steel.

Details, in thousand tons, are given in the tables below.

(000 tons.)

Finished Iron.	Pro-ducers.	Steel Works Rolling Mills.	Iron Works Rolling Mills.	Rolling Mills.	Total.
Merchant (rounds, squares, flats).....	19	20	26	109	174
Special shapes	6	1	8	—	15
Thin plates	—	—	—	9	9
Total	25	21	34	118	198

(000 tons.)

Finished Steel.	Pro-ducers.	Steel Works Rolling Mills.	Iron Works Rolling Mills.	Rolling Mills.	Total.
Merchant (rounds, squares, flats).....	630	35	22	6	693
Special sections (angles, etc.)	149	11	14	9	183
Girders and U's	199	2	1	—	202
Rails	226	—	1	—	227
Railway accessories (plates and fish-plates)	44	—	1	1	46
Sleepers	34	—	—	—	34
Tyres and axles	33	6	—	—	39
Wire rods	138	—	—	—	138
Hoops (for packing) ...	26	—	1	—	27
Rods (for reinforced concrete)	73	—	—	—	73
Large plates	—	4	2	14	20
Plates :					
Thick (3 mm. and over)	172	22	—	1	195
Medium (1-3 mm.)	98	34	—	13	145
Thin (under 1 mm.)	56	—	—	42	98
Other steel	4	—	—	—	4
Total	1,882	114	42	86	2,124

These quantities represent very nearly the total productive capacity of the Belgian works. Until recent times, production of the Belgian factories has developed normally; the war has only been a delay of a decade.

The tables and the diagram of production show a more rapid progress in the case of steel ingots and pig iron than in the case of finished products.

PRODUCTION OF IRON AND STEEL.

(000 tons.)

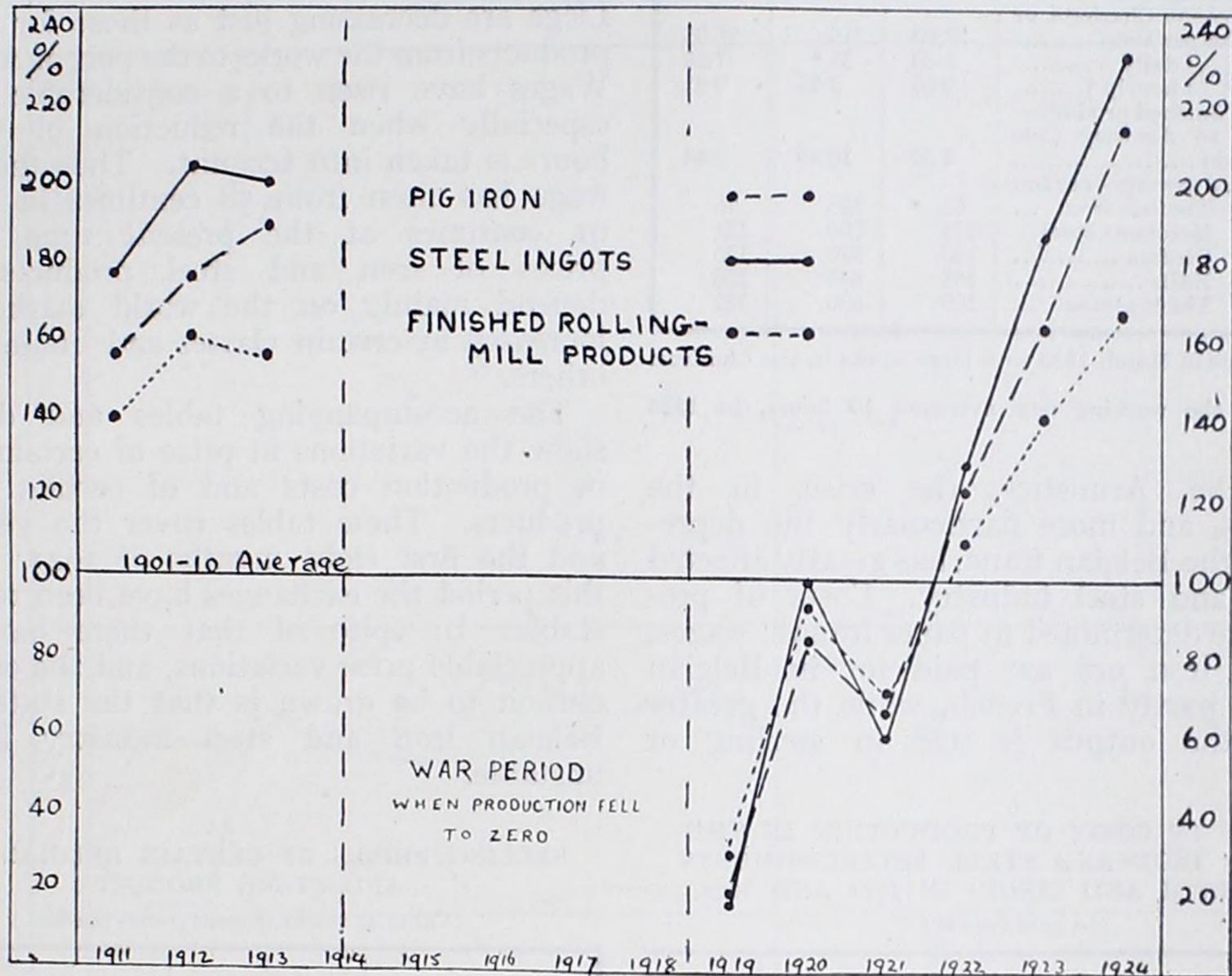
Year.	Pig Iron.	Steel Ingots.	Finished Iron and Steel.	Steel Castings.
Average				
1901-1910	1,317	1,205	1,393	36
1911	2,046	2,128	1,945	64
1912	2,301	2,442	2,238	73
1913	2,485	2,405	2,162	62
1914-1918 (War years—production fell to nearly zero).				
1919	251	322	411	12
1920	1,116	1,192	1,294	61
1921	872	721	996	43
1922	1,613	1,531	1,521	34
1923	2,148	2,239	1,953	58
1924	2,824	2,803	2,322	71
<i>Percentage of 1901-10 average.</i>				
1901-1910	100.0	100.0	100.0	
1911	155.3	176.5	139.5	
1912	174.7	202.8	160.6	
1913	188.6	199.6	155.1	
1914-1918 (War years).				
1919	19.1	16.7	29.5	
1920	84.8	98.7	92.8	
1921	66.2	59.8	71.4	
1922	122.5	127.1	109.2	
1923	163.1	185.8	140.1	
1924	214.4	232.8	166.7	

The results obtained by the Belgian manufacturers are the more remarkable since the works have not the advantage of proximity to iron mines; they have only partially the advantage of being near the coal-fields. They are not very near Antwerp, the port for finished

products. The prosperity of the Belgian iron and steel trade rests primarily upon the labour of a working population which has become highly skilled in the course of several generations, and upon an excellent technical and commercial organisation.

PRODUCTION OF IRON AND STEEL.

Percentages of 1901-10 average.



V.—ECONOMIC POSITION.

The economic position of the Belgian iron and steel industry has been continually changing since the Armistice and it is impossible to say what it may be in the near future.

Immediately after the war factories had to be reconstructed, and the work of restoration has only just been completed. World markets have been completely upset. France has become an important producer who may become a formidable competitor of Belgium in the international market, and, on the other

hand, the reduction in German iron and steel production may give greater effect to the policy of "dumping" practised before the war by the "Stahlverband." Since the Belgo-Luxemburg economic convention, Belgian producers can no longer be protected either directly by a Customs tariff or indirectly by railway transport rates against the great pig-iron and steel producers of the Grand Duchy of Luxemburg, who have the advantage of being near the iron mines.

PRICES, ETC.

	June 1914.	August 1925.	
	In Gold Francs.	In Paper Francs.	In Gold Francs. 1 dollar = 5.1820 gold fr. = 22.1233 paper fr.
Ore from Briey. Price at mine per ton	4.87	22.75	5.31
Transport of ore. Tuquériex (Briey) to Charleroi (243 km.) or to Liège (232 km.)...	4.95	15.25	3.57
Price of coke—at Charleroi or Liège works per ton	22.00	115	26.95
Average wages { daily	5.80	31 *	7.26
{ hourly †	0.58	3.88	0.91
Transport of finished product—Charleroi to Antwerp (100 km.) per ton	3.60	10.40	2.44
Price F.O.B. Antwerp—per ton			
" Thomas iron ...	65	325	76
" Merchant steel	108	560	131
" Girders	140	575	135
" Rails	148	540	126
" Thick plates ...	105	690	161

* Daily wage in March 1925 in a large works in the Charleroi area.

† In 1914 the working day averaged 10 hours, in 1925 8 hours.

Since the Armistice, the crisis in the Exchanges, and more particularly the depreciation of the Belgian franc, has greatly affected the iron and steel industry. Costs of production are determined in paper francs; wages, coke and iron ore are paid for in Belgian money or partly in French, while the greater part of the output is sold in sterling or dollars.

FACTORS IN COSTS OF PRODUCTION IN THE BELGIAN IRON AND STEEL ESTABLISHMENTS (CHARLEROI AND LIÈGE) IN 1924 AND 1925.

(In gold francs.)

	Value of Paper Franc in Gold Francs.	Value of Ore at Works, per ton.	Value of Coke at Works, per ton.	Average Daily Wage.
1924 Jan.	0.217	7.38	46.65	6.72
Feb.	0.199	6.77	38.80	6.16
March	0.200	6.80	39.00	6.20
April	0.269	9.15	49.23	8.34
May	0.253	8.60	44.27	7.84
June	0.236	8.50	38.94	7.31
July	0.235	8.46	37.60	7.28
Aug.	0.260	9.36	39.00	8.06
Sept.	0.256	9.22	37.12	7.94
Oct.	0.249	8.96	32.37	7.72
Nov.	0.250	9.00	35.00	7.75
Dec.	0.257	9.25	37.26	7.96
1925 Jan.	0.262	9.43	36.68	8.09
Feb.	0.263	9.47	36.82	8.15
March	0.263	9.47	36.82	8.13
April	0.262	9.43	35.37	7.72
May	0.270	9.72	33.75	7.95
June	0.244	8.78	29.28	7.18
July	0.239	9.08	27.48	7.04
Aug.	0.234	8.89	26.91	6.89

The situation as it exists to-day, compared with that in 1914, can be deduced from the table opposite, where the price of ores, fuel, wages, transport and certain products are given in gold francs.

Iron ore paid for in French francs has not gone up to a great extent. The price of coke rose appreciably after the war, but one may remark here that over-production of coal throughout the world, and particularly in Europe, tends to lower prices considerably. Transport rates for ores from Charleroi and Liège are decreasing just as those for finished products from the works to the port of Antwerp. Wages have risen to a considerable extent, especially when the reduction of working hours is taken into account. Thus the hourly wage has risen from 58 centimes in 1914 to 91 centimes at the present time. Selling prices of iron and steel products which depend mainly on the world market have increased in certain classes and diminished in others.

The accompanying tables and diagrams show the variations in price of certain factors in production costs and of certain finished products. These tables cover the year 1924 and the first eight months of 1925. During this period the exchanges have been relatively stable. In spite of that there have been appreciable price variations, and the only conclusion to be drawn is that the state of the Belgian iron and steel industry is quite unstable.

SELLING PRICES OF CERTAIN BELGIAN IRON AND STEEL PRODUCTS.

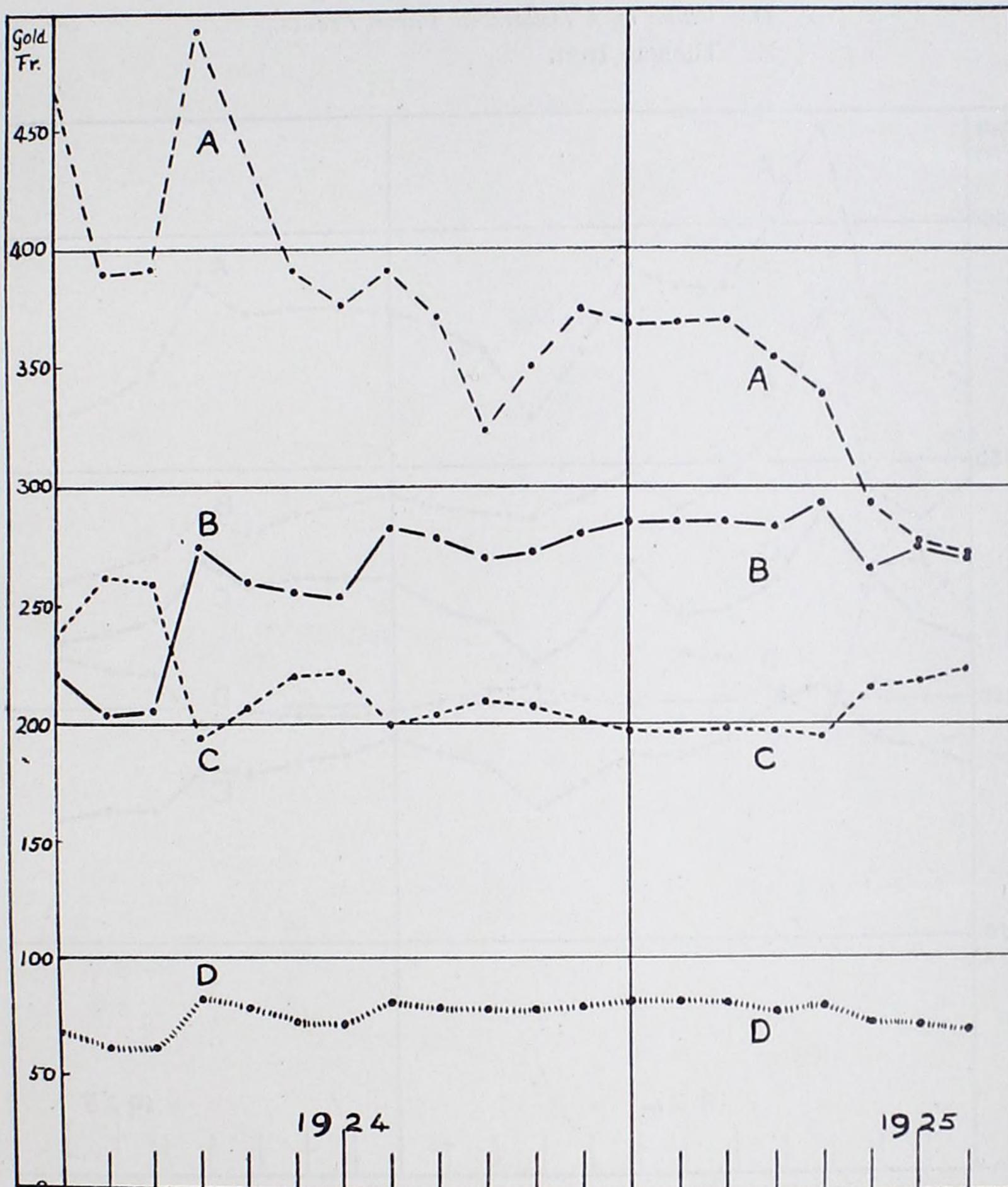
(Value at works in gold francs per ton.)

	Thomas Iron.	Blooms of Thomas Steel.	Rails.	Girders.	Merchant Steel.	Thick Plates.
1924 Jan.	87.88	113.92	146.47	141.05	143.22	167.09
Feb.	90.54	117.41	139.30	139.30	139.30	173.13
March	92	128	145	160	155	185
April	114.32	141.22	181.57	174.85	174.85	221.92
May	101.20	126.50	158.12	158.12	151.80	202.40
June	92.04	120.36	147.50	150.33	141.60	188.80
July	89.30	119.85	141	141	136.30	188
Aug.	89.70	130.00	149.50	144.30	143.00	191.10
Sept.	84.48	115.20	143.36	135.68	136.96	174.08
Oct.	78.43	109.56	139.44	129.48	128.23	159.36
Nov.	87.50	117.50	140	145	143.75	175
Dec.	89.95	120.79	141.35	142.63	145.20	179.90
1925 Jan.	92.22	127.07	144.10	150.65	144.10	183.40
Feb.	89.42	127.55	142.02	148.59	142.02	184.10
March	88.10	127.55	140.70	148.59	140.70	184.10
April	85.67	127.07	136.24	139.38	137.55	183.40
May	87.75	130.95	140.40	144.45	140.40	189
June	76.86	118.34	131.76	140.30	131.76	170.80
July	77.67	115.91	129.06	137.42	133.84	164.91
Aug.	76.05	112.32	126.36	134.55	131.04	161.46

(See following diagrams.)

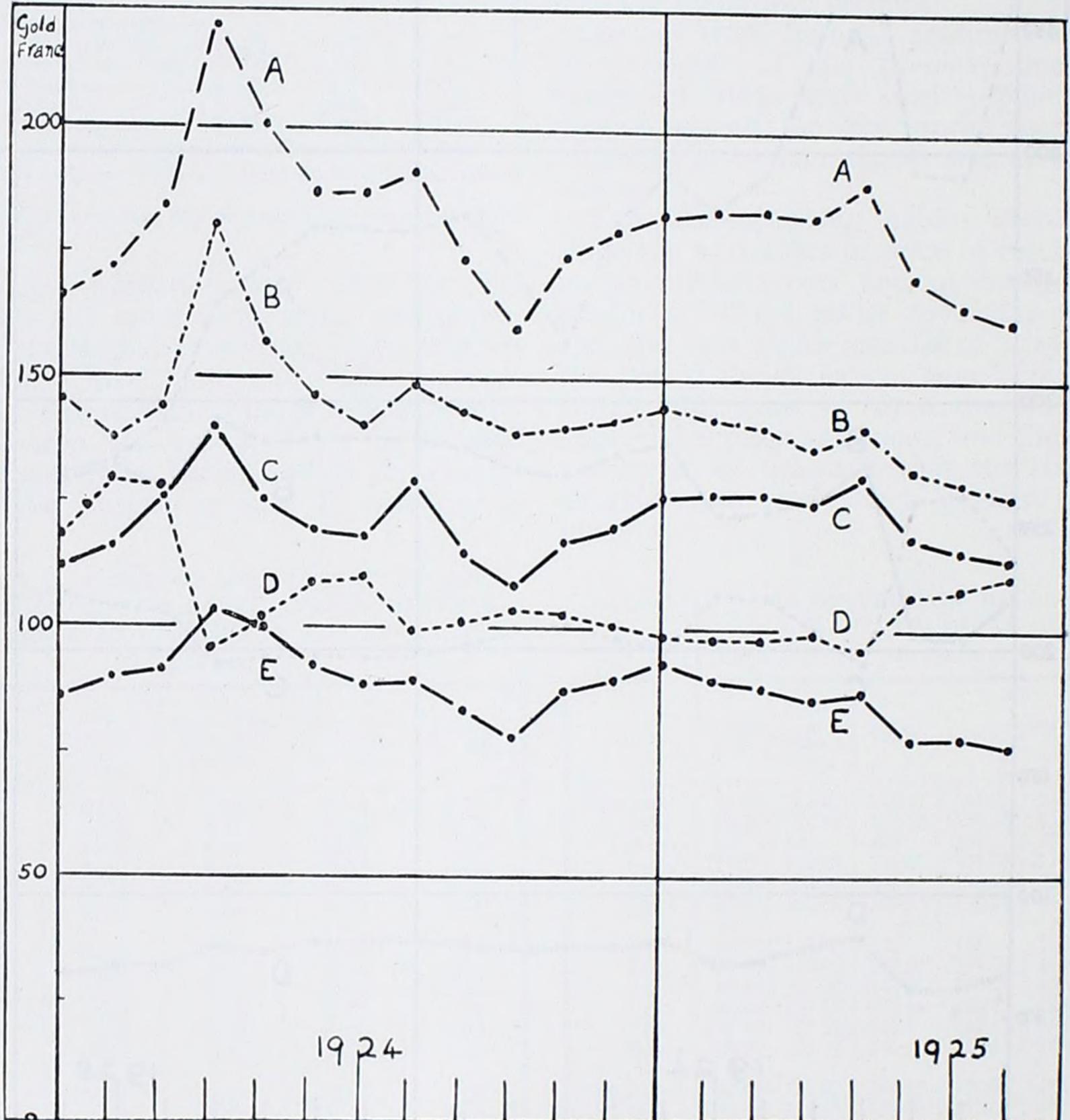
FACTORS IN COST OF PRODUCTION.

- A. Price of One Ton of Coke.
- B. Value of 3 Tons of Briey Ore.
- C. *Value of 10 Dollars in Paper Francs.*
- D. Average Daily Wage.



PRICES OF CHIEF PRODUCTS.

- A. Thick Plates.
- B. Rails.
- C. Blooms.
- D. *Value of 5 Dollars in Paper Francs.*
- E. Thomas Iron.



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