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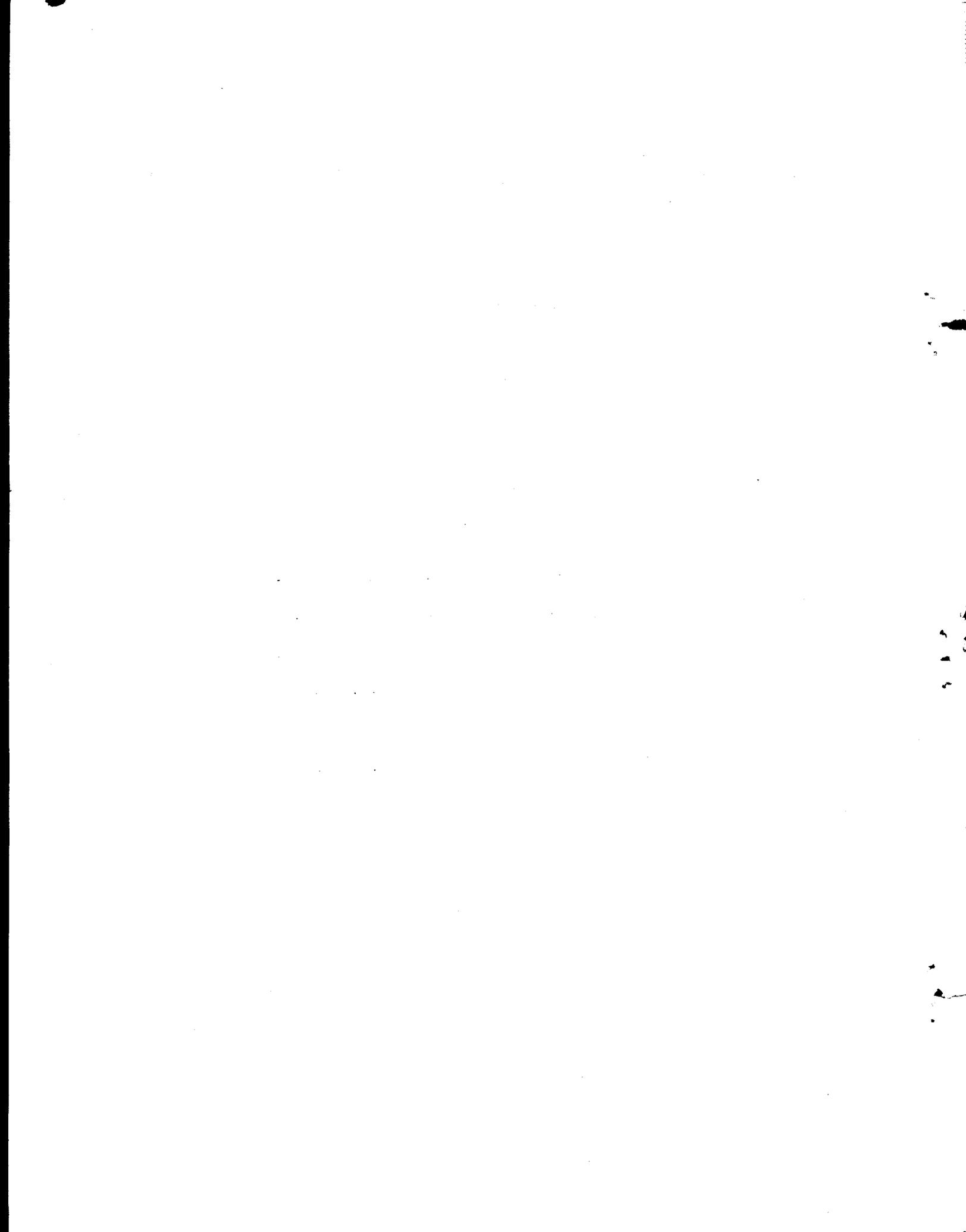
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## ANNEX J

## INDUSTRIAL DEVELOPMENT IN CUBA

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## ANNEX J. INDUSTRIAL DEVELOPMENT IN CUBA.

## INTRODUCTION

As in the case of agriculture, the industrial development of Cuba was linked with the evolution of the export industries until the thirties.

During this period various factors combined to hinder the development of industry for domestic consumption, including the shortage of raw materials and fuel and the limited home market. The necessity of importing both fuel and raw materials resulted in a higher cost of production, other things being equal, than in other countries, at a time when the limitations of the domestic market accentuated the difference in costs by forcing Cuban producers to operate factories not of optimum size. These circumstances prevented the industrialists of the country from competing with imported goods on the domestic market; if they did do so, then their margin of profitability was smaller than it would have been had they invested in export industries. The Treaty of Reciprocity of 1902 with the United States, moreover, granted advantages precisely to a country which by reason of its geographical proximity, the development of its industries and other factors could place its goods on the Cuban market in large quantities and at lower prices than any other foreign supplier.

It is therefore not surprising that prior to 1928, with the exception of sugar refining and tobacco processing, there were only the beginnings of an industrial development in Cuba. The First World War did not act as an incentive to greater industrialization in Cuba, as it did in other Latin American countries, since, unlike them, Cuba did not suffer from a shortage of supplies.

It is quite likely that before the depression of the thirties the handicraft industries were of greater importance within the economic structure of the country than factories producing goods for the domestic market. Two of the largest industries (beer and cement) employed only 2,500 workmen when operating at capacity level or near it. Yet the manufacture of shoes alone, and by primitive methods gave employment to more workmen than did the aforesaid industries.

During the first three decades of the present century, the only industries introduced were precisely those not hampered by the obstacles

/mentioned above

mentioned above (e.g. cement), or else those in which producers in other countries could not compete because of the high costs of transport to the Cuban market (e.g. beer), or else those protected by tariff duties.

As far as can be ascertained from the incomplete data available, the country's industries enjoyed a period of great activity during the twenties. Until 1945 the brewers had not surpassed the volume of production for 1925, (i.e. 51.7 million litres), and the 357,000 tons of cement produced in 1929 still constitute Cuba's record production.

Various factors have encouraged industrialization in this country, among which may be mentioned Government intervention, and the shortage of certain products during the war.

As in the case of agricultural products, the Government raised tariffs considerably on certain types of manufactured goods (e.g. shoes, varnishes and paints), thus establishing a protected market for them. Government action was also directed in more than one instance, from 1927 onwards, facilitating the introduction of new industries. Various measures were taken with this purpose in view, among which were the following: the remission of tariff charges on imports of industrial machinery and raw materials; the exemption of new industries from payment of domestic taxes for periods up to ten years; quantitative restrictions on the importation of certain classes of goods; the creation of Producer Associations empowered to dictate compulsory standards for their members concerning the production, distribution and prices of certain articles. The Board of Directors of each of these associations always included a Government representative.

## SECTION I. STRUCTURE OF INDUSTRY

While it is true that the sugar industry continues to play a predominant role in the country's economic structure, it is none the less true that at the beginning of the war, the industries engaged in production for the domestic market had already reached a certain degree of development. This is shown by the fact that in 1938, Cuban industry supplied almost half of the 103.0 million pesos worth of manufactured consumer goods acquired in the country. <sup>1/</sup>

In 1939, there were 3,500 industrial establishments and handicraft workshops employing 43,000 workers, whose wages in that year totalled 19.0 million pesos. The capital invested in that sector of industry amounted to 152.8 million pesos and the total value added in manufacturing output reached approximately 50.0 million pesos. <sup>2/</sup>

Those industries which produce almost exclusively for the domestic market may be divided into three groups:

1. Industries which have no exportable surpluses due to the scarcity of the raw materials which they use, and industries which cannot compete on the world market because of their production costs. This group comprises industries which in the majority of cases use domestic raw material, such as the food industries (meat, milk, fruit and vegetables), non-alcoholic beverages, cement and hides.
2. Industries which mainly use imported raw material, but which do not require considerable tariff protection because of their low production costs. The industries for producing soap, matches, beer, furniture, paper, tyres, garments, fertilisers and perfumes all belong to this group.
3. Industries which, like the previous ones, mainly use foreign raw material and which require considerable tariff protection on account of their high costs of production. Among these are the industries for making cotton textiles, paints and varnishes and some chemical products.

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<sup>1/</sup> Original data from the Sección Industrias of the Ministerio de Agricultura.

<sup>2/</sup> La Economía Nacional de Cuba, by Julian Alieres, La Habana 1942.

This classification is not rigid, since the inclusion of an industry in one group or another depends on various factors, one of the most important being the relationship between domestic and international prices.

From the partial data published by the Ministry of Agriculture, and from private reports (no census data exist) it may be deduced that the main characteristics of Cuban industry before the war were as enumerated below:

1. The preponderance, within the whole, of the light manufacturing industries, and especially of that engaged in the production of perishable consumer goods. Thus, the net value of the industrial production of foods and beverages represented between 40.0 and 45.0 per cent of the aggregate value for all industries, excluding the export industries. The country had no metallurgical industry, being forced to import products of this type, as well as agricultural and industrial machinery and vehicles.

2. Predominance of small sized industrial establishments, since the average number of men employed per factory only reached twelve. This figure was considerably lower than the average corresponding to the export industries.

3. Dependence on foreign supplies of raw materials used in the process of production. Thus, of a total of 19.2 million pesos invested in raw materials in the year 1939, 64.4 per cent was acquired abroad.

4. Greater use of labour than of capital, due to the relative scarcity of the latter. In other words, the real capital per man employed was small, since it did not exceed 3,500 pesos in 1939.

5. Limited participation of foreign capital in this sector of industry, if compared with the importance which it had in the export industries. It is estimated that while in the first instance the portion of the total invested capital corresponding to foreigners was about 25 per cent, in the second, the proportion reached 60 per cent.

Investments in Cuban industry are largely derived from the profits obtained from other productive activities, and to a lesser degree from the profits obtained in the industries themselves. The commercial banks have not carried out credit operations which tend to encourage domestic industrial development.

6. Heavy Tariff protection for national industries, even for those which through their costs structure do not require it or require it to a lesser degree.

## SECTION 2. DEVELOPMENT OF INDUSTRIAL PRODUCTION.

During the years following the establishment of the new industries, the volume of their production was subject to two main factors: the level of real demand, and the capacity of the industries themselves to produce at a cost which would enable them to substitute their goods for similar imported articles on the domestic market. Accurate statistics are unavailable for this period, but it can be assumed from the scanty data obtainable that in most cases they have only partly succeeded in replacing foreign products on the domestic market.

Despite this, production of certain articles increased considerably from 1927 onwards; this for instance was the case of leather shoes, production of which was trebled between that year and 1944. Another indication of the development of industrial production is provided by the volume of transactions of electrical power by the public utility companies. As may be observed from the table below, the apparent total consumption of electricity rose by 86.1 per cent between 1933 and 1942, and, what is still more important, industrial consumption rose by 121.7 per cent over the same period. It should be pointed out that the sugar factories are not included in the group of industrial consumers, since they generate their own power.

Table 1. Sales of Electric Power  
(in millions of kilowatt-hours)

<u>Years</u>	<u>Total</u>	<u>By Industrial Consumers</u>
1933	173.4	45.2
1938	274.7	..
1939	290.9	..
1940	301.3	..
1941	309.0	..
1942	322.7	100.2
1943	334.7	107.6
1944	376.8	..
1945	415.0	..
1948	638.5	..

Sources: Problemas de la Nueva Cuba, Foreign Policy Association, Second Edition, Havana 1935, p.438; Electric Power Industry of Cuba, Industrial Reference Service, U.S. Department of Commerce, Washington D.C. Nov.1945. (Vol.3, Part I) No.7; and private and official data.

/In the post-war period

In the post-war period, the volume of industrial production has, broadly speaking, remained at a higher level than that obtaining during the pre-war years, although in the case of certain industries, production did not surpass the levels recorded during the war. The determining factor in this high volume of industrial production was domestic demand, which during the last few years has remained at a high level due to increased activity in the sugar industry and a steady rise of money wages.

During the war, there were two opposing trends which reacted on the volume of Cuba's industrial production. On the one hand, the increase in the nominal income, due to increased activity in the sugar industry, caused a striking rise of real demand; this process was speeded up by the establishment of a minimum wage. At the same time, the volume of imports of industrial articles proved insufficient to meet domestic demand, even though their price was considerably higher than before the war.

On the other hand, various factors tended to prevent Cuban industry from filling the gap left by imports. Due to the limited foreign supplies of industrial machinery purchases of capital goods could not be maintained at the levels reached during the five year period, 1935-1939, when they were not particularly high. Another factor contributing to the limitation of industrial production during these years was the shortage of raw materials and of semi-manufactured imports, such as cotton, fats for making soap, and yarn. Further, during the critical years of 1942 and 1943, the periodic shortage of coal and other fuels further hampered the expansion of production.

In spite of these difficulties, increased domestic demand brought about an increase of production, achieved by means of more intensive and efficient use of existing machinery. The increase of production in certain industries may be observed in the following table:

/ Table 2.

Table 2. Volume of Production of selected industries

Products	Units	1939	1944	1946	1947	1948
Shoes	Millions of pairs	4.6	8.7	9.5	10.0	8.0
Matches	Millions of boxes <sup>a/</sup>	98.0	139.0	209.0	249.0	240.0
Paper	Thousands of tons	29.4	23.9	21.6 <sup>d/</sup>	23.0	23.0
Tyres	Thousands of units	-	30.6	53.4	65.9	58.7
Inner tubes	Thousands of units	-	13.5	45.1	41.5	33.9
Beverages <sup>e/</sup>	Millions of boxes	4.0 <sup>b/</sup>	10.0	17.0	20.0	21.0
Paint	Thousands of Gallons	420.2 <sup>b/</sup>	750.0	..	1,139.0	1,232.8
Soap	Thousands of tons	31.2	40.6 <sup>c/</sup>	..	36.3	40.8

a) Boxes of 50 wax matches

b) 1938

c) 1943

d) From this year onwards, only wrapping paper is included.

e) Non-alcoholic beverages.

Sources: Economic Review of Cuba, 1948, International Reference Service, U.S. Department of Commerce, Washington D.C., August 1949, Vol.VI, No.75; Mining and Manufacturing Industries of Cuba, United States Tariff Commission, Washington D.C., 1947; private sources.

During this period and within the limits laid down by the availability of industrial machinery, a tendency to expand in certain established industries and to create others can be discerned. In 1940, for instance, a caustic soda factory was established which produced 408 metric tons that same year. Some years later, production in this factory had risen to 1802 metric tons. In 1942 a glycerine refinery was set up, and the country became a net exporter of this commodity. In the two following years various factories were built, including one for sulphuric acid, another for caffeine and theobromine, another for bottles, and two for matches.

### SECTION 3. THE CEMENT INDUSTRY

#### I. General Aspects

One of the earliest manufacturing industries to be established in the country was the cement industry. In 1898 a plant was built near La Habana with French capital, the annual capacity of which was 48 thousand metric tons. It was closed, however, in 1921, due to its high production costs. Domestic cement was unable to compete with foreign cement, the price of which during the period comprised between 1903 and 1915 remained at approximately the same level, as can be seen in the following table:

Table 3. F.O.B. prices at port of origin of  
imported cement in Cuba  
In pesos per metric ton

1903	9.77
1906	9.52
1909	9.25
1912	9.68
1915	10.06

Source: Foreign Trade Yearbooks (Anuarios del Comercio Exterior).

Before the beginning of the First World War, a second plant was built, with German capital. The incompetent methods and inefficient equipment and the fact that it was badly situated, far away from raw material and consumer centres, placed this factory at a very serious disadvantage as regards competition, with the inevitable result that it was forced to close down after a very short period of operation.

In 1916 construction was begun of a factory still in existence, which did not start to produce cement, however, until 1918. It was built with North-American capital and it was situated very near lime and clay deposits, at Manil, a port about 70 miles from La Habana. The gypsum deposits, though distant, were connected with the factory by an efficient system. The factory possessed 2 furnaces with an annual capacity of about 100 thousand metric tons. At first the dry process was used in production but later further installations were added to employ the wet process. Coal /was first used as

was first used as fuel and was later replaced by petroleum.

The installation of this plant followed a period marked by a pronounced increase in the consumption of cement. This is confirmed by the fact that the per capita consumption of cement rose from 14.2 kilogrammes (1903-1905 average) to 50.7 in the three years preceding the establishment of this industry.

## II. Development of Production

Three stages can be observed in the development of cement production in Cuba: the first extending from 1898 to 1917; the second between 1918 to 1930 and the third from 1931 till the present day.

The first stage is marked by the continuous failure to establish this type of industry in the country. In spite of the additional demand arising from an increase in building on the part of the sugar industry and of the growth of domestic economic activity, domestic production never exceeded 50 thousand tons a year. The greater demand was met by greater imports, which rose from 20.4 thousand tons in 1903 to 132.2 thousand tons fourteen years later.

The second stage is marked by the establishment and rapid growth of the industry on efficient productive bases. In 1924 a furnace was added to the original plant - built in 1916 - and three more before 1928, thereby increasing its capacity to 350 thousand tons. The first addition was caused by a growing demand on the part of private individuals, but subsequent expansion was undertaken anticipating an increase in the demand of the Government, which began a large programme of public works in 1925. Between 1918 and 1929, domestic production rose from 26 thousand tons to 357 thousand, and its contribution to domestic apparent consumption rose from 19.3 per cent to 93.2 per cent. During these years, when an expansion of the cement industry took place, the price of imported cement was maintained at a higher level than that of the preceding 16 years, although domestic industry - taking the efficiency of the machinery installed and the costs of raw material into account - would have been able to compete at a lower price-level with foreign producers.

The third stage comprises the years in which there was a falling-off followed by a recovery in the cement industry. Nevertheless, lower levels  
/than those of

than those of the five-year period 1925-29 were obtained. This was also the stage of protective customs duties in favour of the cement industry.

With depression, the programme of public works came to a standstill, while private construction work was also drastically reduced. In 1933 the total apparent consumption of cement had diminished to 39.4 thousand tons, i. e. only 12.9 per cent of the figure corresponding to the above-mentioned five-year period. Production fell even more: its volume in 1933 was only 12.2 per cent of the average during the five-year period (1925-29). The poor prospects on the market brought about a partial dismantling of the factory and the exporting of two of the furnaces to Brazil.

In 1934, demand and production of cement began to increase gradually. In 1942, demand surpassed the industry's productive capacity, and the Government authorised free imports of cement in order to be able to meet the requirements of the domestic market. The shortage became more evident when public and private construction increased considerably, after 1944. In that year the Government began a programme of public works, while at the same time private construction work reached a value of 22.6 million pesos (221.6 per cent of the corresponding figures for 1939). <sup>1/</sup> From 1941 till 1944, the industry's inability to expand production and the impossibility of importing cement from foreign countries, produced an inflationary rise in price. This obliged the Government to control the price and distribution of cement. In 1943, the import price reached its peak for the present century.

As from 1945, imports were intensified: they were 67.6 thousand tons in that year, 48.0 thousand in 1946 and 68.0 thousand in 1947. The contribution of domestic industry in the total consumption - which had remained at over 95 per cent from 1936 onwards - fell to below 85 per cent during these three years. The factory's production - for 1946 compared to 1945 - however, increased by 60 thousand tons.

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<sup>1/</sup> Part of the increase in the value of construction work includes the price increase of building materials and the increase of wages. In the case of the latter, an increase of 67.0 per cent between 1937 and 1944 can be observed.

In 1949, although the factory's capacity had been enlarged, there was still a shortage of cement. Imports during the year amounted to 41.8 thousand tons. An important factor in the support of demand for cement has been - with the sole exception of 1946- the amount of building. An idea of this can be gathered from the fact that the estimated value of private constructions reached 43.3 million pesos in 1948 and about 41.0 millions in 1949; that is, over four times the amount for 1939.

Considering that the factory was behindhand in deliveries, the Government renewed its control of the distribution and price of cement in January 1950.

/Table 4:

Table 4. Domestic production of cement as percent of  
apparent consumption

<u>Years</u>	<u>Apparent consumption (in thousands of metric tons)</u>	<u>Percentage of domestic production</u>
1918	134	19.3
1919	161	33.1
1920	212	37.7
1921	177	42.2
1922	169	49.9
1923	215	52.0
1924	242	58.6
1925	285	67.4
1926	236	75.0
1927	286	85.1
1928	339	91.9
1929	383	93.2
1930	293	94.5
1931	63	77.2
1932	49	67.7
1933	39	78.7
1934	55	93.1
1935	76	92.6
1936	112	95.4
1937	127	95.6
1938	114	97.4
1939	132	97.1
1940	152	99.9
1941	156	100.0
1942	166	100.0
1943	176	93.6
1944	178	97.7
1945	248	72.7
1946	288	83.4
1947	344	80.2
1948	335 <sup>a/</sup>	85.0
1949	339	87.7

a/ Estimated.

Source: Data supplied by the cement producing company; Foreign Trade Yearbooks and Economic Commission for Latin America.

## SECTION 4. COTTON TEXTILE INDUSTRY

I. General Aspects

The cotton textile industry in Cuba is of recent date: the first factory was only built in 1931. Before this, the country had depended on imports of all types of textile products to meet the requirements of its population. See the following table:

Table 5: Volume of imports of cotton articles by five-year periods, 1905-29

(in metric tons)

<u>Average</u>	<u>Textiles</u>	<u>Ready-made clothing</u>	<u>Other Manufactures</u>
1905-09	7,308.6	595.0	635.1
1910-14	7,714.4	754.5	684.6
1915-19	9,034.6	1,306.6	676.0
1920-24	11,048.7	1,563.8	1,119.7
1925-29	9,209.9	1,041.3	1,513.9

Source: Foreign Trade Yearbooks.

Within the total volume of imports, the textile group and its manufactures were only surpassed by foodstuffs. Within the group itself, textiles and other cotton manufactures occupied the largest share. During the 1905-49 period, the value of imports of cotton goods varied between 13.5 per cent (1905) and 3.3 per cent (1946) of total imports.

The delay in establishing this industry in Cuba, was due to several obstacles: shortage of raw materials; the existence of a tariff on raw cotton and yarn, restriction of the domestic market (per capita consumption was however, higher than that of other Latin American countries possessing a textile industry), and the existence of a reduced preferential tariff applicable to the manufacturers producing at low cost and geographically well situated, (the United States). In the face of so many adverse factors it became virtually impossible to create an industry capable of competing with North American producers.

/Table 6: Index of

Table 6 : Index of Tariff Rates applicable to the indicated  
cotton textiles. Base: 1904 tariff = 100

<u>Plain Cloth</u>					
(weight of 100 square metres of which is over 10 kilograms)					
	To 9 threads	10-15 threads	16-19 threads	20-23 threads	
		(per square centimetre)			
1904	100.0	100.0	100.0	100.0	100.0
1927	102.6	102.9	101.4	104.8	104.8
1934	102.6	102.9	101.4	89.8	89.8

<u>Twill Cloth</u>					
(weight of 100 metres of which is over 10 kilograms)					
	To 6 threads	7-11 threads	12-15 threads	16-19 threads	20-23 threads
		(per square centimetre)			
1904	100.0	100.0	100.0	100.0	100.0
1927	100.0	101.8	104.2	104.2	103.2
1934	100.0	101.8	104.2	96.7	95.8

Source: Basic data obtained from official sources.

In 1927, the panorama was noticeably changed when the Government fundamentally altered the tariff in force since 1900. As can be seen in the preceding table, the tariff applicable to certain types of textiles (all of which are classified in the country's first tariff), was not considerably altered. A protective system arose when new items were included in the tariff, under high customs rates. Thus plain cloth of 20 to 23, 24 to 27, 28 to 31 threads, etc. per square centimetre, which did not appear in the old tariff were included in the new one (1927), when their rate was higher than that of other types of cotton textiles!

As has already been mentioned, the first textile factory was established in 1931. It was followed by another, in 1936. In 1948, there were 86 textile factories in the country, of which 14 manufactured cloth and the remaining 72 made cotton goods. In the cotton cloth factories, there are two plants which produce about 80 per cent of the textiles made in the country, and have a capital of about 11.0 million pesos. Unlike the rest of this industry, they spin the yarn which they use for the manufacture of textiles. All of them, however, are obliged to buy the necessary raw materials - some

materials - some raw cotton and other yarn - abroad.

The two above mentioned factories had in 1944 a yearly manufacturing capacity of 6,900 metric tons of cotton and employed between them 63,648 spindles and 1,678 looms. They were - and still are - the most efficient factories in the country, as can be gathered from the fact that employing about 45.0 per cent of the total numbers of workers in the industry, they account, - as we have just seen - for nearly 80 per cent of domestic production.

Sufficient data are not at hand to prove this industry's importance within total industry. It is generally acknowledged, however, that it is one of the largest to be created, after the implanting of the protective tariffs. There were 6.478 workers in the textile industry in 1947, although a considerable part of this figure corresponds to those employed in the clothing industry. The industry's pay-roll in 1947 amounted to 75 million pesos, equivalent to an average monthly wage of 97.09 pesos. Nevertheless, in 1948, the number of workers and the average monthly wage diminished to 5,859 and 89.49 pesos respectively.

## II. Development of Production

Within a relatively short period since the industry's establishment, annual domestic production reached nearly 3.5 thousand tons of textiles during the 1935-39 period. This represented more than 30 per cent of apparent consumption. (See the following table).

/Table 7 Domestic

Table 7 : Domestic Production of Cotton Textiles <sup>a/</sup>  
as per cent of apparent Consumption

<u>Average</u>	<u>Apparent Consumption (Metric tons)</u>	<u>Percentage of Domestic Production</u>
1935-39	11,300	30.9
<u>Years</u>		
1940	10,556	43.0
1941	14,395	42.0
1942	11,919	48.8
1943	10,262	64.2
1944	11,351	67.2
1945	12,066	64.7
1946	13,272	58.2
1947	13,594	50.7
1948	12,747	54.0

Sources: Production figures given to the Economic Commission for Latin America by the Ministry of State. Import data obtained from Foreign Trade Yearbooks.

a/ Including tulle, lace, passemanterie and ribbon.

Note: According to other official data, the contribution of domestic industry to the consumption of cotton textiles rose to 58.6 per cent in 1945, 52.4 per cent in 1946, 43.6 per cent in 1947 and 38.1 per cent in 1948.

VII. As from 1940 production began to increase until a maximum of 7.8 thousand metric tons was reached in 1945. Its contribution to apparent consumption reached 67.2 per cent in 1944, year during which imports nearly reached the lowest figure for this century while production broke all records. In 1945, the contribution of domestic production to apparent consumption declined, due to a stronger increase of imports than of production. As from 1946, production diminished. According to official figures, the volume of production in 1949 reached 5.7 thousand tons, or 72.7 per cent of the 1945 level. The contribution of domestic production to apparent consumption in 1949 seems to have been less than 50 per cent.

The increase in production observed during the war years was partly due to the deflection of a certain amount of demand towards the domestic product by virtue of the decrease in foreign supply and partly due to an increase in total demand as a result of the rise in national income. A

/third factor,

third factor, though undoubtedly of less importance, was the growth of the population. As in the case of other goods, there was no further increase in domestic production during the war, due to the limited availability of raw materials.

The two largest factories in the country were in a favourable competitive position during the war, since the price of raw cotton rose less than the price of the raw materials used by less efficient producers (see the following table), while another important factor in costs of production - wages - grew at the same rate in all branches of industry.

Table 8 : Index of F.O.B. prices at port of origin  
of cotton and cotton yarn

Base: 1937 = 100

<u>Years</u>	<u>Cotton (a)</u>	<u>Yarn (b)</u>	<u>Ratio (a : b)</u>
1937	100	100	100
1938	77	88	88
1939	86	100	86
1940	76	111	68
1941	77	85	90
1942	109	173	63
1943	144	209	69
1944	134	214	63
1945	144	210	68
1946	177	258	69
1947	226	385	59
1948	315	289	109

Source: Foreign Trade Yearbooks and the United Nations Economic Commission for Latin America.

From 1947 onwards, cotton textile producers have been maintaining that a crisis exists in the industry. They point out the falling off of production and the contribution of domestic industry to apparent consumption as proof of the existence of an abnormal situation. They insist that under present conditions (which cause the industry to be of a higher cost than in that of the United States and which cannot be altered in a short time), the only remedy would be an increase in tariffs.

For the reasons previously given the cotton textile industry nearly doubled production during the war years. As soon as the war was over and

/normal conditions

normal conditions for production were recovered in certain countries, the foreign product began to replace Cuban cotton textiles on the domestic market.

In pre-war years, domestic industry, on the basis of its cost structure, was only able to compete with certain types of imported goods. When the Second World War began, the industry was still young and, as a result, the need to renew its original machinery and equipment had not yet arisen. During the war, producers were naturally unable to re-equip their factories due to the situation existing in the belligerent countries, which had been producers of capital goods.

From these facts it can be assumed that the productivity per worker in industry in general, probably diminished due to the wear and tear of the available machinery, and at the best of times, did not vary at all, compared with the pre-war level. But in the post-war period, when it was to be hoped that equipment would be renewed, it did not take place, in a measure sufficient to alter cost structure in industry.<sup>1/</sup> It was to be expected that if no marked change in the relation between the prices of imported textiles and raw materials occurred in favour of the latter the domestic industry would encounter serious difficulties in the post-war period in keeping that part of domestic market it had acquired during the war.<sup>2/</sup>

The increase of foreign competition began precisely during those years in which cotton textiles were replaced on the domestic market by other textiles, such as rayon, nylon, linen, etc.. As can be seen in the following table, the proportion of cotton textiles of the total apparent consumption dropped from 88.5 per cent during the five-year period, 1935-39, to less than 70.0 per cent as from 1946. Total apparent

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<sup>1/</sup> According to private reports the profits earned during the war by one of the largest concerns in the country was allotted to the building of a rayon factory and not to the renewal of machinery in the factory producing cotton textiles.

<sup>2/</sup> An improvement in the competitive position of domestic industry would have also taken place if the money wage of the textile worker had increased to a much lesser extent than that of a workman in other producing countries. Nevertheless, judging from the incomplete data at hand, this did not happen.

// consumption grew

consumption grew rapidly between 1945 and 1946, remained at approximately the same level during 1947 and diminished in 1948.

Table 9 : Percentage of Cotton Textiles of total  
apparent consumption of textiles

<u>Averages</u>	<u>Percentages</u>
1920-24	92.1
1925-29	86.9
1930-34	88.5
1935-39	76.9
1940-44	78.6
<u>Years</u>	
1945	80.7
1946	69.4
1947	66.7
1948	68.7

Sources: Foreign Trade Yearbooks; report from the State Ministry of Cuba and United Nations Economic Commission for Latin America.

A rough idea of the importance for domestic industry caused by the replacement of cotton textiles by others on the domestic market, is given in the following case: If the relation existing in 1935-39 between the total apparent consumption of textiles and the apparent consumption of cotton textiles had remained stable during the last three years, domestic production would have attained a higher level than the record existing until 1946, even if the volume of cotton textile imports had been what it really was in the previously quoted year.

The decline in the consumption of cotton goods had its origin in two chief sources: 1) the improvement in quality of certain types of textiles, especially those of synthetic fibres, adapted to the climatic conditions existing in the semi-tropical regions and 2) the price relation between cotton and other textiles, which positively turned to the latter's favour as from 1946. (See the following table).

/Table 10. Price indices

Table 10 : Price indices of cotton textiles and substitutes

<u>Years</u>	<u>Substitutes</u> <u>(a)</u>	<u>Cotton</u> <u>(b)</u>	<u>Ratio</u> <u>(a : b)</u>
1937	100	100	100
1938	116	112	104
1939	109	102	107
1940	100	102	98
1941	113	100	113
1942	155	172	90
1943	170	193	88
1944	165	208	79
1945	195	213	92
1946	196	245	80
1947	209	320	65
1948	145	328	44

Source: Foreign Trade Yearbooks and United Nations Economic Commission for Latin America.

### III. The Rayon Industry

Until 1948, the rayon industry in Cuba was restricted to the production of textiles with yarn imported from the United States. Since the industry was established domestic production never reached even a quarter of the apparent consumption of rayon.

As can be seen in the following table, average production during the five-year period 1935-39, was 337 tons. Unlike cotton textiles, production did not increase during the war-years, due to a shortage of raw material. As soon as this could be obtained in sufficient quantities, however, production grew rapidly, and in 1946 and 1947 reached 210.1 and 254.6 per cent respectively of the production of the above mentioned five-year period. In 1948, production fell to the 1945 level as a result of the growing competition of foreign rayon. In 1945, 14.8 per cent of the apparent consumption of rayon was fully met by domestic production, while in 1948 it only supplied 6.8 per cent.

/Table 11: Rayon Production

Table 11: Rayon Production

(in metric tons)

<u>Average</u>	
1935-39	377
<u>Years</u>	
1940	392
1941	397
1942	337
1943	307
1944	439
1945	443
1946	703
1947	858
1948	440

Source: Production figures given to the United Nations Economic Commission for Latin America by the Ministry of State. Import data obtained from Foreign Trade Yearbooks.

In 1948, an important change took place in the industry. A factory was built with the object of exporting rayon, capable of producing annually 1,814 tons of tyre fabric, 1,361 tons of continuous filament yarn and 2,722 tons of staple fibre, in spite of having to import wood pulp, cotton linter, caustic soda and zinc oxide, all of which are used in the manufacturing process. <sup>1/</sup> The factory's capacity exceeds domestic consumption of each of the products just mentioned. Thus it is estimated that the domestic market will only consume (based on the 1948 consumption rate) between 12.0 and 17.0 per cent of the production of tyre fabric, 70.0 per cent of the continuous filament yarn and 33.0 per cent of the staple fibre.

The factory working at nearly maximum capacity employs 670 workers, and the real capital invested per workman amounts to about 22,500 pesos.

The installation of such a factory has apparently been founded on three main points: 1) the probable inability of world rayon production to meet demand, considering its continued increase and the difficulties encountered by two of the largest pre-war producers to raise their production to levels comparable to those existing before 1945; 2) the

<sup>1/</sup> Domestic raw materials used by this industry are the following: sulphuric acid, carbon bisulphide, salt and chlorine.

compensation of the greater cost caused by raw material imports, by means of establishing technical conditions which would guarantee a productivity per worker higher than that of other producer centres; and 3) lower wages paid to the Cuban worker, compared to those paid to workers in the same industry in other countries, even though productivity and efficiency are equal in both cases. Both latter factors enable Cuba to compete in cost terms with other producers from more industrialized countries.

In order to obtain maximum efficiency in their factory, the owners sponsored the formation of an organization consisting of rayon technicians so that they could help to solve some of the technical problems confronting the rayon industry in other countries. The experts introduced fundamental changes in : 1) the purification and coagulating bath sector; 2) the fume exhaust system and 3) the deaeration system for viscose - (the conventional system, in use in most factories, takes between 15 and 18 hours while in this one it only takes a few seconds). To these improvements must be added a few innovations, amongst which is the production of staple fibre by means of a continuous process. <sup>1/</sup>

Since 1st. September 1948 till 31st. August 1949, the factory produced 646.5 tons of continuous filament yarn, 294.6 tons of staple fibre and 1,252.7 tons of tyre fabric. Exports amounted to 58.1 tons of yarn and 1,015.4 tons of tyre fabric. In 1950 it was announced that the factory had received sufficient orders to work for six months at full capacity. Before September 1950, the production capacity of tyre fabrics will be increased by 25 per cent. <sup>2/</sup>

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<sup>1/</sup> For a detailed description of the factory, see Rayon and Synthetic Textiles, Vol. XXX, No. 3, March 1949, p. 57. Washington, D.C., U.S.A.

<sup>2/</sup> See Foreign Commerce Weekly, U.S. Department of Commerce, Vol. XXXVIII, Nos. 2 and 10, pages 33 and 20 respectively.

## SECTION 5. FOODSTUFFS INDUSTRY

I. General Aspects

Before 1930, the domestic demand of processed foodstuffs such as cheese, butter, ham, condensed milk, jerked beef, flour and vegetable oils, was met by imports. During the five-year period 1925-29, imports of these products amounted to 36.0 million pesos, that is 38.1 per cent of the total value of foodstuffs purchased abroad.

The customs tariffs applicable to this type of foodstuffs were raised considerably in 1927, and were further increased during the following years. A typical example of these increases is the case of butter: the customs duty rose from 91.00 pesos per metric ton in 1926, to 120.00 in 1927, 250.00 in 1930 and, two years later, to 410.00 pesos.

The formation of a protected market and the existence of raw material in the country, led to the establishment of the foodstuffs industry. According to official data, in 1939 there were 104 establishments engaged in processing foodstuffs - excluding chocolate factories. Of these, three specialised in the production of condensed milk, twelve in butter and eighteen in cheese. The greater part of production, however, at least as regards the above-mentioned products, was in the hands of only a few factories.

The establishment of this industry and the contraction of effective demand during the depression, and of foreign supply during the Second World War, led to a considerable decrease in the volume of imports of processed foodstuffs between 1930 and 1945. The course of imports between 1925-29 and 1949 is shown in the following table:

/Table 12:

Table 12: Imports of selected processed foodstuffs, 1925-48  
(in metric tons)

	Condensed Milk	Jerked Beef	Edible oils a/	Ham	Cheese	Butter
Average						
1925-29	21,345	15,476	9,134	1,834	2,166	817
1930-34	6,744	1,523	11,364	296	505	73
1935-39	1,727	8	10,336	176	191	9
1940-44	109	—	2,623	131	41	1
Annual						
1945	1,091	—	5,251	266	275	—
1946	11,538	—	2,485	338	66	102
1947	12,473	3,798	3,628	490	170	614
1948	14,916	2,570	6,663	824	180	480

Source: Foreign Trade Yearbooks

a/ In thousands of gallons.

Foreign purchases of these products increased remarkably after 1945, without, however, reaching the level of the 1925-29 period, for the reasons given below.

During the war several foodstuffs industries were formed, to fill the gap caused by the shortage of imported articles, or to export products which had previously been sold in their natural form. The products which suffered the greatest increase were edible peanut oil amongst the former, and tinned pineapples, among the latter.

Since the promulgation of decree number 2,144 in 1945, by means of which privileges of different types (such as exemption from internal taxes, free imports of machinery and raw materials, etc.) were granted to new industries, eight foodstuffs industries have profited therefrom. Of these, the most important is a wheat mill, the construction of which was begun near La Habana at the end of 1949, and which, according to private sources, is expected to produce 60,000 metric tons of flour.

/II. Development of

## II. Development of production

The production of milk derivatives increased rapidly after 1930, and before the outbreak of the Second World War domestic products had practically replaced imports. Except in the case of condensed milk, the volume of domestic production was considerably greater than imports of the 1925-29 period. Domestic production was unable, however, to meet demand, with the result that an acute shortage of these articles was felt during the closing stages of the war. The following table shows the variations in the volume of production of these products from 1937 till 1948.

Table 13 Production of milk derivatives 1937-1948  
(in metric tons)

	Condensed Milk	Cheese	Butter	Powdered Milk
Average				
1937-39	15,081	2,722	2,032	84
1940-45	18,412	4,445	2,118	201 a/
Annual				
1945	11,000	2,500	900	—
1946	12,939	4,763	1,134	48
1947	14,228	5,035	1,139	54
1948	13,229	5,393	1,179	75

Sources: Agricultural, Pastoral and Forest Industries in Cuba, United States Tariff Commission, Washington 1947;

Economic Development in Cuba. A report for the Chase National Bank, I.B.E.C. Technical Services Corporation, New York, 1948, and private sources.

a/ Average over four years.

The principal obstacle preventing an increase in the production of these articles during 1944 and 1945, was the shortage of raw material caused by the drought which affected the country at that time. As from 1946, the supplies of raw materials remained at a fairly low level, due to two important factors: the price ratio between fresh and condensed milk, which turned in favour of the former, and a greater

/demand for

demand for fresh milk, which put considerable pressure on the limited supplies available. To remedy the continual shortage, the Government on several occasions authorised free imports of condensed and evaporated milk. This explains the sudden increase in imports of these products during the three year period, 1946-48.

The production of jerked beef, sausages and similar products, after a considerable increase during the thirties - since there were no imports of these products during this period - was stabilized during the war years, after which it fell appreciably in 1945 and 1946. The increase of per capita income after 1940, resulted in a higher demand for fresh meat. Supply, however, did not increase at the same rate. For this reason, the first measure taken was to restrict the number of head of cattle intended for the meat packing plants. Later, their quota was considerably diminished by Government intervention. Thus the number of slaughtered head of cattle decreased from 110,664 in 1941 to 31,980 in 1946.<sup>1/</sup>

In the post-war period, the domestic cattle-raising industry has been unable to meet demand. Consequently, imports of preserved meat were resumed after many years.

The edible oil industry was comparatively insignificant before the Second World War. The reduced imports and the limited supply of substitutes, caused an acute shortage which was partly met by domestic industry. As can be seen in the following table, the contribution of domestic industry to apparent consumption rose from 1.3 per cent in 1937, to 69.1 per cent in 1944. This was not, however, the record as regards production, since the highest figure was obtained the year before, when 2.3 million gallons of peanut oil were produced.

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<sup>1/</sup> Política de Abastecimientos, Ministerio de Comercio, República de Cuba, Habana, 1947.

Table 14: Domestic production of edible oils as a percentage  
of apparent consumption

	Apparent consumption (thousands of gallons)	Percentage of domestic production
1937	12,950	1.3
1938	9,407	3.8
1939	6,583	15.7
1940	5,836	24.9
1941	3,589	54.5
1942	3,178	41.6
1943	6,673	34.8
1944	2,887	69.1
1945	6,547	19.8
1946	3,522	29.4
1947	5,053	28.2
1948	7,606	11.2

Sources: Foreign Trade Yearbooks; Agricultural, Pastoral and Forest Industries in Cuba, United States Tariff Commission, Washington, D.C. Internal Reference Service, United States Department of Commerce, Washington, D.C., August 1949.

The industry has met with increasing difficulties as regards maintaining its production level during post-war years. The increase of exports on the part of those countries producing edible vegetable oils, and their high costs of production in domestic industry, are the two important factors which have contributed most to its present uncertain situation.

## SECTION 6. THE BEER INDUSTRY

### I. General Aspects

This industry was established in Cuba at the end of the last century. The first factory was built in 1888; its initial capital was very small. Two years later this was raised to 150 thousand pesos; in 1909 it reached one million and in 1910 was again raised to 3 million pesos. In 1926 the industry consisted of three factories, two of which were situated in Havana and the other in Santiago de Cuba, on the eastern side of the island. The fourth plant however, was not installed until 1949.

The breweries are amongst the largest manufacturing establishments in the country. The average number of workers employed is considerably higher than those employed in most industries (529 and 12 respectively). The capital per workman employed is 2.08 times greater than the average of the remaining domestic industry. This factor naturally gives a workman in a brewery a higher productivity than a workman in other industries. Similarly, this productivity determines a wage rate 1.7 times higher than the average rate in other industries, and which in 1939 surpassed the wage rate of the agricultural labourers of the sugar plantations.

The average size of breweries in 1939 was about the same in Cuba as in the United States, although the aggregate value for per workmen in Cuba was 2,720 dollars and 10,064 dollars in the United States. The difference is mainly due to the smaller amount of available capital per workman in Cuban breweries.

This industry like many other domestic industries, imports a considerable amount of the raw materials it requires, since the country does not produce either malt or hops.

### II. Development of Production

During the first twenty five years of the present century, the country imported some of the beer it consumed, as can be seen from the following figures:

<u>Beer Imports: Average of indicated years</u>			
(in million of litres)			
1905-09	1910-14	1915-19	1920-24
5.8	4.8	4.4	5.5

Source: Research Centre, Economic Commission for Latin America of the United Nations.

/Domestic production

Domestic production during those years seems to have increased more rapidly than consumption.

As from 1921, imports, which in the previous years had reached 14.4 million litres, equivalent to 2.4 million pesos, began to diminish. This tendency increased as from 1927. Domestic production gradually supplied an increasingly larger share of consumption which however was reduced by more than 50 per cent between the five-year periods of 1925-29 and 1930-34. With an increase of national income after 1935, demand increased together with a rise in domestic production.

Table 15: Domestic Production of Beer as per cent of  
apparent consumption

Average	Apparent Consumption (in thousands of litres)	Percentage of Domestic Production
1921-24	40,286	91.8
1925-29	47,335	96.7
1930-34	23,248	99.7
1935-39	37,773	99.9
1940-44	45,561	101.1
<u>Years</u>		
1945	77,018	101.3
1946	80,664	100.6
1947	88,340	95.5
1948	101,164	98.6

Sources: 1943 Census, Dirección Nacional del Censo, Havana 1943, and "Cuba Económica y Financiera" Vol. XXI, No. 239, Vol. XXII, No. 254 and Vol. XXIV, No. 278, Havana.

During the war, two obstacles arose, which prevented an increase in production: the shortage of raw materials and the lack of containers.

As can be judged from the foreign trade data, the domestic brewing industry in 1939 was in a position to compete favourably with foreign producers. The f.o.b. price (port of origin) of a litre of imported beer came to 0.39 pesos, while the factory price of domestic beer amounted to 0.19 pesos. However during the war and subsequent years, the competitive position of Cuban producers deteriorated. The price of raw material increased between 1939 and 1947, as can be observed in the following

/table. This

table. This fact, combined with a rise in wages (no increase was perceived in the industry's rate of productivity per workman), caused a rise in the cost of production and, consequently in the price of beer.

Table 16: Index of F.O.B. prices at port of origin of raw materials for brewing and beer

Base: 1939 = 100

<u>Years</u>	<u>Raw Materials</u>	<u>Beer</u>
1939	100	100
1940	85	96
1941	117	95
1942	120	86
1943	102	107
1944	296	93
1945	342	64
1946	222	77
1947	191	68
1948	-	94

Source: Basic data obtained from the Foreign Trade Yearbooks.

In addition the price of the imported beer remained - except in 1943 - below the 1939 figures. It had fallen to 0.24 pesos in 1947.

This situation caused a tremendous increase in the volume of imports, which rose to 4.6 million litres in 1947. For the third time, during the present century, the value of these imports exceeded one million pesos.