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COMMERCIAL
AND
INDUSTRIAL REPORT

BY

M. Lucien de CAZENAVE

Belgian consul général at Zanzibar.



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P. WEISSENBRUCH, KING'S PRINTER
45, POINT STREET, 45
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COMMERCIAL AND INDUSTRIAL REPORT

FIRST PART.

ANTWERP AND ITS HARBOUR.

The admirable geographical site of Antwerp, its situation on the Scheld accessible without difficulty to the largest vessels, its wharfs alongside which ships run without leightening, have made its port the most favourable on the continent.

The roadstead is one of the best protected in the world.

A great number of channels and a highly developed net of railways establish a direct communication between Antwerp and all the parts of central Europe.

To all these natural and physical dispositions are to be added commercial advantages, place duties cheaper than those charged elsewhere, facilities for conveyance and exchange, economical installations which are daily improved.

Lastly, the political neutrality of Belgium secures the trade of Antwerp from the wars which formerly brought on its decline.

Thanks to these exceptional conditions, no port on the continent has attained such an increase of prosperity.

Since the 16th of July 1863 (the memorable date when the international treaty for the freedom of the Scheld was signed), the transit through the port of Antwerp has taken such an increase, that the town has been obliged to extend in a large proportion its maritime installations, which had become insufficient.

These new installations were solemnly opened on the 26th of July 1885; the roadstead and its approaches have been improved, the largest vessels can as well at low as at high water

manœuvre easily in the roadstead, run alongside and stand directly at the wharfs which border the river; they can embark or disembark economically their cargoes, shelter their wares until their lading or their conveyance to destination.

On the right bank is built a wall for embankment of 3,500 meters in length, and wharfs of an average breadth of 100 meters, covered for about a half with shelterhovels and supplied with a complete set of tools.

The commercial and naval establishments on the right bank contain also :

1° Seven wet docks, of which 3 are disposed normally and 21 others perpendicularly to the roadstead.

At present, the town has undertaken the building of 2 new docks; the first, called « Africa », is destined to protect the great transatlantic steamers and the second, named « America », will be assigned to the petroleum trade and accommodated in the completest conditions.

The wharfs of the maritime docks are adapted and supplied with tools. They are covered with hovels on an area of about 5 hectares.

6 dry slips are established at the western wharf of the Katendyck dock;

2° A store called *Royal*, belonging to the town of Antwerp, and a great many stores situated on various points of the town, and belonging to private persons.

The area of the *Royal store* amounts to 30,000 square meters.

Goods are carried up and off by cranes and elevators moved by hydraulic pressure;

3° 6 railway stations 3 of which are essentially commercial stations.

MARITIME AND COMMERCIAL MOVEMENT; COMMERCIAL RELATIONS OF THE PORT OF ANTWERP.

In the summary comparative table of the maritime arrivals prepared according to statistics furnished by the captains of the port, one can remark that in the last years, the number of sailers has greatly decreased, while steam navigation has taken greater and greater extension.

The number of entering sailers, which exceeded 2,000 in 1874, was reduced to 975 in 1885.

The number of entering steamers, which in 1870 was only 1,745, increases rapidly; 3,885 steamers entered in 1885.

The diminution of sailers and increase of steamers has led to this singular result that since 15 years the total number of seaships entered into the port of Antwerp, remained about the same, while the total tonnage was nearly trebled.

The total tonnage, indeed, which in 1870 was but of 1,386,883 tons, giving an average tonnage of 336 tons per ship, has reached in 1885 3,492,934 tons, with an average tonnage of 700 tons.

The movement of the various railway stations at Antwerp-basins was in 1870 for wares at arrival and departure, of 968,074 tons and 256,304 waggons, and in 1884 of 2,572,456 tons and 811,596 waggons.

Independently of seaships, Antwerp receives from the interior of the country a great number of ships arriving by the Scheld or by the Campine canal.

The number of these arrivals was in 1884 29,370, representing a total tonnage of 2,361,129 tons of 1,000 kilog.

The chief relations of the harbour of Antwerp are with England, Germany, the ports in the Baltic, Sweden and Norway, France, Portugal, the basins of the Mediterranean and the Black Sea, the United States, South America, and British India.

The harbour of Antwerp is joined by numerous navigable roads, in the north with the Maese, the Rhine and the canals of South Holland; in the south with the industrial basin of Charleroy and the north of France; as I have already said, a complete net of railways, brings it in direct connection with the whole of Belgium, the Netherlands, the middle of Germany, Alsace-Lorraine, Switzerland, Italy and France.

The port of Antwerp is nearer the north of France, Alsace-Lorraine and Germany than Havre.

It claims equal facilities with the last town for conveyances towards the east of France and Switzerland.

It is nearer than Bremen and Hamburg to a great part of Germany and can contend (and contended often with success) as well with these ports as with those of the Netherlands.

The piercing of the St-Gothard has permitted to direct through

Switzerland the transit between the Western countries and the East.

The harbour of Antwerp is nearer Milan than any other port in Europe.

It is very useful to know the compared distances between the chief German, French, and Belgian ports through which the Anglo-Indian traffic, that of Zanzibar and of the Eastern coast of Africa can be carried out, as well as the shortest distances.

See here what is found in the *Industrial Moniteur* of 1882 :

Antwerp to Brindisi : through the Saint-Gothard.	1,954 kil.
Ostend — — —	2,030 —
Dunkirk — — —	2,090 —
Boulogne — — —	2,098 —
Bremen — — the Brenner	2,108 —
Culars — — the St-Gothard	2,111 —
Le Havre — — the mont Cenis	2,137 —
Hamburg — — te Brenner	2,162 —
Lubeck — — —	2,188 —

The comparison is all in favour of Antwerp, which possesses the shortest and the cheapest transit lines.

Before finishing this note, it is interesting to put under the eyes of readers the comparative table summing up within the twenty last years the arrivals into the harbour of Antwerp and those into some of the chief foreign ports, in order to keep an account of the amazing maritime progress of this haven.

Comparative table of the arrivals from high sea into the various foreign ports from 1864, 1874 and 1884.

NAMES of the ports.	Tonnage in 1864.	Tonnage in 1874.	Increase as to 1864. In 10 years.	Tonnage in 1884.	Increase as to 1874. In 10 years.	Total increase as to 1864. In 20 years.
Antwerp . .	698,839	2,134,162	205 o/o	4,102,063	92 o/o	500 o/o
Hamburg . .	1,048,296	2,094,102	100	3,727,724	78	255
Dunkirk. . .	313,266	338,311	23	1,059,641	173	240
Rotterdam . .	743,000	1,392,688	87	2,142,617	54	190
Havre . . .	946,119	1,708,947	80	2,341,175	37	150
Amsterdam. .	381,709	488,797	27	999,404	44	160
London. . .	3,359,782	4,763,002	42	6,769,767	42	100
Liverpool . .	2,698,522	4,352,816	61	5,209,357	20	94

It is sufficient to compare these eloquent figures to draw conclusions. They prove evidently the growing prosperity of our port.

NAVIGATION RATES AND DUTIES. — GAUGING SYSTEM. — REGULATIONS. — TARIFFS.

The gauging system used in Belgium before 1884 was empirical.

It consisted in the measurement of the three chief dimensions of the ship, viz. the length on the deck between the stem and the sternpost, the average breadth and depth deducted from the dimensions taken on four points of the length.

These three dimensions, length, breadth and depth were multiplied by themselves, and the product was itself multiplied by $\frac{4}{9}$.

The final issue of these operations expressed the tonnage in gauge-tons of the belgian customs measuring $1 \frac{1}{2}$ cubic meter.

The most of the maritime powers have to day adopted a same gauging system.

It is the Moorsom system to which the belgian government accessed with the assent of the powers which have undersigned the treaty of 1863 for the freedom of de Scheld.

The « Moorsom and stable coaling magazines » system has been used in Belgium from the 1st of January 1884.

The Moorsom ton of 2.83 cubic meters being greater than the former customs gauge, the government has been led to institute a commission in order to settle the coefficients for the transformation of the former rates based on the gauging system which has been given up.

The conclusions of this commission have been approved by the government and the town council of Antwerp.

The average relation between the old and the new gauge ton is of 1.168; in other words, 1,000 tons of the old gauge are equivalent to 856 tons of the Moorsom system.

When you get the rates applicable to the ton of gauge calculated by the Moorsom system, you must multiply by 1,168 the rates applicable to the old Belgian ton.

Ships sailing for Antwerp are described by the telegraph on their passing before Flushing, which gives the ship owners or

the consignees time to take the needful measures for hastening unloading.

Sanitary visit.

The sanitary visit that takes place at Doel, is imposed only on ships of doubtful origin, or on board of which cases of infectious diseases have been ascertained.

This visit and the quarantine formalities do not lead to any costs at the expense of the ship.

Customs.

The captains deliver their statement and declarations at the custom-house, at Lillo.

The custom-house officers go on board, and accompany the ships as far as their destination. They deliver the papers at the customhouse of Antwerp as soon as they are arrived in port.

The ship can unload as soon as it is arrived on wharf and the customs formalities have been fulfilled.

Pilotage.

The pilotage of the vessels is obligatory and performed concurrently by the Belgian and the Dutch pilots.

Are not bound to take a pilot : men of war, — pleasure ships belonging to nautical clubs, — sea ships in ballast whose draught does not reach 19 decimeters, — ships coasting in the river, — steam-tugs when they do not trade, — lastly, ships fishing cod-fish, herring, or fresh fish, or serving to convey fresh or salted fish.

The pilotage dues are settled according to the dispositions of the treaty concluded between Belgium and the Netherlands the 12th of May 1863, for the ransom of the toll in the Scheld, which stipulates that the pilotage dues on the Scheld may not be higher than those charged at the mouth of the Maese.

These dues are the same for the ships of all nations and are paid directly in the proportion to the draught of the ships and according to the winter or summer season. The winter season begins on the first of October and the summer season on the first of April.

They differ according as the ships are sailers, towed ships or steamers.

Reductions and exonerations are granted for some exceptional circumstances foreseen by the regulations.

The pilotage at the entrance, leaving, the ascending or descending — in case of forced refuge — is paid only in proportion of 50 per cent of the tariff.

The pilotage duties are increased by one half when the floating ice is abundant enough to impede navigation, and to render the pilotage course dangerous.

These duties are also generally increased by one half for ships difficult to steer, for want of needful ballast, or on account of a damage to the rudder, or to the rigging, when these damages, without seriously compromising the ship, render pilotage more dangerous.

A. — Pilotage at the entrance.

Tariff of the pilotage dues for the Scheld, from the sea before the passes to the roadstead of Flushing. (See table *A*.)

B. — Pilotage at leaving.

Tariff of the pilotage dues for the Scheld from the harbour of Flushing to the sea. (See table *B*.)

C. — Pilotage at going up and coming down.

Tariff of the pilotage duties for the Scheld from Flushing to Antwerp and « vice versa ». (See table *C*.)

The measurement of the draught imposes a fixed duty of fr. 0.53 for the entrance and the leaving.

There will be paid for taking a pilot on board in the haven an indemnity of fr. 4.23.

The pilotage, from the haven to the docks and vice-versa, and the pilotage for changing of anchorage occasion the following dues :

Ship not masted such as sloops, tjalks, galiots, and so on	fr. 1.75
Ship non masted such as schooners	fr. 2.50
Bark or three-master.	fr. 3.02
Steamer	fr. 2.50

This tariff is also applied to ships going from the harbour to wharf at the mouths of the docks and vice versa.

Ships crossing the Scheldt in order to go from one dock into another, pay « double tariff ».

A. — *Tariff of the pilotage duties for the Scheldt from the sea before the passes to the roadstead of Flushing (Belgian money).*

DRAUGHT in palms or decimeters	SUMMER PRICES.			WINTER PRICES.		
	Sailers. F. C.	Towed ships. F. C.	Steamers. F. C.	Sailers. F. C.	Towed ships. F. C.	Steamers. F. C.
15	15 24	14 18	13 33	20 32	19 05	17 78
16	16 08	15 03	13 97	21 46	19 89	18 62
17	16 93	15 87	14 81	22 01	20 74	19 26
18	18 62	17 35	16 30	23 70	22 22	20 74
19	20 32	19 05	17 78	25 40	23 92	22 22
20	22 01	20 53	19 26	27 94	26 24	24 55
21	23 70	22 22	20 74	30 48	28 57	26 67
22	25 40	23 70	22 22	33 02	30 90	28 99
23	27 09	25 40	23 70	35 56	33 44	31 11
24	28 78	27 09	25 19	38 10	35 77	33 44
25	31 32	29 42	27 51	40 63	38 10	35 56
26	33 86	31 75	29 63	44 02	41 27	38 52
27	36 40	34 07	31 75	47 41	44 44	41 48
28	38 94	36 61	34 07	50 79	47 62	44 44
29	42 33	39 58	37 04	55 87	52 49	48 89
30	45 71	42 96	40 00	60 95	57 14	53 33
31	49 95	46 77	47 60	66 03	61 80	57 78
32	54 18	50 79	47 41	71 11	66 67	62 22
33	58 41	54 81	51 22	76 19	71 53	66 67
34	62 65	58 84	54 81	81 27	76 19	71 11
35	66 88	62 65	58 41	86 35	81 06	75 56
36	71 11	66 67	62 22	91 43	85 71	80 00
37	75 34	70 69	66 03	96 51	90 58	84 44
38	79 58	74 71	69 63	103 28	96 93	90 37
39	84 66	79 37	74 07	110 05	103 28	96 30
40	91 43	85 71	80 00	120 21	112 80	105 19
41	99 89	93 76	87 41	130 37	122 33	114 07
42	108 36	101 59	94 81	140 53	131 85	122 96
43	116 83	109 63	102 22	152 38	142 86	133 33

DRAUGHT in palms or decimeters	SUMMER PRICES.			WINTER PRICES.		
	Sailers.	Towed ships.	Steamers.	Sailers.	Towed ships.	Steamers.
	F. C.	F. C.	F. C.	F. C.	F. C.	F. C.
44	125 29	117 46	109 63	164 23	154 07	143 07
45	135 45	126 98	118 52	176 08	165 08	154 07
46	145 61	136 51	127 41	191 32	179 47	167 44
47	155 77	146 03	136 30	206 56	193 65	180 74
48	165 93	155 56	145 19	223 49	209 52	195 56
49	182 86	171 43	160 00	240 42	225 40	210 37
50	199 77	187 30	174 81	260 74	244 44	228 15
51	216 72	203 17	189 63	281 06	263 49	245 93
52	233 65	219 05	204 44	301 38	282 54	263 70
53	250 58	234 92	219 26	321 69	301 59	281 48
54	267 51	250 79	234 07	345 40	323 81	302 22
55	284 44	266 67	248 89	370 79	347 51	354 44
56	304 76	285 71	266 67	396 19	371 43	346 67
57	330 16	309 63	288 89	428 36	401 69	374 81
58	355 56	333 33	311 11	462 22	433 44	421 44
59	389 42	365 08	340 00	506 24	474 71	442 96
60	423 28	396 83	370 37	550 26	515 98	481 48
For each palm or decimeter above.	25 40	23 75	22 22	33 86	31 75	28 63

B. — *Tariff of the pilotage duties for the Scheld, from the road-
stead of Flushing to the sea (Belgian money).*

DRAUGHT in palms or decimeters.	SUMMER PRICES.			WINTER PRICES.		
	Sailers.	Towed ships.	Steamers.	Sailers.	Towed ships.	Steamers.
	Fr. C.	Fr. C.	Fr. C.	Fr. C.	Fr. C.	Fr. C.
15	11 01	10 37	9 74	13 54	12 70	11 85
16	11 85	11 01	10 37	13 39	13 54	12 70
17	12 70	11 85	11 22	15 24	14 39	13 33
18	13 54	12 70	11 85	16 08	15 03	14 18
19	14 39	13 54	12 70	16 93	15 87	14 81
20	15 24	14 18	13 33	17 78	16 72	15 66
21	16 08	15 03	14 18	18 62	17 57	16 30
22	16 93	15 87	14 81	20 31	19 05	17 78
23	18 62	17 67	16 38	22 01	20 74	19 26
24	20 31	19 05	17 78	23 70	22 22	20 74
25	22 01	20 74	19 26	25 40	23 92	22 22
26	23 70	22 22	20 74	27 09	25 40	23 70
27	25 40	23 92	22 22	28 78	27 09	25 19

DRAUGHT in palms or decimeters	SUMMER PRICES.			WINTER PRICES.		
	Sailers.	Towed ships.	Steamers.	Sailers.	Towed ships.	Steamers.
	Fr. C.	Fr. C.	Fr. C.	Fr. C.	Fr. C.	Fr. C.
28	27 09	25 40	23 70	30 48	28 57	26 67
29	28 78	27 09	25 49	32 47	30 26	28 45
30	30 48	28 57	26 67	33 86	31 75	29 63
31	32 47	30 26	28 45	35 56	33 44	31 44
32	33 86	31 75	29 63	37 25	34 92	32 59
33	35 56	33 44	31 41	38 94	36 61	34 07
34	37 20	34 92	32 59	41 48	38 94	36 40
35	38 94	36 61	34 07	44 02	41 27	38 52
36	41 48	38 94	36 49	46 56	43 60	40 85
37	44 02	41 27	38 52	49 10	46 14	42 96
38	46 56	43 60	40 85	51 64	48 47	45 29
39	49 10	46 14	42 96	54 18	50 79	47 44
40	51 64	48 47	45 29	57 57	53 97	50 37
41	54 18	50 79	47 41	60 95	57 14	54 33
42	56 72	53 42	49 74	64 34	60 32	56 30
43	59 26	55 66	51 85	67 72	63 49	59 26
44	61 80	57 99	54 48	72 80	68 36	63 70
45	67 72	63 49	59 26	77 88	73 02	68 45
46	76 19	71 53	66 67	84 66	79 37	73 07
47	84 66	79 37	74 07	94 81	88 89	82 96
48	94 81	88 89	82 96	108 36	101 59	94 81
49	108 36	101 59	94 81	121 90	114 29	106 67
50	121 90	114 29	106 67	135 45	126 98	118 52
51	135 45	126 98	118 52	152 38	142 86	133 33
52	152 38	142 86	133 33	169 31	158 73	148 48
53	169 31	158 73	148 48	186 24	174 60	162 96
54	186 24	174 60	162 96	203 17	190 48	177 78
55	203 17	190 48	177 78	223 49	209 52	195 56
56	223 49	209 52	195 56	243 81	228 57	213 35
57	243 81	228 57	213 35	264 43	247 61	231 41
58	264 43	247 61	231 41	284 44	266 67	248 89
59	284 44	266 67	248 89	304 76	285 71	266 07
60	304 76	285 71	266 67	325 08	304 76	284 44
For each palm or decimeter above.	20 31	19 05	17 78	20 31	19 05	17 78

C. — *Tariff of the pilotage duties for the Scheld from Flushing to Antwerp and vice versa.*

DRAUGHT in palms or decimeters.	SUMMER PRICES.			WINTER PRICES.		
	Sailers. Francs.	Towed ships. Francs.	Steamers. Francs.	Sailers. Francs.	Towed ships. Francs.	Steamers. Francs.
15	24	22	21	29	27	25
16	26	24	22	30	28	26
17	27	25	24	31	29	27
18	29	27	25	32	30	28
19	30	28	27	33	33	31
20	32	30	28	38	35	33
21	35	33	31	41	38	36
22	38	35	33	44	41	38
23	41	38	36	46	43	40
24	44	41	38	49	46	43
25	46	43	40	51	48	45
26	49	46	43	54	51	48
27	51	48	45	58	54	50
28	54	51	48	60	56	52
29	58	54	50	62	58	55
30	60	56	52	64	60	56
31	62	58	55	68	64	59
32	64	60	56	71	67	62
33	68	64	59	73	68	64
34	71	67	62	76	71	66
35	73	68	64	78	73	69
36	76	71	66	82	76	71
37	78	73	69	85	79	74
38	82	76	71	88	82	77
39	85	79	74	91	85	80
40	88	82	77	98	92	86
41	91	85	80	103	97	90
42	98	92	86	108	101	94
43	103	97	90	114	106	99
44	108	101	94	118	111	104
45	114	106	99	126	118	110
46	118	111	104	130	122	114
47	126	118	110	135	127	118
48	130	122	114	142	133	125

DRAUGHT in palms or decimeters	SUMMER PRICES.			WINTER PRICES.		
	Sailers. Francs.	Towed ships. Francs.	Steamers. Francs.	Sailers. Francs.	Towed ships. Francs.	Steamers. Francs.
49	135	127	118	149	139	130
50	142	133	125	156	146	136
51	149	139	130	162	152	142
52	156	146	136	170	159	148
53	162	152	142	176	165	154
54	170	159	148	183	172	160
55	176	165	154	190	178	166
56	183	172	160	197	184	172
57	190	178	166	203	190	178
58	197	184	172	210	196	183
59	203	190	178	217	203	190
60	210	196	183	223	209	195
For each palm or decimeter above.	7	6	5	7	6	5

Ships moored across in the roadstead above or below the docks and led from their anchorage to the wharfs of the Scheld or to the mouths of the docks; vessels sailing from the roadstead or the mouths of the docks into one of the free dry docks in the neighbourhood of the town, pay treble tariff.

Every movement performed by night gives rise to the charge of a duty double that which is to be paid for an ordinary movement of each description.

Fire and light-house duties.

Independently of the pilotage duties, the Belgian and Dutch government charge a duty for fires and light-houses.

That is a duty of 11 centimes for each ton, as well at the ascent, as at the descent of the river for every ship passing the Scheld from the sea into Belgium, or from Belgium to the sea.

There are no buoy duties.

Maritime police duties.

The tariff without distinction of flag, is the following:

Survey on entrance, fr. 6; besides, fr. 0.50 for every man of the crew.

Survey on leaving, fr. 2.

Every visa on the muster-roll without mutation, fr. 1.

Arrest of a deserting or refractory sailor and his conveyance on board of the ship (to be paid by the captain or the consul who may have demanded the arrest), fr. 12.

To fasten a vessel with chains (to be paid by the requesting suitor), fr. 12.

Duty for the presence of the maritime commissioner at the disbanding of the crew (all acts included), fr. 8.

Gunpowder.

There is to pay for disembarking and provisional depot of gunpowder, 4 florins of Netherlands, being equivalent to fr. 8.47.

All the duties above mentioned for pilotage, fires and light-houses, and maritime police, are received by agents and for account of the government.

Navigation dues.

These dues are received by the town of Antwerp.

They are fixed as follows:

Sea vessels. — Sea sailers and sea steamers which enter the docks pay the town a single duty, according to the following tariff.

1 ton of 2.83 cubic meters new gauge (not including 15 % additional taxes) of ships of

Principal duty by ton.

85 tons	and less	fr. 0.47
86 to 128 tons	—	0.53
129 to 171	—	0.58
172 to 214	—	0.64
215 to 257	—	0.76
258 tons and above		0.82

Sea sailers, which remain in the roadstead, and effect a loading or an unloading, pay half the above mentioned duty.

If they do not effect any operation they are free of duty.

Are also free of duty, ships bound for up the river and which are forced to lighten on condition that the lighters also go up the river.

Sailers which during the same year (beginning with the first journey) arrive more than twice in the harbour of Antwerp, or sea-steamers which, in the same year enter more than twice in the docks, enjoy a reduction of :

- 1/4 for the third journey.
- 1/2 for the fourth —
- 3/4 for the fifth and following journeys.

Sea steamers which load or unload in the roadstead, or at the piers, or at the wharfs of the river, pay for a ton of 2.83 cubic meters :

For each of the ten first journeys.	fr. 0.26
For each of the ten following journeys	0.18
For each of the further journeys	0.12

To enjoy the diminution of the dues, it is necessary that the journeys should be undertaken during the year after the first arrival.

These dues are also charged with an augmentation of 15 %.

Sea vessels which in the same journey operate traffic in the roadstead and in the docks, are liable only to the dock-duty.

Provided they have paid the required dock duties as above indicated, the vessels may remain there for three months. Passed this term, they pay 6 centimes per ton and per month.

Every month commenced must be entirely paid.

Inland ships. — Ships and steamers for inland traffic, including tugs, which enter the docks, pay :

Below 50 tons	fr. 0.10 for a ton.
50 tons and above	0.30 —

Ships of 50 tons and more enjoy the diminutions of 1/4, 1/2 or 3/4, according to the number of the journeys in the same year.

Sailers and steamers for inland traffic, including tugs, which load or unload in the roadstead, at the piers, or at the wharfs of the river or in the south boating docks, pay for each journey :

Below 30 cubic meters	fr. 0.04 for a cubic meter.
For 30 cubic meters and above	0.06 — —

And the whole of the duty can never exceed fr. 3.00.

Boats and steamers performing a daily service with Tamise, Boom, etc., pay fr. 0.50 for a journey, whatever their capacity or the number of their daily journeys may be.

Fishing sea and inland boats, dredging or ballast-lighting boats are free from duties as well in the docks as at the wharfs of the river.

Towing.

Towing. — Sea towing is free and needs a special job contract. The prices are discussed between the captains and the towing Companies.

Three of these companies exist in Antwerp :

The joint stock screw towing Company (Gerling, manager).

The joint stock insurance and ship-owners company for towing and salvage (Desiré Maas, manager).

The joint stock Anglo-Belgian screw steam towing Company (Herincx, manager).

There exists also a joint stock Company for towing and transport in the interior waters (Henri Maas, manager).

The towing from Antwerp to Flushing would be undertaken at the following approximative conditions :

Ships of 200 tons and above.	fr.	300
— 201 to 300 tons		350
— 301 to 400 —		375
— 401 to 500 —		425
— 1,000 tons		650
— 1,500 —		1,000
— 2,000 —		1,250

Above 2,000 tons special dispositions.

A second ship is with commonly supplied a deduction of 1/4 on the previous tariff.

Although the various Companies have adopted the same tariffs, these are not always applied, and considerable reductions are often granted according to circumstances.

Towing in the docks.

Changes of anchorage are undertaken by a towing service organized by the town of Antwerp.

The town does not assume any responsibility for damages caused eventually by the towing to the ships, or to the maritime installations; the intervention of the town is limited to the supply of the moving power.

These towing ships are breamed from the morning and are at the disposal of sailors between the regulation hours of the harbour service : From April 1st to October 1st from 6 o'clock in the morning to 7 in the evening; from October 1st to April 1st from 7 in the morning to 6 in the evening.

The five following tariffs are charged for the towing of the ships :

	A	B	C	D	E
Ships of 85 tons and below . . fr.	2	4	6	8	1
— 86 to 171 tons	5	7	9	11	2
— 172 342 —	8	10	12	15	4
— 343 514 —	11	14	16	20	6
— 515 685 —	14	18	20	25	9
— 686 856 —	17	22	25	30	12
— 857 1,027 —	20	25	30	35	15
— 1,028 1,199 —	23	28	35	40	18
— 1,200 1,370 —	26	31	40	45	21
— 1,371 1,541 —	29	34	45	50	24
— 1,542 1,712 —	32	37	50	55	27
Ships above 1,712 —	35	40	55	60	30

The four first tariffs are charged according to the starting point and the destination of the towed ship as indicated in the following table :

DESTINATION of the towed ships.	STARTING POINT.					
	Old little dock.	Old great dock.	Kattendyck dock.	Timber dock.	Campine dock.	Channel dock.
Old little dock	E	A	B	C	D	D
Old great dock	A	E	A	B	C	C
Kattendyck dock	B	A	E	A	B	B
Wood dock	C	B	A	E	A	A
Campine dock	D	C	B	A	E	B
Canal dock	D	C	B	A	B	E

Tariff E is used in the following cases :

For a displacement in one of the docks; for towing from the mouth of the sea sluice into the old dock and vice versa; from the

mouth of the sea sluice into the screen of the Kattendyk sluice and vice versa, from the screen of the Kattendyk sluice into the Kattendyk dock and vice versa.

There is also a special tariff, fixed by a convention between the government and the town council of Antwerp, for towing inland ships, from the channel of the Campine to the new sluice n° 6, and the Kattendyk screen. According to this tariff, one pays :

Empty ships	Fr.	0.50
Ships laden with less than 10 tons		0.50
— with from 10 to 50 tons		1.00
— — 51 100 —		1.50
— — 101 150 —		2.00
— — 151 200 —		2.50
— — 201 250 — and more		3.00

If one desires to use tugs outside of the service hours, one is obliged to pay in to the hands of the captain of the haven, besides all ordinary towing cost, a sum of fr.25.00 for the town treasury.

Loading and unloading of ships.

The gauge tonnage ascertained by the sea-bill, settles the time granted for loading or unloading ships, for occupying a place at the wharf and in the neighbourhood of the river and the docks.

This time indicated upon the following tables, begins the second day after the mooring, unless the captain testifies that the customs-officers have refused to measure his ship, and unless there is an uncontrollable cause, which is, left to the appreciation of the college of aldermen.

Unloading.

TONNAGE.	Summer season.		Winter season.	
	1 st April to 30 th September.		1 st October to 31 st March.	
	Working days.		Working days.	
	Sailers.	Steamers.	Sailers.	Steamers.
85 and less	4	2	5	3
86 to 171	6	3	7	4
172 257	9	4	10	5
258 342	11	5	12	6
343 428	13	6	14	7
429 514	15	6	16	7
515 599	17	7	18	8
600 685	19	7	20	8
686 771	20	8	22	9
772 856	21	8	23	9

Loading.

TONNAGE.	Summer season.		Winter season.	
	1 st April to 30 th September.		1 st October to 31 st April.	
	Working days.		Working days.	
	Sailers.	Steamers.	Sailers.	Steamers.
172 and less.	10	3	12	4
172 to 257	13	4	16	5
258 428	17	7	20	9
429 642	21	10	25	12
643 856	25	12	30	15

Above 856 tons, there is granted for unloading as for loading an additional delay of 1 day for 85 tons for sailers and for 171 tons for steamers.

For ships loading or unloading with their end only at the wharf, there are granted additional days as follows :

1 day for ships of 171 tons and less.	
2 days — 172 to 342 tons.	
3 — — 343 514 —	
4 — — 516 685 —	
5 — — 686 tons and above.	

If these delays are not kept, the captain of the port enjoins by a writ to the commanders, captains, masters or owners of these ships to finish the operations within the 24 hours, and these injunctions are repeated every day until the complete loading or unloading of the ship; every want of obedience is punished by a fine of fr. 20 for ships of 385 tons and less, and of fr. 25 for ships of 386 tons and more.

Moreover if the authorities have ascertained thrice that these injunctions, have not been obeyed the captain of the port can order the immediate removal of the ship.

If this order is not executed, the master of the ship is liable to a new fine of fr. 25 to the town, and the captain of the port has the right to cast off or to cut the cables, and to execute this work at the costs and risks of the commander of the ship.

Unloading machines.

The town has established on the wharfs, fixed cranes moved by arms, fixed and movable hydraulic or steam cranes.

The site of these cranes (whose number will be incessantly

increased in great proportions) and the force of each of them are indicated in the following table :

List of the cranes established on the wharfs of the docks.

SITES.	Numbers of the customs.	Tools,	Greatest power.
Little dock.	4	Fixed crane moved by arms	20 tons.
—	4	Small fixed crane moved by arms	10 —
Great dock.	5	Movable hydraulic crane number 7.	1 1/2 —
—	5	— — — — — 8.	1 1/2 —
—	5	— — — — — 9.	1 1/2 —
—	5	— — — — — 10.	1 1/2 —
—	5	— — — — — 11.	1 1/2 —
—	5	— — — — — 12.	1 1/2 —
Kattendijk dock.	21	Hydraulic sheers	120 —
—	21	Fixed crane moved by hands	10 —
—	22	Fixed hydraulic crane movable also by hands.	40 —
—	22	Fixed hydraulic crane	40 —
Canal dock	28	Movable steam crane number 6	1 1/2 —
—	28	— — — — — 5	1 1/2 —
—	28	— — — — — 4	1 1/2 —
—	29	— — — — — 3	1 1/2 —
—	29	— — — — — 2	1 1/2 —
—	29	— — — — — 1	1 1/2 —

N. B. The steam cranes numbers 1 to six will be succeeded before the end of 1885 by eight hydraulic cranes.

The use of these cranes is optional.

Ships laden or unladen by cranes, have the right to be placed at the wharfs served by these cranes, excluding those which do not use them.

The cranes are placed at the disposal of interested parties according to the inscription-roll kept by the captain of the port.

The ship to be registered must be present in the harbour.

The town is not answerable for accidents or damages caused to persons, ships, or goods, and proceeding from the use of the cranes, or from the apparent or hidden defects of the machines or their accessories.

The cranes are used in the presence of a commissioner of the town. This superintendence being of general interest, does not make the town answerable.

If an interruption of work takes place, and is caused by a defect discovered in the cranes, the hirers cannot claim any indemnity, but are obliged to pay the hiring price only in the proportion of the time during which they could have used it.

The cranes cannot be used to raise burdens heavier than those which have been fixed for each crane by the administration. Infractions are punished with a fine of 10 francs for 100 kilog., irrespective of the responsibility of the ship owner or the consignee for all the damages that may happen.

The use of the cranes is only authorized on working days and beyond the service hours of the customs.

These hours are enumerated as follows :

	Morning.	Evening.
From Nov. the 1 st to February the 15 th	7 1/2 to 12	1 1/2 to 5
From February the 15 th to March the 31 st	7 to 12	1 1/2 to 6
From April the 1 st to October the 31 st	7 to 12	2 to 7

Those who intend to work out of these hours must apply writing to the captain of the harbour, and pay an additional duty mentioned in the supplementary tariffs.

Every hour commenced is due entirely.

The use of the cranes established at the docks is fixed as follows :

TARIFF OF THE LOADING AND UNLOADING DUTIES BY MEANS OF THE CRANES.

I. — *Fixed cranes moved by hands.*

For a package of the weight of :

1.	500 kilog.	and more	. fr.	0.50	for 1,000 kilog.
3.	501 to 1,000 kilog.	—	. .	0.75	—
3.	1,001 to 3,000	—	. .	1.00	—
4.	3,001 to 5,000	—	. .	1.25	—
5.	5,001 to 7,000	—	. .	1.50	—
6.	7,001 to 9,000	—	. .	2.00	—
7.	9,001 to 12,000	—	. .	2.50	—
8.	12,001 to 15,000	—	. .	3.00	—
9.	15,001 to 18,000	—	. .	3.50	—
10.	18,001 to 21,000	—	. .	4.00	—
11.	21,001 to 25,000	—	. .	5.00	—
12.	25,001 to 40,000	—	. .	6.00	—

The fractions must be paid with a progression of $\frac{1}{4}$ of a ton of 1,000 kilog.

Outside the regulation hours, one pays, for the use of the cranes, an additional duty of 1 franc for an hour of the day and 2 francs for an hour of the night.

II. — *Fixed hydraulic cranes and sheers.*

For a package of the weight of :

1.	10,000 kilog. and above	fr.	3.00	for 1,000 kilog.
2.	10,001 —		4.00	—
3.	15,001 —		5.30	—
4.	20,001 —		7.00	—
5.	40,001 —		8.00	—
6.	60,001 —		9.00	—
7.	80,001 —		10.00	—

The fractions must be paid with a progression of $\frac{1}{4}$ of a ton of 1,000 kil.

The additional duties are of fr. 2 for an hour in the day, and of fr. 4 for an hour in the night, out of the regulation hours.

III. — *Movable hydraulic crane of 1 $\frac{1}{2}$ ton.*

For a day according to the working hours of the customs :

20 francs if an agent of the town works with the crane.

15 francs if the hirer works himself.

The time during which the crane has been used is reckoned by half days.

Outside the regulation hours, a supplement of 2 francs is paid for an hour of the day and 4 francs for an hour of the night.

IV. — *Movable steam-cranes of 1 $\frac{1}{2}$ ton.*

For a day's work fixed according to the hours indicated by the customs : 30 francs.

The time of the use of the crane is also reckoned by half days.

The additional duties are of 3 francs for an hour of the day,

and of 6 francs for an hour of the night outside the regulation hours.

The town supplies generally only the machine ready to be employed.

The manœuvre is executed by the workmen of the hirers.

Exceptions to these rules are made for the sheers of 120 tons, the cranes of 40 tons of the wharf number 22 and the steam-cranes which are always manœuvred by an agent of the town.

The tariff for the use of hydraulic cranes established along the wharfs of the Scheld and which must be agreed to by the State and the town of Antwerp, is not yet fixed.

OCCUPATIONS OF THE WHARFS AND SHEDS.

Wharfs of the docks.

General rules. — The deposit of goods on the wharfs of the docks must be authorized by the captain of the port, who fixes the part of the wharf and the approaches placed at the disposal of the applicant for the wares to load or to unload, and who is bound to proportion as much as he can that space of ground to the tonnage of the ship.

Unless the goods be directly taken off or laden, they must be piled so as to take the least place possible.

The goods cannot remain on the wharfs more than three days after the time allotted for unloading the ship.

If unloading begins or finishes after this delay, the wares must be taken off the second day after their unloading, save cases of justified hindrance or of impediment caused by the customs formalities.

The goods to be embarked can only be laid opposite the ship to which they are destined, or at the spot appointed by the captain of the port for their loading.

Unembarked goods can also remain there only for three days after the ship has completed her lading between the fixed delays.

They ought to be removed the next day after the lading is completed, if for this operation the regulation delay has been exceeded.

The goods destined to a steamer performing a regular service,

and having a determined spot, may, provided a previous authorization be obtained, be deposited the second day before the departure on the wharf where the ship is commonly moored.

The goods that remain on the wharfs after the fixed delays, or are deposited prematurely, or out of the limits indicated by the captain of the port, pay, after a notification made by this agent, a hire of fr. 0.25 for a square meter, for each of the first five days, and of fr. 0.50, for each of the following days.

Independently of the receipt day by day of the hire above, the authorities have the right to remove when they choose, and at the costs and risks of the offenders, the goods which for this hire is to be paid.

The goods removed in this way are only restored, after the payment of the hire and of all costs whatsoever, to which their retention has given occasion.

Sheds.

Timber docks. — The unloading of timber, the beams excepted, cannot be carried out outside the sheds constructed by the town for that purpose, save some exceptions.

Delays are granted for the temporary stay of the timber under the sheds, or at their approaches, for the imported cargoes.

These delays vary according to the tonnage of the ships as follows : twenty six to forty five-days for sailers, and twentytwo to thirty-seven days for steamers, beginning with the day on which the ship has obtained a place suitable to unload cargo.

The timber may, after a special authorization, be placed on the wharf with a free sojourn of eight days; after this delay, the goods are liable to a hire of fr. 0.25 per square meter and per day charged by the town.

Imported timber remaining under sheds pays the town a hire of fr. 0.35 indistinctly for a Moorsom's gauge ton of the importing ship. The additional load of the deck is reckoned as $\frac{1}{8}$ of the tonnage.

Timber laid on the wharfs without authorization, placed beyond the assigned limits, or staying beyond the delays, pays an additional hire of fr. 0.25 per square meter and per day, reckoned on the real surface occupied.

Covered shed for corn.

The shed at the western wharf of the Campine dock is specially reserved for warehousing corn waiting for a railway-conveyance.

The town charges a hire of fr. 1.00 for a waggon laden on the road along the shed.

Special installations will soon be placed at the disposal of interested parties, on account of the transformations made at the Hanseatic house to adapt that building to the warehousing and storing of corns.

Sheds of the docks.

The sheds of the store-house wharf, of the « Godefroid's » wharf, of the « St-Laurent's » wharf, and of the south wharf of the sluice dock, are placed at the disposal of tradesmen to shelter goods, specially those which would be damaged outside.

Other sheds will be constructed subsequently on various parts of the docks.

The town does not undertake in any way the superintendence of the goods deposited in the sheds, and is not liable at all for damages or losses.

The captain of the port indicates the area which can be occupied by the goods, and also the height to which they can be piled.

Goods pay a hire per square meter and per day of :

- Fr. 0 01 the first ten days;
- 0 10 the ten following days;
- 0 20 beyond this delay.

Goods cannot remain under the sheds more than five days, nor goods to be shipped more than three days, after the regulation delays fixed for the lading or the unlading of the ship.

After these delays, they are liable to a hire of fr. 0.25 per square meter and per day, and the captain of the port has the power to remove them at the costs and risks of the owners.

Generally the occupied areas are measured by the great square, without reckoning the fractions of the meter.

Storing of petroleum.

It is forbidden to store petroleum and other natural or artificial mineral oils elsewhere than in the sheds appointed by the town for that purpose, or in other spots reserved for that purpose by the competent authorities.

The deposit in the enclosures as well as the ware-housing in the sheds are at the risks of those to whom the goods belong, and without any liability on the part of the town.

For using the sheds of the town, one pays :

Boxes for 100 kilog. Fr. 0 10.

Entire compartment always supposed filled.

For each barrel 0 12.

Barrels piled (four in height) :

For an ordinary barrel 0 14.

The barrels of great dimension pay in proportion to the space that they occupy comparatively to ordinary barrels.

The storing duty is required for each month commenced.

Special dispositions regulate the number of barrels to be unladen or shipped per working day, according to the cargo.

Looibroeck boating dock.

The dock and the wharfs are reserved exclusively to ships employed to convey materials or goods.

These ships can enter there, remain and leave without paying any duty whatsoever.

Goods and materials intended to be laden or unladen, can remain on the wharfs of this dock for eight days, without paying any due at all.

Deposits that are not removed after the ninth day since they were formed, pay the town per square meter of occupied surface, and that till complete removal, a hire of :

Fr. 0.10 the first day,
— 0.15 the second day,
— 0.25 the third day.

and so on, the hire increasing fr. 0.05 every day, and being calculated on a minimum surface of 50 square meters.

The measurement is done every day.

After the eighth measurement, and independently of the charge of the above hire, the authorities reserve for themselves to remove the goods.

Sheds of the wharfs of the Scheld.

This part of the port of Antwerp is ruled by the convention of the 16th of January 1874.

The definitive duties for the use of the wharfs and sheds, must be fixed by a convention between the town and the government.

The present manner of working is but a provisional one, and will but exist until the complete delivery of the wharfs to the town be fulfilled by the state, according to conventions intervened.

South boating dock.

These docks have been also placed under the rule of the convention of the 16th of January 1874, and are worked by the town together with the State.

They take the place of the four inland canals, suppressed in course of the rectification of the wharfs of the Scheld.

The inland boats which employ these docks, pay the town the navigation dues that have been mentioned under this denomination, and are subjected to the general rules of the docks.

The deposit of goods on the wharfs is free.

Ballasting and unballasting of ships.

The ballasting of ships is performed in Antwerp either by masters of ballasting ships accepted by the town for this service and punctually bound by regulations, or by free ballast-lighters.

I. — The cost of each « last » of ballast in sand weighing 2,000 kilog. furnished by the ships in the service of the town, is fixed as follows (with an augmentation of 15 % for sea ships) :

For ballasting (delivery of the ballast) :

In the roadstead.	Fr. 2.10
In the docks or at the wharfs.	2.25

For unballasting (hire of the ballast-lighters) :

In the roadstead.	Fr. 1.40
In the docks or at the wharfs.	1.55

These prices do not include the carriage on board nor the taking of the ballast.

II. — The ballasting or unballasting by transshipping, without ballast-lighters, is paid as follows :

By the captain of the unballasting ship :

In the roadstead.	Fr. 0.28
At the wharfs or docks.	0.30

By the captain of the ballasting ship :

In the roadstead.	Fr. 0.55
At the wharfs or docks.	0.60

These prices are mere duties to the town, which does not fulfil any office.

When this transshipping is performed with the use of the town ballast-lighters, the first price indicated is to be paid.

When ballasting and unballasting are performed without the ballast-lighters of the town, and otherwise than by transshipping, the duties paid to the town are fixed as it follows :

For the ship which receives the ballast :

In the roadstead.	Fr. 1.10
At the docks or wharfs.	1.20

For the unballasting ship :

In the roadstead.	Fr. 0.55
At the docks or wharfs.	0.50

All the various duties aforesaid designated are also due, if the captains employ, to ballast their ships, rubbish of buildings or quarries, rock-works, or other similar substances, or when these substances are unballasted.

Dry slips.

The town does not undertake any repairs to the ships. It limits itself to the hire of its slips.

It is not liable for accidents or damages caused to persons, ships or goods, in the employ either of the dry slips, or of the tools and tackles supplied by the chief-service.

If a ship remains in the slip for more than a fortnight, it is liable

for each supplementary day, to the payment of double the duty payable according to the tariff for the fourteenth day.

The day of sojourn is understood to be of 24 hours, and the 24 hours being begun, the duty must be paid totally.

Night work is forbidden, except by special leave of the council of burgomaster and aldermen. For Sundays and recognized holidays, duties are not charged unless the interested parties have worked on these days.

Tariffs.

TONNAGE OF THE SHIPS.		For ships which get in and out the same day.	For a stay of two days (for each day).	For each of the first three days in the slip.	For each of the following days.
85 tons and above	Fr.	70	50	45	25
86 tons to 128 tons		105	70	60	30
129 — 171 —		140	85	80	33
172 — 214 —		175	95	90	36
215 — 257 —		180	105	100	39
258 — 300 —		210	120	115	41
301 — 342 —		240	135	130	44
343 — 385 —		270	145	140	47
386 — 428 —		300	160	150	50
429 — 514 —		360	190	176	54
515 — 599 —		420	220	203	58
600 — 685 —		480	250	229	62
686 — 771 —		540	280	255	66
772 — 856 —		600	310	283	70
857 — 942 —		660	340	297	77
943 — 1,027 —		720	370	311	84
1,028 — 1,113 —		780	400	324	91
1,114 — 1,199 —		840	430	337	98
1,200 — 1,284 —		900	460	350	105
1,285 — 1,370 —		940	480	367	108
1,371 — 1,455 —		980	500	384	111
1,456 — 1,541 —		1,020	520	401	114
1,542 — 1,627 —		1,060	540	417	117
1,628 — 1,712 —		1,100	560	433	120
For each 85 tons above. . . .		40 more,	25 more,	20 more,	5 more.

The company of the slips and dock-yards of the Scheld, of M. J. De Decker and Co, possesses, on the left bank of the river, two dry slips hired at similar prices. Building and repairing stocks are situated close to these slips.

There are also on the Scheldt other dry slips one situated at Burght and belonging to M. A. Schulte, and the other situated at Cruybeke and belonging to M. W. Freeman.

Lastly the naval dock-yard of the John Cockerill Joint Stock Company situated at Hoboken possesses also a dry slip, and building and repairing shops perfectly supplied with tools.

Store and ware-houses.

Royal store-house. — The town has become the owner of the royal storehouse since the 1st of January 1884, and it places its ware-houses at the disposal of merchants on the conditions stipulated in regulations and that the brief plan of this notice does not allow us to explain. These conditions differ very little from the tariff of the Docks, Store and Ware-houses general Company.

There exists a special regulation for the public store-house, and also a special tariff of the store-house duties charged.

The goods which are not specially denominated in this tariff, and which are not assimilated to those specified in the customs tariff, pay :

Fr. 0.08 per 100 kilog. for goods taxed at their weight at the entrance into the kingdom;

Fr. 0.08 per 100 fr. worth for those taxed according to their value;

Fr. 0.08 per 100 liters for those taxed according to their measure.

Fr. 0.08 per 100 pieces for those taxed according to their number.

Generally, goods warehoused in virtue of some dispositions of the general regulation, and those which at the request of the owners remain unpiled, are subject to a double warehouse duty.

The owners can, with some exceptions, hire for a year, six or three months, special places or premises for warehousing goods; but the square of these places cannot be less than 34 square meters for the store-houses, and 24 square meters for the cellars.

The tariff charged for the hire of store-houses designed for the goods subject to the customs supervision, amounts to :

Fr. 0 70	per square meter	and per month	for the ground-floor.	
0 60	—	—	—	1 st floor.
0 50	—	—	—	2 ^d —
0 40	—	—	—	3 ^d and 4 ^t —

General store-houses of Antwerp Company.

The store-houses kept at the disposal of interested parties are :

The «St-Felix» and the «Rubens» store-houses, situated at the Godefroy wharf and the Old Lions canal.

The ware-houses «Australia» situated between the Campine and the Kattendyck docks.

They are employed for the deposit of all goods free at the entrance of the kingdom or for which duties have been paid before their warehousing.

Nevertheless, by means of a previous convention with the Company, the premises can be placed under the various ware-housing systems authorized by law, and thus receiving wares which are not free from fiscal duties.

The Company issues at the option of the interested party, for all goods staying in its store and ware-houses, either deposit certificates, or negotiable warrants.

The store-house duties are charged either on the gross weight, or on the gross contents according to a special tariff.

For all non tariffed wares, or those which are denominated in the tariff, fr. 0.10 for 100 kilog., or 100 liters, or 100 fr., or 100 pieces, are charged according to the declaration at the entrance of the kingdom, with a minimum of duties that cannot be less than fr. 0,50 for a month, save for the final settlement of the warehoused lot.

Merchants can hire special premises for the deposit of goods.

The tariff for the hire and stallage is :

St-Felix and Rubens store-houses.

For hire of a year :

Ground floor per square meter and per month.				Fr.	1 00
1 st and 2 ^d floor	—	—	.	.	0 65
3 ^d — 4 th —	—	—	.	.	0 55
upper floors	—	—	.	.	0 50
Cellars	—	—			0 45

Hires for a shorter time require private conventions.

Australia ware-houses.

For hire contracted.

For a year, fr. 0.80 per square meter and per month.

For 3 or 6 months, fr. 1.00 —

For a month, fr. 1.25 —

The Company undertakes the housing of the wares on demand.

Ware-houses of the South of Antwerp Joint stock Company.

The South Joint Stock Company puts at the disposal of tradesmen the old war arsenal, transformed into a ware-house, situated near the « St-Michel » wharf and the boating docks of the South, and also a ware-house seated rue de l'Aviron.

The hire of the ware-houses reckoned by the great square is fixed at the following prices :

Ground floor fr. 1.00 per square meter and per month.

1st floor, fr. 0 60 per square meter and per month.

2^a — 0 40 — —

3^a — 0 20 — —

The Company does not undertake the housing of the wares. It confines itself to the hire of the ware-houses.

There are also in the town various private ware-houses put at the disposal of tradesmen especially for wools.

Various handworks.

Lightening.

When the draught of a ship does not allow it to enter the docks, it transfers part of its cargo by lightening.

The workmanship of this transshipping and the hire of the lighter are at the cost of the owner of the wares or of the ship, as well as the cost of unlading the lighter.

Putting under tackle or on the wharf.

The transshipping and unlading of large sailers and steamers including the shifting and putting under tackle or on the wharf, are undertaken by the « estivadores » or « stouwers ».

The same for the lading.

The costs of this handwork depend on the rapidity with which the operations can be carried out, and on the density of the wares.

Thus, the steamers of the regular services, which can immediately load and unload, get more favourable conditions.

Ships which unload their cargoes with intermittences, or whose package is of an uneasy or slow management, are bound to pay higher prices.

Carriage from ship on waggon and vice versa.

Empty waggons are brought over to the wharf, without cost, to receive directly the goods unladen from the ships.

These goods must perform a complete lading, or pay as such.

A special roll gives the names of the goods, destined for exportation through the port of Antwerp, which can be brought to the wharf and admitted to direct transfer from the waggon into the ship.

These expeditions must also perform a complete charge or pay for one.

They pay nothing for the traction of the waggon from the railway station to the ship.

The time afforded for unloading the waggons is reduced to 4 hours for waggons that can be placed along the ship before eight o'clock in the morning or two o'clock in the evening.

A fine of fr. 0.25 per hour and per waggon is applied in case of delay in the unloading of the ships.

Temporary deposit of goods in transit.

Goods in transit, arrived by railway, are generally brought by waggons to the public store-house, where they are unladen by the railway workmen, in special places, and under the supervision of the customs.

Some regular navigation services have at their pier a fictitious store-house.

Lastly, in some cases, the customs authorize the temporary deposit of some goods on the wharf.

Reception of the goods. Conveyance to the waggon or store-house.

The works which begin with the reception of the goods at the tackle or at the crest of the wharf, to the lading into the waggon or warehousing included, comprise :

The reception of the goods, the deposit of them on the wharf, the piling them on the wharf or under the shed, the weighing or measuring, the lading on waggons or carts, the carting, the unlading into the ware-house.

In some cases, the transshipping and unlading of the lighter are included.

These various works can be carried on by the workmen of the person who claims the goods, but generally merchants apply to intermediate agents or corporations called « Nations ». The « Nations » have commonly fixed tariffs. They are subdivided into as many corporations as there are goods arriving regularly into the port of Antwerp.

SECOND PART.

TRADE WITH ZANZIBAR.

Expeditions towards Zanzibar and the East coast of Africa.

Freight.

There is not regular run of business between Antwerp and Zanzibar, because our port is not in possession of a direct service with the East coast of Africa, so that the prices of freights remain essentially variable.

The present conditions are as follows :

The firm John P. Bast which represents at Antwerp the « Peninsular and Oriental Steam Nav. C^o », sends wares by the steamers of this service, *with direct bills of lading*, but with transshipping at Aden; the passage is about six weeks.

The price of freight is *sixty-five* shillings besides 10 per cent primage for 40 cubic english feet, or for a ton of 1,015 kilog. at the option of the captain.

Freight payable at Antwerp; all these conditions for ordinary package.

The same firm sends also with transshipping at London by steamers of the « Peninsular and Oriental Nav. C^o » leaving this port every week for Aden; in this case, the freight would rise to 76 shillings for 40 cubic english feet, or for 1,015 kilog. payable at Antwerp.

MM. Gellathy-Hankey-Sewill, brokers of the « British India Steam Nav. C^o », Leadenhall street, 109. London, send ordinary packages from London to Zanzibar, at the price of 50 shillings besides 10 percentage for each ton of 1,015 kilog. or 40 cubic English feet.

MM. Donald Currie and C^o, brokers of the « Castle Mail Packets C^o », Fenchurchstreet, 3, London, charge at present for the freight of ordinary package from London to Zanzibar 80 shillings besides 10 percentage for primage, and from Liverpool to Zanzibar 92, 6 shillings besides 10 percentage, for each ton of 1,015 kilog. or 40 cubic English feet.

THIRD PART.

COMMERCIAL ESTABLISHMENTS VISITED.

Brewery.

The manufacture of beer is one of the most important industries of Belgium, so much so that at the last exhibition of Antwerp, there were not less than 350 persons exhibiting their produce. Scarcely a city or a town that has not a brewery. But nearly all the beer manufactured in Belgium is consumed in the country although the production reaches millions of francs. We shall mention simply the following establishment.

Mouget frères, at Verviers.

This house was founded in 1874. They manufacture all sorts of beers, and at the same time they trade in grains, flour, and malt.

Their stock consists of : a steam engine 14 horse power, vats of 150 to 160 hectolitres, ice making machine, a machine to make malt.

They employ from 20 to 24 labourers and their annual production vary from 20,000 to 25,000 hectolitres. They export to South America and Australia.

Brush-trade.

E. Gheysen, at Iseghem (West Flanders).

This house manufactures brushes of every kind in quitch-grass, piassava or silk.

The manufactory is mechanical and employs 50 workmen.

The average yearly production reaches 80,000 francs.

It imports the raw materials from Italy, Mexico, Germany and Russia.

Chemical produce.

The manufacture of chemical produce constitutes one of the most important branches of our production, and on account of the scientific discoveries, of the growth of our commercial relations it has developed itself with a wonderful rapidity and has acquired a great importance.

Our manufactures of sulphur produce yearly 60 millions of kilograms; those of soda about 3,500,000 kilograms and 46 millions of chlorhydric acid. The sulphur refineries produce from 12 to 14 millions of kilograms per annum.

Belgium has numerous manufactures of alum, salpetre, paints and tinctures of all colours, of minium, tar, insinglass and gelatin, soaps, varnish, etc. The making of vulcanized Indian rubber is taking a large extension and now they manufacture all varieties of that article.

V^c Deanscutter-Lemercier, at Deux-Acren, Hainaut.

This firm was established in 1852. It cultivates camomile flowers (ordinary or roman), roots of valerian, burdock, etc.

The annual value of its production is about 300,000.

It exports to the United States.

De Coninck and Martel, at Brussels.

This firm manufactures raw salpetre suitable for agriculture and for the making of powder, and also ammoniac.

It employs 40 workmen and its material is composed of boilers, crystallizing, refining tanks, filters, drying tanks, etc.

The annual production varies from 1,500,000 to 2 millions of kilograms having an average price of 50 francs per 100 kilograms.

The firm exports to England and America. It imports its nitrate of soda from Chili.

Th. Desmottes frères, at Deux-Acren, Hainaut.

This firm, founded in 1840, cultivates on a great scale, camomile, valerian, burdock, mallow, marsh-mallow, angelica, etc.

It exports annually for 600,000 francs to the United States, England, Germany, Italy, France, Holland and Switzerland.

J. et H. Fancille sons, at Lachen, Brussels.

This firm manufactures waterproof awnings, bituminous pasteboards, prepares cloths for blinds, sails, tents, etc.

It employs 48 workmen and its material is composed of : 3 hand frames for coating the stuffs, drying stoves, etc.

The value of the annual production is 160,000 francs.

The firm exports to Holland and the Argentine Republic.

Léon Neefs, at Louvain.

This firm makes indigo dyeing on linen and cotton cloth. It employs from 20 to 25 hands, and its implements consist of : One steam engine 15 horse power, tanks and tubs for immersion and tincture.

The value of its annual production is from 150,000 to 200,000 francs.

It principally dyes the « guineas » for export.

It imports the indigo from Calcutta and Java.

Société anonyme de produits chimiques et de salpêtre, à Louvain.

This Company manufactures salpêtre for manure and for powder making, carbonate of potash, sulphate of potash, chlorure of potash, acetic acid.

It employs 40 hands and its implements consist of : One steam engine 35 horse power, tanks heated by steam, tanks for crystallizing, etc.

The Company produces per annum 3 millions kilograms, and exports to different ports of Europe and America. It imports the natural salpêtre from Indies, the nitrate of soda from Chili and the chlorure of potash from Strassfurt.

J.-B. Staes and Co, Louvain.

This firm, founded in 1814, makes the dyeing of all flax and cotton stuffs, specially the « guineas ».

It employs from 50 to 60 hands. Its stock consists of : One steam engine 40 horse power, 115 tanks and tubes for tincturing.

The annual value of the production is 1,200,000 francs.

This firm does not export, but dyes for all the great manufactures of Ghent the products exported by them. It imports indigo from Calcutta and Samarang.

Van Mechelen-Kennis, at Louvain.

This firm, founded in 1832, has its mills at Wygmael.

It manufactures sulphate of iron, sulphuric acid, paints for paper hangings and buildings, green of chrome, white from zinc and lead, yellow chrome and Prussian blue.

It employs 20 hands and its stock consists of : One steam engine 25 horse power, chambers for lead, sulphuric acid, tanks, steam mills for grinding.

The annual value of its production is 300,000 francs.

The firm exports to Chili and Peru, and imports sulphur from Sicily, bichromate of potash from Sweden, sugar of lead from Germany, France and England.

- *Lejeune, at Deux-Acres, Hainaut.*

This firm was founded in 1872. It is engaged in the herb trade.

Its principal products are : Roman camomile, valerian, burdock, mallow, marsh-mallow and poppy.

The annual value of its production is 300,000 francs.

It exports for 100,000 francs per annum.

Chocolates.

V^e Derbaix at Laeken, near Brussels.

This firm, founded in 1877, makes chocolate in packets and cocoa in powder.

It employs 25 workmen, and its machinery comprises an engine of 25 steam-horses, 3 mills, 4 mixing tools, 3 grinders, torrefying and winnowing-engines, etc.

It produces yearly about 120,000 kilog. of chocolate, having an average value of 2 francs per kilog.

It imports cocoa from England.

Ad. Van Gansberghe-Yuminé, at Brussels.

This firm was founded in 1839 and taken up in 1873 by M. Van Gansberghe. It produces gingerbread called Ghent gingerbread, sweetmeats, sugar-plums, chocolates.

It employs about 20 workmen and possesses a gas-engine of the power of 4 horses, mechanical kneading-troughs, and 4 ovens.

Its yearly production reaches 180,000 to 200,000 kilog. of gingerbread at prices varying between fr. 0.70 and 1.00 per kilog.

Coachmaking, wheelwrights-work.

At the beginning of this century, Belgian coachmaking was celebrated through the whole of Europe, and even France was a tributary to Belgium for high class work. Since, this branch of industry has taken a very large increase, and it can be asserted that it sustains its former reputation.

Belgian carriages are distinguished by solidity, elegance in form and comfort.

Van Acker, Louis, at Antwerp.

This firm, founded in 1826, makes high class coaches such as mail-coaches, broughams, mylords, tilburies, etc.

It employs 30 to 40 hands, and possesses piercing, driving back, welding, jointing engines.

The yearly production is valued at 280,000 francs.

This firm exports to the Netherlands, Spain, Turkey, America, Australia, India.

G. Van Hecke, at Ghent.

This firm, founded in 1860, makes common four wheel carriages.

It employs 50 workmen and produces yearly vehicles for a value of 50,000 francs.

It exports to France, Spain, Netherlands and South America.

H. Vogt and Co, at Liège.

This firm, founded in 1860, makes high class carriages, such as landaus, breaks, break-landaus, broughams, etc.

It employs 30 to 35 workmen and its annual production is valued at 100,000 francs.

It exports to the Netherlands.

Cotton yarns and tissues.

The art of using and turning into woven the vegetable fibre covering the cotton seeds, came into Belgium towards the end of the xvith century.

We shall not follow in all its changes, the history of the cotton industry, but in order to give a slight idea of the importance of that branch of our national trade we shall state that there are now in Belgium 800,000 spindles of which 200,000 are for twisting. Ghent alone has 27 spinning factories representing $\frac{3}{4}$ of the whole production of the country. Brussels and St-Nicolas have the speciality of « cotonnettes » swanskins, and English tickens; Ghent the unbleached and bleached cotton cloths, fine linen, lustrings, etc.; Courtrai, Renaix, Termonde, that of furniture cloths, siamoises, handkerchiefs, tickens, blankets, etc., etc.

On account of a reduction in the consumption of the country, exportation is increasing, and they manufacture now articles specially designed for India and the coast of Africa, such as printed cloths, scarfs, shawls, batticks, limeneas, pagnes, etc., etc.

The establishments making those articles can print all sorts of cotton cloths according to the orders given.

A. Baertsoen and A. Buysse, at Ghent.

This house was founded in 1829 by M. Baertsoen father, and in 1868 the present firm became the owner.

They specially manufacture velvet cotton, which article they introduced into the country, bevertees, cuirs, piloux, swanskins,

dimitty, cretonnes, etc., and also Indian cotton yarn for hosiery.

They employ in their works 450 workmen and 200 outside.

Their machinery is composed of: 650 horse power steam engine, 550 looms, 95,000 spindles for jute and cotton.

The annual value of their production amounts to 4,000,000 francs of which from 1,200,000 to 1,500,000 are exported to America, Switzerland, Italy, Spain, France and Holland.

They import their cotton from India and America and the jute from the former country.

J. Eloy and C^o, at Brussels.

This house was founded more than 50 years ago for the printing of cotton cloths; five years lately they introduced in their works at Cureghem near Brussels, mechanical weaving.

They manufacture cotton prints for dresses and furniture, and woven similar to « Vichy and Oxford ».

They employ 200 workmen and the implement is composed of three steam engine, and all the necessary machinery for weaving, printing and the dressing of the cotton wovens.

The annual production amounts to 40,000 pieces of cotton stuffs, of which a great part is exported to Holland, France, Turkey, Congo, America, China and Turkish Asia.

They import from England the cotton yarn required for their fabrication, indigo from Indies and Guatemala, and chemical products from Germany and France.

Having works for weaving and engraving, the house of J. Eloy and C^o can produce all sorts of stuffs that may be ordered of them provided the orders are important enough to begin a speciality.

Hooreman, Cambier and son, at Ghent.

This firm was founded in 1830. They own a spinning and weaving factory at Ghent and weaving mills at Courtrai and Mouscron. They have introduced the making of « guineas » for the African coast. They manufacture cotton prints, guineas, cotton yarns and twisted.

They employ from 500 to 600 workmen.

Their stock consists of : 200 horse power steam engine, 200 looms worked by steam, 400 hand looms, and 15,000 spinning and twisting spindles.

The annual production has a value of 1,500,000 francs, 2/3 of which are exported to South America and Africa.

F. Suppes, at Ghent.

This establishment was founded in 1851.

The fabrication consists in : Calicotes, cretonnes, madapolam, shirtings, piqués, basins, damask cotton for blinds, towels, napkins, handkerchiefs, bleached, unbleached and dyed cloths, white and mixt cloth for exportation, guineas, pagnes, colored basin for Africa.

The number of workmen is about 500.

The annual value of the production is 1,500,000 francs, of which the greater part is exported. That house has introduced guineas and pagnes into Africa.

Tant De Buck and son, at Ghent.

This firm was founded in 1858, and introduced into Belgium in 1879 the manufacture of the knitted and embroidered blind gaze, which are hand made. 72 men and 62 women are employed by the house. The stock consists of : Jacquart's loom by hand work, shearers, beams, twistors bobbins, carburet gas cylinders, hydraulic press, looms to prepare the blind ganze and vellum-lace.

The firm has also instalments for bleaching and dressing.

The annual production has a value of 1,500,000 francs.

Edouard Van Ham, at Buysinghen.

Founded in 1840, this firm manufactures cotton yarns and employs 200 workmen. The stock consists of : Steam engines 200 horse power, and looms representing 10,000 spindles.

The annual production is about 500,000 kilog. of cotton yarns, exported to France and Holland. Raw cotton to the amount of 600,000 per annum is imported : 1/3 from America, 2/3 from British Indies.

N. Wild and brothers, at Ghent.

This establishment was founded in 1815. M. Wild father introduced in that year the making of wadding. They manufacture mostly waddings, cotton blankets.

They employ 75 workmen. The stock consists of : A steam engine 50 horse power, 14 looms for the mechanical making of blankets and 3 spinning looms of 450 spindles, and 16 cards. The house can manufacture 3,000 blankets weekly.

The annual value of the production is of 400,000 francs, the greater part being exported to the Cape, British India, Central America, China, Singapor and the Philippines.

Cutlery.

The chief centres of cutlery are Namur and Gembloux.

For many years all the productions of this province have been called « Namur knives ».

These productions, indeed, enjoyed formerly the justest reputation in every market in Europe. The speciality of Namur was fine cutlery: such as table and fancy-cutlasses; Gembloux produced clasp knives and especially penknives; these two towns afterwards generalized their manufacture, and now they supply cutlery articles of every description.

Twenty years ago, cutlery increased greatly at Gembloux and in the neighbouring villages, where various important manufactories moved by steam power, and employing the most improved tools had been created. The manufacturing prices are sensibly lowered and the productions have gained in regularity, quality and finish.

Th. Boland, at Namur.

This firm, founded in 1832, makes table cutlery, rich and common cutlery, hunting cutlasses and daggers, razors, penknives, pruning knives, trocars, bistouris, etc.

It employs 18 workmen and its yearly production reaches 40,000 francs.

It exports for 15,000 francs to the north of France.

Dethier, Jules, of the firm Baudoin and Dethier, at Gembloux.

This firm, founded in 1869, makes knives for the table, the kitchen, butchery, saddlery, hunting, penknives, daggers, etc.

It employs 90 workmen and possesses a steam-engine of 6 horse power, 9 forges, 7 grindstones, 6 large and 16 small polishing

tools, 2 circular saws, 1 stamper, cutting and arching pressès, and ovens for tempering and warming.

The yearly production reaches 125,000 francs.

One fourth of the production is exported to France and America.

Pierard, Louis senior, at Gembloux.

This firm, founded in 1820, makes fine and common table knives, kitchen and penknives, hunting knives.

It employs 80 workmen, and possesses a steam-engine of 8 horse power, cutting-punches, circular saws, grindstones, polishing tools and forges.

Its yearly production is valued at 100,000 francs, one third of which representing the worth of exported produce.

Distillery.

Distillery occupies a very important place in the industry of Belgium; the quantity of corn, rye, barley, maize, rice, employed can be valued yearly at 100 million kilog., representing an average value of 20 million francs.

Manufactured brandy is produced for a value of 41 million francs, duties included, and for a value of 4,500,000 francs residues used directly by agriculture for the feeding of cattle.

They distil also molasses of sugar-factories and beetroots; they employ from 15 million to 20 million kilog. of the first stuff, representing a value of 2 million francs, and giving from 7 million to 9 million francs alcohol; and about 3,500,000 kilog. of the second stuff, representing a value of 70,000 francs and giving from 250,000 to 290,000 francs alcohol.

In Belgium, the duties paid are refunded at exportation in the proportion of 50 francs per hectoliter brandy of 50 degrees.

Thanks to its superior quality, the yearly Belgian exportation of brandy reaches 50,000 hectoliters.

In Belgium, the manufacture of distilled aromatized drinks, with or without addition of sugar, and of table spirits is very important.

These productions are also admitted to the drawback or refunding of duties.

Bal and C^o, at Antwerp.

This firm, founded in 1862, manufactures inland brandy, gin, bitters and corn alcohols for exportation.

It employs 150 workmen and possesses 4 steam-engines of a total power of 250 horses, 7 distilling-columns, 14 fermenting vats of 120 hectoliters each, and an ice-engine.

Its production represents a value of 50,000 francs per working-day.

It exports to Cuba, Spain, the Western coast of Africa, Australia and Brazil.

A. Fouassin, at Liege.

This firm, founded in 1866, manufactures especially spirits, such as : « Elixir de Chaudfontaine », cristallized « Kümmel of « Riga », « Fouassin » bitter, aniseed, and national curaçao « la Pékinoise ».

It possesses 1 steam-engine and 10 alcohol rectifiers.

It employs 16 workmen.

The yearly value of its production reaches 550,000 francs.

It exports to Australia, Dutch India, France and Algeria.

Ch. Halot, at Wilsele, near Louvain.

This firm, founded in 1870, manufactures alcohol and corn-gin.

It employs 15 workmen and possesses 2 distilling-engines of a total 20 horse power, 2 distilling-columns 1 alembic, 1 rectifying column, 4 macerators, 1 cooling-engine, 10 fermentation vats of 26 hectoliters each.

The yearly production is valued at 1 million francs.

This firm exports to various European and American countries.

N. Van de Velde, at Gand.

This house was founded in 1804. It manufactures alcohol, gin, from rye and barley, and liquors such as « Picrène Bitter », « Karwei-Likeur », curaçao, anisette, bitter elixir, and generally all kind of liquors. The instalment is composed of a continuous apparatus, or column for doughty matters, a rectifying still, a

column for alcohol, six distilling apparatus for liquors, a steam mill, a steam maceration vat, and steam pan for sugar.

The annual production varies from 220 thousand to 250,000 francs. It exports to British and Dutch India, New-York and Valparaiso. It imports barley from the North of Russia and Hungary, and rye from France, Canada and Russia.

Th. Willnotte-Dupont, at Huy.

This house was founded in 1862, by the same party now at its head.

It manufactures alcohol and gin from grains. It employs about 40 workmen and its implements are composed of : 4 steam engines 50 horse power, 4 couples of millstones, three grinding mills, pans for maceration, distilling columns, phlegm clarifiers, etc.

The yearly production amounts to about 1,500,000 francs, the whole being consumed in the country.

Flax and hemp yarns and tissues.

Belgium is one of the first countries that knew the flax industry, which at the end of the last century reached a very high degree of prosperity; and before 1830, the exportation of woven flax for France alone represented 3,500,000 kilograms, having an approximate value of 22 millions francs. The manufacture of damask and figured table linen existed in Belgium since the 17th century.

The city of Courtrai had a great fame for that industry; it used to furnish the rich sets with historical and allegorical drawings which adorned the princely tables of all Europe. To day, this industry is less important, but was introduced with success in other places such as Ghent, Malines, Alost, Turnhout, Vilvorde, etc., where there exist large manufactures.

The number of looms can be put down at 250,000.

Association linière (Limited C^o), at Ghent.

The firm from which proceeded in 1881 the above limited C^o was founded in 1857.

This Company manufactures flax, and tow yarns, unbleached, bleached and dyed. It employs 103 workmen and 205 women.

The stock consists of: 350 horse power steam engines, carding, preparing, spinning machines for flax, carding preparing and spinning machines for tow, all with the last improvements.

The annual value of the production is of 1,500,000 francs, of which 1/3 is exported to Holland, Italy, Spain, Germany and France.

E.-L. De Vleeschouwer, at Antwerp.

This firm, founded in 1882, manufactures pack thread, ropes and cables of all strength.

It employs 30 handworking labourers.

The annual value of the production is of 90,000 francs exported to Holland.

P.-B. Dobbelaere-Hulin, at Ghent.

This firm, was founded in 1829. The works are at Sleydinge near Ghent, and employ 80 men and 30 women. It manufactures sail cloths of 61 centimeters width, pure flax Royal Navy, cotton sails, cloths of first quality for tilts and mattresses.

The stock consists of a steam engine 70 horse power, 85 looms, preparing looms, dressing machines, weevils. It has also gathering and bleaching works.

The annual production represents a value of 600,000 francs. It exports to different countries of Europe, to Canada and British India.

L. Thienpont and son, at Ghent.

This firm owns three establishments founded in 1858; one at Ghent, another at Denderhaute lez-Alost and the third at Sweveghem lez-Courtrai. They manufacture pure and mixed linen, such as table cloths, figured and damasked, towels, canvass for all kind of blinds, mattresses, clothings, and damasked linen for mattresses and furniture.

They employ 700 men.

The products of the firm are exported and may be exported to all parts of the world.

Van de Putte and Rothlesberger, at Ghent.

This firm manufactures specially pure linen. The works for the

spinning and weaving of flax are established at Lokeren and employ about 300 workmen.

It manufactures annually 25,000 bundles of thread and 12,000 pieces of different linen.

It imports the flax and the tow from Russia.

Verhoost brothers, at Courtrai.

Founded in 1810, this firm manufactures linen, cambrics and specially wide linen. It introduced in the country the speciality known as Cambrai lawn.

The works employ 650 men and manufacture by hand working.

The annual value of the production is of 1,200,000 francs, of which 500,000 francs are exported to different parts of Europe.

Fr. Vermeire-Hellebaut, at Hamme lez-Termonde.

Founded in 1859, this firm manufactures round and flat ropes made out of hemp from Manilla, Sisal, Russia, Italy and Flanders.

It employs 50 labourers and all the fabrication is made for hand working.

The annual value of the production is of 600,000 francs, nearly the whole being exported to Holland, Germany, Spain, Turkey, Egypt, Algiers and America.

Vertongen-Goens, at Termonde.

The origin of this firm goes as far back as two hundred years ago. In 1878, the rope works of M. Vertongen-Goens employed 290 men, but on account of improvements in the implements, that number can be reduced to 220, while the production is increased to day to 1,100,000 francs.

The implements are composed of: One steam engine 120 horse power, acting upon a material for spinning, rope making aloes flat cables made in decreasing sections, round and flat metallic cables, and aloes canning ropes.

A great part of this produce is exported. M. Vertongen-Goens imports the hemp from Manilla, Bombay, Sisal, Italy, Russia and the jute from Bombay.

Glass works, looking glasses and ceramic.

It was during the 15th century that the first glass works were established in Belgium, to day, we have 76 manufactures employing more than 12,000 workmen and the value of their annual production amounts to 100 millions of francs, window glass being included for an amount of 40 millions francs.

Bottle making is very important and keeps on the level of the improvements made in other countries. The manufacture of drinking glasses was known in Belgium ever since the middle ages, and now it has reached such a degree of perfection that it competes with all similar products in every market.

The looking glass manufacture is extended to all kind of products, and the plain, polished, tinned and silver plated are made by some of our best mills, enjoying an universal fame.

As to ceramic, it is one of the most improved branches of our industry.

We manufacture, from ordinary earthenware pottery to the splendid table sets made in glass, crystal, artificial China and Delft ware, decorated by hand; and from ordinary brick to mosaic floor tiles.

The number of workmen employed in this line of work amounts to 15,000.

D. Boarth, at Andenne (Namur).

This house, founded in 1855, makes all kind of tobacco pipes from fr. 1.20 the gross, and the refractory bricks.

Its production amounts to 350,000 francs per annum.

It exports, from 8 to 10,000 gross of pipes per annum, to the United States, Australia, and the west coast of Africa.

Boch frères, at La Louvière.

The firm of Boch brothers, founded in 1841, owns two establishments : one at La Louvière, where they make all kind of Delft ware, white or decorated, from the most ordinary articles to the richest products; common floor tiles made out in sand stones and earth for foot pavement, floortiles for facings, plain or ornamented; and the other at Tournai, where are made the ordinary Delft ware, black or dusky, and China ware.

The stock consists of : mills, breakers, grinders, press-filters, lathes, sifters, etc., 3 steam engines with 300 horse power altogether.

The value of the annual production of the firm amounts to 1,500,000 francs, of which 800,000 francs are exported to South America, Italy, Spain, Portugal, France, etc.

The firm imports from England and Germany the clay called China clay and plastic, refractory, feldspath, flint, silex clays for a value of 175,000 francs representing 3,500 tons.

Louis Escoyez, at Tertre (Hainaut).

This firm was founded in 1842. It owns two works, one at Tertre-lez-Baudour and the other at Tertre near Saint-Ghislain. M. Escoyez manufactures refractory products such as : ceramic floor tiles of all shapes made out in sand stone, for mills, stores and stakes, pavement; ornamental bricks, yellow, red or black, hollow bricks, and sand stone pipes.

Its great speciality is the making of products for gas works, steel mills, glass works, blast-furnaces, forges, etc.

It employs about 100 workmen.

The stock consists of : 3 steam engines, 85 horse power altogether, 3 breakers, 3 malaxators, 3 brick moulding machines, 2 brick presses, 3 planing presses, 2 presses to prepare the paste.

The annual value of the production is of 500,000 francs.

It exports to France, Spain, Italy, Switzerland and Russia for a value of 300,000 francs.

Société anonyme des glaces de Moustier-sur-Sambre.

This Company was formed in 1883.

It employs 300 men.

It was the first to apply in Belgium compressed air and steam *gazogènes* machines, tables for casting in different pieces, and balanced polishing tables apparatus.

The material of the Company is composed of : 2 steam engines (compound Carliss), 400 horse power each, of 8 trimming platforms to smooth the glass, 13 polishing machines, etc.

The Company began to work but lately and does not utilize all its means of production. It is able to produce from 80 to 90,000 square meter of glass per annum, with a value of 1,500,000 francs to 1,800,000 francs.

Now it makes looking glasses of all sizes and glazings.

Mouzin and Lecat C^e, at Nimy near Mons.

This firm owns a large manufacture of Delft ware; it makes all household articles such as table, toilet coffee sets, floor tiles for facing, etc.

It employs 500 workmen.

The material is composed of : 3 steam engines, 250 horse power and an extremely complete assortment of machines and tools such as breakers, malaxators, mixing machines, lathes, etc.

The value of the annual production amounts to 1 million francs, one tenth of which is exported to France, Holland, British Indies, Turkey and Peru. Almost all the raw materials, amounting to 300,000 francs, are imported from England.

*Manufacture of China ware of Saint-Winand-Troubelle,
at Andenne.*

This manufacture was founded in 1800 by M. Winand father.

The firm makes all ordinary household articles, such as table, coffee, toilet sets, match boxes, etc.

It employs 30 workmen.

The preparation of the clay is done at a water mill wear Huy and the finishing work is done by hand.

The firm exports but very little and only to Holland.

Compagnie générale des produits céramiques de St-Ghislain.

Founded in 1881, this Company manufactures all ceramic floor tiles, and specially those with incrusted drawings, paving stones with groves or plain.

It employs 80 workmen.

Its material is composed of : One steam engine 40 horse power, one stone breaker, 4 grinders, one malaxator, 4 filters, one dressing machine, 4 hydraulical presses, 2 stone heaters, 2 ovens of 8 meters diameter, etc.

The value of its annual production amounts to 150,000 francs.

It exports to Holland, France, United States, La Plata, Australia, Danemark for a value of 80,000 francs per annum.

The company imports from Germany for 30,000 francs of plastic clay, and from England 5 to 6,000 francs of China clay and from America and England from 8 to 10,000 francs of metallic paints.

Société anonyme du Val St-Lambert, at Liège.

Founded in 1825, this Company owns 4 mills, one at Val-St-Lambert, one at Herbatte near Namur, the 3^d at Namur, and the fourth at Jambes lez-Namur.

Those four establishments make all sorts of crystals, cut or common, thin, half thin, muslin, engraver, engine turned, decorated; table sets, painted glass; all articles for lightings, cut, impolished, engraved; all articles « of albatrine »; lenses for marine purposes, and common drinking glasses.

The Company employs 3,000 workmen.

Its material consist of : 4 continuous ovens located under 8 halls having a surface of 6,000 square meters, 5 rooms for the cutting of the glass and 800 lathes, rooms for the engraving with acid, for engine turned with fluorhydric acid, for the engraving with sand, for the painting, for the making of coast iron moulds; forges, carpenters tools, and immense stores.

The annual production is of 9,000 tons having a value of 5 millions francs.

The Company exports to Germany, Danemark, Sweden and Norway, Holland, France, Turkey, Greece, England, British and Dutch India, Canada, Australia, America, Egypt, Syria, China and Japon.

Horse-hair.

G. Van de Castele-Dubar, at Ghent.

This firm was founded in 1844 by M. Paillon-Dubar, and taken up in 1854 by the present firm.

It spins animal hair by steam, and prepares long hair for tissues and brushes.

It employs 150 men and women, possesses a steam-engine of 75 horse power, spinning-engines, and all working stock for this industry.

The yearly production is about 430,000 kilog. representing a value of 1,300,000 francs.

This firm exports to France, England, Germany, Switzerland, Sweden and Norway, Italy and Brazil.

It imports horse-hair from North America, Germany and Servia.

Leather and hides.

Tanning business is very important in Belgium, where it has been in practice since the remotest times.

We possess now in Belgium tanneries which can be considered as models for their machinery and manufacturing system.

There are about a thousand tanneries with a working staff of 30,000 to 50,000 hands.

They manufacture all sorts of leather; strong leather, strap and towleathers, black smoothed cow, yellow and spotted leather, waxed calf, sheepskin under all forms, and lastly glazed black and coloured leathers.

In 1884, the port of Antwerp received 1,006,782 hides.

Belgium receives directly a larger number of hides from La Plata than England, France and Germany.

Belgian leathers are exported through the whole world, where their price and quality compete with similar English, French, German and Swiss productions.

G. Cornesse, at Stavelot.

This firm makes leather for soles, and has a working staff of 15 hands.

It tans yearly about 3,500 hides of foreign animals and 300,000 kilog. native French hides.

It imports hides with hair from La Plata.

Hubert Louveigné, at Stavelot.

This house makes leather for soles and tans yearly about 1,500 exotic pelts.

Léon Courtejoie at Stavelot.

This firm, founded in 1840, manufactures strong leather for soles and tans yearly 2,000 hides, representing a value of 150,000 francs.

It imports hides from Buenos-Ayres and Uruguay and part of its oak-barks from France.

Fontaine-Olinger at Brussels.

This firm manufactures articles of skin-trade, sheepskins of all colours, and military equipments.

It employs 15 workmen; its machinery contains tools for checking, smearing, cutting and drawing lines on the leather.

Its yearly production reaches 175,000 to 200,000 francs, in which the exportation to the Netherlands enters for 1/3.

This firm imports goatskins from England and sheepskins from India.

Quatrecht Joint stock Company at Ghent.

This Company founded in 1863, has factories at Quatrecht, and its centre at Ghent.

It has introduced in to the country tannery by the English system, and manufactures all sorts of leather for common boots and for industrial uses, and especially straps.

It employs 250 workmen and possesses steam engines of a total power of 200 horses, engines for pressing, razing, glazing, etc.

Its yearly production reaches 2,500,000 to 3 million francs, representing 50,000 to 60,000 tanned hides.

Two thirds of this production are exported to all the countries of Europe, especially France, Germany, Switzerland and England.

This Company imports from South America and France.

E. 't. Serstevens, at Stavelot.

This firm, which has succeeded MM. Nicolay-Massange, manufactures strong leather for soles.

It tans from 4,000 to 12,000 European and American hides.

Its production varies from 300,000 to 900,000 francs.

This house imports from France part of the oak-barks it employs.

Machinery making.

Few Belgian industries have made progress that can be compared with that of the machinery industry, especially the making of steam engines.

One can assert without any fear that in no other country do they manufacture so many different types; not only all the foreign systems justly celebrated are made in our country, but new types have been invented by our manufacturers and adopted by foreigners. Belgium distinguishes herself not only by the great variety of her steam engines, but also by their strength. We count great number of excellent firms who manufacture machineries in such conditions of solidity, care and cheapness that we compete with success with similar foreign products. Besides, she has important

manufactures for envelope making, packing, cards, percussion caps machines, spinning, weaving, brick making machines, etc.

The number of steam engines established in Belgium, in 1882, was 13,124, representing a total strength of 456,480 horsepower.

*Société anonyme des ateliers de construction J.-J. Gilain,
at Tirlemont.*

The works of this Company were established in 1882. It manufactures all coppersmith articles, steam engines of all systems, complete material for sugar mills, refineries, breweries, spinning and weaving factories, etc.

It employs 400 labourers and its implements are composed of : Three steam engines with a total strength of 100 horse power, forges, steam stamps, 35 lathes, 10 boring and drilling machines, 36 planing, filing, countersink, serew tap machines, and a foundery.

The average annual value of its production is of 2,500,000 fr. of which it exports for 1,500,000 francs to Russia, Holland, Spain, the Indies and Brazil.

*Société anonyme de la fabrique de « Boulons » de la Blanchisserie,
at Marcinelle.*

This Company was founded in 1857. It specially manufactures : iron pins, clinches, joints for tubes, rundles, isolating shanks for telegraph and telephone, etc.

It employs 150 men.

Its material is composed of : three steam engines 85 horse power, iron pins making machines of different systems, screw tapping, lathes, drilling machines, etc.

The annual value of its production is of 600,000 francs.

Carels Brothers, at Ghent.

The works of this firm were established in 1839; the stock consists of iron and brass founderies, forges, adjusting, lathes moulding machines, etc.

They make also steam engines with Sulzer's patent safety-valve, large size locomotives for railways, and small ones for tramways.

They employ about 300 workmen. The stock is composed of :

4 steam engines with 140 horse power, 3 stamps, one oven, 3 foundering cubilots, and all the machinery known and improved.

The value of the annual production in machines and locomotives is from 1,500,000 to 2 millions francs. The firm exports for a value of 500,000 to 600,000 francs to France, Holland, Italy and Spain.

Ad. Charlet and Pierret, at Brussels. Iron and brass foundry.

This firm has created in Belgium the manufacture of axles for carriages, trucks, carts, etc.

They employ 200 men. The stock is composed of : 32 lathes, 2 hammers, cubilots, forges, etc.

They manufacture pressing and forcing back pumps, of a new patent. These pumps made in 13 different sizes, give a delivery varying from 20 to 300 litres per minute. The smallness of their dimensions allows them to be usefully employed for gardens, distribution of water in houses, and fires, etc.

The firm makes also all cast iron articles : such as chandeliers, city way-posts, water pipes, columns, balconies, etc.

The production is : 50,000 francs in axles; 6,000 in pumps, and 3 millions kilograms in castings, the value of which is of 400,000 francs; 1/4 is exported to Holland, Greece, Denmark and South America.

Compagnie générale des conduites d'eau aux Vennes, at Liège.

This important Company was founded in 1865. The works are constructed on an area of 10 hectares (about 20 acres).

The annual production is of about 24,000 tons of iron moulding of all kind, rough or finished.

Its stock is composed of : 2 steam engines of 60 horse power and all implements required such as mechanical foundries sufficient to make in sand or clay all moulded articles for machinery, or on patterns; pipes of all kinds vertically cast; forges, lathes and machines for the carrying through of cast irons for buildings, mills, manufactures, mechanical constructions, raising apparatus, materials for refractory brick making, collieries, mines, gas apparatus, water and gas distributing installations, etc., etc.

The value of the annual production of the Company is from 1,500,000 to 1,800,000 francs, of which nearly one million is

exported to France, Italy, Germany, Russia, Holland, Spain, Greece, etc. It employs 500 workmen.

Société John Cockerill, at Seraing (Liège).

It was in 1817 that M. John Cockerill created the works at Seraing. The present Company was formed in 1842.

This Company combines all operations connected with the mining of coal and ores, the working of these ores, the metallurgy of iron and steel, boilersmith's works, construction of bridges, coppersmith, tool engines for works of every description, casting of cannon and ship building. The first wool and flax spinning machines came out of those works, and also the first steam engines built on the continent, the first rail and the first Belgian locomotive.

More than 50,000 different industrial installations have been made by this Company : steam engines, locomotives, steamers and river boats, armour plated monitors, sugar mills, extraction of ores, metallurgic and mechanic mills, manufactures of arms, towing boats, bridges, iron framings, cannons, etc.

The total number of persons employed in the works are 10,420, of which 360 are clerks. The steam power amounts to 14,453 horse power.

The works comprise 13 divisions of production : ways and means, armament, engineering, administration and direction, agencies, purchases, sales, expeditions, book-keeping, reliefs and pensions, hospital and orphan house, sanitary service, dispensary, schools and working houses.

The establishments of the Company comprise :

1^o The coal mines of Colard and Caroline and Marie. Coppée with 7 shafts for extracting, ventilating and 482 Appold and coke ovens;

2^d Mines : In the provinces of Liège, Namur and Luxembourg;

3^d Blast-furnaces : 7 with Whitwell apparatus;

4th Iron manufacture : 66 ovens, 12 stamps, 12 rolling mills;

5th Steel works : 5. Bessemer's patent system, 2 Siemens' ovens, 26 other ovens, 10 stamps, 5 rolling mills;

6th Foundries : Material for the melting and casting of iron, steel and brass;

7^h Forges : 74 forges, 15 ovens, 20 stamps;

8th Coppersmith : 7 ovens, 3 stamps, 12 steam cranes, 6 clin-
ching machines, 88 drills, boring, lathes machines, etc.;

9th Wheels and trains ; 5 gasogenes, 7 ovens, 8 stamps, cranes,
lathes and special tools ;

10th Works for constructions : 550 lathes, planing, drilling,
mortising, boring, screwing machines, and 52 steam and com-
pressed air cranes.

11th The service of movement at Seraing : 24 locomotives,
334 waggons 32 horses ;

12th The service of armament at Antwerp : 10 steamers of 1,200
to 2,300 tons and 2 steam launches ;

13th The service of management at Seraing : offices for secre-
tary, purchases, sales, control, bookkeeping and cash-office ;

14th Different services : Engineering, medical, dispensary,
laboratory, lithographic, library, schools, hospital and orphan
house.

The annual production of this celebrated Company is as follows.

Combustible	400,000 tons.
Coke	200,000 —
Foreign and native ores	270,000 —
Iron and steel castings	130,000 —
Iron sheets, beams, rails, etc.	28,000 —
Steel rails, springs, etc.	79,500 —
Casting pieces steel and brass	6,000 —
Different mechanical pieces	1,800 —
Boilers, bridges, framings.	10,000 —
Forged arbel wheels and ready trains	3,600 —
Mechanical and apparatus machines	8,000 —

The average annual production amounts from 30 to 40 millions
of francs.

The Cockerill Company can furnish per annum besides the coal,
coke, iron and steel of all sorts :

100 locomotives, 70 steam engines, 1,500 different mechanical
constructions, 10,000 tons for bridges, turning plates, framings
and boilers, 14 sea and river steamers, either in iron or in steel,
armour plated cupolas, steel cannons, steam and compressed air
presses and cranes.

Besides the above, the Company owns : Part of ore mine of
Somorostro near Bilbao, 50 hectares of ores in Luxembourg,

part of the coal mine of « l'Espérance », 10 steamers made by itself, and the naval yard at Hoboken near Antwerp, where the building of the largest size steamers can be carried on, as well as a dry dock.

She employs in the last named works 580 workmen and has a steam power of 86 horses.

The Company exports all over the world.

Dutry Colson, at Ghent.

This firm makes tools to work the flax by hand, and trades in English and American agricultural implements, horticultural tools, ironmongery hardware, nails and screws.

The annual value of their transactions is of 400,000 to 500,000 francs.

They export to India, Mauritius, the Argentine Republic, Roumania and Italy.

Alp. and V. Halot, at Wilssele lez-Louvain.

Founded in 1880, this firm manufactures specially railway waggons, rolling and fixed material for portable railway, iron portable bridges that can be taken to pieces, complete installations for mills, quarries, mines, distilleries, breweries, etc.

Its employs 450 workmen.

The stock is composed of : 2 steam engines 50 horse power, and complete implements for that sort of fabrication.

The firm makes annually 1,200 waggons and other vehicles for railways, 2,400 tons metallic bridges and framings.

It exports to Holland, Russia, Spain, Dutch India, Brazil and the Argentine Republic.

Ed. Menning, at Brussels.

This establishment, founded in 1830 by M. Kessel-Van Doorselaer, was continued by the present firm.

It manufactures specially all the material for breweries, distilleries, millers, hat makers, chocolate manufactures, coining and mechanical presses.

It employs 60 men and the implements are composed of all the tools for mechanical constructions, mortising, planing, filing, lathes, forges machines, etc., with a steam engine of 15 horse power.

The annual value of the production is of 250,000 francs.

The firm exports for a value of 80,000 francs to France, Germany and England.

Société anonyme « Saint-Léonard », at Liège.

This Company was formed in 1836. It manufactures all fixed rolling material for railways, steam, air, water, gas, electric engines, tools machines, and apparatus of all sorts, and installations for mines, collieries, mills, etc., and cast and forged pieces.

It employs about 370 labourers and its stock is composed of : 4 steam engines with 150 horse power, a locomotive for the service, 3 ovens for larges pieces, 6 cementing ovens, 45 forges, 2 stamp hammers of 2,000 and 750 kilograms and one with double effect of 350 kilograms, 17 mortising, 16 planing, 36 boring machines, 48 lathes, 23 grindstones, 9 countersink machines, 17 rolling bridges, 36 cranes, 195 vices, one cubilot, etc., etc.

That Company has made 708 locomotives, of which 447 for Belgium, the others for foreign countries; 360 steam engines of which 232 for Belgium, 128 for exportation.

The annual value of its production is of 2,500,000.

It exports to Germany, France, Spain, Italy, Algiers, Brazil, Columbia, the Argentine Republic, etc.

It imports for about 150,000 francs of products necessary for its fabrication.

Felix Sax, at Laeken lez-Brussels.

This firm, founded in 1858, manufactures all articles for the mounting of carriages, railway and tramway travelling waggons, hardware, tools, wood iron and brass screws, etc.

It owns a brass foundery, and works for the nickelling and polishing.

The stock is composed of : One steam engine 8 horse power, different lathes, boring machines, turbine, presses, steam and hand clippings, machines for zinc works, etc., etc.

The annual average of its production is of 1 million francs.

The firm exports directly to France, Holland, Spain and Greece, and indirectly to Italy, Mexico, Portugal and Senegal.

Léopold Van Acker, at Brussels.

This firm was founded in 1872. It manufactures steam engines of all systems, and specially those semi fixed ; all implements for

contractors, centrifugal and all kind of pumps, cranes, rolling bridges, hydraulic and all sorts of lifts, tool machines, etc., etc.

It employs 30 men. Its stock is composed of : One steam engine 20 horse power, lathes, planing, boring, mortising machines, etc., etc.

The annual value of its production is of 150,000 francs, of which a part is exported to Holland, Portugal and Spain.

Société anonyme verriétoise, at Verviers.

This Company bought the works that the firm J. D. Houged and Ch. Teston founded in 1823.

It makes multitubular boilers of the Ronfosse system, automatic alimentations apparatus, steam engines, locomobiles, centrifugal pumps, shafts for transmission, and specially all the material required for woollen mills.

It can employ 1,000 workmen.

Its stock is composed of a steam engine 100 horse power and of all the most improved tools.

Besides iron and wooden machinery works, it owns a foundry.

The annual value of its production is of 2 millions francs.

The Company exports to all countries of Europe, the United States and la Plata.

Société anonyme « La Visserie belge », at Laeken near Brussels.

This Company was founded in 1853; it manufactures all sorts of metallic and wooden screws, with flat, round and square head, screwing-hooks, hinges, bolts, screw-nuts and clinches.

It employs 250 labourers and its stock is composed of : one steam engine 180 horse power and of more than 400 tool machines fitted for that kind of products.

The annual value of its production is from 600,000 to 700,000 francs, of which half is exported.

It exports to France, Spain, Italy, Greece, Roumania, Egypt, England, Russia, Denmark, Sweden and Norway, Brazil and the Argentine Republic.

The Company imports its latten from England, and the iron wire for small screws from Germany. The iron for large screws and bolts is from the country.

Materials for civil engineering.

Thanks to the natural wealth of its soil, one finds in Belgium all the materials required for the execution of all civil engineering works. Numerous mills manufacture first class cement, excellent hydraulic lime and others, bricks and tiles justly appreciated, compressed cement advantageously used as substitute for natural stones on account of its solidity and cheapness, etc., etc.

The brick making manufacture of Boom employs more than 3,500 workmen and produces per annum 400 millions of bricks; that of Hemixem has 650 workmen and produces 75 millions of bricks yearly.

Fievé and C^o, at Ghent.

This firm, founded in 1871, manufactures compressed square floor tiles with incrustations.

It employs from 60 to 80 workmen and its stock is composed of : One steam engine 25 horse power, 2 sets of mill stones, 7 hand presses, 2 steam presses. The average yearly production is of 500,000 francs.

The firm exports to France, Germany, the United States, Brazil, Guatemala and Austria.

Auguste Lehon and C^o, at Antoing.

This firm, founded in 1830, manufactures half hydraulic limes for buildings, hydraulic cements. They work the quarries of blue and grey stones of Tournaisis.

They employ 150 men. Their stock is composed of 3 steam engines of 100 horse power, draining and extracting machines, breakers, etc.

They produce yearly 5,000 tons of limes and cements representing a value of 200,000 francs and 100,000 francs in stones.

The exportation is to Holland, America and Canada.

Société anonyme de Niel en Rupel, at Niel lez-Boom.

This Company was formed in 1876 for the making of Portland cement. Its cement, finer than that made in England, can support a greater addition of sand.

It employs 350 men in the works and 100 outside. Its stock is composed of : 4 steam engines with a total of 570 horse power, 4 malaxators, 6 mill stones for pastings, 10 for cements, 3 breakers, 4 compressing rollers.

The annual production amounts to 2 millions francs.

It exports more than 20,000 tons of its cements to France, the United States, Australia and America.

The cements of this company, mixed up with three parts of normal sand, give a resisting power to the traction, after 28 days, of 15 kilograms per square centimeter, a resistance that the best English made cements cannot attain.

*Société anonyme des terres plastiques et produits réfractaires
d'Andenne, at Namur.*

This Company, created in 1836, owns three mills, one at Andenne and two at Seilles near Liège.

It makes refractory bricks for blast furnaces, gas ovens, boiler's fire place, crucibles, gas retorts, muffles, pipes and apparatus in artificial sand stone, paving stones of the same making for yards and foot-pavements, etc., raw and calcined earth for glass-works' crucibles, ornamental vases, for gardens and conservatories, etc.

The Company employs 350 workmen.

Its stock is composed of : 4 steam engines with 130 horse power, 3 sets of vertical mill stone, 10 sets of breaking rollers, one breaker, 10 bolters, 10 elevators with buckets, 16 malaxators, 2 rolling machines for brick, two for hollow bricks and pipes, and three presses to compress the bricks.

The annual value of its production is of 800,000 francs.

The Company exports for 500,000 francs of products to France, Germany, Spain, England, Russia, the United States, Venezuela and Australia.

W. Van den Abeele and Co, at Antwerp.

This firm was founded in 1880. It manufactures all tools such as shovels for stokers, excavators, spades, dredges, pickaxes, adzes, crow-bars, hammers, axes, etc., and also pumps of the Reis system.

The firm employs 25 workmen and the stock consists of one

steam engine 25 horse power, stamp hammers, presses, cuttings punches, rollers, lathes, saws, planes, counter-sink machines files, etc.

Metallurgy.

This important industry with its diversity of branches has greatly contributed to the prosperity of Belgium.

Thanks to her mineral combustible, to her ores, to the facilities of importing and exporting, to her working population and to her industrial genius, Belgium abundantly produces castings, iron, steel, zinc, lead and even a certain quantity of copper and silver.

She can claim the honour of making the best types of the powerful machines employed by mining industry, especially those intended for ventilation and the building of works.

The metallic mines have yielded since 1840 for a value of 500 millions of francs. If we consult the statistics on the production of Belgium, we find that she produces annually :

Castings	700,000 tons.
Iron	500,000 —
Steel	120,000 —
Zinc	80,000 —
Lead	8,000 —

The number of people employed in the metallic mines is 20,000.

This considerable production has given rise to numerous industries, such as wire and platinum mills, coppersmith, hardware and tin articles making, etc., etc., without counting all the varieties connected with iron, steel, lead, etc.

Caramin and C^o, at Thy-le-Château.

The mills of Thy-le-Château ascend as far back as 1775; since that they have been transformed and enlarged according to the progress made by the industry. Now they can produce yearly 100,000 tons of castings and 80,000 tons of iron and steel.

The Company that now works these establishments was formed in 1879.

The principle articles of its production are : Refined and moul-

ding castings, rails and their iron and steel accessories of all profiles for railways of all dimensions, portable railways, tramways; beams, iron \sqcup and \sqcap for waggons.

This firm employs 975 workmen. The stock is composed of 47 machines, of which 4 blowing machines for blast furnace, rolling mills, and all kind of tools machinery for steel and locomotives. The total strength of the steam engines in use is of 1,720 horse power.

It exports to France, Italy, Brazil, Holland, Switzerland and America.

It imports from Spain the steel ores, from Luxembourg the iron ores, and from Germany charcoal castings.

*Gregoire and Co, J.-E. Demessemaker successor,
at Ruysbroeck-Brussels.*

This firm owns an iron foundery for large, small and ordinary mechanical articles.

It employs 40 men. Its steam strength is of 4 horse power. The annual production is of 20,000. It exports to Germany, England and France.

Delloye-Matthieu and Co, at Huy.

That firm, founded in 1845, manufactures mixed iron sheets, polished sheets, sheets made with charcoal, and those for « corners ».

It employs from 4 to 5 hundred workmen. The stock are composed of 4 hydraulic wheels, 5 steam engines of 500 horse power and all the materials and tools necessary for that industry.

The annual value of the production is 1,250,000 francs.

It exports to different countries of Europe and America for an amount of 6 to 700,000 francs yearly.

It imports per annum from Germany 500 tons of castings and 500 tons of iron scraps.

Ch. Dumont, Van den Abeele successor, at Brussels.

This firm manufactures metallic gauze made out of steel, galvanized iron, tinned iron, latten and brass wires for rice planta-

tions, millers, mines, breweries, distilleries, paper making, windows' stores, etc., etc., latices for aviaries, fences, espaliers, etc.

The number of workmen is 20 and the stock consists of 11 frames for weaving, 35 machines for making the latices.

The value of the annual production is of 32,000, of which one third is exported to France, Holland, Greece, Roumania, Spain, Portugal and Congo.

The firm imports the fine latten wires from France.

Forges de la Providence, at Marchienne (Limited Co).

This Company owns three establishments; one at Marchienne, the second at Haumont and the third at Longwy (the two last in France).

It manufactures all sorts of iron, iron and steel beams, corners, sashes, iron, moulding and refined castings.

It employs 3,600 workmen and the stock is composed of 7 blast furnaces, 22 rolling mills, 95 puddling forges, 42 heating ovens, and a considerable number of tool machines.

The annual value of the production is of 24 millions francs.

The Company exports yearly about 35,000 tons representing a mean average of 4,200,000 francs to England, China, British Indies, America and the East.

Société anonyme des Fonderies d'Andenne.

This Company was formed in 1876. It manufactures all pottery and stove articles in cast iron.

It employs 70 workmen.

Its stock is composed of : 2 steam engines with 28 horse power, and all tool machines required for that industry.

The annual value of its production is of 150,000 francs.

The Company exports for an amount of 40,000 francs to Holland and Roumania and imports from England for a value of 18,000 francs of castings.

Société anonyme de Marcinelle et Couillet, at Couillet (Hainaut).

This Company was formed in 1835. It owns two establishments : one at Couillet and the other at Chatelineau, besides a

colliery at Marcinelle, and important ore works in the province of Namur and in the Duchy of Luxembourg.

It manufactures rails, profiled irons, metallic sleepers, iron plates for locomotives, materials for railways, of large and small sections, fixed steam engines, etc., etc.

It employs 3,000 workmen and 2,500 in the coal mines.

The Company's stock consists of 130 steam engines with a total force of 7,000 horse power, 7 blast furnaces, 250 coke ovens, 40 puddling ovens, 25 retreating ovens, 10 rolling mills, 12 cubilots, 8 blowing machines for blast furnaces, 204 different tool machines.

The annual value of its production is 15 millions francs.

The Company exports to all parts of Europe, Tunisia, Egypt, America, Australia, etc.

It exports in :

Castings.	1,200,000 kilograms.
Irons and plates	17,350,000 —
Locomotives and steam engines .	1,610,000 —

Société nouvelle des produits émaillés et étamés de Saint-Servais (Limited), at Namur.

This Company was founded in 1881. It manufactures all enamelled and tinned household articles, plain or decorated.

It employs 200 men and women.

Its stock consists of one steam engine of 40 horse power, 3 presses, lathes for smoothing, lining and paring machines.

The annual production is of 600,000 francs.

The Company exports 2/3 of its produce to France, Holland, England, Italy and South America.

It imports some chemical produce from Germany.

Musical instruments.

Balthazar Florence, at Namur.

This firm, founded in 1872, manufactures all kind of harmoniums.

It employs 30 men and possesses a complete material of lathes, circular saws, etc., etc.

The annual value of its production is of 200,000 francs.

J. Gunther, at Brussels.

This firm, founded in 1845, manufactures pianos of all sizes and of all types.

It employs 110 men. Its stock is composed of : 1 steam engine of 4 horse power, circular and hand saws, lathes, boring machines, etc.

The annual value of the production is of 600,000 francs.

It exports to Holland, England, Russia, Chili, Bolivia and the East Indies.

J. Oor, at Brussels.

This firm was founded in 1870. It manufactures all sorts of pianos, of large and small sizes, with crossed, oblique and vertical strings.

It employs 55 men and its annual production amounts to 250,000 francs.

It exports to Holland and Dutch India.

Van Cavelaer, brothers and sisters, at Brussels.

This firm manufactures all brass and silver instruments such as : French horns, cornopeans, bugles, trombones, etc.

It employs from 35 to 40 men and make yearly from 1,800 to 2,000 instruments, of which a great number is exported to France, Holland, Calcutta and the Sandwich Islands.

Paper mills material.

Belgium has made enormous progress in this industry for the last few years, and now she exports not only a great part of her production but also machineries for paper making.

Our paper machine builders have in foreign countries a great reputation as much for the improved systems of their making as for their cheapness, solidity and perfection.

Our papers are much sought for on account of their good quality and low price. The annual production varies from 35 to 40 millions of kilograms of all sorts of paper, of which half is exported. Belgium manufactures also paper-hangings.

Auguste Chantrenne, at Nivelles.

This firm was founded in 1860. It manufactures paper paste board making machines and all machineries for that kind of industry.

It employs from 65 to 80 workmen and its stock is composed of one steam engine of 30 horse power, 2 planes, 4 filers, 3 countersinks, 4 borers, 18 lathes for rollers, 3 suspended lathes, one stamp hammer, one screw-tap, and 4 forges.

The annual value of the production is from 6 to 700,000 francs, of which exportation takes from 4 to 500,000 francs.

G. de Coninck, at Brussels.

This firm, whose mills are at Dieghem, manufactures grey, semi grey and white pasteboards made out of wood past, straw and rags; and packing papers of all shades.

It employs from 120 to 130 workmen and its stock is composed of : 2 steam engines of 155 horse power, 2 paper and paste board machines, 2 revolving boilers, 5 grinders and of all the small accessory tools.

The annual value of her production is of 1 million francs, of which one fourth is exported to England, Turkey and South America. This firm imports its wood paste from Sweden.

Victor Daveluy, at Bruges.

The firm was founded in 1835. It manufactures ordinary and fine playing cards for all countries.

It employs 70 men. Its machinery is composed of : One gas machine, presses card, etc.

Its playing cards are exported all over the world.

Ferdinand Delcroix, at Baulers-lez-Nivelles.

This firm founded in 1882, manufactures specially the parchment paper called « Vegetal Parchment » of all thicknesses and shades.

It employs 50 men and 65 women.

The stock is composed of three steam engines of 170 horse

power and of all the most complete assortment of tools for the making of raw paper, and for its transformation into parchment.

The annual production amounts to a value of 900,000, of which 9/10 are exported to England, France and Germany.

A. Deleplanque, at Ghent.

This firm was founded in 1856. It manufactures special packing paper including the cheapest to the strongest, such as those intended for glass works, nails, tobacco, chicory manufactures, etc. It makes also the paper employed by the spinning mills, and white and writing papers for exportation.

It employs 69 men in its works and 93 outside.

The stock is composed of 2 steam engines of 80 horse power three revolving boilers, one continuous machine, 6 refining and defibring tanks, hot-presser, clippings and liner machines, forges, lathes, etc.

The annual average value of its production amounts from 7 to 800,000 francs and it exports about 150,000 kilograms of paper to France, England and South America.

The firm imports its wood paste from Sweden and Norway.

De Naeyer and Co, at Willebroeck.

This firm is the most important of the country for paper making; it occupies large works where 1,200 men and 300 women are employed.

Its stock is composed of 30 steam engines of different systems representing a total strength of 3,000 horse power, and of the most improved implements and tools which are all made in the works annexed to the establishment.

The paper is made out of straw, wood or other vegetable material, and is manufactured of different qualities: white or colored, in rolls for printing, in reams, or on spools, fashionable, lined or water marked, in strips for telegraphs, in schools copy-books, and even in envelopes.

The annual value of the production of the firm is of 5,500,000 francs of which 2/3 are exported all over the world.

M. De Naeyer has added to his paper manufacture coppersmiths' works where he makes economical multitubular and inex-

plosible steam boilers of his own invention. These boilers have universal reputation, and the number already made till the end of 1884 represented a treating surface of 114,946 square meters.

Everaerts-Fisenne, at Louvain.

This firm, founded more than a century ago, manufactures paper-hangings.

It employs from 40 to 50 workmen, and owns a four colours machine producing 1,000 rolls per day. It exports to England, Holland and France. It imports its colours from France and Germany.

Antoine Van Genechten, at Turnhout.

Founded in 1834, this firm manufactures all kinds and qualities of playing cards for all countries, marbled, goffered with different colours and drawings, enamelled, varnished or fancy papers, colored papers in rolls, lithographic and chromolithographic printings.

It employs 450 workmen.

The stock is composed of 2 steam engines of 120 horse power, lithographic presses, hot presses, weevils, rolling mills, machines to smooth, goffer, line, colored, brush and grind the inks and colours, etc., etc. 4/5 of the production are exported either directly or indirectly through different firms to all parts of the world.

Printing types and machines.

Our type founderies produce enough for the needs of the country, but some of them export. As to our printing press makers, they are perfectly installed and their productions are well appreciated. They confine themselves to the making of the most useful machines, and they have arrived at a state of performance that leaves nothing to be desired.

H. Jullien, at Molenbeek lez-Bruxelles.

This firm was founded in 1862; it manufactures rotative, printing, cutting, paper reckonning and folding machines, typographic

graphical and lithographic presses, and typo-platten machines printing from 3,000 to 8,000 copies per hour. These last presses are destined to make a revolution in the manufacture of small press.

The firm employs 130 workmen. The machinery is composed of one 30 horse power steam engine, 7 planing, 3 mortising, 4 drilling, 5 filing machines, 25 lathes, 40 vices, 3 forges.

The annual value of the production is of 500,000 francs, of which $\frac{3}{4}$ are exported to France, Holland, Spain, Italy, Russia, the Dutch colonies, the Argentine Republic and Calcutta.

Quarries.

The working of the quarries in Belgium, such as porphyry, granite, sand stones, marble, etc., etc., is considerable; for the last 25 years, it has exported for a value of 700 millions of francs. It constitutes one of the most profitable industries of the country always tending to develop itself. It employs about 30,000 workmen.

Société anonyme des Carrières d'Anton-sur-Meuse, at Anton lez-Andenne.

The quarries of Anton-sur-Meuse have been worked since 1840 and the Company was founded in 1880.

The Company furnishes building stones in little granite of the Meuse, either blue, grey or white and also lime.

It employs about 100 workmen and the value of its annual exploitation amounts to 100,000 francs. It exports 40,000 tons of stones, limes, etc.

It has an hydraulic saw-mill.

Dejaiffe-Devroye, at Mazy, near Namur.

This firm was founded in 1839 for the working of the black marble of Mazy.

It owns a steam mill, an hydraulic saw mill, and marble work shops at Mazy and hydraulic polishers at St-Martin.

It makes marbles in boards, floor tiles, polished or unpolished, and mantel pieces, and employs about 90 workmen.

The stocks consists of : 2 steam engines with a total strength

of 120 horse power, 2 hydraulic wheels of 15 horse power each, a rolling bridge with crane and capstan worked by steam for the extraction of marble; 9 sawing frames, 5 polishers and 2 special machines to cut the floor tiles.

The value of the annual production is of 200,000 francs.

It exports to France, Holland, Germany, England, America and the Indies.

*Mademoiselle la comtesse Desmanet de Biesmes,
at Golzines (Boissière).*

The working of the black marble quarries of Golzines goes as far back as 104 years ago.

It employs about 60 workmen and the stock consists of 3 steam engines of 35 horse power altogether, steam cranes, saw mill, and different machines to cut and polish the flag stones.

The value of the annual production is of 100,000 francs, which is nearly all exported to France, Germany, England and America.

Dubay-Grosjean and son, at St-Martin-Balatre.

This firm has been working the quarries of black marble of Mazy lez-Golzines since 1864. It cuts its marbles in blocks, boards, and in polished flags. It employs 45 men and owns two steam engines with 67 horse power, saw mills, polishing mills, etc.

L. Evrard brothers and sisters, at Annevoie.

The quarries worked by MM. Evrard brothers and sisters are situated at Denée. They have been worked since 1840, and give magnificent black marble used for mantel pieces, clock supporters, and polished floor tiles for the inside of buildings. The firm employs 50 men.

The stock consists of : 2 hydraulic wheels for the saw mills, and of 4 steam engines with 60 horse power for the working.

The value of their annual production is of 250,000 francs, of which exportation takes 100,000 francs.

Evrard-Fosseur, at Denée, (Namur).

Since 1884, this firm farms the quarries of black marble of Denée,

which it turns out in blocks, boards, flags stones and polished square floor tiles.

It employs 40 workmen.

The stock consists of : 4 steam engines 65 horse power, draining and extracting machines, saw mills, polishers, etc.

The value of the annual production is of 80,000 francs. It exports to France, Holland, Germany and Austria.

*Société anonyme des grès, marbres et petits granits d'Yvoir,
at Yvoir lez-Dinant.*

The working of the quarries dates from 1861 and the Company was formed in 1882.

These quarries furnish ordinary or re-shaped sand stones, stones for macadam and ballast, black marble for mantel pieces and in boards, small granite for buildings, edges, pavements, etc.

The Company employs 410 workmen.

Its stock consists of : 4 hydraulic motors of 200 horse power, stone and marble saw mills, polishers and breakers.

The value of its annual production is of 700,000 francs.

Minet brothers, at Denée (Namur).

This firm was founded in 1780 and works the black marble quarries of Denée.

It turns out the marble in floor tiles, polished or unpolished.

It employs 20 men. Its stock consists of one steam engine 15 horse power, another one for the extraction and the polishing.

The value of the annual production amounts to 305,000, nearly all being exported to Germany and France.

Louis Watrisse, at Dinant.

This firm has worked since 1840 the quarries of black marble of Bouvignes.

It turns out its produce in blocks and polished boards and floor tiles.

It employs 100 workmen. Its stock consists of 6 steam engines with 60 horse power and all the tools required for the working.

The value of the annual production is of 200,000.
That firm exports to Australia and South America.

Railway working-stock.

The first railway on the continent was made in Belgium. Opened the 5th of May 1835, it had a length of 12 miles; the length of Belgian railways now reaches nearly 3,000 miles.

This increase of railways in Belgium has extremely influenced the growth of the principal industries connected with the working of them.

The first working stock orders were executed in England, but soon that branch of industry occupied our great manufactories and since 1840 orders in foreign countries were abandoned.

Not only most of our great manufacturers supply Belgium, but they have sent and send abroad produce of their manufacture. They compete with success as well for solidity and finish, as for elegance and cheapness.

In 1882, Belgium possessed 1,570 locomotives representing 263,403 horse power.

Dyle and Bacalan Joint stock building Company, at Louvain.

This Company, founded in 1866, manufactures fixed and wheeled working stock for railways of every breadth save locomotives; bridges, metallic frames, portable railways, metallic stockades of special system cheap and rapidly placed, cast-iron grease-boxes.

It employs now 900 workmen, but can employ 1,200 to 1,500.

It possesses 800 horse power, 480 for engines and 320 for stampers.

The yearly production is valued at 4 million francs.

It makes completely various important railways in Brazil, and in the Argentine Republic.

It exports to Servia, Roumania, Sweden and Norway, Algeria, Senegal and Dutch India.

It imports fine iron from Sweden, velvets from France and Germany and for more than 1 million francs wood from Brazil.

« *La métallurgique* » *Joint stock building Company,*
at Brussels.

This Company, established in 1880, possesses three manufactories : the first at Tubize, founded in 1854 ; the second at Nivelles, in 1858 ; and the third at La Sambre, in 1857.

This important Company makes locomotives, tenders, carriages, waggons, hydraulic cranes, signals, turntables, turning bridges, transshipping boats, reservoirs, blade-springs ; in one word, fixed and wheeled working stock for railways, tramways, cheap railways, and also metallic buildings, iron bridges and frames.

It has a working staff of 1,400 to 1,700 hands, possesses 14 steam-movers, 86 lathes of every sort, 10 plaiting engines, 24 mortises, 21 polishing engines for iron, 28 filing-tools, 18 screwing-tools, 104 boring houses, 15 steam-stampers from 500 to 8,000 kilog., 3 arching tools, 13 ventilators and a large number of other engines.

Its average yearly production reaches about 7,500,000 francs and the export amounts to 2,600,000 francs.

The countries to which the « *Métallurgique* » exports are Algeria, Spain, France, Greece, the Netherlands, Italy, Portugal and Senegal.

Shoe-trade.

The shoe-trade is spread through Belgium and during these last years, it has made great progress.

The most used fabrication systems are : mechanic sewing for bordering ; the fabrication of legs and vamps ; soles sewed with thread waxed mechanically or by the hand ; screwed soles, pegged in iron or in wood.

Some important firms employ mechanical movers and improved tools.

Some places are known for their manufacture, such as : Louvain, Herve, Binche, Sottegem, Isegem, etc.

Their production does not fear similar foreign production.

Dauby, Albert, at Louvain.

Founded in 1875, this firm employs 100 workmen for the making of ordinary boots, with double sewing, for current trade.

These boots are made wholly by the hand.

The yearly making reaches 300,000 francs.

This firm exports to France, England and the Netherlands.

It imports sealskins from London, dull and glazed calveskins from Germany, tissues from France, elastics from Germany, and fine pelts from France.

Starch.

E. Remy and Co. at Louvain.

This Company, founded about 25 years ago, possesses one manufactory at Wygmael near Louvain and another at Heerdts near Dusseldorf.

It manufactures especially the rice-starch called « Royal ».

In the manufactory of Wygmael about 700 workmen are employed. The mechanic force is supplied by 7 steam engines representing 600 horse power, 2 gas-movers of 3 horses each, and 2 turbines of 90 horses.

The tools are highly improved.

The manufactory contains besides the starch factory a steam-mill, a rice-mill, a pasteboard manufactory, a printing office, a little factory for mechanic building and repairs.

In all these branches of industry are consumed yearly more than 35 million kilog. rice and wheat, nearly 15 million kilog. coal, timber for boxes, soda-salt, paper, pasteboard, etc.

The annual production of starch amounts to 10 million kilog.

This firm exports to every country in the world.

Sugar factories.

Belgium can claim the honour of having had on her territory in 1810 one of the first beet root sugar mills established. This industry was born at the beginning of the 19th century, and its creation was one of the first and principal results of the continental blockade formed by Napoleon in 1806.

The first attempts were laborious, difficult and onerous; it was only in 1836 that the beet root sugar making took a decided forward step.

In 1846, there were in Belgium only 25 sugar mills producing 4,091,000 kilograms of sugar, of which 258,000 were exported.

In 1880, the number of sugar mills was 760, yielding 57 millions kilograms of which 56,700,000 were exported.

These figures show the remarkable progression of that industry, which constitutes one of the most considerable economical facts of the industrial history of our country.

Vinckenbosch and C^o, at Tirlemont.

This firm was founded in 1839. It owns two sugar mills and one refinery. It makes crystallized sugar in loafs.

The stock, complete and of the most improved, consists of 20 steam engines with a total strength of 400 horse power.

The firm employs 700 workmen and the average value of its production varies from 4 to 5 millions of francs. It exports to the Mediterranean coast.

Timber.

Georges and Octave Suy, at Ghent.

The manufactory of MM. Suy, whose chief production consists in sheets for plating and in right and arched mouldings of wood, was founded in 1821 and employs now from 50 to 80 workmen.

They possess 2 steam twin-engines, Corliss system, having 200 horse power; horizontal and vertical mechanic saws; special alternative saws; with ribbons; circular saws; engines for polishing and moulding; tops for arched mouldings, etc.

This firm has introduced into Belgium sawing for platings.

The yearly production is about 1 million francs; it exports for a value of 600,000 francs to France, the Netherlands, England and Switzerland, and it buys all foreign or native timber.

Tobacco manufactories.

In 1645, « The Flanders » were already trading in tobacco; the culture and the manufacture of that plant were free and flourishing. When the monopoly was created in 1811, the tobacco trade took a large development in the country.

In 1844, it was one of the main branches of Belgian industry, the manufactures numbering 1,500 and the detailers 30,000; one can affirm that those figures have trebled since then.

The communes where the plant is mostly cultivated, are : Menin, Wervicq, Comines, Warneton, Obourg, Roisin and Grammont.

The manufacturing of snuff existed ever since the plant was known. The principal localities of that production are Menin and Antwerp.

Chewing tobacco is principally made at Menin, Antwerp, Brussels, Ghent, Alost and St-Nicolas. That product is not exported, the whole being consumed in the country. Cut, or smoking tobacco, is made in great quantity for home consumption and exportation. This sort is much appreciated on account of its superiority over Cuban tobacco.

The manufacturing of cigars has taken a large extent during the last thirty years. The principal centres are Antwerp, Brussels, Liège and Grammont.

Independently of a large consumption in the country, the cigar manufactures export an enormous quantity.

Amongst those are cigars made with Havana tobacco, which are much appreciated.

Cigarette manufacture has also taken a great extent and the consumption of that article increases gradually.

Various manufactories.

Lempereur and Bernard, at Liège.

This firm, founded in 1868, makes petroleum table lamps and suspensions similar to the gas ones.

It introduced into Belgium the making of the « Belgian Lamp » with intense burner.

The firm employs 206 men and 106 women.

Its stock is composed of 3 steam engines of 40 horse power altogether, 150 machines to join, cut, turn, countersink, plane, etc.

The value of its annual production is of 800,000 francs.

It exports to Brazil, the Argentine Republic, and Dutch India.

E. Semal, at Nivelles.

Founded in 1860, this firm makes wooden furniture with, and red pine wood furniture with bamboos. Those furnitures remar-

kable for their elegance, solidity and lightness can be taken to pieces and set up again with great facility, constituting a great convenience for economical transport.

M. Semal employs 200 men and his stock is composed of one steam engine 25 horse power, and divers special machines.

The value of the annual production is of 600,000 francs, 1/3 being exported.

Arms.

The industry of arms is one of the oldest in Belgium.

This manufactory was introduced in Liege at the end of the XIVth century.

Since that period, have been melted or forged there all the pieces of various forms and dimensions which were successively used, as well the guns of 18 feet in length as the large and short falconets.

In later times were manufactured portable weapons such as : arquebuses with hooks, wicks and serpentines whose complicated mechanism was changed in 1517 by the application of a small wheel.

About the end of the XVIIth century, after the invention of the silex-platina, the arms industry took such a growth that it became necessary to regulate the proof for fire-arms.

The first proof-bench was established at Liege in 1672, and from that time the manufacture of arms in Belgium made the greatest progress.

It was understood how much the future of this industry was dependent on a system of proofs affording complete security.

This excellent organisation of the proof secures to the arms of Liège an absolute solidity. What increases this security is the principle of the responsibility of the workmen who produce the barrels, a principle according to which they lose the produce of their labour, when these barrels burst during one of the proofs to which they are submitted.

Under these conditions, it is not possible that arms manufactured at Liege can present the least danger, and this fact has not a little increased their reputation.

About 30,000 workmen are employed in Liege and in its neighbourhood in the manufacture of fire arms. Thanks to the great

division of labour, no country produces with similar perfection and at such low prices.

Liege excels principally in the manufacture of rich fire arms, and competes for make, finish, and taste, with London and Paris, though the cost of its produce is much inferior.

Since the great foreign countries have been supplied for the manufacture of arms, Liege makes a great deal less; the tools, however, for mechanical production of arms such as they exist now at Liege, are sufficient for executing all orders which would be confided to manufacturers, and even, with the elements and facilities of which they dispose, they remain able to furnish annually more than 100,000 war-guns of the best quality.

Since some years, the Cockerill Co makes guns which can compete with those of the Krupp factory.

Aug. Francotte, at Liege.

This firm founded in 1810, especially manufactures new arms, for shooting, war and exportation and applies, but exceptionally, to the transformation of old arms.

The working staff of the manufactory is nearly 225 hands in the manufactory and 2,000 to 3,000 outside.

Its working material includes 2 steam-engines from 30 to 40 horse power, and numerous highly improved tools necessary for making barrels, mechanisms and furnitures.

The firm possesses a manufactory of war-arms at Herstal.

Its yearly production is valued at 1,500,000 francs, 9/10^{ths} of which for exportation into every country in the world.

H. Pieper, at Liege.

This firm, founded in 1867, especially manufactures mechanical shooting guns the prices of which vary from 40 to 60 francs.

The average amount of its production reaches 1,200,000 francs. It exports nearly the whole to Europe, the United States, Japan and India.

Its working staff is about 250 hands in the manufactory and more than 200 outside.

It possesses a Corliss-engine of 60 horse power, 260 various

tools and engines : « fraiseuses », lathes, planing machines, gimlets, engines for cutting wood, or engraving arms etc.

This firm also makes all kind of machinery for electric lighting.

Pirlot and Frésart, at Liege.

This firm, founded in 1815, manufactures war exportation, and rich fire-arms : articles of saddlery, bits, stirrups, spurs in malleable cast-iron, copper and white metal.

The number of workmen amounts to 400.

The yearly import of fabrication reaches 1 million to 1,200,000 francs more than 9/10^{ths} of which for exportation.

This firm exports to France, England, Germany, Russia, Austria, Italy, Turkey, America, China and Japan.

It possesses 22 agents for exportation.

A. Riga and C^e, at Liege.

This firm, founded in 1877, manufactures arms of every kind and especially exportation-arms, comprising the types which are chiefly sold in the principal countries of the world.

It employs 50 workmen and clerks, besides 500 workmen outside the manufactory.

The yearly production reaches about 1 million francs, 1/10^{ths} of which represents the value of arms exported through the whole world.

Alb. Simonis, J. Janssens and Dumoulin brothers, at Liege.

This firm, founded in 1882, manufactures mechanically every sort of war and shooting arms, and especially guns Comblain system and revolvers.

It employs 300 workmen inside and 30 outside the manufactory.

It possesses 1 steam-engine of 45 horse power and 250 tools.

Its yearly production amounts to 9,000 or 10,000 rich guns and 40,000 or 50,000 war guns.

Nearly the whole production is exported to the United States.

Woollen yarns and tissues.

The woollen industry is one of those that contributes the most to the industrial glory of Belgium; it constitutes one of the principal elements of the wealth and prosperity of the country. Thirty years ago, the woollen manufacture was concentrated at Verviers and its neighbourhood. To day, that industry is established in a great number of localities; nevertheless, Verviers is still the principal centre.

The spinning of carded wool is that which has taken the greatest and most rapid development. Its annual production is about 7,500,000 kilograms, representing a value of 50 millions francs. The manufacture of cloths and stuffs is not less important and the export is considerable. That of rose, merino, cashmere, orleans stuffs develops itself also in the country, and in such conditions of prices, quality and perfection that there is no fear of foreign competition.

Other industries employing wool are just now spreading such as felt for hats, carpets, clothings and paper making.

E. de Grand-Ry, at Weffe-Dinant.

This establishment was founded in 1879. M. de Grand-Ry, specially manufactures merinos of different shades and crossings for export to warm countries.

The annual production reaches 450,000 meters of woven having a value of 1,100,000 francs.

J. Dehesselle, at Thimister-Verviers.

This firm, founded in 1760, manufactures flannel and light stuffs made of pure wool. The stock is composed of a steam engine 80 horse power, one brake, one beetle, 12 cards, 13 spinning mills with 5,070 spindles, 80 looms for mechanical weaving, 3 rolling washers, 2 woollen machines, 1 drying machines, 2 dyeing boilers, etc.

The firm does not export.

Société anonyme La Dinantaise (Limited), at Dinant.

This Company was founded in 1877. It specially manufactures merino, cashmere shawls and combed woollen yarns.

It employs 85 men and 65 women. Its stock is composed of a vertical steam engine 130 horse power, 11 preparatory machines for spinning, 8 spinning looms of 600 spindles each, one bobbin machine, beams, and 150 weaving looms. The annual value of its production is of 900,000 francs, of which $\frac{1}{5}$ is exported.

*Fabrique nationale de chapeaux (Société anonyme),
at Anderlecht-Brussels.*

This Company was founded in 1881. It manufactures all kind of felt hats. Its employs 500 hands. Its stock is composed of a steam engine 100 horse power, and of the most complete and improved material for the mechanical making of hats.

The annual average production is of 1 million of francs (200,000 hats), nearly the whole being exported to England and her colonies, America, Africa, Cuba and the West Indies.

It imports yearly from England and Australia for about 200,000 francs of skins.

Albert Oudin and Co, at Dinant.

This firm, founded in 1872, introduced in to the country the manufacture of merino and cashmere shawls, and also the spinning of combed wool.

It employs about 600 hands, of which 350 are women.

The stock is composed of 3 steam engines with a total of 300 horse power, 14,000 self acting spindles and 400 weaving looms.

The average value of the annual production is of 3 millions francs, of which 300,000 francs are exported to America, Holland and England.

Fran Simonis, at Verviers.

This firm was founded in 1725. It manufactures all sorts of fancy woollen stuffs of all qualities : cloths, cashmere, satins, cambrics, and specially billiard cloths of all shades.

It employs from 1,300 to 1,400 hands. M. Y. Simonis owns two mills : one at Verviers, comprising the works for weaving, fulling and dressing; the other at Surdan near Verviers, where are the spinnings made; the last has 10,000 spindles. The works at Verviers have 450 mechanical weaving looms.

Peltzer and son, at Verviers.

This firm was founded in 1815. They manufacture black cloths, fancy and fashionable articles, cloths of all shades, flanel of all kind, billiard cloths and woollen yarns.

1,800 labourers are employed at the works. The implements are composed of : 18,000 spindles, 400 mechanical weaving looms and 400 horse power steam engines.

The annual production is about 25,000 pieces of different woollen stuffs, representing a value of 5 millions of francs. Exportation to all parts of the world.

Aubin Sauvage and Co, at Ensival.

This firm exports woollen tissues and fancy articles.

Conclusion.

This report is the result of an industrial exploration of Belgium.

It presents many omissions : great indeed is the number of important Belgian firms that I have not been able to enumerate.

The merchants of East Africa, however, will find in this work useful intelligence, and if they wish to obtain further information, they can always apply to the Belgian consulate at Zanzibar.

It would be very happy if commercial intercourse could be established directly between Antwerp and the Eastern Coast of Africa. To this result every one must aim who wishes to enjoy the cheap prices and the perfection which are the distinctive characters of Belgian industry. The habit of employing intermediate agents or middlemen persists in spite of the facility of modern communications. If this system is sometimes advantageous, it has the great disadvantage raising of prices to the great loss of consumers.



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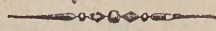
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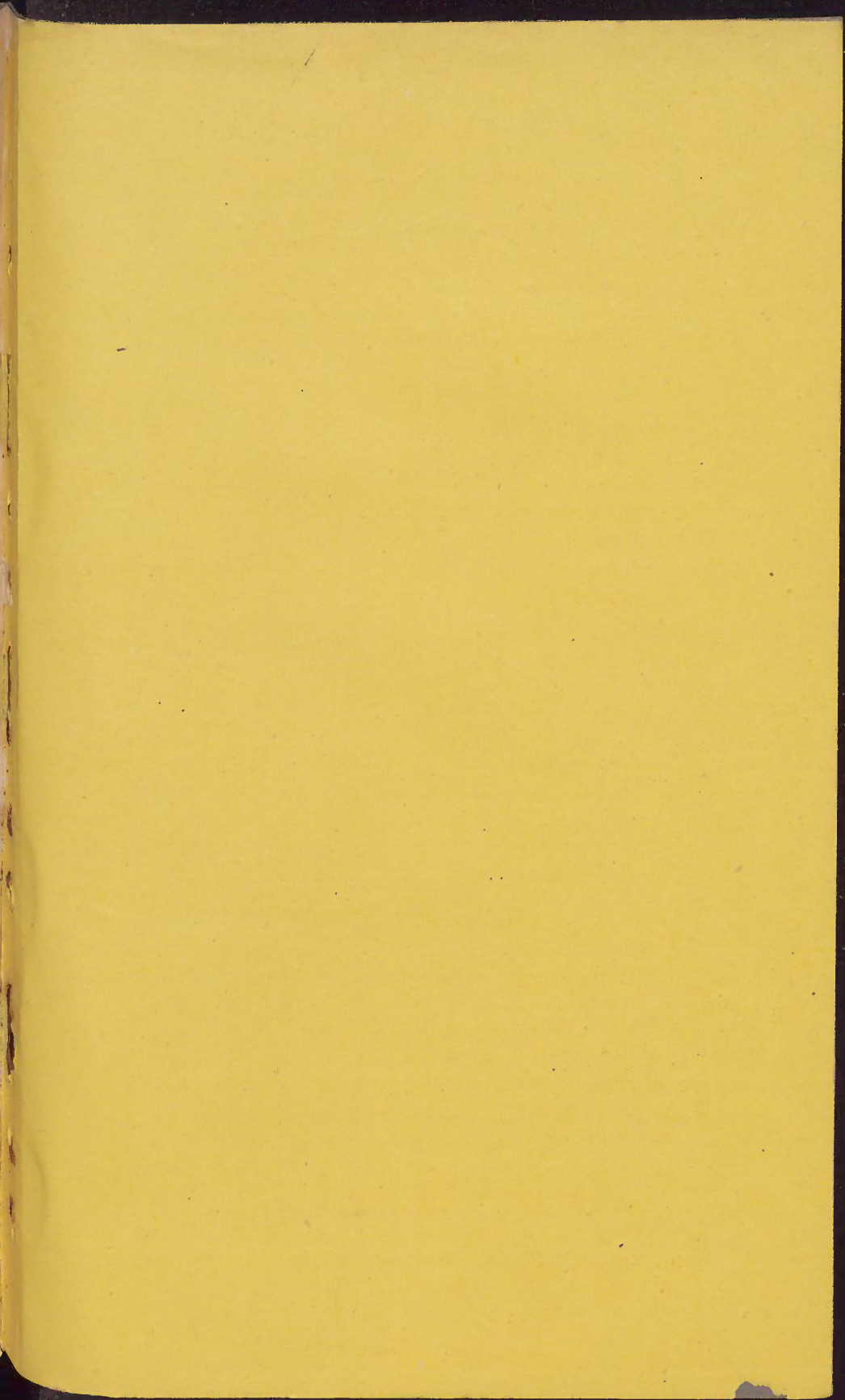
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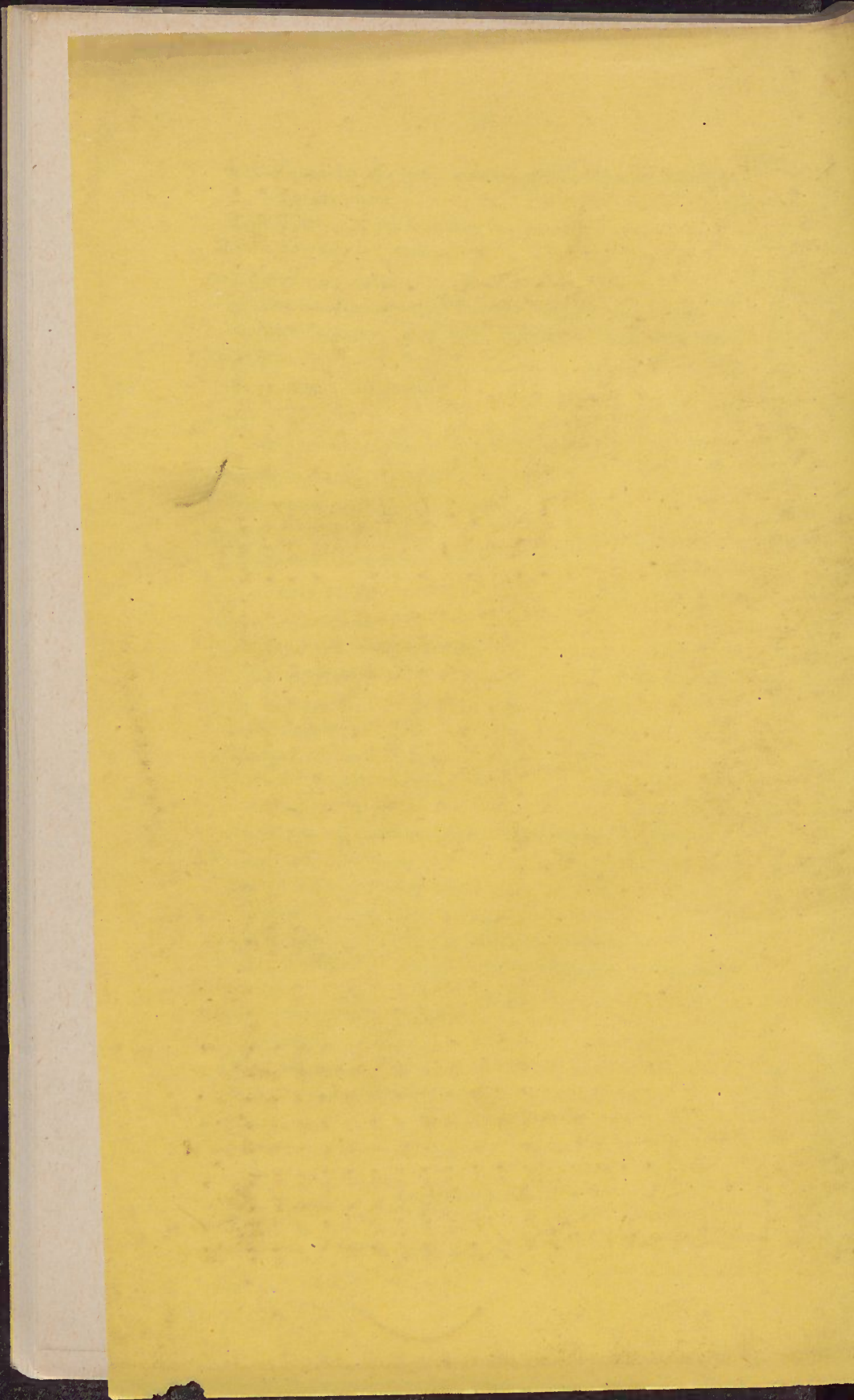
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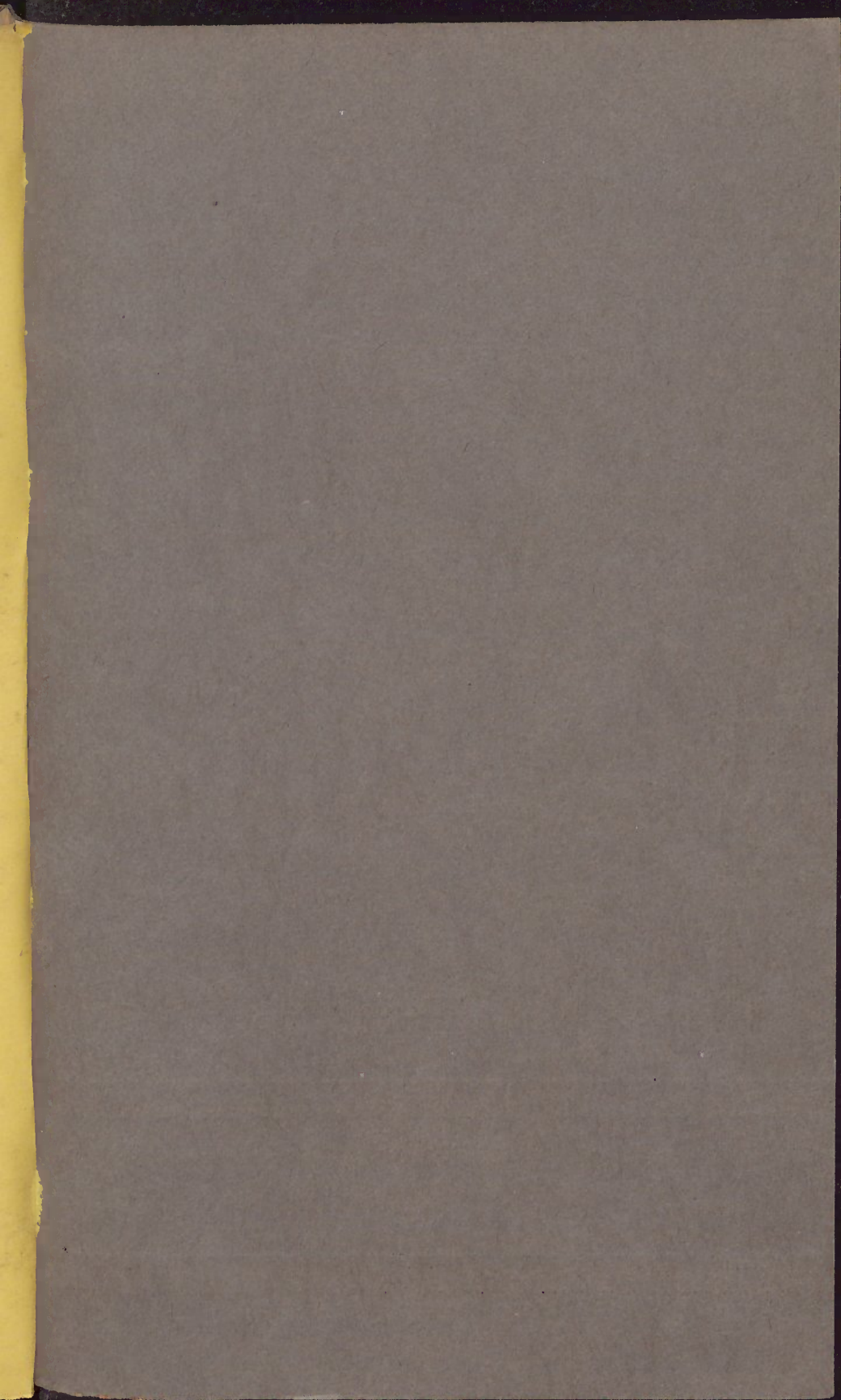
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