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Sir Harry H. Johnston
with kindest regards
PORTUGAL
from José d'Almada

A Survey of
Her Wealth
& Economic Possibilities

by
JOSÉ D'ALMADA
of the
Banco Nacional Ultramarino,
Lisbon.

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PORTUGAL.

THE geographical position of Portugal is a great economic asset if it were utilised. Portugal forms a rectangle on the extreme west of the Iberian Peninsula. Its perimeter measures 2,054 kilometres, 1,209 kilometres being land frontiers, and 845 kilometres being sea coast. Its greatest length from north to south is 561 kilometres and its greatest width is 218 kilometres, the total area being 89,106 square kilometres, or 8,910,640 hectares.

Portugal is Spain's natural outlet to the Atlantic Ocean. Lisbon is only 656 kilometres from Madrid, and Oporto 616 kilometres. All the Mediterranean trade with England and America is bound to pass opposite the Portuguese Coast, as well as all South African and South American trade with the Northern European markets.

This exceptional position is reinforced by the Portuguese Islands of Madeira, the Açores, and Cape Verde, stretched all along the Atlantic and dominating the commercial routes connecting Europe with America and Africa.

Rivers.

The country is traversed by twelve rivers which, with their tributaries, cover an area of 77,990 square kilometres. The rivers Douro, Tagus, and Guadiana are navigable to a certain extent. Their flow, however, has not been regularised, and the waterways of Portugal are still to be adapted to a normal traffic. The rainfall being irregular, the rivers' flow is torrential with few exceptions.

Water-power.

The waterfalls are very numerous. Some of them are very powerful, and might be harnessed with great economic advantage, both for the country and the capital invested.

The mountain chains are all situated north of the Tagus—the highest point is 1,991 metres, at Serra da Estrella.

Broadly speaking, Portugal forms an amphitheatre, the open space of which lies south of the Tagus, gradually steepening in the north. The River Douro is the most important source of energy in the country. However, the

waterfalls are within the international zone, and consequently they could only be exploited by arrangement with Spain. No agreement having been reached, the river has not been harnessed, and the energy to be derived from its waters is being wasted. The permanent power of the Douro alone is estimated at 102,000 horse-power, and that of the whole hydrographical basin is calculated at 309,000 horse-power.

According to studies made, the tributaries of the Douro would yield the following permanent energy:—

Côa	41,000 h.p.
Sabor	6,000 h.p.
Tamega and Tua	12,000 h.p.
Paiva	12,000 h.p.

Totalling	71,000 h.p.
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which are outside the zone fixed by the Spanish Convention. The River Lima, at Lindoso, yields 3,500 h.p. It is the only big dam already carried out in Portugal with Portuguese and Spanish capital. The River Cavado is reported to yield 38,000 h.p. (permanent power).

The Vouga basin is supposed to yield 12,000 h.p., according to the studies made.

The River Mondego is estimated to yield 20,000 h.p. The Tagus yields 40,000 h.p., and its tributary, the Zezere, yields more than 20,000 h.p., according to the studies made.

The energy of the River Guadiana is estimated at 30,000 h.p.

The distribution of the water-power in Portugal is thus centred in the north of the country.

The total permanent power available is estimated at 500,000 h.p. and the temporary power (during the rainy season) at 400,000 h.p.

The hydro-electric installations actually working number 18, totalling 16,900 h.p.

The number of schemes submitted to the competent department exceeds 200, but, except for schemes, hitherto very little capital has been invested in harnessing the rivers of Portugal. No investment on a large scale could be more remunerative for foreign capital. The cost of the works is estimated at 1,000-2,500 escudos per horse-power installed. Two-thirds of the works are paid in Portuguese currency. Therefore, calculated in sterling, most of the works would be cheap. But that is only one side of the problem. The progress resulting for industries and agriculture would immediately increase the purchasing power of the country, and the reduction in the importation of coal, with freight and insurance added to the high prices ruling, would

benefit the exchange, as the demand for approximately £3,500,000 (the coal bill) would cease or decrease, and be reduced to the amount required for bunkering purposes.

Portugal is importing one-half of the coal she used to buy in England, and she is paying over double the amount for it.

In a small exchange market like Portugal the falling off in demand of an annual amount of £3,500,000 would be immediately reflected in the agio. The financial benefits to be derived from a broad water-power policy need not be explained at any length; they are self-evident.

It may be argued that the power demand and consumption of the country are small, but nowhere has electric power been left wasted, and the country's possibilities are still to be opened up. In fact, Portugal's consumption of power is not ascertainable with exactitude, as there are no statistics, and no data whatever are supplied by the official departments concerned.

However, reliable private information shows that in 1914 the production of energy amounted to 138,000 h.p., of which only a small fraction was derived from water-power. But this figure is relative to the power derived from water and coal and utilised in industry. The power generated by the railways, by the tramways, the power required for the electric light supply, the power utilised in the generation of gas, and the power derived from charcoal and wood, has to be estimated if a right idea of the market is to be formed.

The power actually required for the railways is estimated at 68,777 k.w.h.; the power required for light is calculated at 50,000 k.w.h.; the power for the city tramways is estimated at 13,630 k.w.h., totalling 132,407 k.w.h.

The distribution of the energy is variable, but with the exception of Oporto most of the centres of consumption are situated in the centre and south of Portugal.

Electric power would change the face of Portugal within a few years. The mining resources of the country are at a standstill awaiting cheap power. Agriculture is in a backward state, lacking power and transport facilities. Most of the existing industries are wanting an impetus and an adjustment of plant. Chemical industries are practically non-existent although raw materials are abundant.

Mines.

Copper deposits are mainly found in the South. The S. Domingo Mine is the most important, and has been exploited since 1858. It belongs to an English firm, Messrs. Mason and Barry. The output of the mine varies a good deal, but over

400,000 tons of ore have been recorded in a year and the exports average at 300,000 tons of mineral. The number of miners and employees in this mine is approximately 3,000. The cost of production, under the present rate of exchange, is said not to exceed £4 per ton. This is one of the numerous instances of the advantage of foreign capital in a country with a depreciated exchange.

There are nine copper mines working in the South of Portugal, most of them run by English capital. There are a few concessions exploited by Spanish and French companies.

The total export of copper mineral amounts to 350,000 tons per annum; the number of miners and employees is approximately 5,000; the motive power generated in these mines is 2,036 h.p. and 819 k.w.

The treatment of the ore is not carried out in Portugal. A good many chemical industries might possibly be started there, the more so because salt is abundant on the coast of Portugal.

Tin is exploited as such by two French companies and a few Portuguese firms, but a good deal of it is found in the wolfram mines, and is being worked simultaneously with the latter. The exports of tin amount to 200 tons per annum. The employees and miners number 440; the motive power is 226 h.p. The average percentage of tin is 60. The wolfram deposits of Portugal are the most important in Europe. They are being exploited by British and French capital. The most interesting group of mines belongs to the Wolfram Mining and Smelting Company, Ltd., of London. The works carried out at Panasquiera, near Fundão, represent a great capital outlay. There are a few thousand yards of tunnels built, compressed air is canalised all over the mines for the mechanical drillers; new plants are being erected for the complete treatment of the ore; and hydro-electric schemes are being contemplated on the River Zezere for the supply of cheap motive power. The installations are perfect, and the 500 miners and employees work in the best harmony with the company.

The total production of wolfram averages 500 tons per annum, but the percentage of tin, arsenic or lead varies according to the reefs.

Silver and gold are being exploited on a very small scale, and play no important part in the economy of the country.

Uranium ores are found in the districts of Vizeu and Guarda. The most important mine is the Urgeirica, belonging to Messrs. Burnay and Cie, of Lisbon. These valuable deposits would afford the most interesting field for scientific investigation. The radio-active properties of numerous natural springs and the possible influence of these salts on the public health have not been studied.

The production of sulphur has increased a little, but the home market is not self-supporting. Forty-thousand tons of sulphur are produced every year in the country, but a great deal more has to be imported.

Iron is awaiting the development of hydraulic power in order to expand. The output of iron ore is about 30,000 tons per annum. The total amount of iron in Portugal is estimated at 75,000,000 tons. The average percentage of iron is 43 in the mines that have been worked. The number of claims registered is 93 (July, 1922). The most important iron concessions of Portugal are situated in the district of Bragança, where the French firm of Schneider and Cie holds 22 concessions that have never been worked. Messrs. Burnay and Cie, of Lisbon, are the only firm exporting iron ores from the south of Portugal, and their mines are the only ones being exploited in the country.

The Bragança mines depend entirely on the development of the hydro-electric schemes of the Douro.

Antimonium and lead are being worked on a very small scale.

A few valuable coalfields have been discovered and are being exploited at St. Pedro da Cova, at Cabo Mondego, Lena, near the big cement factory of Maceira, and in other places. In 1914 the coal output was 30,000 tons, in 1921 it amounted to 210,000 tons, an increase of 700 per cent.

Minerals will be treated in Portugal as soon as there is available electric power, and metals will in future be exported instead of ores. It will represent a benefit to the exporters, who will cease to pay the transport of useless loads and who will pay salaries in depreciated money. A great number of subsidiary chemical industries would find an open field for expansion.

Mineral Waters.

Mineral waters are very abundant all over the country and many are being exploited with great success.

Agriculture.

Sixty per cent. of the inhabitants are occupied in agriculture, but 38 per cent. of the total surface of the land might still be utilised. The percentage of land that is not utilisable (rocky, towns, &c.) is 4.65 of the total area. The land is not self-supporting, notwithstanding the fertility of its soil and the mildness of its climate. The agricultural implements and machines do not correspond to the present needs, and hand labour absorbs a large percentage of the cost of production. The

methods of husbandry are in some cases perfect, but in the majority of cases the soil is not scientifically exploited. Education as regards agriculture has just recently been given an impetus, but a great deal is still to be done in showing experimentally the advantage of the rotation of crops, of manuring, of selecting seeds, of using modern implements, &c. The size of the holdings varies a great deal. The larger ones are situated in the Alemtejo, Extremadura, and Beira Baixa. The banks of the Tagus (Ribatejo) are the richest tract of land in Portugal and the most adequate for mechanical agriculture. In Minho and Traz-os-Montes land is so divided that sometimes a tree belongs to 20 or more owners.

The cereal crops occupy 751,321 hectares approximately. The yield of wheat per hectare averages at 300-420 kilos. The production of the districts of Portalegre, Evora, and Beja is more than half of the total produced in the whole country. At Aveiro and Porto the average production is 720 kilos per hectare, and in some places one ton and more have been recorded per hectare. The yields vary with the rainfall and the manure. The imports of manures (phosphorites, super-phosphates, &c.) average 70,000 tons per annum. Fish guano is the manure of the district of Aveiro. A good deal more might be produced in the numerous fishing centres of the coast and in the rich coasts of West Africa. Stable manures are estimated at 10,000 tons per annum, but in most cases they are inadequately prepared. The cereal crop in 1921 was approximately the following:—

Wheat.		Rye.		Oats.		Barley.
Litres.		Litres.		Litres.		Litres.
247,420,226	...	120,263,060	...	164,998,832	...	57,135,197

The imports of wheat bear a great influence on the exchange. The highest figures under this heading were 82,538 tons in 1879, 81,869 tons in 1899, 184,200 tons in 1916. The highest crop of wheat was recorded in 1911, viz., 322,000 tons, the average being 230,000 tons. The average consumption of wheat in the country is increasing*. Wheat bread is replacing maize and other inferior qualities of flour. The cultivation of wheat has been encouraged by the agrarian policy of the Government, that is, the grant of a remunerative price for the crops and the restriction of the import of wheat and flour to the amount strictly required for seed and for the consumption over and above the land production.

In addition to wheat, Portugal produces 500,000 tons of maize (the average during the war declined to 274,000 tons per

* In 1911 the wheat consumption amounted to 293,939 tons, and in 1920 to 364,272 tons.

annum and is returning to the pre-war position), 110,000 tons of rye (during the war the average was 78,000 tons), 15,000 tons of rice (23,000 tons in 1920), and 125,000 tons of oats and barley. Beans of different qualities are estimated at 59,000 tons, potatoes average at 240,000 tons (during the war the average was 156,000 tons). The average production of fruit and vegetables is 200,000 tons per annum.

Whether Portugal, with her 8,000,000 hectares of land, is able or not to be self-supporting is a matter of scientific controversy. At any rate it is hard to believe that 6,000,000 inhabitants cannot produce sufficient food in the country to meet their requirements. The amount of bread consumed per inhabitant is estimated at 400 grammes per day, or 104 kilogrammes per annum.

Irrigation works in the Alemtejo are being contemplated. A canal ought to be opened near the River Sorraia (a tributary of the Tagus) and it would irrigate 40,000 hectares of the best land in the Alemtejo.

The cultivation of vines is typical of Portugal. The area of the vineyards is 320,000 hectares; the annual output of wine being 5,000,000 hectolitres. The highest figure recorded is 6,870,000 hectolitres in 1908. The average yield per hectare is 23 hectolitres (in France the yield is 39 hectolitres). The number of labourers employed in the vineyards is put at 100,000.

The variety of wines and grapes is considerable. The qualities are influenced by the soil, the sun, the rainfall, the climate. The famous port brands are circumscribed by the Douro banks, extending to Traz-os-Montes. Regoa is one of the most interesting centres of this branch of agriculture. Apart from the ports, the light northern table wines are a little sour and have special markets in the country, in the Portuguese colonies, and in Brazil. The southern table wines are the best. Grapes and raisins are exported in increasing scale.

Tartar is in great demand for the United States. The wine exported to England in 1913 was 3,669,411 gallons, valued at £946,000; in 1919 it was 12,458,220 gallons, estimated at £7,940,000; and in 1920 5,941,575 gallons. As regards port wine, England absorbs 59 per cent. of the production, Brazil 16.4 per cent., and Germany (pre-war average) 6.6 per cent. Brazil buys 59 per cent. of the exports of light table wines (686,596 hectolitres average of the period 1904-13), and the Portuguese colonies are proving to be a good outlet (25.5 per cent.) for the light wines. France is occasionally a great buyer (21,053 hectolitres in 1920) when she wants to meet her home deficiencies. England buys only 2.7 per cent. of the light table wines.

Olive Trees.

The cultivation of olive-trees is very popular and covers an area of 330,000 hectares, each hectare containing 120 trees. The average yield per tree is 6 kilogrammes of olives per annum, with 18 per cent. of oil. The crops depend on the season and on the manures. Yields of 15 kilogrammes per tree have been recorded, and higher percentages of oil (36 per cent.) are not uncommon. The total annual production of olive oil averages 500,000 hectolitres. During the war period the production decreased and touched 350,000 hectolitres. The consumption of olive oil and of olives is considerable in the country. The fisheries absorb large quantities of oil in the sardine and tunny preserving industry. The number of olive-oil factories in Portugal is 5,263, most of them small and inadequately organised. The olive-oil markets are in the African colonies and in Brazil, but with the expansion of the fish-preserving industries the amount of olive oil available for the export trade is declining every year. The value of this crop is at present 160,000,000 escudos.

Almond Trees.

The area under almond-trees, fig-trees, and carob-trees is 131,221 hectares. The value of the crops is estimated at £600,000 per annum.

Flax and Hemp.

Flax is cultivated in the Northern provinces. The area under flax is decreasing, and it is estimated that not even 90,000 hectares are being exploited of the 200,000 hectares of the middle of the nineteenth century. The yield per hectare is 400 kilos of textile material and 7 hectolitres of seed, but the plant never grows more than 72 centimetres. The linen manufactured in the country was, approximately, 4,000 tons in 1900; but no reliable figures are available since that date.

Hemp was cultivated in the fifteenth and sixteenth centuries for the manufacture of ropes; but there is no appreciable plantation at present.

Palm Trees.

Certain varieties of palm trees are cultivated in the Algarve, where their fibres are utilised for brooms or mats.

Tobacco.

Tobacco is cultivated in the Douro district, under special laws. Its cultivation is restricted to certain areas according to

the monopoly granted to a private company. The imports of tobacco from abroad average at 2,000 tons, and the amount of manufactured tobacco sold in Portugal is 4,000 tons per annum.

The sub-products of tobacco are not being exploited.

Cork.

The area under cork-trees is 330,862 hectares, yielding 50 to 75,000 tons of cork per annum, valued at approximately £1,000,000. Evergreen oaks are planted near the cork-trees and occupy an area of 363,940 hectares.

The acorns are used to feed pigs and the wood is utilised for charcoal.

Live Stock.

The numbers of live stock kept have not been readjusted, and consequently all figures are approximate. It is estimated that there are about 85,914 horses, 50,455 mules, 137,950 donkeys, 624,568 cattle, 2,977,454 sheep, 936,899 goats, 971,085 pigs; totalling 5,784,322 head, weighing 418,000 tons, or 64 heads and Kg.4,714 per square kilometre. The consumption of meat is estimated at 5 kilos per inhabitant (in Lisbon and Oporto the averages are 38 and 35 kilos respectively). The amount of meat produced in the country is estimated to weigh 30,000 tons per annum, the deficiency being met from abroad.

Dairy Produce.

Milk is estimated at 120,000,000 litres per annum, cheese at 6,000 tons, butter at 730 tons, eggs at 324,000,000, wool at 3,000 tons, manures 10,000 tons. The weight of the domestic fowls is estimated at 19,689 tons.

Possibilities.

There is still a great deal to be done concerning the selection and feeding of animals. Horses, cattle, and pigs have been the object of special care. The horses of Alter do Chão are a very fine race, which unfortunately is decreasing in number. The Royal horse of Alter was instituted by John V. and continued by Joseph I.

Bullocks of the best fighting races are bred in Portugal and exported to Spain, where they fetch high prices.

Pigs have been selected at Alemtejo and form a distinct breed which stands tropical climates very well.

Woodlands.

Woodlands produce four million metric tons of wood for the export trade, but they do not meet the home market demand. The import of staves from the United States, for instance, averages 37,728,000 pieces, and the quantity of pitch-pine wood for building purposes is 3,000 cubic metres.

The wood for charcoal and burning purposes is estimated at 5,000,000 cubic metres per annum produced and consumed in the country. Joinery wood and resins, dyewoods and turpentine oils are imported each year from abroad; but the resins and turpentine produced in the country in 1920 were valued by the Chambers of Industry at over £1,000,000. The home production is, however, 20 per cent. of the total consumption. Only one-third of the pine forests are being tapped. A peculiar branch of the wood industry consists in the manufacturing of toothpicks, occupying 4,298 labourers and consuming 1,462 tons of wood of *Populus Alba*, a kind of beech. The woodlands cover an area of 1,500,000 hectares, of which 85,000 h. are chestnut trees, 68,000 h. are oak trees, and 780,000 h. are pine trees, the remainder being planted with evergreen oaks and cork trees. This branch of agriculture is far from having reached a progressive stage of development. It is estimated that 5,000 h. of land are planted with trees per annum. The slopes of Serra da Estrella, for instance, are still denuded to a great extent. The State gives some assistance to forests.

Chamber of Agriculture.

An impetus has been given recently to co-operative societies and farmers' unions. The number of such unions is already 200, and the amount of credit granted is daily increasing.

Education has been reformed and a few agricultural colleges have been created. There are experimental gardens spread about the country, and it may be expected that new methods of food husbandry will be introduced. However, the amount spent in agricultural education is not even one-fifth of the total budget of the Ministry of Public Instruction.

Tractors are very few. It is reported that only about 60 are in working, the majority being kept idle for some reason or other.

Fisheries.

With 900 kilometres of sea coast it is only natural that part of the Portuguese population should be engaged in fishing. According to the last figures published the number of fishers is 50,000,

and the number of boats employed by them is 10,100. The big fishing nets (seines) number 130. The catch is valued at approximately 30,000,000 escudos per annum. The quantities are not given, except for sardines (44,858 tons), tunny fish (1-2,000 tons), and cod-fish (1-3,000 tons).

There is a great variety of fish and sea products, but the fish canning industries are especially concerned with sardines and tunny fish. The exports under these headings amount to very nearly £1,000,000. Brazil, the United States, the African Colonies, Greece, Turkey, and France are among the best markets.

The fish canning industry requires some 20,000 tons of tinplate per annum for the tin boxes. Tinplate costs over £500,000 per annum (average).

Codfish is still imported from Newfoundland and Norway in quantities of 30,000 tons per annum, valued at £1,000,000. The catch of Portuguese vessels is 2,000 tons only per annum.

Oysters have not had the attention of capital as much as they ought to. Portugal exports only 800,000 oysters to France and Belgium. The London market, consuming 1,000,000,000 oysters, has been neglected.

The sub-products of the fishing industry are not being exploited to a great extent. Oils, skins, bones, guanos are not being efficiently treated. They represent a source of riches still to be utilised.

Salt.

Salt is very abundant. The output is 400,000 tons, and the exports average at 100,000 tons per annum. The salt production is unlimited considering that the crystallisation is estimated at the rate of 500 tons per hectare of salt-pan or salt-pond. The best known salt industries are situated in Aveiro, on the banks of the Tagus, near Lisbon, at Setubal, Alcacer to Sal, and in Algarve (Almargem, Tavira, Faro). There are salt rocks in the country, but hitherto they have not been exploited. As chemical industries are still in a backward state, the uses of salt are restricted to food preserving and for table purposes.

Wool Factories.

The wool output of Portugal varies between 3,000 and 5,000 tons per annum. The quantity of wool imported from foreign countries averages 2,500 tons per annum.

The textile industry is centred on the slopes of the Serra da Estrella mountains. Covilhã is the chief woollen textile town of the country with 103 wool factories. There are a few modern

looms, but the majority are old and most of them are driven by old wooden Pelton wheels of the eighteenth century.

Cotton.

The number of labourers employed in the cotton factories of the country is estimated at 60,000. This branch of the textile industry owes its development to a high Protectionist tariff both at home and in Portuguese West Africa. Unfortunately capital has paid no attention to cotton-growing in the African colonies, and the industry is entirely dependent on foreign imports, amounting to very nearly 20,000 tons per annum. The Portuguese colonies contribute only some 3,000 tons. The United States supplies Portugal with more than 12,000 bales of cotton per annum. Brazil supplies about 4,000 tons. The number of looms is 400,000, but only 100,000 are working.

Cotton-growing in Angola, Mozambique, and Portuguese Guinea is an imperative necessity of Portugal's economy.

Linen.

Flax is practically a domestic industry. In the 16th century this industry occupied a very important rank. The imports of foreign linen amount to 2,000 tons per annum. Considering the great possibilities of this industry, the high prices fetched by linen, thanks to the Russian market's depression, and the vast African highlands where linen might be grown, it is hardly credible that this most useful industry is being entirely neglected. The island of Madeira imports the finest linens from Ireland for the embroideries, valued at approximately \$2,500,000 U.S. per annum.

Glass and Earthenware.

The glass industry experienced a great impetus in the 18th century, when Pombal engaged specialists for the factories he caused to be erected. According to the latest statistics there were 13 glass factories in the country, but few have the necessary plant and the products are not perfect. Raw material is excellent, and Portugal being a wine-producing country and so rich in mineral waters, bottle-making ought to be a paying industry.

The country offers a great variety of argils and a few factories are producing porcelains. In this branch there is an undertaking worthy of notice for its organisation and quality of its products—"A Electro-Ceramica," of Villa Nova de Gaya, near Porto, specialising in electric fittings.

Tiles are being manufactured by 1,107 factories.

Cement Factories.

There is a first-class cement factory near Leiria, in a place called Maceira, which has been inaugurated in 1923. The plant is of the best, and the raw material is reported as the finest known in the Peninsula. The actual output is reckoned at 35,000 tons per annum, but the capacity of the plant is for an output of 70,000 tons. The capital invested is exclusively Portuguese.

Fruit Preserving

industries are expanding. The convent traditions relative to fruit preserving are still alive in places like Elvas, famous for its plums and olives.

Candle, Soap, and Oil Factories.

The best factory of this kind in the Peninsula is undoubtedly the União Fabril, near Lisbon.

Sugar Refineries.

The sugar imported from the Portuguese colonies (30,000 tons) is refined in Lisbon, where two big factories have been erected.

Transport.

The total extension of railways in Portugal is 3,045 kilometres, of which 1,805 km. are owned by private companies and 1,240 km. by the Government.

The number of locomotives is 380, and the number of freight cars is 6,229.

According to the available data the Portuguese railways show a traffic of 2,000,000 tons in the main lines and 700,000 tons in the narrow gauge lines.

Private capital invested in the railways aggregates 112,092,000 escudos and 4,000,000 francs. The State lines represent a capital of 15,946,000 escudos.

The paying lines are the small ones in the north of Portugal. The other companies pay no dividends, notwithstanding the growing volume of traffic. The State lines are run at a deficit.

There are in Portugal 17,000 kilometres of macadamised roads. Motor-cars and motor-lorries are very popular and there is a growing consumption of petrol.

The utilisation of the water courses would be of great advantage for agriculture.

Sea transport is assured by a merchant fleet numbering 57 steamers (including the ex-German fleet) totalling 200,000 tons. Only a very small fraction of the State-owned steamers is being utilised.

There are two colonial shipping companies, with 54,000 tons and 18,000 tons respectively.

The aggregate capital of the shipping companies is estimated at 20,000,000 escudos.

Economic and Financial.

There are no statistics of industrial production, and even those relating to agriculture are not always complete. But the increase of wealth in the country is visible.

The passenger traffic in the trains compares most favourably with the pre-war period. The number of letters, telegrams, and telephone messages shows a large increase. Locomotives and trucks are being imported in order to increase the transport facilities of the railways.

The consumption of sugar, cocoa, coffee, tobacco, cotton, and foodstuffs is increasing.

The imports of luxuries from abroad, such as velvets, silks, Parisian confectionery, &c., have attained a very high record.

The deposits in the banks have increased. The State Savings Bank, for instance, recorded in 1914/15 19,116,000 escudos of voluntary deposits, comparing with 199,271,101 escudos in 1921-22.

The deposits in the Bank of Portugal in 1922 amounted to 58,918,974 escudos. The deposits in the Banco Nacional Ultramarino in 1922 totalled 279,246,612 escudos.

The velocity of circulation in some banks is most interesting, as it coincides with certain definite periods of the country's economic life. Cheques are not in general use as in England, although they would greatly facilitate the task of the banks and alleviate the position as regards the fiduciary issue.

The State Savings Bank, however, paid in 1921-22, 173,898 cheques, totalling 251,700,342 escudos, comparing with 90,153 cheques and 140,488,261 escudos in 1920-21.

In 1919 the number of new companies floated was 926, representing a nominal capital of 156,805,000 escudos. In 1918 the new companies numbered 705, and the capital represented amounted to 125,180,000 escudos. This capital has been invested much more in banking and insurance business than in any other branch. General trade accounts for 36,000,000 escudos in 1919 and industrial undertakings represent 30,000,000 escudos.

Thirty-five applications for the privilege of introducing new

industries were entered in the registers of the Department concerned. Twenty new industries have been introduced in Portugal in the last few years. One of the most important consists in the production of copper sulphate. The concession was granted under the condition that a minimum output of 1,000 tons should be guaranteed per annum.

Trade.

The volume of the total external sea trade averages at 4,000,000 tons, including colonial, re-exports, and international traffic. The turnover of the Lisbon harbour in 1920 amounted to over 10,000,000 tons, of which only 3,000,000 tons belong to the international trade. Recent trade statistics are not available, therefore one has to adopt the accepted averages.

The main imports consist of:—

Raw Cotton	...	...	...	20,000 tons.
Coal	...	...	...	1,500,000 „
Iron	...	...	...	68,000 „
Manures	...	...	...	150,000 „
Maize	...	...	...	200,000 „
Wheat	...	...	...	150,000 „
Rice	...	...	...	30,000 „
Sugar	...	...	...	40,000 „
Codfish	...	...	...	35,000 „

The chief exports consist of:—

Raw and manufactured cork	...	...	93,000 tons.
Pit timber	...	...	349,000 „
Mineral ores (copper, tin, wolfram, iron)	...	...	500,000 „
Wines	...	...	100,000 „
Preserved and canned fish	...	...	90,000 „
Fruit and vegetables	...	...	100,000 „

The re-exports are mainly:—

Cocoa	...	...	...	35,000 tons.
Coffee	...	...	...	4,000 „
Oil seeds	...	...	...	3,000 „
Wax	...	...	...	500 „
Rubber	...	...	...	1,000 „

The Portuguese shipping capacity measures 319,978 cubic metres, and the cargo space is estimated at 239,979 cubic metres.

The share of the Portuguese flag in the external trade was approximately one-third, but this figure is obsolete. Since 1916 a change has been operated, as ex-German steamers have been surrendered to the Portuguese Government and utilised in the external trade.

Most of the merchandise, however, such as cotton, coals, iron, codfish, &c., is carried in foreign bottoms, and the bill paid to foreign shipping and insurance companies is estimated at very nearly £3,000,000. Excepting Angola, most of the trade with the Portuguese colonies is carried in foreign bottoms at present.

Trade with Great Britain is approximately one-third of the total foreign trade. England is the best market for port and Madeira wines, absorbing 59 per cent. of the production. She is also the best market for fresh and dried fruit, purchasing 75 per cent. of the figs, almonds, and carob of the Algarve; she buys most of the cork and of the mineral ores of the country.

Reciprocally Portugal buys all the coal she requires in England, all the tinplates, the copper, and the iron. It is through the intermediary of England that Portugal buys cotton, wheat, and codfish in America. The volume of trade with England may be estimated at 1,000,000 to 2,000,000 tons per annum.

Trade with the United States is declining on account of the exchange. But the United States supplies tobacco, cotton, gasoline, petroleum, staves, and sometimes wheat. Agricultural machines and light motor-cars are also in great demand. In return Portugal sells to the United States canned fish, figs and almonds, carob, cork, and goat skins.

The volume of trade with Brazil is estimated at 100,000 tons, and represents about 8 per cent. of the total value. There is a Portuguese colony numbering some 2,500,000. The number of Portuguese emigrants going to Brazil each year may be reckoned at 35,000. This colony and the affinity of race and language determine a commercial intercourse *sui generis*.

Portuguese products enjoy a sentimental preference in Brazil. Cheese, butter, fruit, vegetables, olive oil, canned fish, building stones, tiles, light wines find in Brazil an excellent market.

Brazil is selling sugar, cotton, coffee, timber, and rice, but the growing competition of the Portuguese colonies is likely to reduce the amount of Brazilian goods imported for consumption in Portugal.

Trade with Spain represents about 10 per cent. of the total. Portugal buys rice, calico, carburet (7,000 tons), wool, and animals, and sells animals, fish, salt, manures, and a little fruit. The volume of trade is estimated at 300,000 tons.

The trade with Germany was in 1913 about 15 per cent. of the total, representing a volume of 248,901 tons.

Germany was the outlet of all colonial produce; a good market for cork, skins, fruit, light wines, grapes, raisins, &c. In return Portugal bought in Germany machines, manufactured iron, chemicals, and many other necessities.

The volume of trade with Italy declined from 82,585 tons in 1912 to 19,903 tons in 1918 (the last statistics). It represented 1.54 per cent. of the total.

Italy exported to Portugal beans, sulphur, and silks, and imported from Portugal canned fish and little else.

Trade with France consists in the import of confectionaries, luxury articles (velvets, silks, &c.), automobiles, machines, perfumes, &c., and France buys wines, dye-woods, and a few colonial products.

Trade Prospects.

The prospects of Portuguese trade, generally speaking, are vast, provided no one-sided protectionist tariff wall is erected. Trade reciprocity is imperative. There is no buying where selling is impossible.

The co-operation of British capital in assisting the reconstruction of Portugal would largely contribute to strengthen the old and traditional ties between the two countries. British capital might take a large share in harnessing the waterfalls of Portugal, with the advantage of securing a new field of operations in substitution of the market for coal that is sure to disappear sooner or later. Portugal might supply England with much more fruit, vegetables, eggs, cheese, cork manufactures, fish, oysters, light wines, mineral table waters, flowers, &c. The southern districts of Portugal are a fortnight in advance of the northern, and a few weeks in advance of Northern Spain and France.

Trade with Spain would easily increase if a sound understanding between both countries was established. The Douro waterfalls could only be utilised in Portugal by means of a Spanish Convention, but unfortunately no agreement has been arrived at and an immense power supply in Europe is going to waste.

The water that might be harnessed at Rodam, on the Tagus, would only be fully utilisable if the Spanish Government agreed to the reservoirs that ought to be built in Spain. An intimate co-operation between both peoples would be reciprocally advantageous. Colonial goods that find such a big market in Spain are seldom imported from Portugal, notwithstanding the proximity and transport facilities. A number of Spanish industries might find in Portugal a ready outlet.

A high speed electric railway between Madrid and Lisbon would intensify commercial intercourse.

France, with her colonial empire, with her wines and table waters, is not exactly a natural purchaser of Portuguese goods. The Portuguese light wines imported into France lose their nationality and are absorbed by the Bordeaux brands. But the

influence of France in Portugal is such, that if it were properly utilised great benefits might result for the trade of both countries.

The trade with the Portuguese colonies is protected by a protectionist tariff, the object of which is to concentrate in Lisbon the colonial produce of West Africa, and to grant the freight monopoly to Portuguese steamers. Mozambique (East Africa) and Portuguese Guinea are not under this regime, and their direct trade with foreign countries is progressing by leaps and bounds. Angola (West Africa) has just adopted provisions aiming at facilitating direct trade with foreign countries. Since the war many foodstuffs which used to be imported from foreign countries are being imported from the colonies, such as sugar, maize, rice, but notwithstanding, much is still to be done in that direction.

The Finances.

The State finances do not correspond to the economic state of the country. In the Budget for 1922-23

	Escudos.
The ordinary receipts are estimated at ...	226,501,000
The extraordinary at	35,051,000
Total	261,552,000
The estimated expenditure is, ordinary ...	353,420,000
Extraordinary	235,487,000
Total	588,907,000

The deficit is 327,000,000 escudos.

The budget for the current year contains a very curious comparative table of the income and expenditure calculated in sterling. It may be inferred therefrom that whilst the expenses remain constant the receipts decline and are reduced to one-third of their amount in 1910, owing to the depreciation of the escudo.

The following are the figures given:—

	Receipts.	Expenditure.
	£	£
1910-11	13,660,367	13,936,405
1916-17	9,161,039	9,389,032
1917-18	8,749,691	9,916,118
1922-23	4,879,848	11,452,886

The increase of expenditure resulting from the rate of exchange is estimated at 121,597,000 escudos for the payments to be made in gold, but in addition to this there are items of 110,400,000 escudos for the cost of materials to be purchased abroad and 151,636,000 escudos for the grants to civil servants.

The total for the differences of exchange is 383,633,000 escudos, or 67 per cent. of the total expenditure.

The number of civil servants increased by 5,000 since 1914, to 19,123, excluding the Post Office, the harbour, and the State railways. The strength of the army and navy has not yet been reduced to its pre-war figures, and the number of recruits for the army is still 45,000, comparing with 30,000 in 1913-14. The State railways show a deficit of 12,000,000 escudos; the harbour of Lisbon brings in no appreciable income; the Post Office shows a considerable deficit; the State merchant shipping has proved a failure. To redress these evils and to readjust all these services is a task in which the present Government is engaged.

The debt interest and funding services amount to 153,000,000 escudos, but deducting the bonds held by the Treasury this amount is reduced to 133,876,000 escudos, representing 23 per cent. of the State expenditure and 55 per cent. of the anticipated income.

The receipts budgeted for 1922-23, compared with those of 1921-22, are the following:—

	Escudos. 1922-23.	Escudos. 1921-22.
Direct taxes	54,073,000	49,907,000
Stamps and registration	39,780,000	33,630,000
Indirect taxes	62,241,000	54,127,000
Monopolies	22,759,000	15,130,000
State-owned properties	3,292,000	2,492,000
Dividends of shares held by the		
Treasury	23,282,000	21,619,000
Reimbursements	3,477,000	3,270,000
Self-governing services	17,593,000	13,726,000
Other items	35,055,000	37,095,000
Total	261,552,000	230,996,000

The only note-issuing bank for Portugal and the Islands of Madeira and the Azores is the Banco de Portugal. In the colonies the note-issuing bank is the Banco Nacional Ultramarino. The State is granted certain advantages in proportion to the notes in circulation. The Gresham law has found a full demonstration, and there are no coins in circulation. The amount of gold in circulation was estimated at £20,000,000 some years ago.

An exhaustive analysis of the Budget would mean a description of political and economical events, and would exceed the space assigned to this survey.

The Finances:—Supplementary.

Budget for 1923-4.

1. The following figures are quoted from the budget estimates for 1923-4:—

RECEIPTS :

			Escudos.
Ordinary	...	...	540,524,713
Extraordinary	...	...	133,551,450
			<hr/>
Total	...	...	674,076,163 (£9,257,076)

EXPENDITURE :

			Escudos.
Ordinary	...	...	452,969,908
Extraordinary	...	...	360,445,964
			<hr/>
Total	...	...	813,415,872 (£11,143,550)

			Escudos.
FORESEEN DEFICIT	...	...	139,339,709

Comparing these figures with those of the last budget there is an increase of 412,524,000 escudos under the heading of receipts and an increase of 224,508,000 escudos in expenditure.

The foreseen *deficit* is 187,661,000 escudos less than that of last year.

New taxes have been enforced and are expected to yield a great revenue.

The following are the estimated receipts for 1923-4:—

			Escudos
Direct taxes	...	...	140,145,985
Stamps and registration	...	...	58,730,000
Indirect taxes	...	...	209,951,230
Monopolies, &c.	...	...	25,077,523
State-owned properties	...	...	4,593,024
Dividends of shares held by the Treasury	...	...	47,629,339
Reimbursements	...	...	3,649,831
Self-governing services	...	...	50,747,778
			<hr/>
Total	...	...	540,524,713

The foreseen ordinary and extraordinary expenditure is the following:—

	Ordinary. Escudos.		Extraordinary. Escudos.
Public Debt ...	216,137,836	...	—
Gen. Expenditure	5,195,741	...	—
Finance Office ...	18,557,819	...	61,804,329
Home Office ...	29,118,773	...	34,724,398
Justice Office ...	3,027,912	...	8,035,000
War Office ...	80,545,715	...	58,741,500
Navy Office ...	31,869,892	...	35,775,684
Foreign Office ...	22,595,515	...	5,059,400
Commerce Office & Communications	20,113,034	...	21,476,501
Colonial Office ...	3,089,798	...	7,927,533
Education Office...	17,106,958	...	72,633,500
Works Office ...	1,888,265	...	32,222,879
Agriculture Office	3,722,644	...	22,045,240
Total ...	452,969,908	...	360,445,964

The increase shown in the ordinary expenditure is about 100,000,000 and in the extraordinary about 125,000,000 escudos.

The charges of the debt show an increase of 44,956,123 escudos, owing to the rate of exchange.

The Army absorbs 21,618,895 escudos more in the ordinary budget and 30,172,500 escudos more in the extraordinary. The strength has not been reduced. The Navy shares an increase of 8,550,176 escudos in the ordinary estimates and of 21,717,206 escudos in the extraordinary. Its strength has not been reduced.

The military budgets total 206,932,791 escudos, or 25 per cent. of the ordinary and extraordinary budgets totalling 813,415,872 escudos.

There are other military expenditures included in the Home Office (Republic Guard), in the Finance Office (Custom House Police), and in the Colonial Office.

According to the budget for 1923-4 the public debt totals 2,509,950,810 escudos (nominal value) and bears interest amounting to 55,432,045 escudos and a sinking fund of 4,016,704 escudos.

The total external debt is 216,366,330 escudos.

In addition to this there is the floating debt, the debt to the Bank of Portugal, the debt to the Caixa Geral dos Depositos, the War Debt to Great Britain.

The most important points of the budget, in addition to the military and naval expenditure, are the civil servants list, the bread or flour subsidies, the floating debt, the State industries, the State railways, the harbours managed by the State, the Post Office, representing productive and unproductive expenditure.

Revenues.

A constructive policy is sure to re-establish the confidence of the public in the internal possibilities, which are very far from even being realised by the great majority. As soon as the sterling values are negotiated normally in the Portuguese markets the exchange will ameliorate, the cost of living will decrease, and the Government finances will progress. Taxation to a certain extent must be enforced, but the psychological factors of confidence and of the will to invest money within the country are perhaps more effective still. The amount of paper money in circulation, the floating debt, and the loans to the Treasury are such that the only possible policy would be to transform an unreal paper value into a payable asset. Such works as hydro-electric installations and irrigation schemes, would, within five years, change the face of public finances. Facilities granted to big hotel companies in order to attract foreigners to the watering places and to the winter stations of the country would result in a rapid affluence of gold into Portugal. It would be false to infer from the Budget that the state of affairs is hopeless. In 1920, for instance, the gross revenue of agriculture, excluding dairy produce and stock breeding, was estimated, according to official data, at 572,500,000 escudos, or, at the then rate of exchange, £18,892,000. Admitting that 50 per cent. was absorbed by the cost of production (which is far too much), the net income would be £9,446,000.

The industrial revenues represent a few millions.

The remittances from Brazil amount to £3,000,000 (very often much more) per annum. The remittances from other places where Portuguese colonies exist (San Francisco, New Bedford, Haiti, British Guiana, &c.) are estimated at £1,000,000.

The expenditure of foreign steamers in the Portuguese harbours is estimated at £500,000. Money spent by foreign travellers in Portugal may be estimated at £200,000—an item that might be considerably increased. In addition to this, there is the revenue from Madeira and the Azores, where foreign shipping and foreigners are estimated to spend approximately £2,000,000 per annum.

The colonial trade is another sterling asset of considerable importance. The cocoa islands of San Thomé and Príncipe export

values estimated at £2,000,000. Admitting for the sake of argument that 50 per cent. is absorbed by the cost of production, £1,000,000 remains as net income for the remuneration of some millions of escudos capital invested there.

Portuguese Guinea is the lands of oil seeds, of which 20,000 tons are being exported per annum, yielding about 100 per cent. of the capital invested there. Angola's exports are valued at £620,000 for 1921. Mozambique's exports are estimated at £1,000,000. All this money is brought into the country yearly, and the disequilibrium which is noted in the State finances will gradually disappear as the development of the colonial resources takes place. The Portuguese debt would be crushing were it not that £20,000,000 have been spent by the mother country in the colonies within the last 70 years. In addition to the colonies, the debt is represented by 17,000 kilometres of roads; by numerous bridges; by harbours, such as Lisbon, Leixões, San Miguel, Lourenço Marques; by 1,200 kilometres of railways with equipment; by thousands of schools, three universities, and an excellent School of Engineering, &c.

The Adjacent Islands

of Madeira and the Azores play a very important part in the Portuguese economy.

Madeira.

Madeira, well-known for her variety of climates, is the calling port for all ships going to and returning from South Africa and South America. One hundred thousand passengers are reported to call at Funchal per annum. The chief exports consist of wines (£400,000) and embroideries (\$2,000,000).

Very little has been done to attract foreigners to Madeira. The sea passages are much too high, accommodation is good in some hotels of Funchal but does not exist in the hinterland, touring facilities are non-existent, sports are limited to practically nothing, daily telegraphic news from abroad is relatively scarce, transport is very awkward and most expensive. There are about 100 kilometres of motor roads which have not yet been properly metalled. Electric tramways in the main roads, linking the magnificent landscapes of the Northern coast of the Island with Funchal would undoubtedly attract a good many visitors, who, during the short stay of the steamers in the harbour, are confined at present to a very small area.

The interior of the island, which would be easily reached in a very short time, is one of the most beautiful sights in the world.

Madeira produces wine (some 5,000 pipes of 420 litres) of different varieties. The old brands are disappearing. They were introduced by the first Portuguese explorers, who brought them from the Greek Archipelago and the Mediterranean Islands. What Madeira might yield in grapes and raisins for the London market has not yet been realised by the agriculturists.

Sugar cane is being grown in a very small area (2,000 hectares), comprising the best soil on the sea side. The sugar percentage is very high and some 5,000 tons of sugar are produced annually by a big English factory. As a branch of agriculture it seems artificially maintained by a series of protectionist measures. Sugar growing in Madeira is very expensive, compared with Africa for instance. White labour is dearer than coloured, and in Madeira agricultural machinery has not yet been introduced. Whether it is economic or suitable is a matter for scientific investigation and this has not yet been carried out.

Banana growing is very remunerative, but the banana is not being thoroughly exploited.

Fruit growing is neglected. Strawberries, for instance, ought to be exported all the year round.

Tomatoes have found a very good market in England but their production is still comparatively small. Early vegetables and beans are cultivated on a small scale.

Agriculture has been confined to the vineyards and to sugar-cane and has neglected the very interesting field that might be exploited in the way of early fruit and vegetable exports for the European markets, where flowers would probably fetch remunerative prices.

There are more than one thousand varieties of plants in the Island. Some of the native woods are valuable.

The harnessing of waterfalls might change the face of the Islands in a short period.

At present, owing to lack of transport, life is absurdly expensive, and communications practically restricted to alpinists.

Stock breeding is conducted on a very small scale and nothing has been done to improve the grazing lands.

The production of milk is small (6-12 litres per day each cow); the amount of butter is estimated at 500 tons per annum.

The embroidery industry is foremost in Madeira. It occupies 50,000 women out of a total population of 200,000.

The exports to the United States were valued at \$2,500,000 U.S. in 1920.

The wicker basket industry is valued at 7,800,000 escudos per annum.

The Madeira people emigrate to the United States, to the Sandwich Islands, and to South Africa. The average rate of

emigration before the war was 3,400 per annum. The remittances from the emigrants are considerable and money is invested in landed property.

Madeira has to import wheat, maize, and other foodstuffs. Property is changing hands. New methods have to be introduced in order to meet new social conditions.

Azores Islands

are quite different from Madeira. Agriculture has been much more developed there. Sugar beet is grown at S. Miguel, where 4,000 tons of sugar are manufactured each year.

Cattle fattening has been encouraged by the beetroot residues, and 3,000 head of cattle are being exported to Lisbon per annum. The production of butter amounts to 500 tons.

Pineapples are being exported at an average of one million per annum, and millions of oranges constitute one of the main exports. But the orange groves were destroyed by different insects and great trouble has been caused in that branch of agriculture.

Imports of beans from Italy into Portugal, amounting to £200,000 per annum before the war, are now being supplied by the Açores Islands.

Tea was introduced in the middle of the 19th century and has proved a success. The Lisbon and Porto markets consume 220 tons of tea, of which 90 tons are from the Azores.

Tobacco growing is very popular in some lands and the annual yield is 300 tons.

Paper pulp and fibres are being produced in small quantities. The *Phormium tenax*, introduced from New Zealand, has proved well at St. Miguel and 300 tons of fibres have been exported to the United States.

Two thousand tons of chalk are exported per annum, and 700 h.p. generated by a waterfall is supplied to the industries every year. An electric tramway line is being contemplated. The number of emigrants to America averaged 5,000 per annum in the pre-war years. Recently it has been compensated by an immigration of approximately 8,000 per annum, showing the prosperity of the people. The remittances from the emigrants play a considerable part in the development of these Islands.

There is a good artificial harbour at Ponta Delgada, where more than 1,000 steamers call every year, carrying 70,000 passengers.

Communications with the United States have directed trade to America.

Table waters, sulphur, fisheries might still expand with great advantage for the economy of the Islands.

The Cape Verde Archipelago

has a foremost strategical importance.

Their production is negligible. The population is periodically starved by terrible famines. The possibilities, notwithstanding, are very numerous. All tropical and European fruits and vegetables grow there. But capital and technical management have not been available. Coffee is excellent, sugar cane is abundant, certain varieties of tobacco do well, the *fatropa curcas* grows wild. Orange trees grow beautifully, but hitherto no attention has been paid to agriculture in these Islands.

Salt and fisheries might well prove remunerative for any capital that should be invested.

The Cape Verde Islands are living on the bunker coal supplies amounting to 250,000 tons per annum. The number of steamers calling at St. Vincent in 1913 was 3,822 of 5,747,336 tons displacement.

Portuguese Guinea

is one of the richest tracts of land in West Africa. Very little capital has been invested there. Exports are growing. The main branch of trade consists in oil seeds. Direct trade with the United States is progressing. There is no differential tariff. Rice has been cultivated, and not only does the home production meet the market requirements, but a few hundred tons have already been exported. Skins are offered in substantial quantities. Cotton-growing, sugar, palm and seed oils, fruits, maize, potatoes might be developed there with great advantage, as the colony is only five days distant from Lisbon.

The Islands of San Thomé and Príncipe

are the most productive of the Portuguese colonies. The annual output of cocoa averages 35,000 tons. The coffee and palm oil exported defray the costs of cocoa production. Great benefits would be derived from the establishment of a free harbour in the Gulf of Guinea, where certain colonial products would be concentrated and distributed to the numerous markets of the West Coast of Africa.

Some of the estates are models of administration and of cultivation, such as the Companhia Agricola do Príncipe, with its model plantation of Agua Izé at S. Thomé. If a native population could be settled in these islands and water power could be utilised in the agriculture, the future of these islands would be prosperous.

In addition to cocoa and coffee, some estates export some 200 tons of cinchona bark (quinine) per annum. There are

valuable building woods in the mountains, but transport is prohibitive. There is only a light railway under State management, measuring 14 kilometres long, and the roads are inadequate for motor-transport.

These islands were developed exclusively with Portuguese capital, estimated at 20,000 contos, or £4,000,000 at the par rate of exchange. The high prices of cocoa and coffee, as well as the depreciation of the Portuguese currency, have given a strong impetus to the prosperity of San Thomé and Príncipe, where capital has found a highly remunerative investment.

Angola

covers an area of 1,250,000 square kilometres in the West African coast. It is a country of vast possibilities and of enormous riches—diamonds, oil wells, wolfram and tin, copper and iron, have been prospected, and some of the deposits are being exploited by foreign and Portuguese capital. The agricultural possibilities are unlimited, as almost all climates are found. Building and joinery woods, dye-woods, gums, resins, palm-oil are abundant in some places. The coast belt is sterile, except near the rivers or where there is a subterranean water-course.

Capital is required for big undertakings, such as the exploitation of oil-palm forests, the building of hotels on the sea coasts, and many other undertakings. But a modest capital would find a good remuneration in stock-breeding provided the right area is selected for the purpose. Sugar, maize, beans, oil seeds, and diamonds are being exported.

According to the official statistics the total imports and exports in 1921 were 63,592,000 escudos, of which 39,995,000 escudos represent imports, and 23,597,000 escudos represent exports.

The volume of trade was 52,967 tons, the imports amounting to 9,425 tons and the exports to 43,542 tons.

There are only 1,220 kilometres of railways, namely, the Loanda Malange line measuring 500 kilometres, the Lobito Chinguar line with 520 kilometres and the Mossamedes railway with 185 kilometres.

The hauling capacity of these railways would be quite unable to meet the requirements of the land, were it properly developed.

The Angola minerals were prospected first by the Benguela Railway Company within a tract of land 10 kilometres wide on each side of the line. Since 1912 the Companhia de Pesquisas Mineiras de Angola was organized by several Portuguese and Belgian financiers and the whole land was prospected from North to South

As an affiliated company, the Companhia de Diamantes de Angola was floated in 1918 by Portuguese, Belgian and American capitalists, the object being the exploitation of the rich diamond fields of the Lunda district and others. Over three hundred thousand carats have been already recorded, and great hopes are entertained as to the possibilities of this company. It is one of the striking instances of what can be done with a depreciated currency, if properly applied. This company was organized with less than one million escudos and, within a few years, its capital has been increased to two million pounds sterling, the shares being quoted above par.

Another affiliated company is the Companhia de Petroleo de Angola, which was organized with the object of exploiting oil in Angola. It is reported that important wells have been struck in several places. As a matter of fact 18 wells have been sounded and, in the Bengo banks, important works are being carried on by the Sinclair Oil Syndicate, of New York, with the assistance of Belgian and Portuguese capital. A minimum of 50,000 tons of oil is expected to be produced each year.

North of the Benguella railway mineral prospecting has been reserved for these companies, but to the South there have been several expeditions, the results of which are not yet known.

Angola is rich in iron, hydrocarbons, manganese ores, copper, salt rocks, &c., but, up to the present, only the diamond and oil fields have been developed.

A very interesting organisation has been created by the Banco Nacional Ultramarino and Messrs. Burnay & Co., in order to study the agricultural and economic possibilities of Angola. As there are no official investigations and consequently no scientific data for a modern company, the Fomento Geral de Angola (such is the name of the company) has contracted for experts on different branches of tropical agriculture to investigate the possibilities.

TOBACCO GROWING has been started in tracts of land by the Fomento Geral de Angola, under the supervision of a well-known expert on the matter. Two suitable districts have been carefully selected and the prospects are brilliant. A big Portuguese company will be floated in order to exploit tobacco in Angola.

PALM TREES have not been scientifically exploited in Angola. According to the studies of the Fomento Geral de Angola there are very encouraging prospects in this branch. Concessions have been granted to the Fomento Geral de Angola covering dense palm-tree forests. The most common palm tree is the *demdem* or *Elaeis Guineensis*. Transport is one of the most vital problems to be considered in the case of a new undertaking. The water

courses have to be utilised. There are dense forests at long distances from the coast on the borders of some rivers. Production according to the Fomento Geral de Angola, averages 25 kilos of fruit per annum yielding 15 bunches per tree, or 8 kg. of oil and 8 kg. of palm kernels per tree *growing wild*. Experiments are being made with another kind of palm tree discovered by the Fomento Geral de Angola in the Congo district.

Palm oil mills will have to be erected in Angola, and the exports will have to be organized scientifically.

COFFEE is very abundant all along the Loanda Malange railway. Both sides of the line, there are thick forests of coffee trees, growing perfectly wild. Golungo Alto, 14 kilometres north of Canhoca, is one of the important markets of wild coffee. The selection of coffee is not properly carried out and great opportunities are still awaiting initiative.

At present the exports of coffee amount to 5,000 tons. Coffee is also grown in the Amboim district and exported through Novo Redondo, and further south through Benguella and Lobito. The best Angola coffee is grown in the Chella Mountains, 100 kilometres from Mossamedes, but this variety is not offered in the market.

COTTON is being cultivated in some districts of Angola. Production is small. Only irrigated lands yield sufficient fibre. The Fomento Geral de Angola has caused this branch of agriculture to be thoroughly investigated. Native cotton is attacked by pests of every description and the lint is small and too thin. New plantations are being started on the banks of the Quanza river and in several other places under technical advice. 2,000 tons of cotton is the maximum export under this heading, but Portugal consumes about 20,000 tons, most of which is imported from the United States and Brazil.

OTHER FIBRES are reported by the Fomento Geral de Angola to afford great opportunities. In one special case, with a small capital of 300,000 escudos, the rights to a concession of 55,000 hectares might be purchased. This land has over one million sisal plants in full growth, yielding 3 per cent. of fibre per kilo. Each plant bears 15 new leaves per annum with an average weight of 3 kilos per leaf. The duration of each plant is 15-20 years. It is reported that 500 tons of fibre might be exported per annum out of this tract of land, representing a value of £40,000. The capital required for the installation of light railways and other plant is estimated at £20,000.

SUGAR CANE has been cultivated with success, in many parts of Angola, and there are several modern sugar mills. The exports of sugar to Portugal average 10,000 tons per annum. The yield per hectare, is, in some places, abnormally high. Power alcohol is being manufactured in two factories already.

RUBBER has declined so much that it plays no important part in the trade of this country. There are no European rubber plantations.

OIL SEEDS are very abundant, but the exports are dependent on the cost of transport.

STOCK BREEDING has been thoroughly investigated by the Fomento Geral de Angola. Not all apparently favourable tracts of land are suitable for this purpose.

Pigs do very well and weigh 1-200 kilos in 11 months.

The Angola Estates, in which the Bovril Company is interested, are carrying on a big stock-breeding undertaking north of the Benguella railway, some 350 kilometres off the coast, 1,500 metres above the sea level. There are 600 head of cattle.

Sheep, mohair goats, and horses have not been tried.

The tsé tsé fly is a great nuisance, as it affects cattle exactly where the grazing conditions would be more favourable. And not all herbage is good. Many are poisonous.

Stock breeding is a modern industry and, as such, requires the most suitable cross-breds and appropriate conditions. Experiments have been carried out in several places simultaneously and a scientific analysis of the results has to be made prior to any conclusion being arrived at.

It seems, however, that the Malange and Amboim districts may prove to be successful.

RICE yields as much as 3 tons per hectare in some places.

As labour is becoming dear and difficult to obtain, there are no prospects of expanding any branch of agriculture where mechanical cultivation is made impossible and where transport facilities are not available. The High Commissioner has caused 20,000 kilometres of excellent motor roads to be cut through the lands which are considered suitable for white colonisation, and it is thus possible to travel through Angola in light motor-cars at high speed.

FISHERIES are exploited in the southern coast, in the district of Mossamedes. Some 8,000 tons of dried fish is exported every year from this area. Oil, guano, hides, and other sub-products of the industry have not been utilised.

A thorough investigation of the fisheries and their possibilities has been caused to be made by the Fomento Geral de Angola through its affiliated Company, the Cia de Pescarias de Angola.

There are very few white colonists in Angola. The native population numbers 5,000,000 and the number of whites does not reach 25,000. Capital has not been attracted to Angola, but now that diamonds and oil have been found and are being exploited by powerful capitalists, an impetus in this direction may be given shortly.

Communications with Europe are facilitated by wireless posts in the chief towns of the coast and in the hinterland. A regular shipping service is carried on by Portuguese and German steamers. The trip from Lisbon to Loanda lasts a fortnight.

Hunting and shooting afford very good opportunities, but there is no hotel accommodation, even in the sea-ports, notwithstanding the attractive facilities granted to capital invested in hotel building and exploiting.

Mozambique

in East Africa, is being exploited by powerful companies. It is a land of great resources. Its contact with South Africa and with British Central Africa has contributed to its development. The country has been opened up to a certain extent. Sugar production attains already a figure of 50,000 tons, which is five times as big as Angola's maximum. The valley of the Zambesi is a land of promise where millions of cocopalm-trees are bearing fruit. The area under the chartered Mozambique Company contains riches which are not yet known. Oil wells and palm trees are reported in the Nyassa districts. Precious woods and coffee trees are abundant in the district of Mozambique. The Inhambane district is well known for its fruits and oil bearing seeds and plants.

Communications have improved in the last few years. Railways have been built and are being built in order to transport the products of some rich districts.

More attention has been paid to the transport of goods from the neighbouring colonies than to the development and colonisation of some districts of Mozambique. There are only two efficient lines connecting the sea with the frontier:—

1. The Lourenço-Marques Ressano Garcia railway under the State Administration, measuring 88 kilometres, connecting Lourenço-Marques with Transvaal.
2. The Beira railway connecting Rhodesia with the sea. This line is under the management of the Mozambique Company.

There are no other lines linking the Portuguese Coast with the bordering States. It is self-evident that the Quelimane railway ought to be divided into two branches, one serving Lake Shiré, and the other penetrating through Tete in the direction of Elisabethville. A railway ought to penetrate the district of Mozambique to Lake Nyassa, and another line ought to be constructed between Lake Nyassa and Porto Amelia, serving the large tracts of lands managed by the Nyassa Company.

All these railways would be of international importance as they would serve the neighbouring States. The Portuguese Government has completed the line from Lourenço-Marques to Swaziland (69 kilometres) on the understanding that the line would be continued by the South African Railway Administration to Breyton or Pietrëtt, but hitherto no steps have been taken in fulfilment of the promise.

There are short lines between Lourenço-Marques and Xinavane on the river Incomati (142 kilometres), Lourenço-Marques and Polana line (3 kilometres), Lourenço-Marques and Marracuene line. This side line is 32 kilometres long and of narrow gauge.

The Inhambane Inharrime railway measures 90 kilometres; the Quelimane-Nhamacurra-Mocuba railway measures 150 kilometres; the Lumbo (Bay of Mossuril) Mconta railway, on the direction of the Nyassaland, measures 66 kilometres.

The total length of railway lines under State management is 550 kilometres.

The Beira Mashonaland railway covers 339 kilometres in Portuguese territory.

The Trans-Zambezia railway line initiated its works in 1920, and has already covered 159 miles from Beira. The bridge on the Zambesi and some 20 miles of rails are still to be built. It is undoubtedly the most important achievement in East Africa since the war. The total length of line in Portuguese territory will measure 300 kilometres.

The line starts 30 kilometres from Beira in the Dondo junction, thence up to the Zambezi, opposite Chindio, at Vila Fontes, following then the course of the river up to Mutarara (60 kilometres) turning northwards to Port Herald. This undertaking is seconded by the British Government and has very interesting financial connections.

The position as regards railways in Mozambique is that the main lines are fed by the foreign territories.

The Lourenço-Marques railway shows a traffic of 200,000 passengers and 900,000 tons of goods per annum. The total

passenger traffic on the State lines averages 330,000, and the volume of goods transported on the State lines is 1,000,000 tons.

This position is not quite satisfactory. The country produces too little, notwithstanding its immense resources. Cotton, tobacco and oil seeds represent a negligible amount of the exports. Tobacco is grown in circumscribed areas and very little capital has been invested in its development.

North of the River Save, the colony has attracted more capital in agriculture. There are plantations of coco-palm trees in the territories of the Companhia do Boror numbering one million trees. Copra and fibres are being regularly exported abroad from these rich tracts of land.

The famous Sena Sugar Estates lie on the Zambezi with their sugar factories and their model European installations.

The Chartered Company of Mozambique has encouraged and seconded all initiatives, protecting and advising European settlers, promoting sugar plantations, tannin bark exploitations, maize, beans and other branches of agriculture. Stock breeding is becoming an important asset in those lands.

Tete is being prospected, and great hopes are entertained concerning coal and other minerals.

The Mozambique district affords good farming opportunities. The woodlands are reported to be extremely rich. The Nyassa Company's concession is still awaiting a good opportunity. South of the Save the Inhambane district is practically undeveloped. The Limpopo Valley in the Lourenço-Marques district is one of the richest tracts of land. It would be suitable for all tropical plantations provided the required irrigation works were carried out.

There are suitable climates for European settlers in this colony, but railways will have to be completed prior to any serious movement being undertaken in that direction.

There are approximately 200,000 native labourers in the fields, and the number of native indentured labourers on the Rand averages 50,000 per annum.

The emigration to the Rand has been financially advantageous for the colony, but from economic and political stand-points it presents several drawbacks.

The number of Europeans in Mozambique is reported at 15,000, comparing with four million natives.

The industries of the colony are, with few exceptions, centred in Lourenço-Marques, such as the tobacco factories, match factories, soap and vegetable oil factories, paper pulp, cement, cordage and rope industries, etc. There are about ten industries enjoying monopolies. The sugar and tannin factories are the most important in the colony.

The main exports consist of 50,000 tons of sugar, part of which has to be forwarded to Portugal; of 500,000 bags of maize; of coconuts, oilseeds, jute, and timber, but the commercial intercourse between Portugal and Mozambique is smaller than with West Africa.

Very interesting problems of a political and economic nature are being debated respecting the relations with the neighbouring States, the better employment of native labour, the building of railways and harbours, the exploitation of the agricultural and mineral riches of this colony, the settlement of Portuguese colonists, the most adequate customs tariffs, the opening of new markets, the encouragement of foreign capital and industry.

The possibilities of this country are numerous, the most striking being the cultivation of cotton, jute, fibres, sugar, oil seeds, the exploitation of fruit, vegetables, and other foodstuffs, stock breeding, the exploitation of coal, copper, tin, gold and other minerals, the exploitation of fisheries and salt, etc.

Portuguese India

is a relic of the big Empire of the 16th century. The land is undeveloped. The chief exports consist of coconuts. Rice, cotton, rope-making, fisheries, salt, might be the object of commercial undertakings. Mormugão is the best natural harbour of the western coast of India and is being exploited by a British company.

Macao

is the Portuguese entrepôt of the East, established in the sixteenth century. As a trade centre it might be most valuable.

Timor

is the Portuguese possession of the Pacific. Half of the island belongs to Holland. The soil is fertile and it is reported that oil wells exist there. Sandalwood and coffee are the most valuable articles of export.

British Capital Invested in the Colonies.

The amount of British capital invested in the Portuguese colonies is estimated at £20,000,000. The Lobito railway is the most important British undertaking in Angola. At Mozambique numerous companies were floated with the strong assistance of British capital, such as the Mozambique Company, the Nyassa

Company, and many others. The Mormugão harbour and railway are being exploited by a British company, as already stated.

Conclusion.

Such a variety of economic resources and such a potentiality of wealth offer to capital the best guarantee that could be required to develop the riches of Portugal and her colonies.

What the Banco Nacional Ultramarino has done for the Development of the Portuguese Colonies.

The trade between Portugal and the African colonies, in the early centuries, and up to the 19th century, was limited to ivory and slaves. Brazil was the colony *par excellence* when India was lost to the Portuguese (17th century). All capital and attention were drawn to Brazil, whose riches remunerated all the efforts of the Portuguese.

The abolition of slavery, the independence of Brazil, and the weakness of the position in India influenced Portugal, in the 19th century, to pay some attention to her African colonies. The experience of some Brazilian farmers, as well as the growth of the tropical plants that had been introduced into Africa, either from Brazil or from the East, attracted a few colonists to San Thomé, to the Coast of Angola, and to the Zambesi banks, where farms were established and tropical agriculture and trade with the natives were exploited. It is a feature of agriculture in Portuguese Africa that trade with the natives must accompany all undertakings. The natives like to have a shop at the place where they are working. In Mozambique the trade with the natives is carried on by Asiatics.

It is noteworthy that all along the old slave routes of Angola there are beautiful palm trees and other plants such as cotton, cinnamon, chinchona (quinine), fruit trees. It is self-evident that these plants were introduced by the slave traders, who came from

Brazil in order to fetch labour for their plantations. The old slave routes are still discernible in that there is a kind of village or oasis at distances of 20 kilometres, and there very often one sees plants and herbs that were evidently brought from abroad. The river courses were the usual route followed by the slave traders to the interior.

In the hinterland of Angola, some 300 kilometres from Loanda, in the zone of the Malange railway, on the banks of the numerous rivers traversing the country (Quanza, Bengo, Lucalla, &c.) one sees still very distinctly the stone buildings (some of them magnificent) of the early colonists, who first settled in those lonely districts.

In the middle of the 19th century the merchants of Loanda suggested the necessity of a bank, in order to facilitate their transactions.

In 1867 the exports of Angola amounted to 274 tons of cotton, 716 tons of beeswax, 179 tons of indigo, 912 tons of coffee, 276 tons of palm-nuts, the value of which totalled 1,247 contos.

The Banco Nacional Ultramarino was founded in 1864, and in 1865 the head office at Lisbon and the offices in the colonies had discounted 3,684 drafts, amounting to 5,717 contos, 434 contos had been advanced on securities, and 2,789 contos had been transferred to and from the colonies. The deposits at sight showed a balance of 300 contos and the other deposits 159 contos, the movement of the deposits aggregating 6,783 contos.

The office of the Bank at Loanda was opened in 1868, and the trade of the colony was so small that only 126 drafts were discounted, their amount being 121 contos; the number of advances on securities was 124, totalling 56 contos; the amount of transfers was 153 contos; the cash returns amounted to 490 contos. The notes in circulation in Angola amounted to 41 contos.

In 1867 the Bank established an office at S. Thomé and have supported, since that date, all the agricultural undertakings of the richest colony of Portuguese West Africa.

In the same year a loan was made to the Governor of the district of Mossamedes (South Angola) with the object of opening the roads of Capangombe, Huila and Bibala, the most suitable districts for white settlement in that zone.

The vicissitudes of the incipient tropical plantations reflected themselves on the Bank, and the first years of experience were far from successful.

In 1871 the agricultural loans in S. Thomé, Loanda, and Cape Verde were already 5,600 contos.

The agricultural production of the Cazengo and Golungo districts was estimated at 1,000 contos per annum. The transport problems were already calling for the attention of the Bank, as the volume of trade increased.

In 1872 S. Thomé exported 1,099 tons of coffee and 78 tons of cocoa; but the labour question was a drawback. The island had not enough native population for the supply of the agriculture.

In 1872 there were 375 contos of notes in circulation at Loanda, 353 contos at S. Thomé, and 26 contos at Cape Verde.

In 1873, the freedom granted to criminals who were deported to Angola, caused the Bank to make strong representations to the Government, showing how inconvenient and dangerous it was and how it affected the free colonisation of Angola by a better class of settlers. The current of emigration was thus encouraged to Brazil to the detriment of Angola, where the mortality of the Europeans was lower. The Bank, that year, caused samples of products from S. Thomé and Angola to be exhibited at Vienna.

The abolition of slavery caused a slow readjustment of the economic conditions of the colonies, and credits had to be restricted accordingly.

Plagues, revolts, epidemics, and other events troubled the normal development of West Africa. The Bank, however, advanced money for the completion of the most urgent works, such as harbours, jetties, &c., and forwarded plants from one colony to the other.

In 1876, the offices of the Bank were opened at Lourenço-Marques. But trade with East Africa was in a critical position. Ivory was becoming very scarce. The riches of Mozambique were lying idle, as there were no white settlers to promote them.

In 1879, Angola showed very good prospects and a regular shipping line was established, giving a strong impetus to the trade. Cocoa, coffee, cinnamon, chinchona, vanilla were cultivated in the northern districts of Angola and in some estates of S. Thomé. In 1881 the Bank was supporting the sugar plantations in Angola and suggesting tobacco plantations in that colony. The coffee cultivation, to which most of the agriculturists devoted their activity, was exposed to a strong competition from Brazil, and consequently, the Bank in 1882 tried to show to its clients the advantages of other tropical plantations. The 100 chinchona trees (quinine) introduced in 1869 in S. Thomé had been the object of the special attention of agriculturists, and 32,800 trees were recorded in 1884.

The quality of the quinine is of the best, and numerous informations were given by the bank to the agriculturists relative to this branch of agriculture. In 1886 there were 600,000 chinchona trees at S. Thomé.

Vanilla was introduced there in 1879 and cocoa approximately at the same time.

In 1888 the Report of the Bank deals with the problems of India, with the railway, the salt industry, the races, the religions and the money in circulation.

In 1898, a strong impetus given to the trade of Angola, railways and river transports and production, intensified the trade of Loanda. The colony had 500 contos in circulation. The Bank insisted on the necessity of encouraging white settlers to immigrate to Angola and devote themselves to tropical agriculture, facilitating the required credits.

In 1894, the Companhia da Ilha do Principe was organised with a capital of 500 contos and created at S. Thomé the model farms it holds there with the support of the Bank.

The Report of the Bank for that year recommends the association of capital for the development of the colonies and shows the advantages of co-operation. Thanks to the initiative of the founders of the Banco Nacional Ultramarino the Portuguese colonies were opened up and sources of revenue were created in West Africa to the advantage of the Metropolis.

The capital of the Bank was in

1865	...	...	936 contos.
1901	...	...	5,400 „
1919	...	...	24,000 „

The reserves were:

1865	...	...	5 contos.
1901	...	...	260 „
1919	...	...	24,000 „
1922	...	...	30,200 „

The note circulation in the colonies was in

1866	...	...	41 contos.
1902	...	...	2,693 „
1919	...	...	19,590 „
1922	...	...	54,077 „

The number of offices in the Portuguese colonies was in

1864	...	...	1 (at Loanda)
1901	...	...	8
1919	...	...	24
1922	...	...	28

One-fourth of the total imports of the country is carried on through the Bank, and three-fourths of the exports are negotiated through its intermediary. Consequently, offices had to be opened abroad, in all centres of Portuguese trade, and at home in the chief markets.

In the last few years the Bank has seconded the formation of new companies with the object of developing the riches of the colonies.

The Companhia de Pesquisas Mineiras de Angola, with the object of prospecting north of the Lobito railway, has made the most interesting investigations as regards the mineralogical prospects of the country.

The Companhia de Diamantes de Angola is an affiliated company organised with the object of exploiting the rich diamond fields of the Lunda district, yielding thousands of carats of diamonds per annum.

The Companhia do Petroleo de Angola is another affiliated company studying the oil fields of Angola, the exploitation of which will take place soon.

The agricultural possibilities of Angola have been investigated by the Fomento Geral de Angola, in which the Bank is interested. The studies have encouraged numerous capitalists to invest in the fisheries of the southern coast of West Africa, in the tobacco plantations of some districts of Angola, in the trade and cultivation of cereals, in the fibre and cotton cultivation, and in the palm oil exploitation. For the first time in the history of Angola there is a scientific basis for the undertakings which are, under the auspices of powerful Portuguese institutions, in co-operation with foreign capitalists

One-fourth of the total imports of the country is carried on through the bank, and three-fourths of the exports are negotiated through its intermediary. Consequently, offices had to be opened abroad, in all centres of Portuguese trade, well as home in the United Kingdom.

In the last few years the bank has seconded the formation of new companies with the object of developing the riches of the country.

The Companhia de Petrolhos Mineiros de Angola, with the object of prospecting north of the Beira railway, has made the most interesting investigations as regards the mineral prospects of the country.

The Companhia de Diamantes de Angola is an authorized company, opened with the object of exploiting the rich diamond fields of the Namibia district, yielding thousands of carats of diamonds per annum.

The Companhia de Petrolhos de Angola is another affiliated company, studying the oil fields of Angola, the exploitation of which will be begun soon.

The agricultural possibilities of Angola have been investigated by the Instituto Geral de Angola, in which the Bank is interested. The studies have encouraged numerous capitalists to invest in the riches of the southern coast of West Africa, in the tobacco plantations of some districts of Angola, in the trade and cultivation of cereals, in the fibre and cotton cultivation, and in the palm oil exploitation. For the first time in the history of Angola there is a scientific basis for the undertakings which are under the auspices of powerful Portuguese institutions, in co-operation with foreign capitalists.

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