

HANDBOOKS PREPARED UNDER THE DIRECTION OF THE
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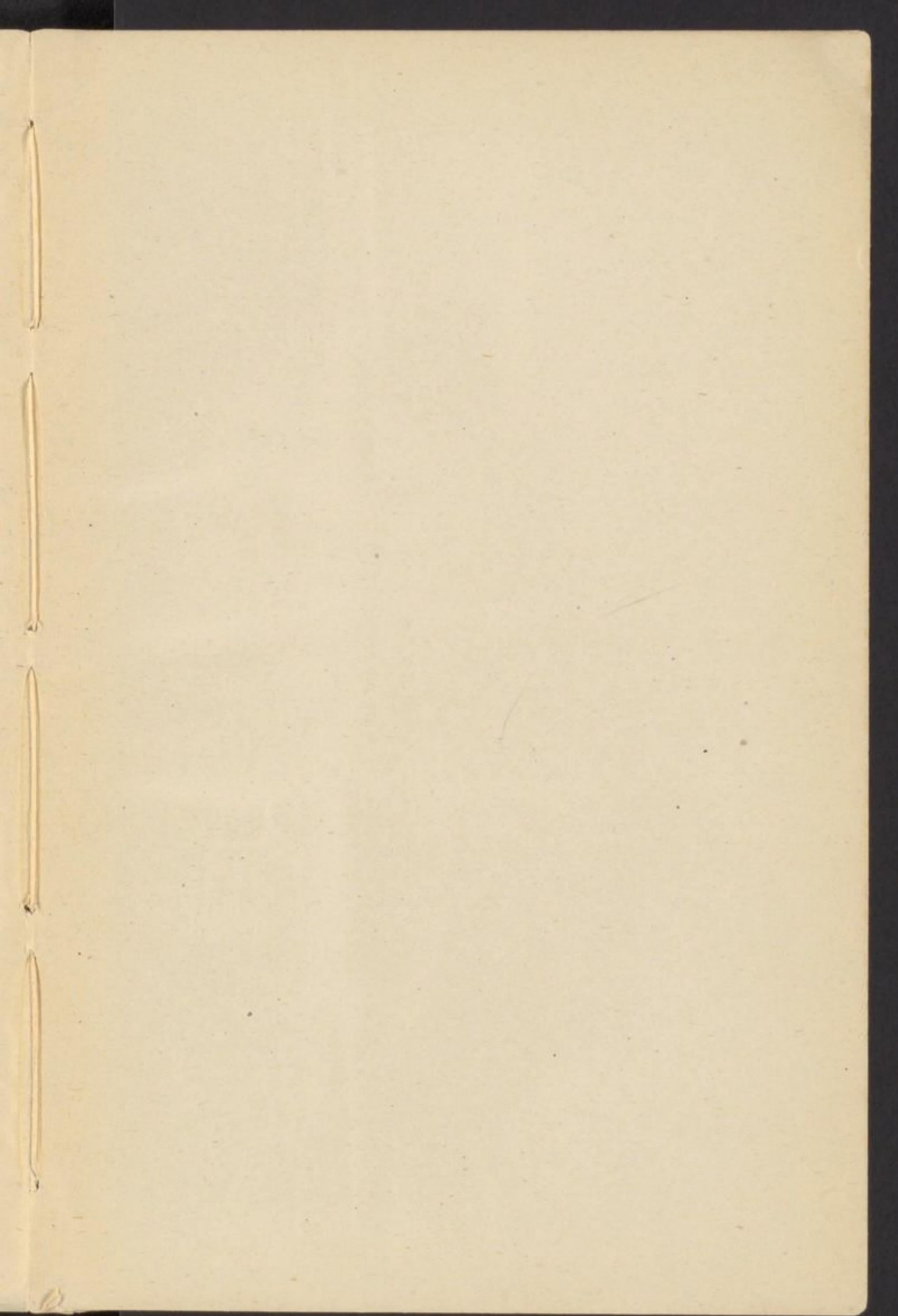
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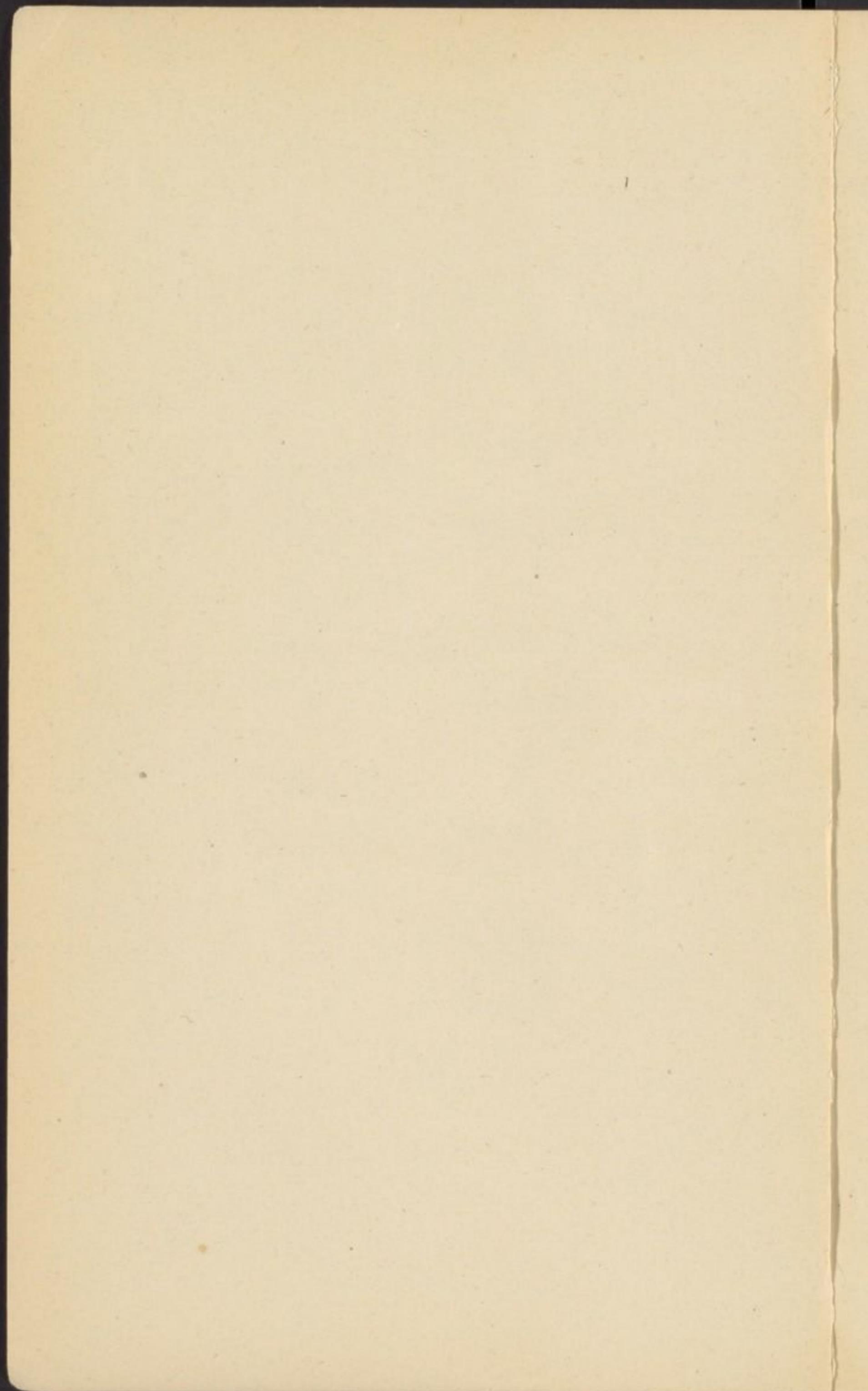
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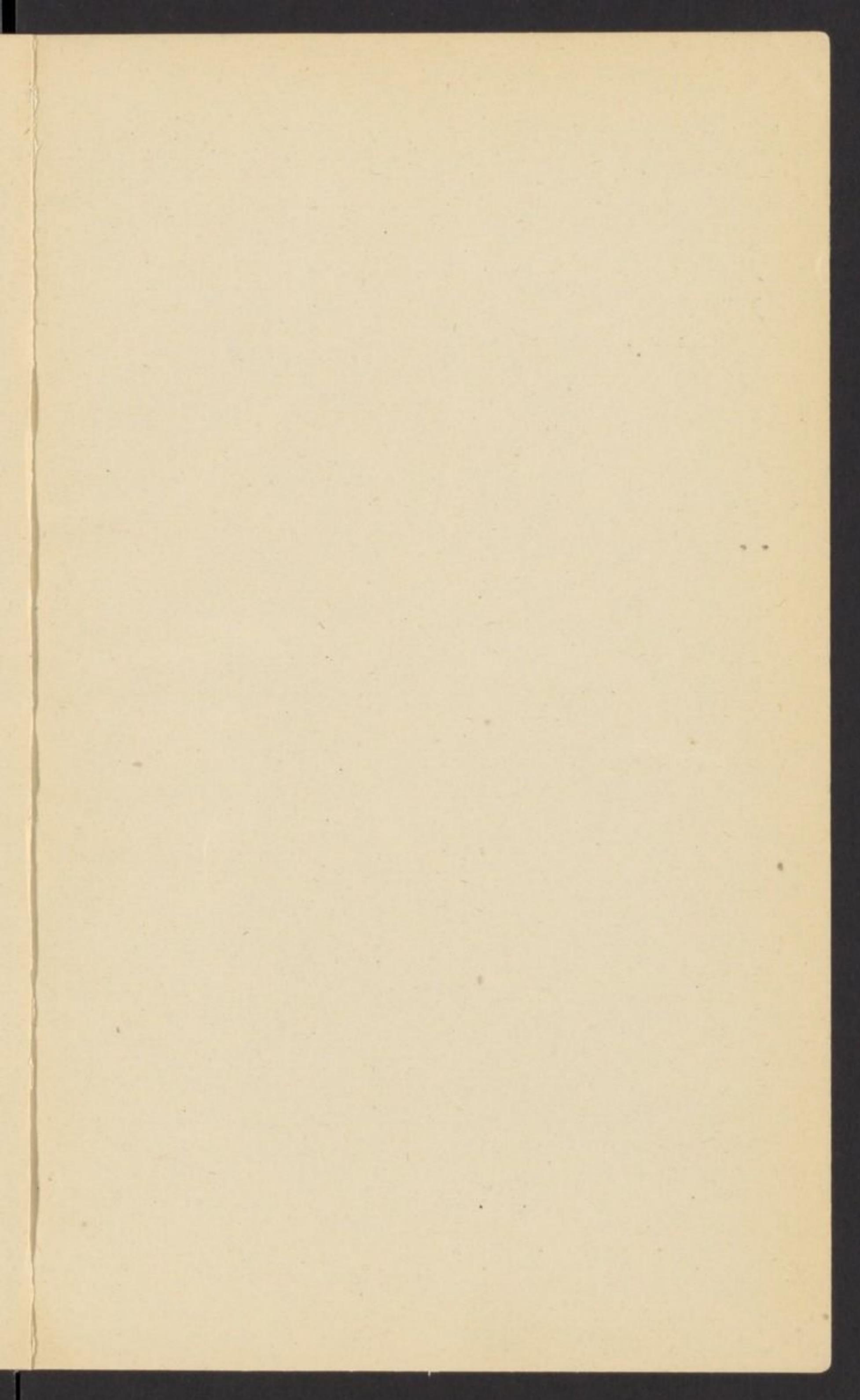


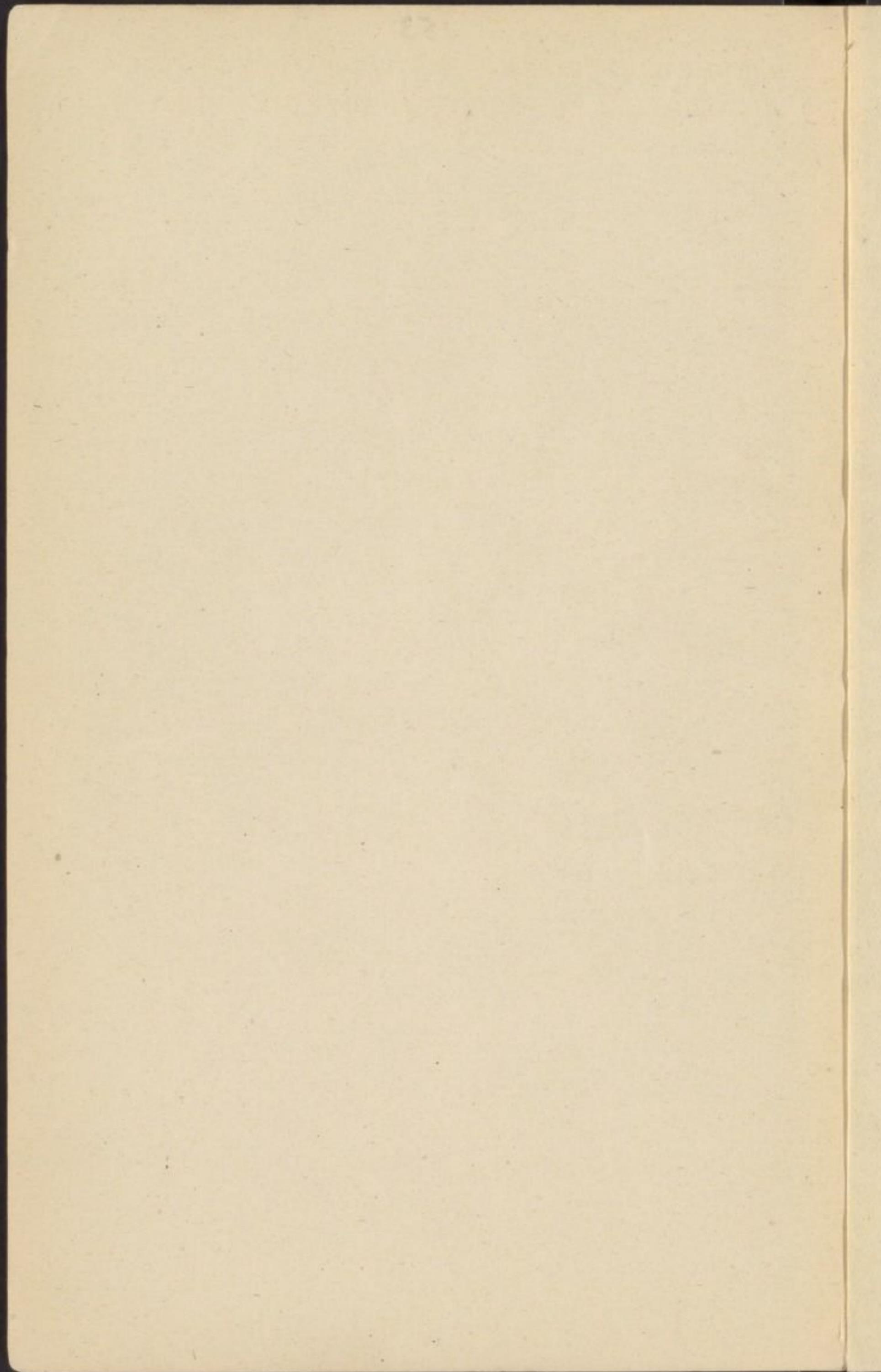


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NYASALAND

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EDITORIAL NOTE

IN the spring of 1917 the Foreign Office, in connexion with the preparation which they were making for the work of the Peace Conference, established a special section whose duty it should be to provide the British Delegates to the Peace Conference with information in the most convenient form—geographical, economic, historical, social, religious, and political—respecting the different countries, districts, islands, &c., with which they might have to deal. In addition, volumes were prepared on certain general subjects, mostly of an historical nature, concerning which it appeared that a special study would be useful.

The historical information was compiled by trained writers on historical subjects, who (in most cases) gave their services without any remuneration. For the geographical sections valuable assistance was given by the Intelligence Division (Naval Staff) of the Admiralty; and for the economic sections, by the War Trade Intelligence Department, which had been established by the Foreign Office. Of the maps accompanying the series, some were prepared by the above-mentioned department of the Admiralty, but the bulk of them were the work of the Geographical Section of the General Staff (Military Intelligence Division) of the War Office.

Now that the Conference has nearly completed its task, the Foreign Office, in response to numerous inquiries and requests, has decided to issue the books for public use, believing that they will be useful to students of history, politics, economics, and foreign affairs, to publicists generally and to business men and travellers. It is hardly necessary to say that some of the subjects dealt with in the series have not in fact come under discussion at the Peace Conference; but, as the books treating of them contain valuable information, it has been thought advisable to include them.

It must be understood that, although the series of volumes was prepared under the authority, and is now issued with the sanction, of the Foreign Office, that Office is not to be regarded as guaranteeing the accuracy of every statement which they contain or as identifying itself with all the opinions expressed in the several volumes ; the books were not prepared in the Foreign Office itself, but are in the nature of information provided for the Foreign Office and the British Delegation.

The books are now published, with a few exceptions, substantially as they were issued for the use of the Delegates. No attempt has been made to bring them up to date, for, in the first place, such a process would have entailed a great loss of time and a prohibitive expense ; and, in the second, the political and other conditions of a great part of Europe and of the Nearer and Middle East are still unsettled and in such a state of flux that any attempt to describe them would have been incorrect or misleading. The books are therefore to be taken as describing, in general, *ante-bellum* conditions, though in a few cases, where it seemed specially desirable, the account has been brought down to a later date.

G. W. PROTHERO,

*General Editor and formerly
Director of the Historical Section.*

January 1920.

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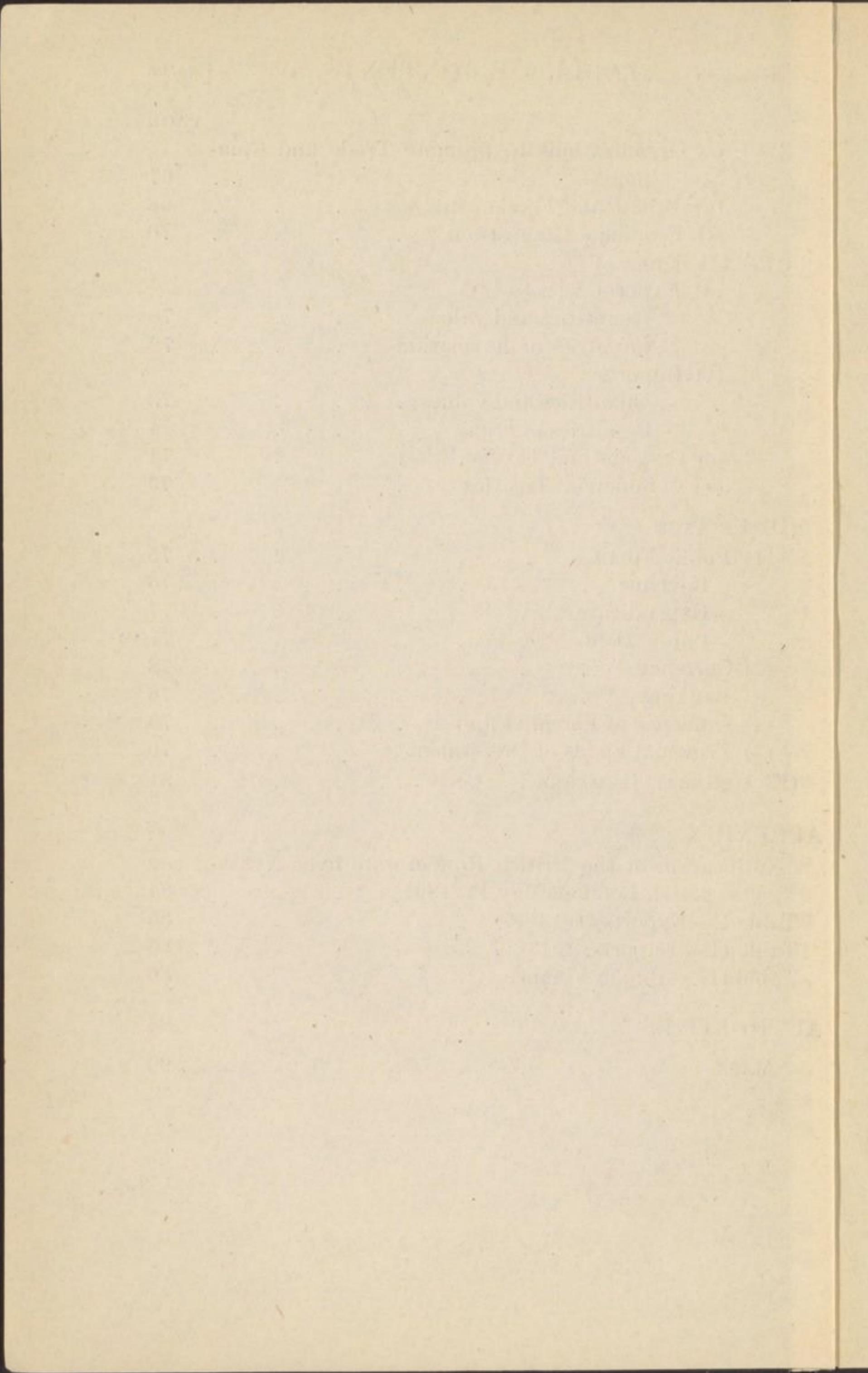
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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) POSITION AND FRONTIERS

THE Nyasaland Protectorate consists of a strip of territory to the west and south of Lake Nyasa, about 520 miles in length and 50 to 100 miles in breadth. It has a total area of 39,573 square miles, and lies approximately between $9^{\circ} 22'$ and $17^{\circ} 8'$ south latitude and $32^{\circ} 30'$ and $35^{\circ} 55'$ east longitude. The territory is bounded on the north by Tanganyika (the former German East Africa), on the west by north-eastern Rhodesia, and on the east, south, and south-west by the province of Mozambique (Portuguese East Africa).

The northern frontier follows the River Songwe from its mouth as far as 33° east longitude; thence it turns south-west to the Rhodesian frontier. The western frontier then follows the watersheds between Lake Nyasa and the River Luangwa (Loangwa), between Lake Nyasa and the Zambezi, and between the Shire and the Zambezi.

The south-eastern frontier leaves Lake Nyasa at $13^{\circ} 30'$ south latitude and runs south-east to the north shore of Lake Chiuta; thence, crossing the lake, it runs along the eastern shores of Lakes Chiuta and Shirwa to the River Malosa, then follows the courses of the Malosa, the Ruo, and the Shire to a point below Chiwanga, and thence turns west to the Zambezi-Shire water-parting.

The southern point of the Nyasaland Protectorate is about 130 miles from the sea, the distance to Chinde by the Shire-Zambezi route being about 185

miles. This is the natural outlet of the territory, and has profoundly influenced its historical development.

(2) SURFACE, LAKES AND RIVERS

Surface

The greater part of the territory consists of the highland country which lies to the west of the great depression of Lake Nyasa. The Nyasa trough is continued to the south by the Lake Shirwa depression and the Shire valley. The Protectorate therefore falls naturally into two divisions, one lying west and the other south of Lake Nyasa, and each of these regions is again sharply divided between high-level and low-level areas.

The Western Region.—The western region consists of the Angoni plateau, which falls gradually south and west towards the Zambezi, ending towards the lake in an escarpment. Its greatest heights are Nganda Hill (8,597 ft.) in the north, and Mount Dedza (7,788 ft.) at the south-west of the lake. The interior plateau maintains a general level of over 4,000 ft. This region may be divided into three sections: (a) the coastal strip, (b) the mountain escarpment, and (c) the plateau.

(a) In the north, near the former German frontier, the coastal strip has a width of about ten miles; southwards it gradually diminishes, until at Florence Bay the mountains overhang the lake; but still farther south it again increases to an average width of twenty miles. It consists of rich alluvial soil, and is inhabited by a large native population, which cultivates rice and cassava. Much of the coast is swampy.

(b) Almost the whole of North Nyasa is occupied by mountains, the most important being the Nkonde Hills

in the extreme north-west, and the Nyika plateau hills (8,000 ft.). In West Nyasa district is a broad belt of mountainous country more than a hundred miles long, which is divided from the Mombera plateau by the Vipya Mountains (over 7,000 ft.), continued south-west to the frontier by the Chimoliro Hills.

South of the River Dwangwa the eastern scarp of the plateau again rises and at Dowa joins the Kirk Range, a mountainous plateau 25 miles broad (7,000 to 8,000 ft. high), which is continued along the British-Portuguese frontier. Apart from its bare granite peaks the mountain region is well wooded, especially in the extreme north, where good timber trees are found. The typical low open forest of Nyasaland, both on the mountains and the plateaux, is useless except for firewood.

(c) The plateau includes the whole of Mombera district and the greater part of Marimba and Central Angoniland. The South Rukuru river flows north through the whole of the Mombera district. The plateau consists partly of open plain, partly of more or less broken country, and much of its surface consists of rich alluvial soil, on which the natives cultivate maize, millet, beans, and sweet potatoes. Excellent feeding grounds for cattle exist along the courses of the principal rivers.

Mombera and Central Angoniland possess a fairly large population.

The Southern or Shire Region.—The depression which connects Lake Nyasa with the Zambezi valley is bounded on the west by the Kirk Range, and on the east as far as Lake Chiuta by the Mangoche Mountains. In the centre of this depression lies the extensive plateau of the Shire highlands, with the range of Mount Pirilongwe at its northern end.

The Lowlands.—The coastal strip to the south of the lake is fertile and thickly peopled; the plains, how-

ever, are as a rule badly watered, and support a small population. The country around Lake Shirwa and Lake Chiuta is absolutely flat, and is inundated for many miles in the wet season. The River Shire is bounded, except in the neighbourhood of the Murchison Cataracts, by alluvial plains, which vary from four to twenty miles in width. Much of the valley is covered with bush. Numerous large swamps exist on the lower waters of the rivers.

The Shire Highlands.—This is by far the most important district of the Protectorate. The highlands consist of an irregular chain of mountainous country running from north to south for about ninety miles, with a width of twenty to thirty miles. Their greatest height is Zomba Mountain in the north (6,647 ft.). Most of the district lies about 1,500 ft. above the surrounding plain. The soil is everywhere fertile, and consists in Zomba district of a heavy red earth formed from the weathering of granite. The highlands are watered by numerous perennial streams, which descend to the Shire, to the Tuchila, and to Lake Shirwa.

Mount Mlanje, which lies in the extreme south-east of the Protectorate between Lake Shirwa and the River Ruo, is a lofty tableland with an area of 200 square miles, rising from 6,000 ft. to 9,846 ft. in height. In form it is a rocky terrace broken by a succession of gorges, while its summit consists of undulating grassy downs divided into separate areas by the deep-cut valleys of the mountain streams. The most important of these is the Luchanya plateau (6,000 ft.).

The district is extremely well watered, and there is rich vegetation on the sides and round the base of the mountains. All the torrent valleys contain magnificent timber such as is not found elsewhere in the Protectorate, and the valuable conifer known as the Mlanje cedar is indigenous.

Lakes and Rivers

Lake Nyasa, the third largest lake in Africa, is 360 miles long and 15 to 50 miles wide, with an area of 10,200 square miles. It lies at an altitude of about 1,565 ft., and is surrounded on the east, west, and north by lofty mountains. The greatest known depth is 386 fathoms, near Ruarwe. Its principal affluents, which include none of first-rate importance, are the Songwe, the North and South Rukuru, the Dwangwa, the Bua, and the Lintipe, all on the western shore. Its only eastern affluent of any significance is the Rohuhu in the Tanganyika Territory. From its southern extremity issues the River Shire.

Navigation is everywhere practicable, but the lake possesses few good harbours, the best being Mtengula on the Portuguese shore. The different anchorages are much exposed to winds which sweep the lake north and south, and cause a heavy sea. The principal ports in British territory are Fort Johnston at the outlet of the lake, the head-quarters of the Marine Transport Department of the Protectorate; Kota Kota, the trade port for north-eastern Rhodesia; and Karonga, the terminus of the road from Lake Tanganyika. In the Tanganyika Territory the two principal ports are Alt-Langenburg and Wiedhafen, at the north-eastern end of the lake.

The most important islands are Likoma and Chisamulo, near Malo Point. Although close to the Portuguese shore, these islands are British territory.

The *River Shire*, which is the only important river of the Protectorate, has a total course of 275 miles, the last 50 of which are in Portuguese territory. Issuing, as already stated, from the south end of Lake Nyasa, it passes through the shallow lake of

Pamalombe; but the Nyasa outlet is now frequently dry, and Lake Pamalombe has become no more than a reedy swamp. In the central part of its course the Shire skirts the Shire highlands in a series of rapids known as the Murchison Cataracts. At present the only navigable portion of the river is that between the Zambezi and Port Herald in the extreme south of the territory, and in some years the limit of navigation is even as far south as the Pinda Rapids near the Zambezi.

The Ruo, the principal tributary of the Shire, rises in Mount Mlanje, and is navigable by canoes for about 12 miles above its confluence with the main river at Chiromo.

Lake Shirwa or *Chilwa*, which lies south-south-east of Lake Nyasa, is a shallow brackish sheet of water of fluctuating area, with no outlet. In the rainy season it inundates for many miles the reedy and swampy plain which surrounds it. Navigation, even by native canoes, is rendered impossible by the great reed beds and the shallowness of the water.

Lake Chiuta is a small fresh-water lake, north of Lake Shirwa, which it resembles in general character. It is connected with Lake Amaramba in Portuguese territory, and is thus the ultimate source of the Lujenda.

(3) CLIMATE

There are two types of climate in the Protectorate, that of the Nyasa-Shire depression and that of the mountain and plateau country. On the lake shore the temperature varies from 80° to 98° F. (26.6°–36.6° C.) in the hot season (October to December), and in the cool season (May to August) from 65° to 80° F. (18.3° to 26.6° C.). In the Shire valley the temperature is considerably higher, and there is a maximum of about

105° F. (40.5°C.) in the hot weather. The climate of the highlands is fairly cool, and in exceptional cases the day temperature may fall as low as 40° F. (4.4° C.), with frost at night. At Zomba, which represents the climate of the Shire highlands, there is a maximum of about 93° F. (33.8° C.) in November, and a minimum of 42° to 47° F. (5.5° to 8.3° C.) in August.

The rainy season lasts from the end of November to the end of March. The rainfall is very heavy in the mountain country north-west of Lake Nyasa and on Mount Mlanje, where it averages from 79 to 87 in. (200 to 220 cm.) a year and upwards. At Zomba in the north of the Shire highlands the annual average is 56 in. (142 cm.), but on their southern edge the average is 65 to 70 in. (165 to 178 cm.). On the lake shore the rainfall is heaviest in the north-west (Karonga, 55 in., or 140 cm.), and decreases at the southern and south-western limits of the lake to between 35 and 28 in. (89 and 71 cm.). On the great plateau the annual average is between 30 and 35 in. (76 and 89 cm.), and water is very scarce in the dry season, above all in the central districts (Marimba). In the Shire valley the annual average varies from 25 to 35 in. (63 to 89 cm.).

The north-east monsoon sets in at the beginning of December, and for the next five months northerly and north-easterly winds, sometimes of considerable force, are prevalent, with occasional squalls from any direction, and numerous heavy thunderstorms. From May to mid-September the south-west monsoon blows, while between monsoons there is a period of variable winds—either violent east winds lasting through the morning, or southerly breezes.

During the period in which the territory has been known to Europeans, a gradual process of desiccation has undoubtedly been going on, as is shown by the

drying up of streams and marshes and the conversion of lakes into swamps.

(4) SANITARY CONDITIONS

Owing to the prevalence of malarial fever throughout most of the territory Nyasaland cannot be said to be healthy for Europeans. In this respect the Shire valley and the lake shore are the worst districts.

The greatest mortality among Europeans is caused by blackwater fever, which is apparently confined to those who have already suffered from malaria. The climate of the highlands is suitable for Europeans, and some places, notably Mount Mlanje, form admirable sanatoria; but on the lake the humidity of the atmosphere renders the heat extremely trying.

The most prevalent diseases among the native population are bronchitis, malaria, dysentery, rheumatism, and venereal diseases, while severe epidemics of smallpox occasionally occur in spite of systematic vaccination. Sleeping-sickness has become endemic in the Dowa district of Central Angoniland, but the disease has shown no sign of becoming epidemic. The affected area of the Dowa district has been proclaimed by the Government, and measures have been taken to combat the disease by the destruction of game, the clearing of undergrowth, and the direct destruction of the fly itself.

Parasitic diseases are common among the natives, especially ankylostomiasis, which is especially prevalent among the natives at the north end of the lake. Jiggers and ticks are found universally in native settlements; myiasis, due to the burrowing larvae of a fly, which produce boil-like swellings, is also common, and sometimes affects Europeans.

Small Government hospitals for Europeans exist at Blantyre, Zomba, and Fort Johnston, and for

natives at Port Herald, Zomba (three), and Fort Johnston. In addition to the work of the Government, much medical work among both natives and Europeans is undertaken by the missionaries.

(5) RACE AND LANGUAGE

The races of Nyasaland have become much mixed during the last century in consequence of slave-raids and tribal migrations. By far the most important indigenous stock is the Anyanja, also known elsewhere as Anyasa. This includes the Anyanjas proper, who inhabit the lake shores and the Shire valley and highlands, the Achewas and Achipetas of the Angoni highlands, the Ambos of the Kirk Mountains, and the Manganjas, Makangas, and Machinjiris, who have entered the southern part of the Protectorate from the adjoining Portuguese districts.

The Anyanjas are a fairly intelligent and industrious race, but their unwarlike and submissive character made them an easy prey in the past to the Angonis, the Arabs, and the Yaos.

In the north-west of the territory a number of other indigenous tribes exist, belonging to the following groups:

(a) The Awankonde stock, a pastoral people at the north end of the lake; (b) the Batumbuka stock in Mombera district, to which probably belong also the Ahengas, the Anyikas, and the Aphokas; (c) the Atongas, an important tribe on the west coast of the lake, who keep considerable quantities of cattle.

The Yaos (Wa Yao) are the most important non-indigenous people. In the second half of the nineteenth century they entered the territory from the country west of the Lujenda, and established themselves in large numbers in the Shire highlands and at the south end of the lake. Their chiefs opposed a strong resis-

tance to the Government for several years. Physically and mentally they are much superior to the other peoples of the territory, and their stubborn character makes them less easily managed by Europeans.

The Angonis are a people of Zulu stock, who entered the western part of the Protectorate eighty or ninety years ago. Their two principal settlements are in Mombera and the western part of Central Angoniland, and a few of greatly mixed type are found in the Shire highlands. Their native language has almost disappeared.

Considerable numbers of Angurus and Alolos have entered the Protectorate during recent years from Portuguese territory, but they are nomadic in their habits, and are of little value as labourers. There are a few Swahilis at Kota Kota and other points on Lake Nyasa, a remnant of the period of Arab trade. Several other tribes exist in the Protectorate in small numbers, such as the Sengas, the Bizas, and the Awembas.

The two most important native languages are Ki-Nyanja and Ki-Yao, the former of which is generally understood throughout the Protectorate. Swahili is also widely spoken as a *lingua franca*.

(6) POPULATION

Distribution

The population of Nyasaland and its distribution have undergone very great changes in recent times. During the second half of the nineteenth century especially, the country suffered severely from the effects of the slave-trade. The population was not only enormously reduced, but many fertile districts which had formerly supported a large population became entirely deserted. Wherever a strong power established itself, however, a centre of population grew up. With the advent of security under the British protectorate this process has been reversed, and the

population has been scattering in all directions in search of fertile land. This movement away from the villages has become so strongly marked that the Government has found it necessary to take measures against it, and under the District Administration Ordinance of 1912 scattered groups of huts are being concentrated into good-sized villages, in which sanitary and administrative control over the natives can be more easily carried out. At present the greatest density of population is found in the Shire highlands, the Shire valley below Chiromo, the eastern parts of Central Angoniland, and the southern parts of the lake shore. The hilly regions of West and North Nyasa districts and the greater part of Marimba are thinly peopled, as are also the middle Shire valley region (Ruo and West Shire districts) and the plains around Lake Shirwa.

The native population was estimated in 1915 to be 1,137,572, of whom 505,121 were males and 632,451 females. The rate of increase has been rapid during the period of British administration, although the infant death-rate is probably very high.

The number of European residents was 831 in 1914-15: 587 male and 244 female. In 1916 the total was 741. The bulk of the European population resides in the Shire highlands, especially at Blantyre and Zomba, and in their immediate neighbourhoods.

In 1914-15 the number of Asiatics amounted to 410, in 1916 to 391.

Towns and Villages

The chief settlement in the Protectorate is Blantyre, in the Shire highlands; others are Zomba, the seat of government, Chiromo, Port Herald, Port Anderson, Limbe, and Liwonde. On Lake Nyasa are Fort Johnston, Kota Kota, Bandawe, Chintechi, Nkata, Likoma, and Karonga.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

- 1859 Lake Nyasa discovered by Livingstone.
 1861 First attempt at British missionary enterprise in Nyasaland.
 1875-6 Beginning of Scottish missions.
 1878 African Lakes Corporation founded.
 1887-90 Portuguese claims to Nyasaland challenged by Great Britain.
 1889 Discovery of the Chinde mouth of the Zambezi.
 1890 Anglo-German Treaty.
 1891 British Protectorate proclaimed over the Nyasaland district.
 1891 Anglo-Portuguese Treaty.
 1893 African Lakes Corporation merged in British South Africa Company.
 1902 British Central Africa Order in Council.
 1907 Nyasaland Order in Council.

Early Explorations.—The origin of the Nyasaland Protectorate is to be found in David Livingstone's explorations in southern central Africa in 1853-73, Lake Nyasa having been first sighted by him in September 1859. In 1861 the Universities Mission of the Church of England began work in these regions, not far from Zomba in the east of the Shire Highlands; they did not, however, permanently establish themselves in Nyasaland till 1881, and in 1885 they fixed their headquarters on the island of Likoma in Lake Nyasa. In 1875 the Free Church of Scotland came in, and in 1878 chose Bandawe, half-way up the western side of Lake Nyasa, to be the centre of the Livingstonia Mission of the Free Church of Scotland. The Church of Scotland Mission dates from 1876; it made its centre at Blantyre

in the Shire highlands, which took its name from Livingstone's birthplace on the Clyde. Connected with Scottish missionary enterprise was the first British commercial company in Nyasaland, an association of Scottish merchants dating from 1878, and known as the African Lakes Corporation. James Stevenson, the chairman of the company, gave his name to the 'Stevenson Road', a track intended to be constructed for some 230 miles from the northern end of Lake Nyasa to the southern end of Lake Tanganyika, but actually carried at the present for no more than some sixty miles from Lake Nyasa. This company was in 1893 to a large extent merged in the British South Africa Company. Thus, British missionaries and traders were at work in what is now the Nyasaland Protectorate years before Great Britain had any political connexion with it.

Portuguese Claims.—The second chapter in the story of Nyasaland begins with the 'Scramble for Africa' in the eighties, which led to extensive claims on the part of Portugal. An Anglo-Portuguese Treaty (the Congo Treaty), which was signed on February 26, 1884, contained, in Article III, the following stipulations:

The High Contracting Powers recognise the entire freedom in respect to commerce and navigation of the rivers Congo and Zambesi and their affluents for the subjects and flags of all nations.

The claims of Portugal on the Shiré shall not extend beyond the confluence of the river Ruo with that river.¹

This treaty, however, was never ratified.

The Berlin Conference of 1884-5, and the General Act of that Conference, directly affected Nyasaland

¹ Africa, No. 3 (1884), C. 3886, 1884. For the negotiations leading up to the treaty, see Africa, No. 2 (1884), C. 3885, 1884. See also Hertslet's *Map of Africa by Treaty* (1909 ed.), vol. iii, pp. 1004-5. All the treaties mentioned in this section are to be found in Hertslet. See also *The Partition of Africa*, No. 89 of this series.

only in so far as it was included within the free-trade zone conditionally established by that Act.

The Portuguese seem never to have had stations higher up the Zambezi than Zumbo at the confluence of the Loangwe ; and, when the British connexion with Nyasaland began, Tete, much lower down than Zumbo, was apparently the highest Portuguese post on the river. Livingstone found them ignorant of the course of the Shire, and there was no sure evidence that they knew of the existence of Lake Nyasa. However, in May and December 1886 the Portuguese Government made conventions with France and Germany respectively, securing recognition by both Powers of a Portuguese claim to the territories lying between Angola and Mozambique, 'reserving rights already acquired by other Powers';¹ and a map, which was laid before the Portuguese Cortes in connexion with these negotiations, coloured, as reserved to Portugal, 'the entire region lying between Angola and Mozambique, the whole basin of the Zambezi, Matabeleland, and the districts of Lake Nyasa up to the latitude of the Rovuma River'.²

On August 2, 1887, Lord Salisbury formally protested against this sweeping claim, as not founded upon occupation, which, he contended, was the principle admitted by all parties to the Berlin Conference, and as including 'countries in which there are British settlements, and others in which Great Britain takes an exceptional interest'.² A long controversy followed.

¹ These are the words of the French Treaty, Article 4 of which ran : 'The Government of the French Republic recognises the right of His Most Faithful Majesty to exercise his sovereign and civilising influence in the territories which separate the Portuguese possessions of Angola and Mozambique, reserving rights already acquired by other Powers, and binds itself on its side to abstain from all occupation there.' The words of the German Treaty were to the same effect. Africa, No. 2 (1890), C. 5904, February 1890.

² Africa, No. 2 (1890), C. 5904, *ut sup.*, pp. 7-8. For the Portuguese map, see Hertslet's *Map of Africa by Treaty*, vol. ii, p. 706.

In 1888 the Portuguese attempted to close the navigation of the Zambezi, and in that year and 1889 sent armed expeditions into Nyasaland, the second and stronger expedition being under the command of the famous African explorer, Serpa Pinto. So late as October 30, 1888, the British Government disavowed any desire or intention, 'unless forced to do so by circumstances, of creating a jurisdiction over any portion of the Nyasa district'.¹ Shortly afterwards, however, a much more positive attitude was adopted, due to the forward movement of the Portuguese, the grant of a charter to the British South Africa Company (October 1889), the discovery of the Chinde entrance to the Zambezi, and the energy of the British consular officers, notably Sir Harry (then Mr.) Johnston. A British consul for Nyasaland had been appointed in 1883; and, in view of Serpa Pinto's operations, the acting British consul, in August and September 1889, declared various Nyasaland districts to be under British protection.² The consul was now acting under Johnston's instructions. Johnston, who had been appointed British consul in Mozambique, had come out in July 1889, reached the Shire in August, and, after meeting Serpa Pinto on that river, had gone on to make treaties with the native chiefs as far as Lake Tanganyika. Eventually, on January 10, 1890,³ Lord Salisbury sent an ultimatum to Portugal, which had its effect. On August 20, 1890, an Anglo-Portuguese Convention was signed.

The Anglo-Portuguese Treaty of June 1891.—Owing to violent opposition in Portugal, it was not ratified; but a *modus vivendi*, pending a new treaty, was signed

¹ Africa, No. 2, *ut sup.*, p. 86.

² See Africa, No. 2, *ut sup.*, pp. 151, 174. See also the *Map of Africa by Treaty*, vol. i, pp. 286-91.

³ Africa, No. 2, *ut sup.*, p. 211.

on November 14, 1890;¹ and ultimately the Anglo-Portuguese Treaty, which finally settled the spheres of the two countries in these regions, was signed on June 11, 1891, and ratified on the following July 3.² Pending delimitation there was a prolonged *modus vivendi*, followed by articles of agreement by boundary commissioners and exchange of notes. An agreement as to the boundary on the Ruo and Shire rivers was signed in November 1911,³ and the boundary has now for the most part been delimited.

The Chinde Concession.—The value of the Chinde mouth of the Zambezi was made known by an Englishman, Mr. Rankin, in the spring of 1889. There is greater depth of water on the bar; and the entrance, together with the channel into the main river, is far easier and safer for navigation than is the case with any other mouth of the delta. Accordingly, an annexe⁴ to the treaty of 1891 provided for a British concession at Chinde, where goods might be landed and trans-shipped free of customs or other duties, and, *per contra*, for a Portuguese concession in the British sphere on the western side of Lake Nyasa. The lease of the Chinde concession was signed on May 7, 1892; it is a lease for 99 years from January 1, 1892, not to the British Government but to a nominee of the British Government, and an annual rent is fixed and paid. In 1898 the concession was slightly enlarged, to compensate for erosion by the river;⁵ and space adjoining the concession for residential purposes was leased for 99

¹ Africa, No. 2 (1890-1), C. 6212, December 1890.

² Africa, No. 5 (1891), C. 6370, June 1891; and Portugal, No. 1 (1891), C. 6375, July 1891. See also Hertslet, *op. cit.*, vol. iii, pp. 1016-26, and *The Partition of Africa, ut sup.*, Appendix IV, which omits the Chinde annexe.

³ Treaty Series, 1912, No. 10, Cd. 6147, May 1912.

⁴ See Hertslet, *op. cit.*, vol. iii, p. 1025.

⁵ See Hertslet, *op. cit.*, vol. iii, p. 1026.

years from January 1, 1896, but without exemption from duties. The corresponding concession to Portugal on Lake Nyasa, owing to a change of locality, was not finally settled until January 12, 1901.¹

The Anglo-German Treaty of July 1, 1890.—The Anglo-German spheres in the Nyasa region were settled a year before the Anglo-Portuguese settlement by the agreement of July 1, 1890 (Articles 1 (par. 2), 6, 7, 8, 9, 10).² The Anglo-German boundary between Lakes Nyasa and Tanganyika was delimited in 1898, and the delimitation confirmed by agreement of February 23, 1901.³

British Protectorate over Nyasaland, May 14, 1891.—Subsequent to this treaty of July 1890, and very shortly before the signature and publication of the Anglo-Portuguese Treaty, a British protectorate over the Nyasaland districts was finally and formally proclaimed on May 14, 1891.⁴ The protectorate was styled 'the British Protectorate of the Nyasaland districts'. By a later notification of February 22, 1893, the name was changed to that of 'the British Central Africa Protectorate'; but the name 'Nyasaland Protectorate' was revived in 1907.

Before the protectorate was actually proclaimed, Sir H. H. Johnston had been appointed, as from February 1, 1891, to administer it as Commissioner and Consul-General. It will be borne in mind that Anglo-Portuguese relations and agreements included southern and southern central Africa south and north of the Zambezi, and not Nyasaland alone. In February–April 1891

¹ See Hertslet, *op. cit.*, vol. iii, p. 1071.

² These articles are given in Appendix I to *The Partition of Africa*. For the whole treaty, see Africa, No. 6 (1890), C. 6046, July 1890, and Hertslet, *op. cit.*, vol. iii, pp. 899–906.

³ Treaty Series, No. 8, 1902, Cd. 1009, March 1902, and Hertslet, *op. cit.*, vol. iii, p. 925.

⁴ See Appendix, p. 84.

the field of operations of the British South Africa Company was extended to cover what is now Northern Rhodesia ; and Johnston, in addition to being Commissioner of Nyasaland, acted as administrator for the company north of the Zambezi, the company contributing to the cost of the Nyasaland Protectorate. This arrangement ended in 1895, when the company took over the administration of its own territories. Johnston was Commissioner from 1891 to 1897, when he was succeeded by Sir Alfred Sharpe. Before he ended his active work in the Protectorate in 1896, he and his able officers had effectually put down the slave-trade in these regions, and had given peace and order to Nyasaland.

III. SOCIAL AND POLITICAL CONDITIONS

(1) RELIGIOUS

THE table of religions in the Census report for 1911 gives some 82,000 Christians as against rather less than 58,000 Mohammedans, but the figures are incomplete, and probably little more than rough estimates. Mohammedanism is a concomitant of Arab infusion and influence; it does not appear whether or not it is on the increase. The large majority of the natives 'may be classed generally as pagans with a very undeveloped type of religion'.

(2) POLITICAL

On May 11, 1902, 'the British Central Africa Order in Council, 1902' was issued, making further provision for the administration of the Protectorate. In 1904 the charge of the Protectorate was transferred from the Foreign Office to the Colonial Office; and on July 6, 1907, 'the Nyasaland Order in Council, 1907' was issued, under which the Protectorate is now administered. It changed the name of the Protectorate, appointed a governor instead of a commissioner, and gave it a constitution with executive and legislative councils. The law is British law supplemented by local ordinances. There is a High Court, from which appeals lie to the Court of Appeal for Eastern Africa at Mombasa.

(3) EDUCATIONAL

Education is entirely in the hands of the various missionary bodies, and industrial education has been

kept in the foreground. The Christian missions have, beyond question, done excellent educational work, the annual report on the Protectorate for 1915-16 giving a total of 2,067 schools, with a roll of 78,064 boys and 53,591 girls, and an average attendance of 51,409 boys and 33,766 girls. No less than ten missionary societies maintained and controlled schools, receiving between them a Government grant of £1,000. In number of schools and scholars the Livingstonia Mission of the Free Church of Scotland heads the list.

(4) NAVAL AND MILITARY

There is a native police, and armed forces are represented by two battalions of the King's African Rifles. There are gunboats or armed steamers on Lake Nyasa.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

THE internal and external means of communication of Nyasaland are both unsatisfactory for purposes of trade.

Within the Protectorate, between the lake and the head of the railway, there is a gap in the main trade-route which is inadequately bridged by the recently completed motor road. Produce from the lake-shore districts has thus to be discharged and loaded once more than should be necessary, inevitably suffers delay in transit, and pays disproportionately high rates for slow and rough transport across the gap. The extension of the railway to the lake is an urgent necessity.

For its external trade the Protectorate, lying far back from the coast-line, requires an easy, rapid, and unbroken route to and from a good harbour on the Indian Ocean. The railway runs at present from Blantyre to Chindio on the Zambezi : there the journey is broken, and passengers and goods are conveyed on small river-craft down the Zambezi to Chinde, a port so inadequate that cargo has to be trans-shipped by small steamer either to liners lying well out to sea or to the port of Beira, some 150 miles distant. The delays and trans-shipments incidental to this route can only be eliminated by the completion of a railway from Chindio to Quelimane or to the better-equipped port of Beira.

Details of the proposed railways designed to remedy the defects in the through trade-route from lake to coast are given below, in the sections on railways

(pp. 28–34) and on ports (pp. 36, 37). It may be noticed that the distinction between internal and external means of communication is difficult to maintain in the case of Nyasaland. The ports on Lake Nyasa lie within the country, but afford communication with foreign territory; Chinde, though serving as the seaport, is scarcely an integral part of the Protectorate, and the railway even within the frontiers serves mainly the purposes of external rather than internal trade and communication.

(1) INTERNAL

(a) *Roads, Paths, and Tracks*

Without some experience of travel in undeveloped tropical countries, a certain effort of imagination is required to realize the character of the road communications and the difficulties of road-making in Central Africa. Tropical rains periodically convert the beaten tracks into stretches of deep mud; flood water washes away the surface or scores it with ruts that obstruct the passage of wheeled traffic; a luxuriant growth of high grasses and sub-tropical vegetation threatens to submerge the roadway, and the whole system has to undergo an annual clearing and re-making to render it practicable for the dry season. To the difficulties imposed by nature are added those arising from the expense of road maintenance and bridge construction, from the scantiness of funds available—though this is partly counter-balanced by the cheapness of labour—and from the training and management of the native workmen. Judged in the light of these considerations and not by comparison with the age-old highways of wealthy European countries enjoying a temperate climate, the existing road-system of Nyasaland, inaugurated less than thirty years ago,

will be found to be creditable to the energy of its engineers and the foresight of the Government. In some instances local roads have been constructed through the enterprise and at the expense of planters, who in providing thus for their own transport requirements have rendered a public service.

The roads now in existence have an aggregate length of about 3,200 miles. They are classified as wagon roads, main roads, and carrier roads.

Wagon roads, some 570 miles in extent in 1916, include a few metalled roads, of comparatively small mileage. Of these by far the most important is the motor road from Blantyre to Zomba (42 miles), with the further stretch from Zomba to Liwonde and Fort Johnston (77 miles), to which a metalled surface was given in the course of the war. This, the main trade-route to Lake Nyasa, was used by numbers of motor-cars and lorries conveying supplies for the columns operating against the Germans in East Africa. For the conveyance of Government passengers and goods a motor-lorry service is maintained between Limbe, the first station on the railway after Blantyre, and Zomba.

Other metalled roads are being built, or planned, to act as feeder roads to the railway; Luchenza station is connected thus with the Mlanje plateau. Unmetalled wagon roads run from Blantyre to Cholo, to Katunga and thence to Chiromo, to Mneni, and to Mpimbi. These are provided with bridges over streams, and, having a cambered surface and a breadth of 20 ft., can be used by ox-wagons throughout the dry season.

Main roads are similar in character to wagon roads, but being narrower are less suitable for heavy vehicles than for hand-wagons, rickshas, and bicycles. Roads of this class traverse the Protectorate from south to north. At the southern extremity routes alternative

to the wagon roads link Chiromo with Blantyre, and Blantyre again with Liwonde. From Liwonde a trunk road, 482 miles in length, runs first north-west to Ncheu, Fort Mlangani, Dedza, and Lilongwe, and thence in a general northerly direction to Dowa and Ngara, near Mzimba, and onwards to Jakwa, Florence Bay, Deep Bay, and Karonga. Karonga again is the starting-point of the Stevenson road running by Fort Hill, Fife, and Abercorn from Lake Nyasa to Lake Tanganyika, a distance of about 60 miles within and 170 miles beyond the Protectorate frontier. Several main roads connect the trunk route with the shores of the lakes, viz. through Mzimba to Chinteche, from Ngara to Kota Kota, from Dowa to Domira Bay, and from Dedza to Ndindi. From Dowa there is also a main road to Fort Manning on the Rhodesian frontier. Farther south Mlanje is similarly connected with Blantyre, Zomba with Mlanje and with Chikala, and Fort Johnston with Fort Maguire. The aggregate length of all the main roads was 713 miles in 1916.

Carrier roads, again, are narrower than main roads, being indeed little more than tracks or paths cleared periodically of bordering grasses and vegetation. As the name implies, they are primarily intended to allow the passage of native porters, but they may also be used by bicycles and even rickshas. There are approximately 1,900 miles of these cleared paths in the Protectorate. The native paths, uncleared and therefore practically obliterated or overgrown with vegetation after every rainy season, are infinite in number, but are of merely local utility.

Means of transport are various. Merchandise is carried sometimes by ox-wagons, sometimes, especially in more remote districts, by native porters. Oxen and donkeys may be employed only in areas free from tsetse fly. Hand-carts are useful for conveying stores.

Travellers may still use the *machila*, a hammock slung on a pole and borne by a team of two to eight natives. Rickshas are available on the better-class roads. For personal use, bicycles are convenient for short journeys; motor-bicycles also suit local conditions, and were growing in popularity before the war. With the increase in the mileage of metalled roads, motor vehicles are coming into favour, and will probably become in the early future the commonest means of commercial transport between railway or steamboat and plantation or store.

(b) Waterways

With two exceptions the lakes and rivers of the Protectorate are of no importance and of scarcely any use as channels of communication. Those exceptions are Lake Nyasa and the Shire river; but whereas the former is a factor of great and increasing significance in both the internal and external trade of Nyasaland, the latter, which twenty years ago was a waterway of the first rank, carrying practically the whole foreign trade of the country as far north as Chiromo or even Katunga and affording a further navigable stretch between Liwonde and Lake Nyasa, is now, owing chiefly to the fall in the level of the lake, a shrunken stream of little utility even in its lower reaches and even in the rainy season. Its existence has latterly hampered rather than helped development, inasmuch as it tended to delay the construction of the railway from Port Herald southward to the Zambezi. Had there been no Shire, there might now have been a railway running all the way from the Zambezi to Lake Nyasa.

The upper waters of the *Shire* used to be navigable from its outlet from the lake as far as Matope (about 75 miles) in the rainy season, and as far as Liwonde

(about 45 miles) between May and December. A service of shallow-draught steamers was maintained during the greater part of the year between Fort Johnston and Liwonde. Owing, however, to the shrinkage already mentioned in the level of the lake, together with the accumulation of *sudd* and the development of sand-bars and shallows, this part of the river has since 1916 been totally unfitted for navigation.

The lower Shire was formerly the chief and practically the only route of entry for external trade. It was then navigable upwards from the Zambezi as far within the Protectorate as Chikwawa or Katunga in the rainy season, and in the other months as far as Chiromo. Before the Shire Highlands Railway was completed, the practicable head of navigation for steamers had receded from Chiromo to Port Herald, but in recent years Port Herald has in turn ceased to be accessible for the greater part of the year, and an extension of the railway southwards to the Zambezi has been found necessary. The Zambezi, however, is also failing, and even Chindio, the present terminus of the railway, cannot now be reached without difficulty by river steamers during the dry season. Unless, therefore, as a result of the blocking of its outlet, Lake Nyasa should again rise to such a level as to break through the barrier and once more fill the river channel for a cycle of years—a contingency which is far from probable—the Shire will in future be of no practical use for navigation, and the railway will supersede the Zambezi-Shire services maintained in the past by the light-draught stern-wheel steamers of the African Lakes Corporation and the British Central Africa Company. On the other hand, the use of flying boats on the Zambezi and its tributaries, and perhaps on Lake Nyasa, is an interesting possibility of the future.

Of the other rivers of Nyasaland, the Ruo is navigable, by canoes only, for some 12 miles above its junction with the Shire at Chiromo, while the Songwe, North Rukuru, South Rukuru, Bua, and Lintipe, feeders of Lake Nyasa, are also used by canoes to some extent; but no other stream discharging into the Shire or Lake Nyasa, and no affluent of Lake Shirwa, Lake Chiuta, or the River Lujenda, is of any value as a waterway. Nor, again, is navigation for commercial purposes possible on the shallows of Lake Shirwa, on the reedy swamps of Lake Chiuta, or on Lake Pamalombe, which was once fed by the overflow from Nyasa but is now almost entirely choked with sand and *sudd*.

Lake Nyasa, despite the fall in its level, is likely to gain rather than lose in importance in the future, as the country round the lake is developed and trade with neighbouring territories expands. Its remoteness from the railway has limited its utility in the past, but a great impetus will be given to agricultural and perhaps mineral production and consequently to external trade, as soon as a through connexion with the coast is secured. The Nyasa terminus of any such line is certain to become the collecting station for all the produce from the lake-shore districts and the most important entrepôt for the trade of the Protectorate.

Navigation is practicable throughout the length of Lake Nyasa, the depth of which is such as to allow the use of much larger vessels than any hitherto employed. The registered tonnage of the Government steamship *Guendolen* is 350; of the *Queen Victoria*, owned by the African Lakes Corporation, 195; of the *Domira*, the property of the same company, 70; and of the *Chauncy Maples*, a mission vessel, 214. The *Hermann von Wissman*, a German gunboat of 90 tons, was disabled by the *Guendolen* on August 14, 1914,

and was subsequently destroyed. There are two other steamers of smaller tonnage, and a number of sailing vessels.

Of the lake ports the chief are Karonga, Kasweras, Deep Bay, Florence Bay, Ruarwe, Nkata Bay, Bandawe, Bana, Kota Kota, Domira Bay, Monkey Bay, Fort Johnston, Makandanji, and Fort Maguire, all within the Protectorate; Mtengula, in Portuguese territory; Wiedhafen, Alt-Langenburg, and Mwaya, in conquered East Africa. Kota Kota and Karonga are noteworthy, the former as the trade port for north-eastern Rhodesia, the latter as the terminus of the Stevenson road between Nyasa and Tanganyika. Kota Kota has a good harbour, but Karonga is much exposed. Kasweras, Domira Bay, and Bana have sheltered anchorages; the best of all is Monkey Bay, in British territory. There is fair anchorage off Likoma Island, the head-quarters of the Universities Mission. All the other harbours suffer either from obstructions in the shape of sandbanks or bars at the river-mouths, or from lack of shelter from the violent winds that periodically sweep the lake.

(c) Railways

(i) *The Railway System: Route and Mileage.*—The Protectorate is served by one railway line, extending from Blantyre to Port Herald and from Port Herald across the frontier to the Zambezi. The section north of Port Herald constitutes the Shire Highlands Railway; the southern section is known as the Central Africa Railway.

The Shire Highlands Railway was designed to provide a railway connexion between the centre of the Protectorate and the perennial head of navigation on the Zambezi-Shire route. As originally planned it was to link Blantyre with Chiromo (83 miles), but

subsequently, owing to the difficulty of navigating the Shire River from Port Herald to Chiromo, provision had to be made for adding 30 miles to the length of the line and making Port Herald the southern terminus. The railway, 113 miles in length, was completed in 1908.

Port Herald, however, has in recent years been inaccessible to river steamers for more than half the year, and it therefore became necessary to extend the railway southwards to the Zambezi. The terminus eventually selected was Chindio, which lies in Portuguese territory on the north bank of the Zambezi, above its junction with the Shire. The extension, known as the Central Africa Railway, was completed in 1915. Its length is $60\frac{1}{2}$ miles, of which 16 miles fall within Nyasaland, making the total length of railway within the Protectorate 129 miles.

(ii) *Details of Construction.*—The Shire Highlands Railway cost more than a million pounds to construct, so that the average cost per mile reached the high figure of about £9,000. Most of the constructional work was very heavy, with high embankments and deep cuttings, though without tunnels. There are 66 bridges having a length of 30 ft. or more; the largest are the girder bridge over the Mswadzi river, and the bridge across the Shire at Chiromo, which is built on screw piles of $2\frac{1}{2}$ ft. diameter, with five pairs of girders of $42\frac{1}{2}$ ft. span, and one lifting span of 100 ft., moved by counterweights. The gauge of the line is the standard Cape gauge of 3 ft. 6 in. There is a high percentage of curvature, and in consequence the maximum speed does not exceed 20 miles an hour. In normal times two passenger trains run in each direction every week, and goods trains run in accordance with the demands of the traffic. It is quite clear that there is ample carrying capacity on the existing

line for all the traffic likely to offer itself for many years to come. The whole line, 174 miles long, is managed by the Shire Highlands Railway Company, which for this service on the southern section receives 10 per cent. of the net earnings of the Central Africa Railway Company.

(iii) *Finances*.—The planning and construction of both the existing railways appear to have been due mainly to the enterprise of the British Central Africa Company, which also takes an active interest in plans for further development. This company is the parent of the Shire Highlands Railway Company and of the Central Africa Railway Company, in both of which it retains a controlling interest. It has obtained concessions for building a line in the future to connect Lakes Nyasa and Tanganyika and for bridging the Zambezi at or near Chindio; it is also understood to be interested in the projected railway between Chindio and Beira. In raising the capital required for the construction of the Central Africa Railway the company received material assistance from the British Cotton Growing Association.

The Protectorate Government has also been active in assisting railway construction. For building the first line the British Central Africa Company obtained the grant of 361,000 acres of land, but this was afterwards redeemed by the Government at the price of 10s. per acre. Government has further guaranteed to make up the net income of the Central Africa Railway Company for a fixed term of years to 4 per cent. of its capital of £500,000; thus in 1916 the company's net earnings were £6,905, and Government supplied the sum of £13,095 required to raise its income to £20,000.

The urgent need of extending the line northward to the lake was emphasized by successive governors,

and the Imperial Government at last made provision for this extension in the East Africa Loans Bill, which was passed by Parliament in 1913. Under this Act Nyasaland was voted a grant of £803,000, that is to say, £647,000 for railway extension and £156,000 for the improvement of road communications. Owing to the war, however, the loan has not yet been made available; it is probable, moreover, that the sum originally assigned for the railway extension would now prove quite insufficient to meet the increased cost of materials and of transport.

(iv) *Adequacy to Economic Needs; Proposed Extensions.*—The acknowledged inadequacy of the railway system consists first in its failure to serve any of the districts north of the Shire highlands. Two-thirds of the Protectorate lie within easy reach of steamer services on Lake Nyasa; but the development of the whole of this northern region is conditional on the extension of the railway to the lake, since under present conditions of transport none but the most highly priced and least perishable of its products can be marketed at a profit. The second weakness of the system is its failure to reach a commodious seaport. At the railway terminus at Chindio, outgoing freight is transferred to the river steamers and conveyed down the Zambezi to Chinde. The Zambezi can no longer be regarded as an adequate waterway: the river services are comparatively slow and are subject to congestion and delays; and Chinde at the Zambezi mouth is far from being a satisfactory harbour, since two trans-shipments are necessary for all cargo in transit, and outgoing freight is liable to further delays. If Protectorate produce is to be dispatched to foreign markets expeditiously and in good condition, the railway must be continued through to Quelimane or to Beira.

The extensions which have been proposed, with

a view either to remedying these defects or to opening up new channels of access, are the following :

- (i) Blantyre (or Luchenza) to Lake Nyasa ;
- (ii) Lake Nyasa to Lake Tanganyika ;
- (iii) Chindio to Beira ;
- (iv) Chindio to Quelimane ;
- (v) Mossuril (Mosoril) Bay (opposite Mozambique Island) to Lake Shirwa ;
- (vi) Port Amelia (Pemba Bay) to Lake Nyasa ;
- (vii) Lake Nyasa to north-eastern Rhodesia.

(i) There are two possible routes by which the railway might be extended northward to Lake Nyasa. Government officials appeared formerly to favour the route, for which the preliminary surveys were made, from Luchenza *via* Zomba to the south-eastern arm of the lake. The alternative route lies to the west. Starting from Blantyre, or possibly from some other point on the present railway, the proposed line would run north, cross the Shire river at a point between Liwonde and Matope, and terminate in a station on the south-western arm of Lake Nyasa.

Of the two, the former line would be the shorter and presumably the cheaper to construct, and it would give slightly lower freights for traffic to and from the lake. It would, however, traverse a region of little agricultural value, and would certainly seem to be less well adapted than the alternative route for developing the rich districts of central and northern Nyasaland, and less conveniently located for possible further extensions to the north-western districts.

(ii) The British Central Africa Company has secured permission to build a line from the north end of Lake Nyasa to the south end of Lake Tanganyika. This line, however, is not likely to be built before the lake is connected by railway with a seaport.

(iii) The connexion with the coast would be most naturally and advantageously effected by extending the existing line southward from Chindio to Beira. Beira is better equipped than any other seaport which might serve as the outlet for the traffic of Nyasaland, and would have no difficulty in coping with the extra traffic that the Zambezi line would attract to its wharves. Preliminary surveys have been made; the line, as now projected, will be 158 miles long, and will traverse country presenting few engineering difficulties. The capital required is said to be forthcoming, and hopes are entertained that construction may be begun in the course of 1920 and completed within a year. Details of the financial arrangements have not been made public, but it may be presumed that the British Central Africa Company and the Companhia de Moçambique are chiefly interested.¹ The former company holds the concession to build the bridge across the Zambezi, but the needs of Nyasaland traffic at this point would be met sufficiently well for a number of years by a less costly expedient, such as a river ferry or an aerial wireway.

(iv) Quelimane offers an alternative as a seaport for the Protectorate. A railway from Quelimane to the interior is now under construction, and was expected to attain a length of 62 miles by the end of 1917. Having a shorter distance to traverse, it has secured an initial start from the proposed Chindio-Beira line, over which it possesses the further advantage that between Chindio and Quelimane there is no Zambezi to cross. But lack of capital is likely to delay the completion of this line, and if the Beira-Zambezi railway should be finished first, the facilities offered by

¹ The financial arrangements have now (Jan. 1920) been completed, and an official guarantee has been obtained.

the port of Quelimane are not such as to be likely to draw away from Beira any considerable portion of Nyasaland traffic.

(v) A line starting from Mossuril Bay, opposite Mozambique Island, has been constructed some 20 miles inland, and is projected to traverse Mozambique District and reach the Protectorate at or near Lake Shirwa. There is no likelihood of this railway being carried through to British territory within any small number of years.

(vi) Another railway project was embodied in the terms of the charter granted in 1891 to the Companhia do Nyassa, which undertook to build a railway across Portuguese Nyasaland to Lake Nyasa. The route was surveyed, the terminus selected being Port Amelia, situated on the excellent natural harbour of Pemba Bay. The company, however, has not been able to find the capital necessary for the railway scheme, which would do much to open up a region of attractive possibilities. But in any case, the projected line, some 500 miles in length, could scarcely compete for the trade of the British Protectorate with the shorter route, of about 400 miles, to Beira.

(vii) A railway connexion between north-eastern Rhodesia and Nyasaland is a likely development, but in this case no definite project has yet been made public. Mention has been made of a possible railway from the lake to Fort Jameson, but the route of any such line is not likely to be fixed until the terminus of the Blantyre-Nyasa line has been agreed upon. Were the latter line to strike the south-western arm of Lake Nyasa, its extension to Fort Jameson would give north-eastern Rhodesia a shorter route to the coast, at Beira, than any possible branch lines from the existing Rhodesian system.

(d) Posts, Telegraphs, and Telephones

The postal establishment in recent years has comprised 19 post offices and 7 sub-offices, and the total number of letters and postal packages of all kinds dealt with has exceeded 2,000,000 per annum. Between 1912 and 1917 expenditure averaged £5,700 and revenue slightly less than £5,000, though in 1913-14 the sales of a new issue of stamps raised the figure to £7,012.

The main telegraph system of the Protectorate is owned and managed by the African Transcontinental Telegraph Company, whose line runs from Umtali, in Southern Rhodesia, to Tete on the Zambezi, and thence to Chikwawa, Blantyre, Zomba, Liwonde, Fort Johnston and up the western coast of Lake Nyasa to Karonga and Fort Hill, crossing thereafter the extremity of Northern Rhodesia and reaching Bismarckburg and Ujiji on Lake Tanganyika. That part of this wire which falls within the Protectorate frontiers measures 590 miles; the branch lines, from Chikwawa to Chiromo, and from Domira Bay to Fort Jameson (north-eastern Rhodesia), measure 67 and 128 miles respectively.

The rate for telegrams to stations within the Protectorate is 3*d.* per word, with a minimum charge of 2*s.* 6*d.*

A telegraph line runs along the Shire Highlands and Central Africa railways. Its length north of the frontier is 129 miles, so that the total telegraph mileage for the Protectorate is 914.

There is a telephone system at Zomba, connecting the various Government offices. The total length of wire is 13 miles, and in 1914 there were 21 connexions.

(2) EXTERNAL

(a) Ports

Though Nyasaland has no coast-line, it has, paradoxically, an ocean port of its own, for in 1892 the British Government, anxious to secure a permanently open route to the Protectorate, obtained from Portugal a 99-years' lease of a concession at Chinde, which, though it remains under the sovereignty of Portugal, is exempt from all Portuguese rates, taxes, and customs duties, and is administered by a Nyasaland official, styled 'British Vice-Consul and Agent'. The concession lies at the mouth of the most easily navigated branch of the Zambezi, but the erosion of its foreshore by the river current and ocean tides is proceeding at the rate of about 15 yds. a year, and it has been found necessary to secure from the Portuguese Government an extension of the original plot, which was rapidly disappearing.

Practically the whole of the imports and exports of Nyasaland pass through Chinde on their way up or down the Zambezi. The cargo handled may be roughly estimated to amount to 30,000 tons per annum. In 1913 the exports, consisting of sugar, salt, wax, raw cotton, live-stock, rubber, ivory, and bark, were valued at £244,179, while imports, consisting of textiles, provisions, cement, iron and steel, agricultural machinery, soap, and tea, amounted to £420,535.

Chinde harbour is a poor one; the ocean-going vessels that call there have to moor far out from the shore, and the loading and discharging of cargo is accomplished with such inconvenience and delay that the vessels of most East African services use Beira as an entrepôt, cargo being conveyed by tug and lighter to and from Chinde, a distance of about 150 miles. It may be regarded as certain that Chinde will lose its

importance for Nyasaland trade as soon as the railway is completed from Chindio to Beira, though it may still retain a fraction of its trade with the Zambezia district of Portuguese East Africa.

The chief shipping lines which before the war served the Protectorate through Chinde, direct or *via* Beira, were the Union Castle line from Southampton, the Aberdeen line from London, the Empreza Nacional de Navegação from Lisbon, and the Deutsche Ost-Afrika Linie from Hamburg, Antwerp, and Southampton. This German line ran two tenders, the *Kadett* and *Adjutant*, especially for service at Chinde and to and from Beira. The British Central Africa Company latterly ran a service of two small steamers between Beira and Chinde.

The ports on Lake Nyasa, mentioned on p. 28, furnish opportunities for direct trade with the interior of Portuguese East Africa and of what was German territory, and for transit trade with north-eastern Rhodesia. Their external trade has hitherto been of slight importance, but there are possibilities of considerable development in the future, for the lake-shore districts are no less promising on the north and east than on the west, and their latent resources were observed by numbers of white men during the recent campaign in German and Portuguese East Africa.

(b) *Cables and Wireless Communication*

The African Trans-Continental Telegraph Company's line communicates with Northern Rhodesia and conquered East Africa, and also with Southern Rhodesia and the Union of South Africa.

Cable communication with Europe is conducted either along this land line and by eastern or western cable, or along the Portuguese wire from Chiromo to

Chinde and thence by the Eastern Telegraph Company's cables. This company has cables to Aden, India and China, Mauritius, and Australia.

Wireless stations for military use were established during the war on Lake Nyasa and in Portuguese East Africa, but having been set up for a special purpose they have by now presumably been dismantled.

(B) INDUSTRY

(1) LABOUR

(a) *Supply of Labour ; Emigration and Immigration*

That the Protectorate possesses an ample reservoir of native labour is evident from the official estimate of the population, which indicates that in 1916-17 there were more than one and a quarter million of natives and less than 800 Europeans, the average density of population being 28 to the square mile. The industries of the country are those of agriculture and of the preparation for export of raw materials, such as cotton, tobacco, and sisal hemp. There are no great manufactures and no mines ; railway construction has only periodically required large numbers of labourers. The Protectorate natives are not averse from working on plantations, and Government, without resorting to coercion, encourages them to seek such employment by remitting half of the hut tax of any native who has worked for at least one month for a European employer. Natives, however, will seldom work away from their homes for many months consecutively : during the rainy season, between October and March, in particular, when planters are most anxious to have their ploughing and planting or sowing completed in time and readily offer higher rates of pay, the natives usually prefer to attend to the hoeing of their own plots, which at other

times are left to the care of the women and children. Women seldom work on the plantations, but native children are frequently employed for cropping and for catching insects.

In pre-war years, therefore, planters who were careful to engage labourers in anticipation of their requirements for the season had no great difficulty in securing a sufficient number. The war created certain special conditions, the effects of which are likely to be felt for some years. Large numbers of men were employed as carriers in the East Africa campaign, at much higher rates of pay than had been usual in peace time. Government also took steps to stimulate domestic production of food-stuffs, and it is possible that natives may now prove reluctant to accept employment at pre-war rates, and may increasingly prefer to cultivate cotton, rice, beans, or ground nuts on their own account.

The chief plantation area of the Protectorate is the Shire highlands, a region which includes the districts of Blantyre, Zomba, and Mlanje. The opportunities of employment which are offered here attract every year from March onwards a very considerable force of volunteer labourers from the north-western districts, who return home before the following rains. There is thus a distinct ebb and flow of labour within the Protectorate. There is also a similar movement to and from the contiguous territories of Rhodesia and Portuguese East Africa. Before the war the number of migrant labourers attracted by the relatively high wages of the Zambezi sugar plantations and Rhodesian mines was estimated to range between 15,000 and 20,000. They usually returned after a season's absence, and the earnings they brought back formed an appreciable contribution to the modest wealth of the Protectorate. The Government viewed this exodus of able-bodied labourers with some concern, as is shown by the enunciation of policy

in the Colonial Report on Nyasaland for 1910-11. 'As regards native labour, the Government has steadily pursued the policy of discouraging the emigration of natives to other territories by every just and lawful means in its power, being confident, in view of the rapid increase of agricultural industry in the Protectorate itself, and the ample opportunities of local employment which now exist, that such emigration must eventually be detrimental not only to the interests of local planters and others, but likewise to those of the native community, in whose case the larger wages obtainable in South Africa must be discounted by the prejudicial effect produced by intercourse with more sophisticated centres upon their simplicity of character, upon their habits of life, and upon the lot of their wives and families remaining behind. While, however, the Protectorate Government discountenances emigration for the above reasons as far as it legitimately can, it recognizes that natives who have formed a settled determination to quit Nyasaland must be allowed to do so, and to such natives passes are issued accordingly.' The recruitment of labourers within Nyasaland for employment elsewhere was forbidden, and steps were taken to prohibit their employment in the mines of the Rand as soon as it became clear that when so occupied they were prone to contract tuberculosis. They were still allowed—and, moreover, showed an increasing inclination—to leave the Protectorate in order to seek employment in the mines of Southern Rhodesia or the sugar plantations of Portuguese East Africa; but, when the railway was under construction from Port Herald to Chindio, a special ordinance was necessary to sanction the recruitment and engagement of Nyasaland natives for work on the section between the frontier and the Zambezi.

(b) Labour Conditions

The conditions under which labour may be employed within the Protectorate have been carefully formulated by the Government. Contracts may be verbal or written, but a contract for a period exceeding one month cannot be enforced until executed in writing and in the presence of a magistrate. Wages must be paid in cash, with no deductions beyond the amount of any previous part payments. Labourers must be provided with food, with housing of the ordinary sort, and with medical attendance during illness. Alcohol may not be given or sold to any native, except on physician's prescription.

Wages, which up to 1910 had been as low as 3s. per month in the dry season and 4s. during the rainy months, had risen before the war to 5s. and 6s. respectively. Native carpenters, masons, brickmakers, bricklayers, and printers could be engaged at rates of 10s. to 40s. per month, and although their work was unequal, in point of speed and of accuracy, to that of competent European workmen, it was exceptionally useful in a new country. Skilled labourers, however, were apt to migrate southward in order to take advantage of the more favourable opportunities available in Rhodesia and the Union. Native cooks could be hired for 10s. to 20s. per month, and other house-servants were paid from 5s. to 20s.

The general conclusion suggested by these data is that the natives' physical well-being was effectively safeguarded by the Government's regulations, and at the same time the planter was fortunate in being able to secure his services at such low rates, even though in steadiness and competence his work is not comparable with that of the European labourer working in a temperate climate. Circumstances which will tend

to raise the level of wages in future are, in addition to those already mentioned as conditions arising from the war, the natural and normal expansion of native agriculture, which will lessen the available supply of labour, the influx of European settlers, which will increase the demand, and the improvement in means of communication, which will stimulate native cultivation and will also tend to standardize wages by those offered in adjacent territories. On the other hand, the completion of new railroads and the increasing use of mechanical means of cultivation, of harvesting, and of road transport, will set free a large force of labour now employed in these operations, while periodical failures of crops, such as have been frequent in the past, may also assist at times to swell the supply. On the whole, therefore, there seems to be at present no reason to anticipate any general scarcity of labour or any pronounced difficulty in obtaining plantation hands at rates sufficiently low to make profits possible.

(2) AGRICULTURE

The soils of Nyasaland are of many varieties, ranging from light sand to black cotton soil and to heavy red clay. High temperatures, running up to 120° in the shade during the hotter months, are met with in the Shire valley and in the low-lying plains; at greater altitudes, as in the Shire highlands, the rainfall is heavier, ranging between 40 and 100 in. per annum, while temperatures seldom exceed 96° , and in the cold portion of the dry season fall as low as 40° . This variety of climatic conditions, together with the fairly adequate labour supply, gives scope for the cultivation of many tropical and subtropical plants, and the problem which each European planter has to solve for himself is not so much what particular crop can be grown with success as which of the possible crops will

best repay cultivation under present conditions of transport and freights and of prices in the European market. The remoteness of the Protectorate from the sea, and the difficulties, delays, and cost of the carriage of agricultural produce to Europe, have hitherto compelled planters to devote their chief efforts to high-priced products such as tobacco, cotton, and tea, and to leave almost entirely to natives the cultivation of maize, rice, sesame, ground-nuts, and other grains and oil-producing plants.

Cotton is grown on a large acreage, and tobacco to a much smaller degree, by natives; otherwise the distinction between the agricultural practice of natives and European planters extends to products as well as to methods of cultivation and the scale of operations. The traditional processes still followed by most of the natives are wasteful and destructive. A new plot is cleared by cutting down and burning all wood, bush, and grasses; the ground, enriched by the burnt vegetation, is then hoed and turned over to a depth of a few inches only, and a variety of grains and vegetables is sown or planted, in quantity sufficient to provide for the wants of the cultivator's family. The same plot is used for a few seasons, but when it shows signs of impoverishment of soil it is deserted and left to be overgrown with jungle, while another plot is prepared to be cultivated similarly for a few years and then abandoned in its turn. The use of these unscientific native methods over long periods of time has caused a marked deforestation of areas once well timbered, not only in Nyasaland but over large regions of Central Africa generally. In Nyasaland, there is reason to hope, the spread of better methods among the natives and the well-directed efforts of the Forestry Department will check the annual wastage and bring about a gradual augmentation of forest resources.

The European planter's operations are of a very different character. With a sounder knowledge of the principles of agriculture, and a useful store of information readily placed at his disposal by the Department of Agriculture, he works on a much greater scale, employing a large force of labour, cultivating large fields with far greater effectiveness, making increasing use of agricultural machinery and mechanical transport, growing a relatively vast quantity of produce, preparing it and consigning it to a distant market. For these operations a very considerable capital is essential, and under present-day conditions there seems to be an indifferent chance of success for a plantation with less than £3,000 of capital to finance it. Squatter farming by Europeans, which might involve a certain loss of prestige among the natives, is precluded by the climatic conditions of the Protectorate, since the European settler is not able to endure long hours of manual labour in the open. The number of Europeans in Nyasaland who are primarily agriculturists may be estimated at about 150, a high proportion of these being employees of the larger land companies. In 1916 a total of 52,883 acres was under European cultivation. This included 26,507 acres in Blantyre district, 6,661 in Mlanje, 6,414 in Zomba, 4,360 in West Shire, 3,999 in Ruo, and much smaller areas in the other districts. These figures make it evident that the chief regions of European cultivation are the Shire and Mlanje highlands and adjacent districts.

The Government Department of Agriculture, organized with the object of controlling and fostering the agricultural industries of the Protectorate, has now a personnel consisting of a director, an agriculturist, four assistant-agriculturists and a clerk, a chief forest-officer, a veterinary bacteriologist, two veterinary officers, and an entomologist. Under the direction of

this staff reports are published and information issued for the guidance of planters and native cultivators, and regulations are drafted for the destruction of pests and for other protective measures, such as the dipping of cattle.

(a) *Vegetable Products*

Coffee was the first and for a number of years the only crop cultivated by planters, and the record annual export, of 2,148,160 lb., was achieved in 1900, before any of the other products had passed the stage of experiment. Coffee was chosen in the first instance because, although it took a few years for the bushes to mature and begin to bear, its cultivation was easy, and, while promising generous profits, demanded no great skill or agricultural experience. But the prosperity of a country which depends on a single branch of agriculture as its only source of exchangeable wealth cannot be secure without a protected market or a monopoly of production. Nyasaland enjoyed neither of these privileges, and when the price of coffee on the European market fell, in consequence chiefly of increased production in Brazil and elsewhere, the cultivation of coffee within the Protectorate inevitably dwindled, until in recent years the annual output has failed to reach one-tenth of the figure for 1900. The falling-off in coffee, however, has been more than balanced by the introduction and development of other staple crops; the basis of production has thus been broadened and the economic position of the Protectorate correspondingly strengthened.

The highest price ever obtained for Nyasaland coffee on the London market was 114s. per cwt. for a few exceptional lots in 1896 and 1897. At this time 100s. per cwt. was a usual quotation, but by 1901 average prices had fallen to about 55s. per cwt., and

since then they have tended rather to decline further than to improve. In addition to low prices the uncertainty of the crop tended to discourage coffee-planting: a good crop requires an unusual combination of climatic and weather conditions—early and plentiful rains, comparatively low temperatures, and an absence of strong winds. For the best results a friable loamy soil, containing lime, is necessary.

In the Shire highlands the variety usually cultivated is Arabica, which has been found after repeated trials to give better returns than the *Stenophylla*, Liberian, and Abeokuta varieties. The beans when cured should run about 70 or 80 to the ounce, but are frequently only half this weight when the rainfall is low and is not supplemented by irrigation. The market value of a crop varies with the shape as well as the size of the beans, and this depends largely upon the care and efficiency with which the operations of pulping, fermenting, and drying are carried out. Under existing conditions there appears to be little chance of a recovery in coffee-planting in the Protectorate, especially as the output of cotton and tobacco is now approaching 20,000 tons per annum, and these products seem to promise much higher profits than coffee.

Cotton.—The cultivation of cotton in the Protectorate dates from 1901, when experimental parcels were prepared for the European market. Three years later 21,900 acres were under cultivation, and gave an export of 346 tons. This disappointing yield, of 35 lb. per acre, was attributed partly to the selection for cultivation of varieties unsuitable for local conditions, partly to the lack of knowledge and experience on the part of planters. Experiments quickly demonstrated that the type which suited the climatic conditions of the Shire highlands was a long-staple cotton of the American upland class. The selected variety was

readily acclimatized, and surprised its sponsors by improving instead of depreciating in its new environment; its fibre proved to be of exceptional length and silkiness, and soon won for the Protectorate the reputation of producing the highest-grade upland cotton in the world. Nyasaland upland plants are remarkably hardy, highly resistant to bacterial blight, and particularly well adapted for elevations between 1,000 and 3,000 ft.

The Shire valley was considered more suitable for the high-priced Egyptian varieties, but the experience of recent years seems to suggest that besides giving a small yield, Egyptian cotton is too susceptible to fungoid disease and too sensitive to atmospheric changes to be cultivated successfully, even in this part of the Protectorate.

For a few years after 1904 there was a marked decrease in the acreage under cotton, and a slight decline in the quantity of cotton exported; but by 1910 the conditions essential for successful production had been ascertained, and acreage and output rose rapidly, until in each of the three years immediately preceding the war more than 33,000 acres were under cotton, and were yielding crops averaging well over 80 lb. of fibre per acre. The outbreak of war led to a temporary fall in prices and an interruption of the progress of the industry, but by 1916 prices had risen far above the pre-war level and ranged between 10*d.* and 1*s.* 3*d.* per lb. on the home markets, while there was a record export of 3,462,408 lb., valued locally at £132,339. It may therefore be said that in spite of this period of low prices and of the high freights and shortage of cargo space prevailing during the later part of the war, the cotton industry of the Protectorate has not been permanently injured, but is, on the contrary, in a particularly favourable position for resuming pro-

gress and undergoing considerable expansion in the immediate future. In particular, a rapid development in the districts bordering the lake is practically certain to follow on the completion of the railway connexion between Beira and Lake Nyasa.

Among the agencies to which the progress hitherto recorded may fairly be attributed are, first, the enterprise of the larger planting companies, such as the British Central Africa Company, the African Lakes Corporation, and the A. L. Bruce Estates; second, the encouragement given to the nascent industry by the British Cotton Growing Association, which established ginneries, offered remunerative prices for standard cotton, and through its local agents made advances on unharvested crops; and third, the measures taken by the Protectorate Government. These include the publication of reports on all matters affecting the local cultivation of cotton and other crops, the experiments conducted on the two Government farms at Namiwawa and Nyachiperi, and the regulations issued with the object of preventing the introduction or spread of disease and insect pests, and of encouraging the natives to grow cotton. An incentive offered in former years was a rebate of hut tax granted to native cultivators, and continued until the native industry was fully established. The Agricultural Department issues selected seed free of charge, and supervises the work of the trained natives who give instruction in correct methods of cultivation. Markets for the sale of native cotton have been established, and have proved beneficial by securing the natives the advantage of competitive prices, and by teaching them the importance of grading their cotton; while the small toll of 3*d.* per cwt. of native cotton purchased suffices, along with the buyers' licences (10*s.* each), to make the markets practically self-supporting.

In 1908-9 the native cotton crop was 130 tons of seed, yielding 196 bales of 400 lb. of fibre; this was followed, in successive years, by crops of 220, 692, 962, 744, 1,198, 867, 815, and 944 tons. In the last five years before the war the output of native cotton amounted to 24 per cent. of the total export, and although the ratio fell to 17 per cent. for the first three years of war—in consequence, probably, of the absence of many natives on military transport service—there is no question that native cultivation, with an acreage approximating 9,000 as against 30,000 cultivated by European planters, is now firmly established, and will share in any agricultural expansion that may follow the conclusion of peace and the extension of the railway to the lake.

Tobacco is a crop of no less importance to the Protectorate than cotton. Introduced a few years earlier than cotton, it was rather longer in establishing its position and attaining a similar export value. Latterly, however, it has challenged cotton for the first place on the list of exports. Over the seven years ending March 31, 1917, the estimated total values of the cotton and tobacco exports were £516,996 and £514,796 respectively. This approximate equality of values is the more interesting as the two crops are generally regarded as supplementary and are cultivated on the same estates. The tobacco crop is usually harvested in months when cotton requires little attention; tobacco benefits as much from heavy rains as cotton suffers, and both do well in seasons of normal rainfall. The acreage under tobacco in late years has averaged about one-third of the acreage of cotton cultivated by Europeans. On the other hand, the quantity grown and exported has been slightly in excess of the total cotton export, since the average yield of cotton fibre has ranged in late years from

70 to 110 lb. per cultivated acre, whereas the average crop per acre of tobacco has been 300 to 525 lb. Tobacco requires more labour, more attention, and more skill in handling than cotton, and also a much higher expenditure on the operations of cultivating, harvesting, and preparing for market. Acre for acre, expenses are reckoned as about double those of the cotton plantation. One costly item is the erection of a number of curing barns, which before the war used to cost on an average £30 each. But with careful cultivation tobacco is a very sure crop, distinctly hardier than cotton, and, apart from its other advantages, it occupies the soil for a comparatively short period and, with a local market available, permits of quick returns as well as attractive profits. Under pre-war conditions it was estimated that a selling price of 4*d.* per lb. was sufficient to cover the cost of production. The action taken on behalf of tobacco by the Imperial Tobacco Company, Ltd., is similar to the assistance given to the cotton industry by the British Cotton Growing Association. The company has established a packing factory at Limbe, and is prepared in normal years to purchase planters' crops cash on delivery, at prices varying from 2*d.* to 8*d.* per lb., according to the quality and curing of the leaf. In 1915 the heavy freights (£14 15*s.* 2*d.* per ton) charged for transport to England and the shortage of cargo space made it impossible for the Imperial Tobacco Company and other local buyers to purchase the crop at the same rates and in the same quantities as in previous years; but towards the end of the year an improvement in the shipping facilities and the prohibition of the import of tobacco from America into the United Kingdom enabled planters to ship their remaining stocks and sell them at satisfactory prices in the home markets. The following year freights

rose still further, exceeding £20 per ton, but prices were high, and the Nyasaland consignments, profiting by the privileged admission of British-grown tobacco, commanded prices of 9*d.* to 1*s.* 10*d.* per lb. according to grade. It is not to be expected that prices will remain at this level under peace conditions, but the industry has every prospect of success, and expansion is at least highly probable, as there are large areas where tobacco will thrive and repay cultivation. At present the natives only grow the plant for their own use, as they are unable to cure it for the European market. No doubt, however, some native tobacco is bought, cured, and eventually exported by Europeans.

In the Shire highlands tobacco is planted by preference on rich light grey or sandy soil, but grows sufficiently well on dark loam or heavy soil. For light soils chemical manures, green manures, or leguminous plants are employed as fertilizers. Planters differ considerably as to the varieties of tobacco most suitable for cultivation: the bright, semi-bright, and mahogany types are all grown, and among the favourites are Raglan's Conqueror, White Stem Orinoco, Hester, Adcock, and the Pryors.

Tea.—The export of tea began in 1909, and has increased steadily year by year, reaching in 1916–17 the figure of 420,685 lb., of the estimated local value of £14,023. It therefore now occupies, in respect both of value and of weight, the third place on the list of exports; and tea was being grown in 1916 on a total area of 4,228 acres. It may be noted that there is a considerable local consumption of tea, and that the production is much higher than the export figures indicate.

Nyasaland tea was sold before the war at 5*d.* to 9*d.* per lb. in London; in 1916 it was finding a ready sale

at 1s. per lb., a price which, notwithstanding high freights, gave planters a handsome profit. A much greater output in future might therefore be confidently anticipated, were it not that the area suitable for tea-planting is restricted to districts where the rainfall is heaviest. The southern and south-eastern slopes of Mount Mlanje were regarded until lately as the only region in which tea could be grown successfully, but Blantyre and East Africa, Ltd., has obtained good results on its Bandanga estate in the Cholo section of Blantyre district, while experimental plantings recently made in North Nyasa district promise well for the future.

Where the rainfall is sufficiently heavy, tea is an easy crop to cultivate and is little troubled by disease or insects. The tea-planter, however, even more than the coffee-planter, requires a reserve of capital, since the bushes do not come into full bearing until the sixth year. From cotton and tobacco, on the other hand, crops are obtained within a few months of planting. For the treatment of the tea-crop, moreover, the planter has to provide expensive machinery. Several factories, equipped with modern machinery, are established in the Mlanje district, and the rise in the London quotations for Nyasaland tea is doubtless due in part to the improved treatment which the harvested crops now receive.

Rubber.—Twenty years ago the export of wild rubber from Nyasaland exceeded 90,000 lb. in weight and £10,000 in value. The rubber was obtained from the indigenous landolphia vines found near streams throughout the Protectorate. These vines grow slowly and are not suitable for cultivation; and the result of their indiscriminate exploitation in their uncultivated state was to exterminate the vines in some districts, and to produce by 1902 a sudden decrease in

the quantity and value of rubber exported. A more judicious system of treating the underground parts of *Landolphia parvifolia* was introduced and followed for several years by the African Lakes Corporation within an area in West Nyasa district where it held a concession from Government on a royalty basis. In 1910 the product as thus prepared was being sold on the London market at 3s. 9d. to 4s. 4d. when fine white Pará was quoted at 5s. 2½d. The disastrous drop in the price of rubber on the European markets made the collection of wild rubber unprofitable, and by 1914 the harvesting of landolphia had practically ceased.

Meanwhile the production of cultivated rubber had passed through the experimental stage. Trials made with *Funtumia elastica* gave disappointing results, and *Castilloa elastica*, which appeared at first to thrive in West Nyasa, was found to grow too slowly and to require a more evenly distributed rainfall. *Jequie manicoba* and *Remanoo manicoba* also proved unsuccessful. On the other hand, Ceará rubber (*Manihot glaziovii*) soon won favour and was adopted as the standard variety on most plantations. The area under rubber rose from 3,523 acres in 1908 to 10,562 acres in 1913, over three-fourths of it being devoted to Ceará. Pará rubber (*Hevea brasiliensis*) was planted by the African Lakes Corporation in West Nyasa, where the climatic conditions seem favourable to its growth.

The export of rubber reached its lowest mark in 1903-4, and subsequent years showed, in spite of fluctuations, a gradual increase, culminating in the years 1910-13, when the export reached an average value exceeding £10,000. In these years output rose while prices were falling, so that the value of the total crop was fairly constant. But immediately afterwards the slump in the world's rubber markets caused

a severe set-back to the industry, and in 1914 the area under cultivation fell from 10,562 to 5,936 acres. This decrease was, however, partly due to the uprooting of trees found to have been planted in an unsuitable environment. During the first three years of war the acreage increased slightly, and as more young trees came into bearing the output and export showed a distinct advance, the latter reaching the figure of 69,851 lb. in 1916-17. The prospects of the industry are therefore somewhat uncertain at the present time. The gigantic production of rubber in other countries seems likely enough to keep prices at such a low level that estates on which the trees might grow in Nyasaland may be more profitably occupied with other crops. Pará rubber is possibly in a stronger position than Ceará, for the trees of the latter variety yield a rather small quantity of latex and can be tapped profitably only in the few months when the soil is saturated.

Fibres.—The climate and soil of Nyasaland are eminently suitable for the production of various fibres. Indigenous varieties of fibre-bearing plants are 'bow-string hemp' (*Sansevieria sp.*), *denje* (*Sida rhombifolia*), *nzonogwe* (*Triumfetta rhomboidæa*), and *buaze* (*Securidaca longipedunculata*). *Sansevieria*, though it yields an excellent and high-priced fibre, grows too slowly to repay cultivation, and in its natural state is not found in sufficient abundance to be prepared for export. The fibres of *nzonogwe* and *denje* resemble jute; the former is inferior in quality and the plants are not amenable to cultivation. *Buaze* yields a strong fibre, superior to flax and suitable as a textile material for finer fabrics, but besides being hard to cultivate the plant contains much gum, from which the fibre is separated with difficulty.

Ramie (*Boehmeria nivea*) grows luxuriantly when planted in rich loamy soil and irrigated during the dry

season. Its fibre, however, which is very long and exceptionally strong, and when well prepared commands high prices, is embedded in gums, and efficient decorticating machinery has yet to be devised.

Of the imported varieties of fibre-producing plants, *Mauritius hemp* (*Furcroea gigantea*) and *sisal hemp* (*Agave rigida sisalana*) have both been cultivated successfully and on a moderately large scale. Both plants are easily grown, and thrive on loose soil, especially if it is rich as well as loose. Mauritius hemp yields a fibre of rather less value than sisal. The latter, however, is apparently in higher favour with planters and occupies a greater acreage in the Protectorate, though sisal is said to be the hardier variety and more adaptive to varied soils, positions, and climates.

The acreage under sisal and Mauritius hemp together was only 801 in 1916, but the value of fibre exported was £4,056, and it is probable enough that hemp growing will attain considerable proportions in the early future.

Chillies and *Capsicums* can be grown without difficulty, and were formerly regarded as useful subsidiary crops. The standard variety is a capsicum known as 'Nyasaland chilli', similar to the Zanzibar chilli and yielding a vermilion pod from five-eighths to three-quarters of an inch in length. In 1911-12 there were 800 acres under chillies, and the export attained the quantity of 171,673 lb. and the value of £3,219. Overproduction in the Protectorate and the extension of chilli cultivation in East Africa and Uganda caused a flooding of the London market, and prices fell in 1913 from 45/50s. to 25/35s. per cwt. Chilli production in Nyasaland for the time being almost ceased, but war conditions apparently offered special opportunities, for in 1916-17 the acreage rose to 650, and the value of the export was returned as £3,133. It may be

assumed that the chilli market is too limited and too easily swamped to warrant the expectation of any large development of chilli growing in the Protectorate.

Strophanthus, of which three species are found—*S. kombe*, *S. ecaudatus*, and *S. courmontii*—is an indigenous plant growing wild and yielding berries from which a drug useful in cardiac affections is obtained. The export in 1912–13 was valued at £2,623, but four years passed before it again exceeded £200, and even in 1916–17 it was only £1,178.

Rice.—The native cultivation of rice, which achieved a production of 1,264 tons in 1916–17, has been well established since the 'nineties, when it was encouraged in order to provide home-grown supplies for the Protectorate's troops. A similar need, on a larger scale, arose in the last few years, and the native-grown rice found a good local market. The industry, for which the conditions are favourable in the lake-shore districts of Marimba, West and North Nyasa, and Central Angoniland, is capable of great expansion, but is handicapped at present by inadequate communications with the coast.

Fruit of many kinds may be grown in Nyasaland. Peaches, apples, pears, and strawberries are produced, chiefly at the higher elevations, but the climatic conditions naturally suit best the sub-tropical fruits such as mangoes, bananas, pine-apples, oranges, lemons, grenadillas, pawpaws, guavas, and loquats. Fruit is grown for domestic consumption and not for export.

Vegetables.—Besides the indigenous vegetables cultivated by natives, almost all varieties of European vegetables can be grown throughout the year in the highlands. On the lower levels they may be cultivated for four months of the year with some chance of success.

Minor Crops.—Among the minor crops cultivated in

small lots by Europeans are *maize*, *beans*, *wheat*, and *ground-nuts* (*Arachis hypogaea*), in addition to a considerable quantity of greenstuffs grown for fertilizing purposes. None of these crops is a monopoly of the European planter, for all of them figure among the products of native cultivation. The surplus available after the needs of the native population are satisfied is sold to Indian or European traders. The export figures, therefore, show in each case remarkable fluctuations from year to year. The most important crops for export purposes are probably maize and ground-nuts—the former for its value as a food, the latter because of their yield of an oil useful for cooking, lubricating, and lighting, and of their employment in the manufacture of soap and of foodcake for cattle. With better means of external communication a considerable trade might be built up in both products or in their derivatives.

(b) *Animals and Animal Products*

Live-stock.—Cattle-raising is not practicable in regions where tsetse fly is found, and unfortunately the fly is constantly attacking new areas, and causing heavy mortality among the herds both of Europeans and of natives. The best district for cattle seems to be the Angoniland plateaux; where considerable numbers of cattle are owned by natives. Native-owned stock includes representatives not only of the common Afrikaner cattle, but also of the smaller humped variety. With the object of improving these breeds Shorthorn and Aberdeen Angus bulls have been introduced, but the cross-bred progeny, while showing an improvement in form and size, has been found to be more liable to diseases than the pure-bred native stock.

Circumstances that are favourable to the development of cattle-raising are the existence, not too far off, of a ready market for live-stock at Salisbury and

Buluwayo, and the increasing use of cattle for agricultural purposes such as cultivating, harvesting, and transport. The creation of an export trade in canned or frozen meat must be regarded as a very remote possibility; the herds of cattle and flocks of sheep are not yet numerous or large enough to establish any considerable trade in hides, skins, and wool; while there is no market sufficient for the establishment of dairying on a large scale, though there is one small dairy on the Government farm at Namiwawa.

The numbers of the different kinds of live-stock in the Protectorate in 1916 were returned as follows:

	<i>European-owned.</i>	<i>Native-owned.</i>
Cattle	16,697	74,715
Sheep	1,734	32,957
Goats	868	170,563
Pigs	640	22,546
Donkeys	229	0
Mules	32	0
Horses	5	0
Totals	20,205	300,781

The climate is too hot for horses, and is trying for mules and even for donkeys. The cattle, sheep, and goats owned by Europeans are mainly pure-bred imported stock or crosses with native breeds: the sheep owned by the natives are of the common fat-tailed species, and their goats are of the small and hardy African variety.

Beeswax and Ivory.—Two animal products of some value are *beeswax* and *ivory*. In recent years the export list has included these two items in nearly equal values, since the annual average of 10,000 lb. of ivory, assessed at 10s. per lb., gave the same total value as the average of 100,000 lb. of beeswax at 1s. per lb. Latterly, however, there has been a noticeable diminution in the ivory export, which seems to indicate a growing scarcity of tusked elephants. The beeswax is obtained

by natives from the honeycomb of wild bees, for which drum-shaped hives are frequently made and suspended from the branches of large trees.

(c) *Forestry*

Cypresses.—The only forests in which valuable timber of large dimensions grows in considerable quantity are the cypress forests of the plateaux and higher slopes of Mount Mlanje. This region is the habitat of the Mlanje cypress (*Widdringtonia whytei*), the timber of which is of high quality, durable and never attacked by white ants. It yields under destructive distillation a dark-coloured oil which is useful as a wood preservative against white ants. The South African yellowwood (*Podocarpus milanjanus*) occurs sporadically on the higher plateaux, while the Uganda juniper (*Juniperus procera*) is also indigenous but of rare occurrence. Numerous other varieties of conifers have been introduced by the Forestry Department.

Hardwoods.—Apart from the cypress forests the woods of the Protectorate contain chiefly scrub and small hardwood trees which are of little utility except as firewood. Large hardwood trees, however, occur here and there, especially in the vicinity of streams at altitudes between 1,500 and 3,500 ft. The most important of these is the *mbawa* or African mahogany (*Khaya senegalensis*), which frequently attains great dimensions and yields excellent timber for furniture. *Mwenya* (*Adina microcephala*) and *mping-u* (*Diospyros sp.*) provide hard timber resistant to white ants or borers. Among other indigenous hardwoods are species of *pterocarpus*, *parkia*, *parinarium*, and *burkea*; while the commoner imported timber trees are true mahogany, East India walnut, silky oak, and many varieties of eucalyptus, now grown extensively for timber and also for firewood.

Acacias.—The indigenous acacias are *A. arabica*, *A. suma*, and *A. farnesiana*. The last of these produces the yellow cassie flowers which in Europe are employed in making scent. The bark and seed-pods of the other varieties contain a high percentage of tannin and are sometimes used for tanning purposes, for which the exotic acacias imported by the Forestry Department may also in time be more extensively utilized.

Palms and Bamboos.—The indigenous palms of the Protectorate include *Borassus flabellifer*, *Hyphaene crinata*, *Raphia vinifera*, *Phoenix reclinata*, and *Elaeis guineensis*. The commercial uses of these palms are well known: the most important is the oil-palm (*Elaeis guineensis*), found on the north-west shore of Lake Nyasa, but hitherto neither grown under cultivation nor commercially exploited in its natural state. Bamboos (*Oxytenanthera sp.*) are found in clumps or groves in many places, and the useful yellow and green striped bamboo (*Bambusa vulgaris*) has been brought from India and grows freely in various localities.

Other Trees.—The rubber-yielding landolphas, the most valuable of which is *Landolphia kirkii*, and the varieties of strophanthus and of fibre-yielding woods, have already been noticed. Some twenty varieties of indigo-bearing trees are found growing plentifully in many districts. Of these *Indigofera arrecta* yields the highest percentage of the valuable indigo dye.

(d) Land Tenure

The land area of Nyasaland is estimated at 25,161,924 acres. It is stated that in 1917 the total number of acres sold and leased was 134,149, and the total number of acres granted under certificate of claim was 3,705,255. More than five-sixths of the land surface thus remains in the possession of the Crown.

A large proportion of the Crown lands is occupied

by native villages and settlements, and a further large proportion is unsuitable for agricultural purposes; but where suitable land is available it may be taken on agricultural lease for 7, 14, or 21 years at an annual rental of 5 per cent. of its assessed value. The lease of an area occupied predominantly by tea, rubber, or other slow-maturing crops may at the lessee's option be extended to a term of 99 years. The rental under such leases may average from 1s. 6d. per acre in the more closely settled districts, and from 1s. per acre elsewhere. A further charge of $\frac{1}{2}d.$ per acre is made in the shape of a tax levied on all land held by Europeans for agricultural purposes.

Grazing leases, giving no rights beyond the use of the land for grazing, are granted for areas up to 20,000 acres, at a rental of $\frac{1}{2}d.$ to 1d. per acre. Plots for trading stores, up to one acre in extent, are let on leases renewable annually at a rent of £5 per plot. Building leases of land within townships and settlements are granted for 21 years, with option of renewal or purchase, at annual rents varying from £20 per acre in Blantyre, Zomba, and Port Herald to £5 in small and remote settlements.

Plantations, or estates suitable for plantations, may be purchased or leased from the individual owners or land companies who hold the land which has passed out of Government possession. The average purchase price per acre in recent years has run from £1 10s. upwards; and if any considerable influx of settlers should take place in future, values would rise much higher, as there is no great area of plantation land available in the districts most suitable for Europeans.

(3) FISHERIES

The Protectorate has no fisheries conducted on a large scale. The natives, however, using grass or

reed traps or nets along the shore, or lines from canoes in deeper water, take large quantities of fish from Lake Nyasa. The natives of Lake Shirwa catch fish and sell it in the Zomba and Blantyre markets. Among the Anyanjas of Lake Nyasa a communal system of fishing is in vogue; the subsidiary operations, such as net-making and canoe-building, are undertaken by different members of the tribe, and the catch of fish is distributed by the village headman among all who have a vested right in it. It has been suggested that a trawler could be profitably employed on Lake Nyasa if there were a sufficient market, but one or two motor-driven fishing-boats would probably meet any demand likely to arise for many years to come. The lake abounds in fish of many varieties, including *usipa*, a small fish tasting like whitebait, a number of species of perch, a carp similar to the Indian mahseer, *mpasa*, a salmon, running up to 15 lb., and the great *nanda* and *kampango*, which measure as much as 6 ft. and 12 ft. in length respectively.

The smaller lakes and the rivers of the low country contain numerous varieties of good fish, of the type of perch, carp, and barbel. The sporting tiger-fish is found in the Lower Shire and Ruo rivers. In recent years trout have been imported: they thrive in the streams of the highlands.

(4) MINERALS

The known mineral deposits of the Protectorate are of no great value, with the doubtful exception of coal.

Mica is the only mineral which has hitherto been worked for export. It is found in scattered surface deposits in the Upper Shire and South Nyasa districts, but it is only the deposits of the Dedza region that have been exploited. Operations were begun in 1916,

and in 1911-12 an output of 66 tons was attained; but year by year the quantity dwindled until in 1916 production ceased altogether. The total amount of mica exported in the seven years was only 125 tons, valued at less than £14,000.

Coal is found in the West Shire district, not far from the River Shire, and in greater quantity and superior quality at Mount Waller and elsewhere in the North Nyasa district, near the lake shore. It is probable that the beds in the latter district will be worked when the railway reaches the southern end of the lake.

Iron ore used to be smelted by the natives in certain parts, especially on the high plateaux, where the red laterite of the surface yields limonite (oxide of iron). Native appliances were too primitive to deal with the richer deposits of iron ores, ilmenite and magnetite, which occur in the gneiss that constitutes a large proportion of the surface of Nyasaland. Within the gneiss there are occurrences of *graphite* in small quantities, of *garnets* of poor quality, and of *limestone*. Limestone is quarried and burned near Liwonde and on Nchisi Island in Lake Shirwa.

Plumbago of good quality is said to occur in West Nyasa and North Nyasa districts.

Gold is found in quartz pegmatites in the Shire highlands, but not in paying quantities.

Asbestos is found in various localities, and discoveries of *galena*, *copper*, and *quicksilver* in undefined quantities have been reported.

A prospecting licence, good for six months, costs £1, and entitles the holder to prospect on Crown lands for gold, silver, precious stones, and mineral oil. Sixteen reward claims of not more than one acre in extent may be awarded, under specified conditions, to any prospector who makes an original discovery of precious stones or of gold or silver.

(5) MANUFACTURES

Beyond the preliminary processes of preparing agricultural products for export, Nyasaland has no manufactures that can be called important. The number of cotton gins in the Protectorate is approximately 240; there are nearly twice as many flue-curing barns for tobacco, and there is also a considerable number of coffee hullers, pulpers, and separators, and of decorticators for sisal and Mauritius hemp. The Imperial Tobacco Company has a factory containing, in addition to curing barns and storage rooms, complete plant for treating tobacco by steam with a view to export, power-saws and other machinery for cask-making, and all the equipment necessary for pressing and packing. Blantyre and East Africa, Ltd., also has a factory for turning out cigarettes and various kinds of tobacco, and for preparing and packing the leaf for export. There is a flour-mill at Chiromo, and there are a few maize-mills, besides other plant for grinding wheat and native grains. A soap factory at Blantyre seems to have failed to survive the experimental stage when castor oil, ground-nuts, and croton seed were successively tried in combination with other local products.

Native industries include the manufacture of certain articles of domestic use, some of which are marketed and a few, such as mats and baskets and articles purchased as curios, are exported in small quantities. Pottery of a rough sort is made by native women; it comprises such vessels as cooking-pots, salt bowls, and storage jars. Native workmen, trained for the most part in the missions, are able to turn out serviceable furniture. Brickmaking also is carried on under European supervision, and native bricklayers are employed in building houses. Other crafts are the

weaving of mats and basket-work, work in brass and in gold, and the forging of assegai blades, knives, and rough agricultural implements. The war brought about a revival in the native smelting industry, and the supply of native hoes was thus usefully supplemented at a time when it was almost impossible to secure steel manufactures from Britain. The remaining products of native manufacture—huts, canoes, weapons, so-called musical instruments, and domestic utensils—have either little or no commercial significance.

(6) POWER

The power required for existing industries is supplied for the most part by oil engines. Some of the perennial streams of the highland districts appear to offer possibilities of the utilization of water-power for electric installations, but the conditions have not yet arisen which would call for or justify the expense of a large scheme. There is, however, an electric installation at Livingstonia which supplies the mission with light and power; and also one at Zomba for lighting purposes.

(C) COMMERCE

(1) DOMESTIC

(a) Principal Branches of Trade

The population of the Protectorate, European and native, with its comparatively few needs and limited purchasing powers, is insufficient to create an internal trade comparable with that of a European community. Trade, however, is well organized, considering the conditions and means of transport. The stores at Blantyre, Zomba, and Fort Johnston cater for the usual needs of European residents, while the natives procure all that they can wish and afford to buy from the

stores established in the towns and villages and at the cross roads or other points of vantage throughout the country. The stores are managed sometimes by Nyasaland natives but more usually by Indian traders, some of whom are employed or financed by the large companies. The African Lakes Corporation, for instance, owns over 120 establishments, run by Europeans, Indians, and natives. Indians also trade actively as pedlars, purchasing from the importing European houses supplies with which they penetrate to the remotest parts of the country.

The European stores trade mainly in clothing and footwear, provisions and medicines, liquors, hardware and cutlery, agricultural requisites, stationery, cycles, arms and ammunition. The chief article of native trade is cotton, in the piece or made up into shirts, scarves, handkerchiefs, &c. Other items are blankets, hoes, beads, wire, lanterns, and the various articles usually classed as 'Kaffir truck' in South Africa.

(b) *Towns and Markets*

The chief towns of the Protectorate are Blantyre, Zomba, Fort Johnston, Chiromo, Port Herald, and Limbe, which are all municipalities levying rates that vary between $1\frac{1}{4}d.$ and $2\frac{3}{4}d.$ in the £ on the capital value of property, and produce revenues ranging (in 1916-17) from £573 (Blantyre) to £55 (Fort Johnston). The chief trade centre is *Blantyre*, which has a European population of about 300 and contains the head-quarters of the Church of Scotland Mission and—at Mandala, now a suburb—the principal station of the African Lakes Corporation. The town is well built, with a large church and mission buildings, a hotel, post and telegraph offices, stores and offices of the trading companies, and private residences. *Zomba* is the administrative capital of the Protectorate,

and contains the Government offices and official residences, the head-quarters of the military forces, and a number of European and Indian stores. *Port Herald*, on the Shire river, is the chief customs station for the Protectorate, being the entry port by river and the first halt on the railway. *Chiromo*, farther north, has declined somewhat in consequence of the dwindling Shire traffic. *Kota Kota* and *Karonga*, on Lake Nyasa, are likely to gain in importance with the development of the north-western districts and the territories beyond.

The markets established at all important centres are appreciated by the natives, who readily bring their produce for sale. They seem to realize the advantage of competitive sales, and to profit by their experience of market methods, especially in regard to native-grown cotton. Cotton, tobacco, and other products offered in large quantities are bought for export, mostly by European or Indian traders.

(c) *Organizations to promote Trade and Commerce*

A Chamber of Commerce was founded in 1895, with the aim of promoting the commerce and agriculture of the Protectorate. In 1907 it was amalgamated with the Planters' Association and, while retaining its original purpose, was renamed the Associated Chamber of Agriculture and Commerce.

The services rendered to agriculture and commerce by the British Cotton Growing Association and by the Imperial Tobacco Company have already been noticed (see pp. 48, 50). The two great land and trading companies, the British Central Africa Company and the African Lakes Corporation, have while serving their own interests done much useful work in furthering trade and in improving communications and maintaining transport services. The work

of the missions in educating natives in agriculture, in handicrafts, and in commercial methods, has raised their economic value, and by increasing output has materially benefited trade, both external and internal.

(d) British and Foreign Interests

The capital by the use of which the commercial development of the Protectorate has been effected was raised almost exclusively in the United Kingdom. Nyasaland is too remote to be likely to attract non-British investors, but although German East Africa offered rival and superior advantages for German enterprise, there were a number of German firms established in the Protectorate when war broke out.

The largest company operating in Nyasaland is the British Central Africa Company, which has an authorized capital of £1,500,000. It owns about 350,000 acres of land, cultivates plantations of cotton, tobacco, tea, and fibre, conducts an extensive store trade, runs two steamers between Beira and Chinde, and, with its flotilla of seven stern-wheel steamers, maintains a river service from Chinde to the railway. The company has always been interested in railway development; it still holds shares to the nominal value of £67,000 and £280,000 in the Central Africa Railway Company and Shire Highlands Railway Company respectively, and it is understood to be promoting further projects of railway extension (see p. 30).

The second of the great companies is the African Lakes Corporation, which, working at first in close connexion with missionary enterprise, was active in Nyasaland before the Protectorate was established. Its authorized capital is £250,000, and its operations include a very extensive trading business, foreign and domestic, transport services by four stern-wheelers on the Zambezi and Shire, and by two steamers on Lake

Nyasa, and the cultivation on a large scale of cotton, tobacco, tea, and rubber. Its land holdings amount to approximately 150,000 acres, part of this area being leased to planters. Its banking business, with headquarters at Blantyre, and branches at Zomba, Chiromo, and Chinde, was recently made over to the National Bank of South Africa.

Blantyre and East Africa, Ltd., has an authorized capital of £88,086. It holds over 150,000 acres, leases some of its properties to tenants, and on its own plantations cultivates chiefly tea, tobacco, and cotton. A. L. Bruce Estates has holdings exceeding 20,000 acres, and grows cotton and tobacco with energy and success. The London and Blantyre Supply Company conducts a wholesale merchant business; it also owns a considerable acreage of land and cultivates cotton, tobacco, and Ceara rubber.

Among the business establishments in Blantyre before the war there was one with head-quarters in Rotterdam—the Central Africa Trading Company (late B. Besseling & Co.)—and two with head-quarters in Hamburg—Ludwig Deuss & Co. and E. H. C. Michahelles & Co. There was also a store owned by a German subject, Hermann Werth. At Fort Johnston there was a store of which the owner professed to be of Swiss origin. These appear to have been the most prominent enterprises of foreign origin within the Protectorate. In judging their importance, account must be taken not only of the scale of their operations, but also of the small number of such businesses in Nyasaland. Besides the stores belonging to the British companies mentioned above, and the mission stores at Dowa, Kawimbe, and Mitsidi, there are only some half-dozen in the whole Protectorate which do any considerable business, and most of these belong to Indians. Of the German firms, the most active and

successful was Ludwig Deuss & Co., who, besides acting as agents for the Deutsche Ost-Afrika Linie and conducting a large import and export trade, carried on a most extensive transport and forwarding business in Rhodesia and Portuguese East Africa as well as Nyasaland, and had establishments at Brokers Hill, at Tete, Beira, and Quelimane, and at Blantyre, Chiromo, and Chinde. Steps were taken in the course of the war to close down and liquidate the German firms.

(e) *Economic Penetration*

The investigations made into the affairs of the German firms showed that these houses enjoyed a large percentage of the European and native trade, and were in particular absorbing the relatively small but profitable salt, dairying, and slaughter businesses.

The success of the German firms seems to have been due not only to energy and ability in business, but also to the privileges they enjoyed of special export rates on German railways, low freights on German ships belonging to the subsidized Deutsche Ost-Afrika Linie, and long credits granted by German banks and business houses. The liquidator of enemy firms, in his report, recommended that in future measures should be taken to limit the investment of foreign capital in Protectorate enterprises, and to prevent these from coming under the control of foreign influences; and also that the Protectorate Government, in co-operation with a local committee of business men, should take vigorous and sustained action to promote trade with the United Kingdom and the dominions and colonies.

(2) FOREIGN

(a) *Exports*

(i) *Quantities and Values.*—The chief products exported from Nyasaland were noticed under the headings

Agriculture and Minerals (see pp. 42, 62), and some particulars were there given regarding quantities produced and exported. Official returns for the five years ending March 31, 1914, show that of the twelve chief items on the list of exports the average quantities exported annually were as follows :

	lb.		lb.
Tobacco . . .	2,255,956	Beeswax . . .	94,420
Cotton . . .	2,008,016	Rubber . . .	78,711
Maize . . .	1,960,327	Tea . . .	60,864
Ground-nuts . .	538,424	Fibre . . .	49,263
Coffee . . .	451,131	Strophanthus . .	12,694
Chillies . . .	124,779	Ivory . . .	10,685

The war affected agricultural production in the Protectorate as in other African dependencies, but in the chief categories the tendencies which had revealed themselves before 1914 were only emphasized in later years. Thus, on the average for the three years ending March 31, 1917, there was a fall in the export of rubber and coffee, but very marked rises in tobacco, cotton, tea, and fibre. The war interfered with the collection of ivory, and the closing of enemy markets resulted in reduced exports of ground-nuts and strophanthus, though the latter product, in consequence of a brisk demand by British chemists, was being shipped in larger quantities by 1916.

Noticeable differences between production figures and export figures are shown in the official publications. A divergence of this kind may be due to domestic consumption of some portion of the crop, as with tea and tobacco, or to the inclusion in the Protectorate export figures of consignments produced in neighbouring territories but exported *via* Blantyre, or again to the fact that part of one year's crop is not infrequently exported during the following year.

The values of the exports for the five years ending

March 31, 1917, are shown in Table I of the Appendix (p. 85). The chief feature of this return is the preponderance of the cotton and tobacco exports, which together represent two-thirds of the total value of exports, specie included, for the five years. The figures include, without distinguishing, the values of products in transit through Nyasaland from adjacent territories. The average value of such transit exports in the five years immediately preceding the war was nearly £22,000, and the products in question comprised ivory, cotton, rubber, and tobacco from Northern Rhodesia, and ivory, beeswax, and unmanufactured tobacco from Portuguese East Africa. With German East Africa the transit trade, import as well as export, was negligible, since the south-western districts of that Protectorate were sufficiently served by Lake Tanganyika and the Central Railway to Dar-es-Salaam.

(ii) *Countries of Destination.*—The export figures show that during the five years immediately preceding the war three-fourths of all exports were consigned to the United Kingdom, and of the other fourth slightly more than half went to British dependencies. Of the remaining 12 per cent., approximately half went to Germany, and half to Portuguese East Africa, Portugal, and other foreign countries.

During the war the closing of enemy markets tended at first to affect adversely the export of those products which had previously been sent for the most part to Germany. But new opportunities soon presented themselves abroad and at home. Foreign markets in the first year of war absorbed 15 per cent. of the exports, but by 1915 the United Kingdom was receiving 94 per cent., while foreign countries took less than 3 per cent. and British possessions the remainder.

In pre-war years the greater part of the annual exports of beeswax, ground-nuts, and strophanthus

went to Hamburg, and the other commodities which Germany purchased were, in order of value, rubber, maize, coffee, cotton, oilseeds, tobacco, and chillies. For ground-nuts and tobacco there was an increasing demand ; of the total export of these products during the last four months preceding the war, Germany took 33 per cent. (765,240 lb.) of the tobacco and 70 per cent. of the ground-nuts. Smaller quantities of ground-nuts went to France. Portuguese East Africa bought maize, maize flour, potatoes, and cotton seed. The United Kingdom was by far the best customer for almost all the products of the Protectorate.

(b) *Imports*

(i) *Quantities and Values.*—The average annual value of each of the chief classes of trade imports for the last five pre-war years was as follows :

	£
Cotton piece-goods and other textiles	126,807
Provisions	23,864
Machinery and hardware	20,702
Arms and ammunition	3,112
Alcoholic liquors ¹	2,704

The outstanding feature of the annual import returns is the dwarfing of the other items by the textiles. It may be estimated that the Nyasaland native spends on the average 2s. 4d. per annum on cotton and other clothing. All the items, cotton included, are such as occur in similar ratio on the import lists of most African dependencies.

The values of the imports of all classes for the five years ending March 31, 1917, are shown in Table II of the Appendix (p. 85). The figures include, without distinguishing, goods imported in transit to neighbouring territories ; in pre-war years these averaged £14,000,

¹ Prior to 1914 wine and beer were included under Provisions.

and consisted largely of trade goods consigned by Nyasaland firms to their branch stores in Northern Rhodesia.

(ii) *Countries of Origin*.—Slightly over 70 per cent. of all imports during the five years ending March 31, 1914, were drawn from Great Britain, close on 8 per cent. from British dependencies, almost 10 per cent. from Germany, under 6 per cent. from Portugal and Portuguese East Africa, 4 per cent. from Holland, and the remaining 2 per cent. from other foreign countries.

The imports from Germany consisted mainly of the cheaper lines of hardware and enamel ware, stationery, tools, and native truck, and of considerable quantities of cotton and woollen manufactures. Austria supplied beads, fez caps, and Hungarian flour. The imports from Holland were presumably for the most part cheap cotton prints. Apart from these categories, manufactured goods of all kinds were imported almost exclusively from the United Kingdom.

During the war British goods enjoyed practically a monopoly of the trade. The increase latterly in the total value of the imports may be attributed in part to normal expansion, temporarily checked in the preceding two years, but also in part to special demands arising from the campaign in German and Portuguese East Africa, and to the rise in prices due to increased cost of production and heavy charges for freight and insurance.

(c) *Customs and Tariffs*

As Nyasaland falls within the sphere included in the Berlin Act of 1885 and the Brussels Act of 1890, its customs charges are limited by the provisions of those acts. (See *Belgian Congo*, No. 99, and *Mozambique*, No. 121, of this series.)

Export dues are levied on ivory (9*d.* per lb.), on

gold other than gold coins (1s. per oz.), on beeswax and on hippopotamus teeth (each 1d. per lb.).

A duty of 10 per cent. *ad valorem* at the port of shipment is charged on all unexempted imports except alcohol, which pays 15s. per gallon proof spirit.

Road and river dues of 1s. per cwt. are charged on imports for domestic use or consumption, or in transit through the Protectorate. Wharfage at the rate of $\frac{1}{2}$ per cent. *ad valorem* is levied on imports and exports, and a registration fee of 6d. per package is payable on all duty-free imports and on goods in transit.

The goods that are exempt from import dues, road and river dues, and wharfage include current coins, live-stock, native foodstuffs, printed matter, goods imported by post, disinfectants, goods in transit, goods imported by and for the use of the Protectorate Government, and personal baggage belonging to specified officials. Exemption from import duties alone is extended to boats, yachts, and ships, agricultural and industrial machinery, manures and insecticides, trees, plants, and seeds intended for cultivation, gunny bags and sacking; also to personal baggage, to naval, military, and civil service uniforms and camp kit, and to sundry other varieties of goods.

(d) *Commercial Treaties*

The various treaties and conventions which affect Nyasaland politically and commercially have already been referred to (pp. 13-18).

(D) FINANCE

(1) PUBLIC FINANCE

Nyasaland is now a self-supporting protectorate, with domestic revenue sufficient in normal times to meet expenditure. The table below shows how revenue developed and overtook expenditure during the years

1908-17. The annual deficits in former years were made good by grants-in-aid from the Imperial Treasury. In 1911 the grant-in-aid was £31,500; next year it fell to £5,000; and no grant was required in 1913 or in subsequent years.

<i>Year.</i>	<i>Revenue.</i>	<i>Expenditure.</i>
	£	£
1907-8 . . .	75,197	105,587
1908-9 . . .	80,534	103,032
1909-10 . . .	76,647	108,728
1910-11 . . .	94,980	112,369
1911-12 . . .	97,356	118,070
1912-13 . . .	128,273	116,361
1913-14 . . .	124,849	133,106
1914-15 . . .	118,523	143,161
1915-16 . . .	137,911	125,665
1916-17 . . .	148,283	128,272

The revenue figures include the sums, averaging £565 per annum, obtained from sales of Crown lands. They include also, for the first five years of the series, annual contributions of £8,000 made by the British South Africa Company for the upkeep of Fort Manning, besides a special grant of £2,000 in 1908-9. The annual grants made in the early years of the Protectorate in respect of the administration of Northern Rhodesia had been discontinued in 1895, when the company assumed direct control of that region.

Revenue.—Details of the revenue for five years are given in Table III A of the Appendix (p. 86). More than half the receipts are obtained from the proceeds of the native hut tax, which is a charge of 8s. levied on each native who owns a hut, reduced to 4s. if the hut owner has worked one month for a European. The item second in importance is the yield of the customs dues, which fell considerably after the outbreak of war, but recovered in 1915-16, and rose to £34,144 in 1916-17. Similar fluctuations took place in port, harbour, and wharf dues. The land tax of $\frac{1}{2}d.$ per acre,

levied on all land within the Protectorate except Crown lands, produces about £8,000 per annum. From licences and excise duties an average total of over £5,000 is realized. The licences are chiefly licences to conduct certain classes of business, as for instance a bank (£25), a general trading store (£25), a retail trading store (£5), a liquor canteen (£40), &c., or to practise certain trades or professions, such as that of pleader (£25), auctioneer (£5), native law agent (£1), hawker (£2), &c.

Expenditure.—The various items of expenditure may be seen from the statement in Table III B of the Appendix (p. 87). The chief expenses are in connexion with district administration, public works, and military and medical services; and the general impression produced by a perusal of the figures is that the available funds are carefully apportioned to the different services, and economically administered. The education grant of £1,000, made to a number of missions which give the natives not only religious instruction but industrial and vocational training, seems scarcely commensurate with the reasonable claims of the native taxpayers and the value to the Protectorate of the secular education given by these institutions.

During the years of war very large sums were expended on military operations. The first year's outlay of £30,183 was followed by annual totals of £173,509 and £415,668, giving an aggregate war expenditure, to the close of the year 1916–17, of £619,360. To enable it to meet these heavy payments the Protectorate borrowed from the Imperial Treasury various sums, bearing interest at various rates, and amounting, on March 31, 1917, to £431,000.

Public Debt.—The war loans just mentioned constitute over two-thirds of the public debt. The other items are two further loans from the Imperial Treasury.

One of these, a sum of £12,000, is the first instalment of the 4 per cent. loan of £803,000 for the improvement of road and railway communications (see p. 31). The other, a sum of £180,000, was borrowed, at 3½ per cent., for the purpose of redeeming from the Shire Highlands (Nyasaland) Railway, Ltd., the subsidy lands, 361,000 acres in extent, granted to the company by the terms of the contracts for the construction of the railway. The total public debt in 1917 was thus £623,900.

(2) CURRENCY

The currency of the Protectorate consists of British coin, gold, silver, and bronze. There is no note circulation.

The specie declared as imports during the seventeen years ending March 31, 1914, included gold to the value of £12,400, silver, £79,420, and bronze, £2,225; while exports included gold, £180,881, silver, £44,046, and bronze, £20. The excess exportation of gold was due to the action of the banks in clearing the accumulation of gold coin brought into the Protectorate by natives returning from employment in Rhodesia and Transvaal.

(3) BANKING

The Standard Bank of South Africa has a branch at Blantyre, which affords the usual facilities, and also an agency at Limbe.

The African Lakes Corporation formerly conducted a banking business, and had branches at Blantyre and Zomba, and agencies at Chinde and the principal stations in the Protectorate. Its deposits amounted to £108,710 in 1916. Recently, however, the Corporation transferred its banking business to the National Bank of South Africa, which, while maintaining existing

branches at Blantyre, Zomba, Fort Jameson (North Rhodesia), and Chinde, has established new branches at Limbe and Fort Johnston.

The Post Office Savings Bank has branches at Zomba, Blantyre, Fort Johnston, and Port Herald. By the end of 1913 the deposits amounted to £4,568. There were 228 depositors, of whom 60 were Europeans, 32 Indians, and 104 natives, while the rest held trustee accounts.

(4) INFLUENCE OF FOREIGN CAPITAL

The foreign capital invested in the country was furnished mainly by German houses. Their policy of fostering trade with Germany was natural and indeed inevitable, and was prosecuted with ability and persistence. Their local representatives ascertained and catered for the requirements of the German markets, and energetically pushed those lines of imported wares which, though coarse or flimsy, were commended to native customers by their cheapness. Again, the facilities offered for passengers and cargo using the Deutsche Ost-Afrika Linie were ably advertised by the officials and agents of the company. Finally, the success with which the German firms had established and were consolidating their position within the Protectorate and securing control of certain minor classes of trade has been noticed under Domestic Commerce (see p. 70).

(5) PRINCIPAL FIELDS OF INVESTMENT

The Protectorate offers limited opportunities for the investment of capital. The population is neither large enough nor wealthy enough, nor sufficiently concentrated in big towns, to warrant expectations of high profits from ordinary trading, a province in which the new-comer would have to face the competition of the

large companies and firms already established, and of native or Indian store-keepers and hawkers. Nor again is there any special reason to expect discoveries of rich mineral deposits likely to create a mining industry. Agricultural production is probably the only source, and undoubtedly the chief source, from which an adequate reward can be anticipated for the investment of capital and the exercise of energy and forethought. Here, however, the opportunities are offered less to the home investor than to the settler. Further, not all branches of agriculture can be held to be tempting for European enterprise. Stock-breeding is at best risky; coffee-growing and rubber-growing are doubtful ventures, and the cultivation of the more attractive crops cannot be attempted by Europeans except with the aid of considerable capital and at some danger to health. The larger and better known companies now hold strong positions, and the European investor lacking acquaintance with local conditions will feel chary of supporting new rival undertakings. Manufacturing industries on a large scale are remote possibilities, though cotton manufacture may conceivably be inaugurated at no distant date.

The Protectorate has attained a satisfactory development by somewhat slow degrees; the improvement of communications will hasten progress, but can scarcely make it sensational or justify hopes of an immediate return on the investment of capital on a large scale.

(E) GENERAL REMARKS

The prosperity of Nyasaland has been shown in the preceding pages to depend mainly upon agricultural production. An estimate of its economic position and prospects would, therefore, involve an examination of the factors favourable or adverse to the various branches of agriculture. The requisites for successful production are first, the choice of crops suitable to local conditions of soil and climate; second, an adequate labour supply; third, cheap and expeditious transport from plantation to market; and fourth, satisfactory prices for the marketed products.

For cultivation by Europeans the most promising crops are tobacco, cotton, tea, and perhaps fibre (see pp. 45-55). Sisal hemp and other fibres have not yet established themselves as staple products, and tea can be cultivated only over a very limited area; consequently, tobacco and cotton stand in a class by themselves at the head of the list of exports. The special causes that have limited and reduced the output of coffee and rubber have already been mentioned. The other commodities—ground-nuts, chillies, rice, maize, and oil-seeds—which can be grown successfully, do not command high enough prices in the home markets to induce planters to cultivate them extensively for export. They are grown, however, in considerable quantities by natives to provide means for the payment of the hut tax. Natives also produce tobacco in some quantity, but the industry that most attracts them, owing to its practical certainty of good returns, is cotton-growing, which in Nyasaland as in Uganda has received encouragement and protection from Government as an industry specially adapted to native attainments.

The labour supply in Nyasaland is neither so plentiful

that planters can always count on securing as many hands as they desire, nor so scanty but that with the exercise of forethought a force can be obtained sufficient for the needs of the plantation. The gradually increasing shortage may be compensated by the greater employment in future of agricultural machinery and of mechanical means of transport.

The cheapness of labour has greatly assisted the development of agriculture in the past; and, although conditions arising from the war have tended to raise the standard of wages, the Protectorate will probably continue to enjoy rates appreciably lower than those of adjacent countries.

The grave defects of the existing transport system have been indicated in the section on Communications (see especially p. 21). One condition which is essential to the more uniform development of the whole country and the progress of its trade is railway connexion between Lake Nyasa and the ocean. It is, therefore, a matter of the utmost importance that the railway should as soon as possible be extended, internally northwards to the lake, externally southwards to Beira. These links once completed, other improvements would follow, such as a fuller transport service on the lake, railroads from Nyasa to Tanganyika and to Northern Rhodesia, and motor services from the lake ports to the adjacent districts. These would give a special impetus to the agricultural development of the whole north-western region, and might lead to the mining of coal and iron ore.

The fourth essential to further progress is a sufficiently high level of prices for the products when marketed. The European markets have hitherto received the bulk of the exports; and, while it is possible that India, Australia, and the United States may in future take some exports, such as cotton and fibre, it

may be expected that the United Kingdom will continue to be the Protectorate's best customer. Produce marketed in Europe, however, has to pay such heavy charges for transport by rail, river, and ocean, that the export of the lower-priced varieties can scarcely be maintained at a profit.

APPENDIX

NOTIFICATION OF THE BRITISH PROTECTORATE
OVER NYASALAND, LONDON, MAY 14, 1891

FOREIGN OFFICE, 14 May, 1891.

British Protectorate over Nyasaland Districts

It is hereby notified for public information that, under and by virtue of Agreements with the native chiefs, and by other lawful means, the territories in Africa, hereafter referred to as the Nyasaland Districts, are under the Protection of Her Majesty the Queen.

The British Protectorate of the Nyasaland Districts comprises the territories bounded on the east and south by the Portuguese Dominions; and to the west by a frontier which, starting on the south from the point where the boundary of the Portuguese Dominions is intersected by the boundary of the Conventional Free Trade Zone defined in the first article of the Berlin Act, follows that line northwards to the point where it meets the line of the geographical Congo Basin, defined in the same Article, and thence follows the latter line to the point where it touches the boundary between the British and German spheres, defined in the second paragraph of the 1st article of the Agreement of the 1st July, 1890.

Measures are in course of preparation for the administration of justice and the maintenance of peace and good order in the Nyasaland Districts.

(Published in *London Gazette* of May 15, 1891.)

TABLE I.—EXPORTS, 1913-17

	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
	£	£	£	£	£
Beeswax	5,064	4,961	5,722	5,994	3,436
Capsicums and chillies	3,166	178	130	269	3,133
Castor-oil seed	327	105	71	61	77
Coffee	4,868	4,802	2,487	2,651	3,285
Cotton	83,868	72,381	78,308	72,625	132,339
Cotton seed	974	329	2,143	622	516
Fibre	1,256	330	623	2,501	4,056
Ground-nuts	12	5,163	3,772	1,912	454
Ivory	4,911	3,515	1,284	1,824	937
Live-stock	1,155	—	6	22	6
Maize and maize flour	—	253	287	2,168	538
Mica	2,026	926	545	409	78
Potatoes	46	48	84	132	249
Rice	—	—	113	31	83
Rubber	19,585	11,195	3,608	3,809	6,072
Sesame seed	605	206	—	—	124
Strophanthus	2,623	193	80	22	1,178
Tea	1,693	2,902	4,156	8,585	14,023
Teeth (hippo.)	35	16	19	19	8
Tobacco	60,201	97,482	84,549	98,017	118,004
Miscellaneous and un- classified	2,609	11,480	5,837	11,237	13,470
Specie	53,490	49,623	41,855	50,758	42,196
	248,514	266,088	235,679	263,668	344,262

TABLE II.—IMPORTS, 1913-17

	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
	£	£	£	£	£
Cotton piece-goods, scarves, handkerchiefs } 176,785	107,287	{ 70,400	104,296	208,798	
Textiles, various		{ 25,401	12,048	21,604	
Provisions	31,622	23,465	16,527	33,235	31,383
Beer and ale	2,792	{ 2,377	789	1,432	2,045
Wines and spirits		{ 2,189	3,831	5,764	8,618
Tobacco	1,776	—	1,091	1,570	4,294
Kerosene	978	2,110	3,622	3,914	5,654
Arms and ammunition	3,254	5,309	2,476	776	578
Hardware, glass, china, &c.	30,907	15,918	9,202	6,530	13,846
Machinery, agricultural and other	—	7,728	8,380	4,460	9,186
Vehicles	—	4,534	5,991	5,406	6,568
Railway materials	—	—	257	8,450	841
Leather and leather manu- factures	—	—	857	1,266	1,693
Stationery and ink	—	3,169	1,864	1,984	4,416
Soap	—	—	1,540	2,682	5,871
Building materials and household effects	—	5,013	87	50	182
Personal effects	—	—	13,441	15,930	24,373
Miscellaneous and un- enumerated	70,178	29,192	25,838	17,541	22,535
Government imports	—	—	9,752	21,478	29,451
Specie	4,100	420	1,452	4,591	21,787
	322,392	208,711	202,798	253,403	423,723

TABLE III.—PUBLIC FINANCE

(A) REVENUE, 1913-17

<i>Head of Revenue.</i>	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
	£	£	£	£	£
Customs	26,543	17,492	16,449	21,571	34,144
Ports, harbours, and wharf dues	9,004	5,956	6,307	6,705	8,811
Native hut tax	65,685	69,810	71,755	76,679	78,478
Land tax	7,991	8,085	7,976	8,072	8,009
Licences, excise, &c.	5,334	5,675	5,232	9,690	4,535
Fees of court or office	1,553	3,154	1,420	5,366	3,156
Post Office	4,560	7,013	4,100	3,835	5,187
Rents of Government property	3,172	3,065	3,357	3,001	2,862
Interest	382	1,214	765	507	377
Miscellaneous receipts	3,372	3,020	1,162	1,808	2,209
	127,596	124,484	118,523	137,234	147,768
Land sales	677	365	—	677	515
Imperial grant-in-aid	5,000	—	—	—	—
	133,273	124,849	118,523	137,911	148,283

TABLE III (continued)

(B) EXPENDITURE, 1913-17

<i>Head of Expenditure.</i>	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
	£	£	£	£	£
Charge on account of Public Debts	—	1,750	4,025	6,852	14,029
Pensions	4,089	4,509	4,567	5,059	5,758
The Governor	2,501	2,111	3,283	2,569	2,492
Deputy Governor's Department	4,646	5,015	4,316	4,300	3,199
Printing and Stationery Department	2,318	3,108	3,089	2,702	3,414
District Administration	23,747	25,301	26,791	26,073	25,995
Treasury Department	4,331	4,353	4,008	3,878	3,883
Customs Department	1,811	1,978	2,257	2,410	2,266
Audit Department	1,492	1,610	1,601	962	1,188
Marine Transport Department	3,655	4,633	4,368	3,241	3,151
Judicial and Legal Department	2,985	3,088	2,433	2,656	3,233
Prisons and Lunatic Asylum	1,702	2,423	2,221	2,561	2,779
Medical Department	9,508	9,633	9,965	9,288	8,808
Medical Special Expenditure: Scientific Commission	5,130	5,214	3,466	—	—
Education	1,000	1,000	1,000	1,000	1,000
Transport Department	2,131	1,887	2,097	2,123	2,307
Military	16,550	12,668	12,942	11,426	9,731
Miscellaneous Expenditure	2,282	1,813	1,450	1,664	1,385
Lands Department	—	—	1,378	1,476	1,191
Post Office	5,785	5,465	5,688	5,718	5,974
Agricultural, Forestry, and Veterinary Department	4,996	7,406	7,176	7,429	7,316
Public Works Department	5,528	6,127	5,665	5,732	5,060
Public Works annually recurrent	2,829	3,331	3,100	3,265	2,965
Public Works extraordinary	5,450	12,171	7,848	1,495	3,290
Railway Extension	1,475	6,153	18,087	10,927	7,895
Bombay and London Agencies	420	359	340	859	[Cr. 37]
	116,361	133,106	143,161	125,665	128,272
Loan Expenditure :					
(a) Railway and Roads	—	—	6,142	2,963	3,329
(b) War Expenses	—	—	30,183	173,510	415,667
(c) Redemption of Railway Subsidy Lands	50,000	—	65,000	50,000	—
	166,361	133,106	244,486	352,138	547,268

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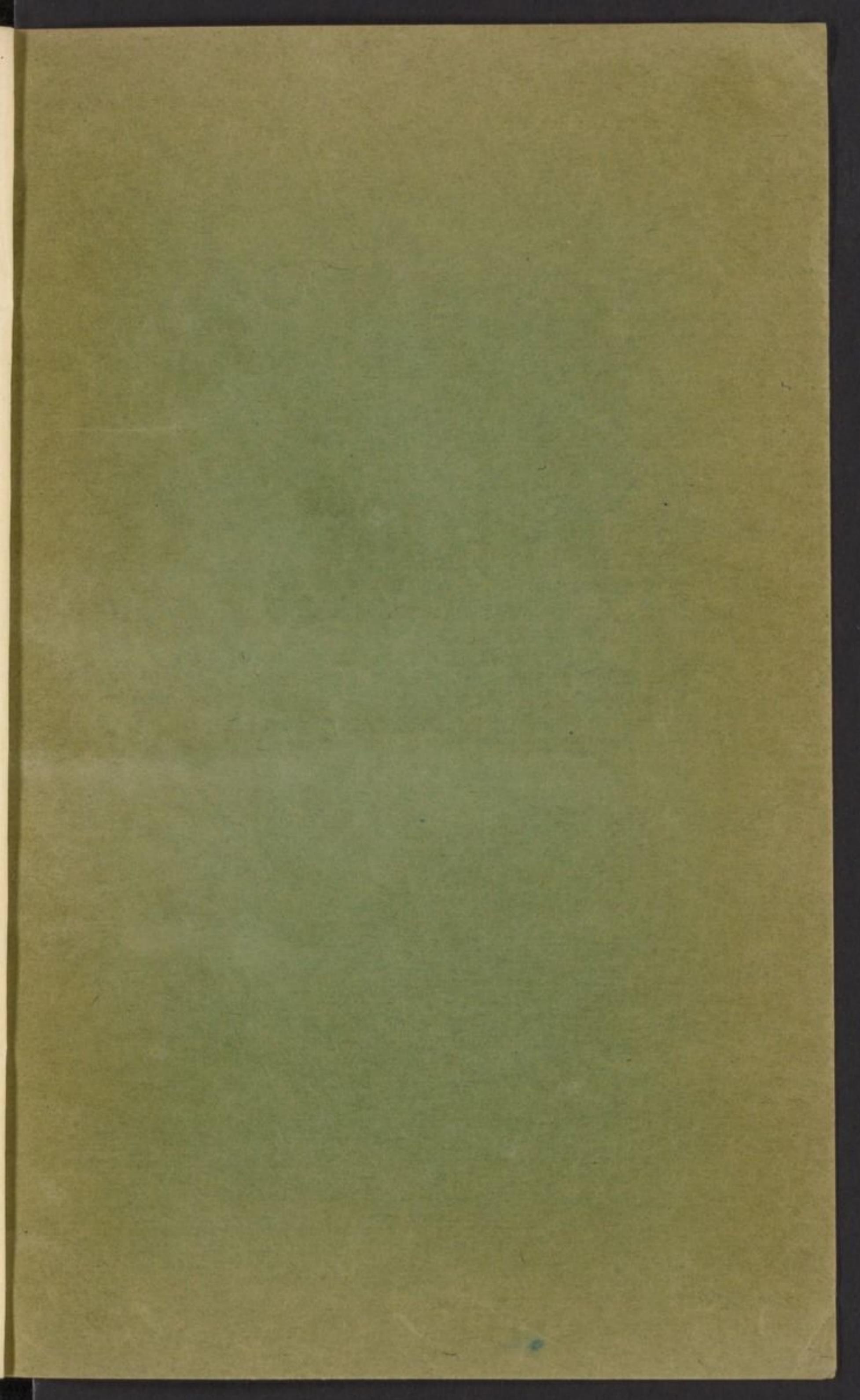
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MAPS

A special map of the 'Nyasaland Protectorate', on the scale of 1 : 1,000,000, has been issued (1908) by the War Office (G.S.G.S. 2136).



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