

HANDBOOKS PREPARED UNDER THE DIRECTION OF THE
HISTORICAL SECTION OF THE FOREIGN OFFICE.—No. 83

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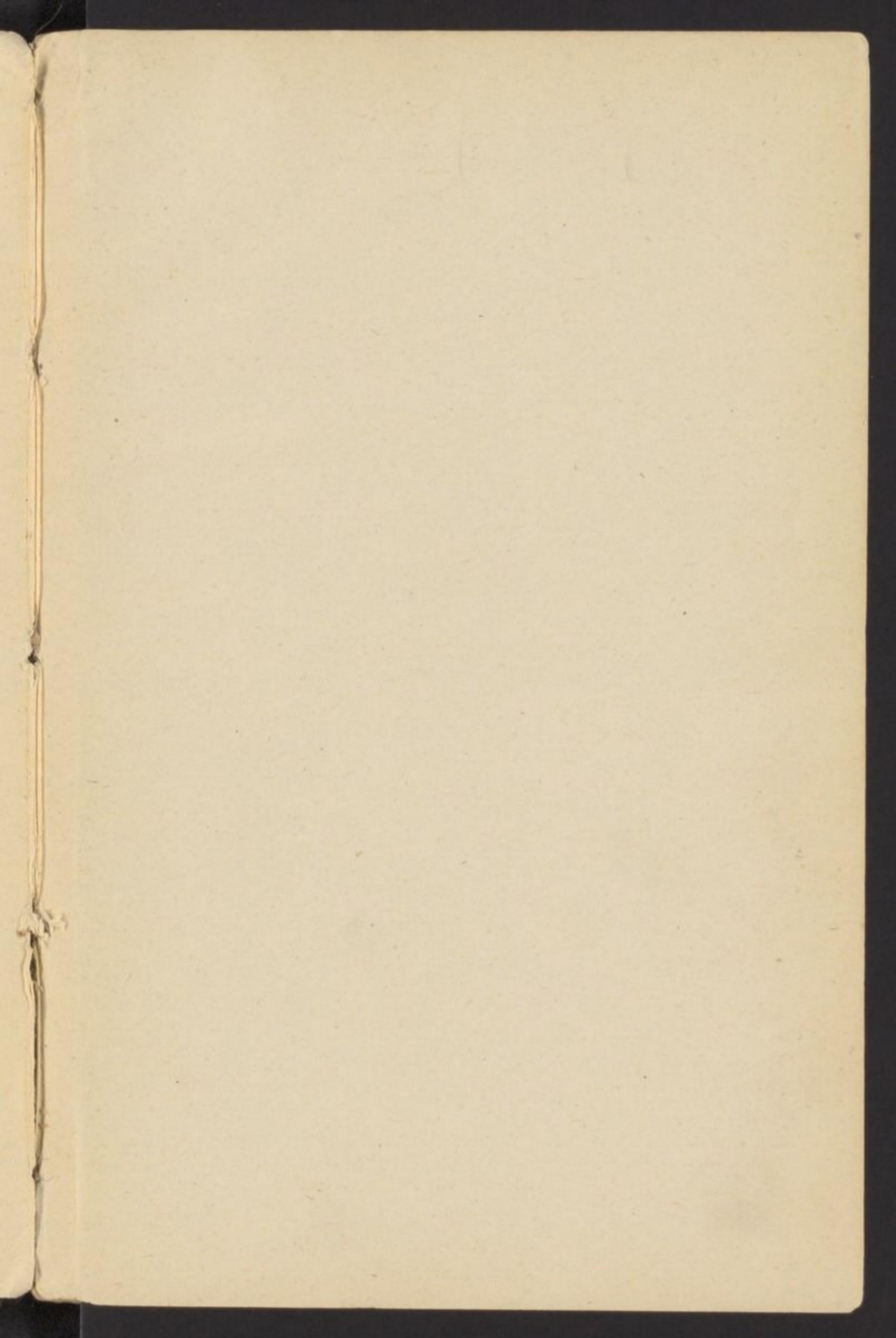


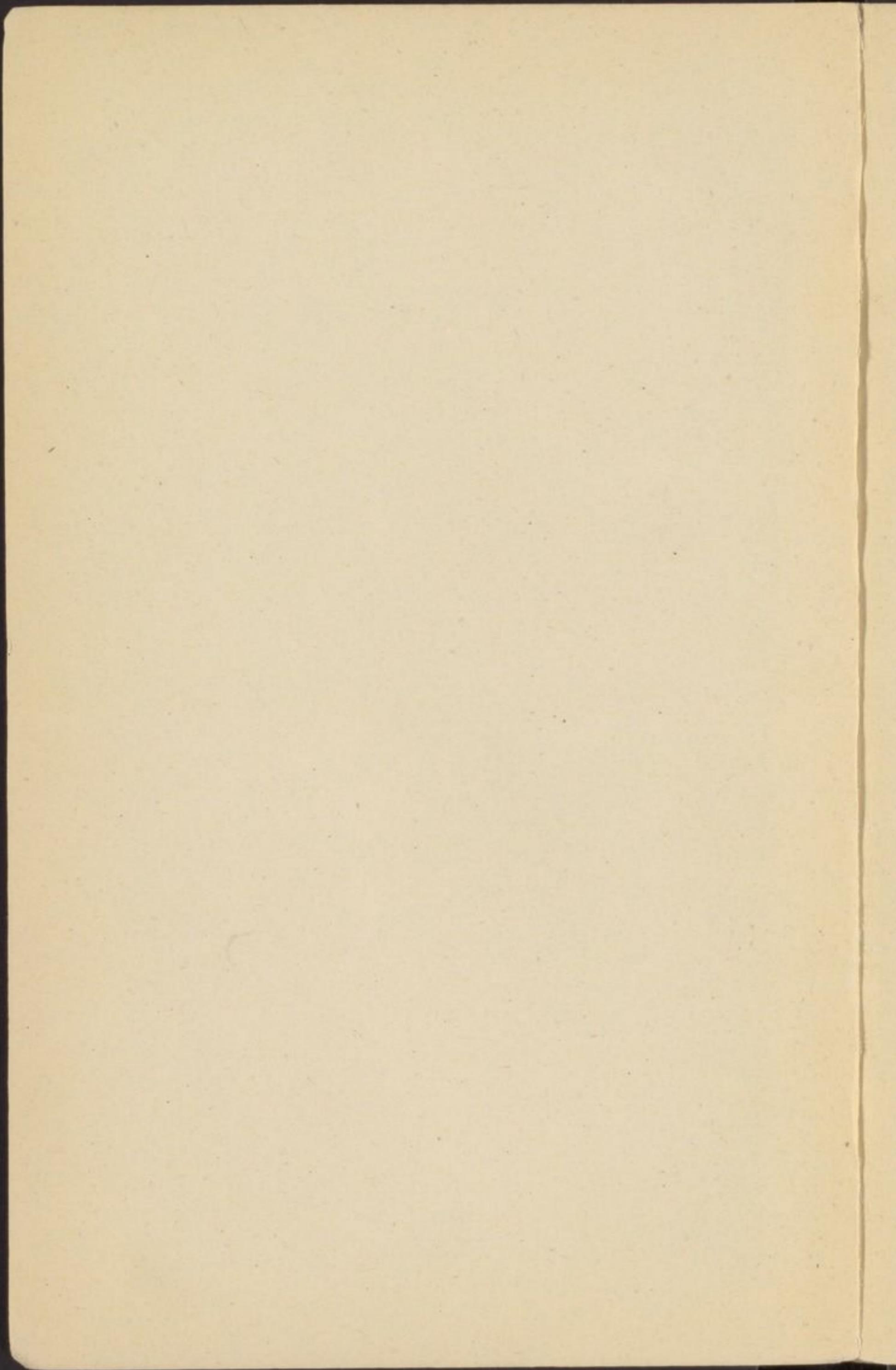
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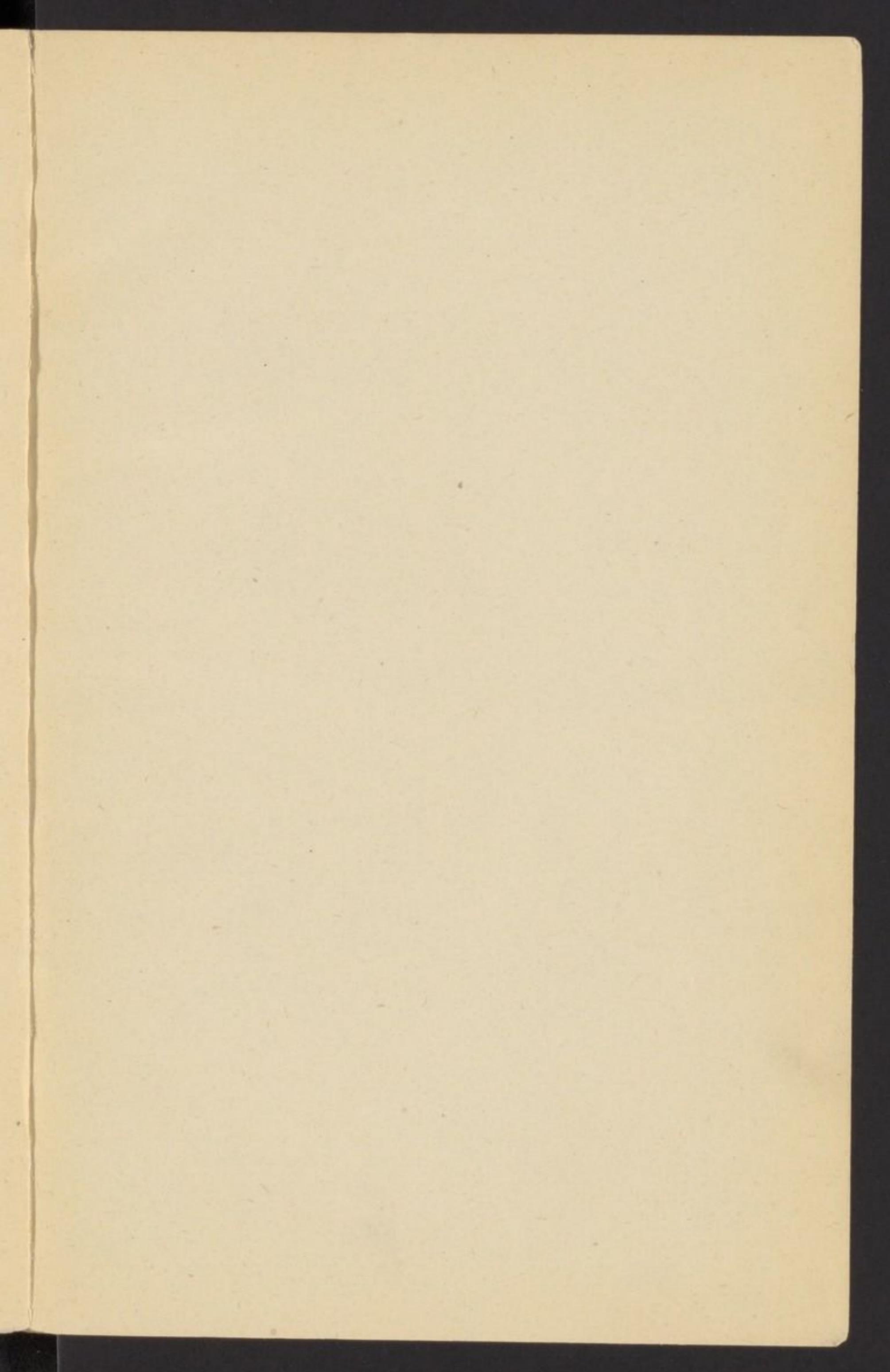


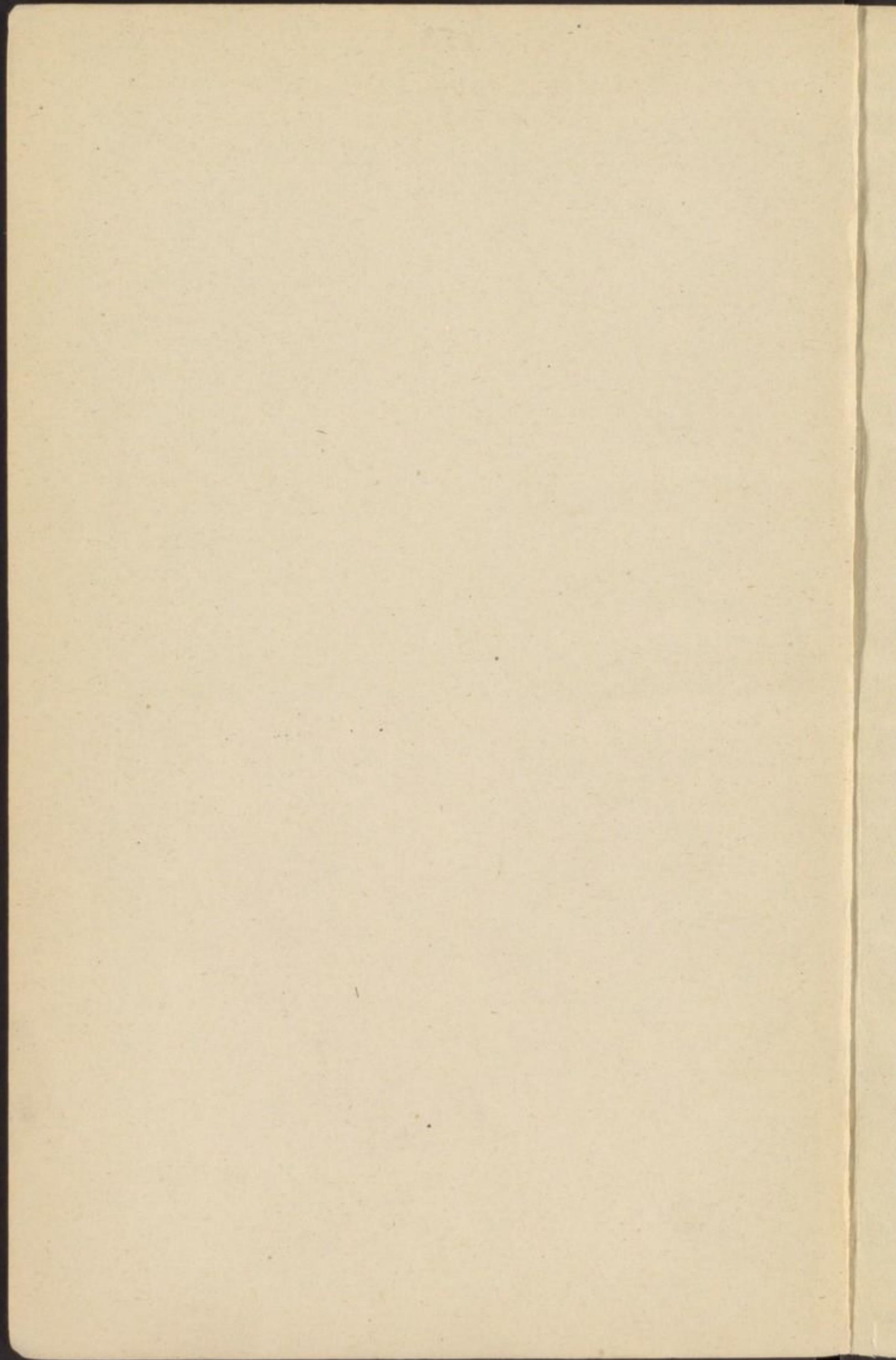
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EDITORIAL NOTE

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.

No. 83

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.

TABLE OF CONTENTS

	PAGE
I. GEOGRAPHY PHYSICAL AND POLITICAL	
(1) Position and Boundaries	1
(2) Surface, Coasts, and River System	
Surface	1
Coasts	2
River System	4
(3) Climate	
Temperature	4
Winds	4
Rainfall	5
(4) Sanitary Conditions	5
(5) Race and Language	
Race	6
Language	9
(6) Population	
Distribution	10
Towns	10
 II. POLITICAL HISTORY	
Chronological Summary	12
(1) DUTCH SETTLEMENTS	12
Early Visits	12
The Dutch East India Company	13
Treaty of 1664	13
British Interests	13
(2) BRITISH POLICY	13
Loss and Recovery of Dutch Colonies	13
Raffles's Policy	13
Treaty of London, 1824	14

TABLE OF CONTENTS

[No. 83

	PAGE
(3) CONSOLIDATION OF DUTCH RULE	14
Abolition of the Sultanate	14
Struggle with Padris	14
Conquest of the Interior	14
Relations with the Achinese	14
Treaty of 1871	15
Conquest of Atjeh	15
Annexation of the Padang Highlands	15
III. SOCIAL AND POLITICAL CONDITIONS	
(1) Religious	16
(2) Political	16
(3) Educational	17
Dutch Native and Secondary Schools	17
Special Government Schools	17
Teaching Staff	17
Curriculum	18
National Education	18
Numbers of Schools and Pupils	19
IV. ECONOMIC CONDITIONS	
(A) MEANS OF COMMUNICATION	
(1) Internal	
(a) Roads	20
(b) Rivers	21
(c) Railways	22
(d) Posts, Telegraphs, and Telephones	24
(2) External	
(a) Ports	
(i) Accommodation	
Belawan-Deli	25
Benkulen, Padang	26
Pangkalan-Brandan	26
Sabang, Singkel	27
(ii) Nature and Volume of Trade	28
(b) Shipping Lines	28
(c) Cable and Wireless Communication	29
(B) INDUSTRY	
(1) Labour	
(a) Supply of Labour	29
(b) Labour Conditions	32

	PAGE
(2) Agriculture	
(a) Products of Commercial Value	
Vegetable Products	34
Areca Palms, Cinchona	34
Coco-nut Palms	35
Coffee, Cotton	36
Gambier	37
Ground-nuts, Kapok, Maize, Rice	38
Rubber	39
Spices, Tea	40
Tobacco	41
Live-stock	41
(b) Methods of Cultivation	42
(c) Forestry	43
(d) Land Tenure	44
(3) Fisheries	44
(4) Minerals	45
Coal	45
Copper, Gold	47
Iron, Manganese, Tungsten, Lead	48
Petroleum	48
Tin	50
Other Minerals	53
(5) Manufactures	53
(6) Power	54
 (C) COMMERCE	
(1) Domestic	
(a) Principal Branches of Trade	54
(b) Towns and Markets	
Barus, Bengkalis, Benkulen, Fort de Kock	55
Kuta Baru, Kuta Raja, Medan, Natal, Padang, Padang Sidempuan, Pajo- kumbo	56
Palembang, Rengat, Siboga	57
Singkel, Telok Betong	58
(c) Organizations to promote Trade and Com- merce	58

TABLE OF CONTENTS

[No. 83

	PAGE
(2) Foreign	58
Principal Exports	59
Principal Imports	
(a) East Coast	59
(b) Sabang	60
Cotton Imports	61
 (D) FINANCE	
(1) Public Finance	61
(2) Currency	61
(3) Banking	61
(4) Influence of Foreign Capital	62
 (E) GENERAL REMARKS	64

ISLANDS OFF THE WEST COAST

Simalu, Banjak Islands, Nias	66
Batu Islands, Mentawai Islands, Engano, Banka	67
Billiton, Riouw-Lingga Archipelago	68

APPENDIX

Convention between Great Britain and the Netherlands, November 2, 1871	70
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AUTHORITIES	71
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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) POSITION AND BOUNDARIES

SUMATRA¹ lies between 5° 39' north and 5° 57' south latitude, so that the Equator divides it into two nearly equal parts. Its total area is 167,954 sq. miles, or 184,000 sq. miles including the adjacent islands. It is 1,060 miles in length, and 248 miles wide at its widest point. On the western side it borders on the Indian Ocean; it is separated from Java, to the south-east, by the Sunda Straits, and from the Malay Peninsula, to the north-east, by the Malacca Straits.

Sumatra forms an *indeeling* (division) of the Netherlands Indies, and is divided into two governments, Sumatra West Coast and Atjeh (Achin), and seven residencies, Tapanuli, Sumatra East Coast, Riouw and Dependencies, Jambi, Benkulen, Palembang, and the Lampong Districts.

(2) SURFACE, COASTS, AND RIVER SYSTEM

Surface

Sumatra consists of a high mountain chain, running along the whole of the western coast, with a broad belt of flat alluvial country occupying the whole length of the island to the east. The mountain chain runs for a distance of over 1,000 miles, rising to numerous volcanic peaks from 5,000 to over 12,000 ft. high. The whole system, which is referred to as the Barisan Mountains or *Bukit Barisan*, consists in general of

¹ An account of the islands off the coasts of Sumatra will be found on pp. 66-69, Section IV, Economics.

two or more chains, running parallel to each other, with a valley between. This valley is broken up into separate sections by the intrusion of volcanic massifs, and in it lies a row of mountain lakes, of which Toba is by far the largest. There are characteristic differences between the mountains of the south of the island and of the north: in the south the range consists chiefly of parallel chains lying near together, enclosing only a few small plateaux; but to the north of 1° north latitude the mountains broaden out to a wide plateau, falling away steeply to the west, and partly surrounded by mountain peaks. The whole range is topped with a line of volcanoes, mostly close to the west coast, of which several are still active. The soil of Sumatra is on the whole extremely fertile, and the country is heavily forested. The forest proper begins at an elevation of 330 ft. to 450 ft., and rises to a great height.

Coasts

The west coast of Sumatra is in general high and rocky, particularly between 2° south latitude and Padang, where the mountains in places come right down to the sea. Between Mokko Mokko and Cape Vlakke Hoek the coast is on the whole bold and difficult of approach, but the mountains lie farther inland and the land near the shore is covered with alluvium and is frequently marshy. North of Padang the coastal marshes begin again, but between Tiku and Tapanuli Bay the alluvial land is broken by stretches of country on which various settlements have arisen. In this part of the coast the sea has eaten away the land in a series of semicircular bays. North of Tapanuli Bay, as far as Trumon (Taroemoen), is a wide alluvial plain, and from thence to Koningspunt the coast is only marshy in places, as at Melabuh (Meulaboh).

The sea is from 20 to 50 fathoms deep in most parts

of the west coast close offshore, falling to great depths beyond the narrow coastal shelf. A chain of islands extends parallel to the coast at a distance of about 60 miles, between the parallels of 3° north and $3^{\circ} 30'$ south; they are for the most part unsurveyed, as is the larger part of the west coast of Sumatra itself.

The best harbours of Sumatra are in the central part of the west coast, where there are several inlets well protected from the sea by islands, e. g. Emma-haven, on Koninginne Bay; north of Tapanuli and south of Indrapura none of the indentations in the coast affords complete shelter from the south-west monsoon. The development of the west coast for trade and settlement is much hindered by the difficulty of access from the sea, owing to the coral reefs and the breaking surf, and by the lack of communications inland.

The whole of the east coast of Sumatra from Diamond Point to Varkenshoek is formed of morasses and sand-banks, breaking up into innumerable points and islands at the mouths of the rivers, so that it is often difficult to distinguish land from sea. The coast is constantly extending seawards, as it is chiefly made up of the sediment brought down by the rivers. This region is largely uninhabited.

The north coast of Sumatra, between Raja and Diamond Point, is very varied: in places the cliffs rise precipitously from the sea, and are crowned with dense vegetation; in other parts there are sandy beaches or cultivated and well-populated plains. The two chief harbours are Oleh Leh (Oelee Lheue) and Sabang (on Pulu Weh Island).

At the southern extremity of Sumatra there are two deep indentations, Lampong Bay and Keizers or Semangko Bay. Telok Betong, on Lampong Bay, has a good harbour, and deals with almost all the trade of the Lampong Districts.

River System

Owing to the position of the mountains in Sumatra, the rivers on the west coast are all short. In the south the rivers have small deltas, and north of Benkulen as far as 2° south latitude, and between Padang and Priaman, are marshes which hinder their discharge.

On the east coast of Sumatra the rivers running through the alluvial plains have wide drainage areas, and form the most important means of communication. The largest rivers on the east coast, beginning at the south, are the Musi, the Jambi, the Kwantan (Indragiri), the Kampar, the Siak, the Rokan (Rekan), the Panei (Pane, Panai), and the smaller Asahan, Serdang, and Deli rivers to the north of these. The most important are the Musi and the Jambi.

(3) CLIMATE

Temperature.—The climate of Sumatra is tropical, but the heat is tempered by the surrounding seas. The air is almost always damp on the coast, being driest in the morning, and the climate may be described in general as hot and moist. The temperature varies hardly at all with the time of year, the maximum being about 77° F. (25° C.) and the minimum 75° F. (23.8° C.), and there is also little daily change. The average temperature for the year is 76.6° F. (24.7° C.). The mountain climate differs considerably from that of the coasts, and on a fine day is delightful, since the sun is usually tempered by strong winds.

Winds.—The climate differs in the parts of the island which lie to the north and the south of the Equator, since the land affected by the Australian monsoon reaches to the Equator or a little to the north of it, and then passes into the sphere of the Asiatic monsoon. Thus southern Sumatra is under the influence of

the north-west monsoon from November to March, and the south-east monsoon from May to October, whilst the north of the island has the north-east wind from December to March and the south-west wind from May to September. The monsoons, however, are nowhere uninterrupted, since the diurnal land and sea breezes cause great local variability.

Rainfall.—The true monsoon climate, with a dry and a wet season, is not found, only comparatively slight differences being observable corresponding to the different seasons. Sumatra has not only a wet climate, the rainfall seldom falling below 80 in. (about 200 cm.) a year at any of the stations, and rising to 185 in. (470 cm.), but the rain is spread over the whole year, though generally speaking the fall is less in June and July in the south of the island, and in January, February, and March towards the north. The wettest period, taking the whole island together, is from October to January, and the driest from March to September. Most rain falls on the west coast, owing largely to its proximity to the mountains. The fall at the west-coast stations varies from 101 to 195 in. (about 260 to 500 cm.) a year, and is almost double that of the east-coast stations (59 to 100 in.; 150 to 250 cm.). The wettest part of the whole island is the central part of the west coast, near the Equator, Pulu Tello having 195 in. (500 cm.) of rain a year. The driest part is in the north, owing to the predominance of the dry south-east winds.

(4) SANITARY CONDITIONS

Sumatra is specially noted for the severity and widespread nature of its malarial fevers, which attack Europeans and natives alike, Europeans being more liable to the rapid form, and natives to the chronic.

Bays and river-mouths are notoriously fever-haunted, but the high country is more healthy. North Sumatra is on the whole less subject to fever, but unseasonable weather often brings epidemics of malaria and beri-beri, which particularly attack new-comers. Pulu Weh Island is a very healthy spot, but the west-coast islands are extremely malarious and unhealthy, as also are the west coasts of Benkulen and Atjeh; Padang has a good record for a coastal town, probably owing to the fresh breeze which blows night and morning there.

Dysentery and beri-beri are also prevalent, particularly among the coolies working on the plantations and in the mines, among whom hook-worm disease (Ankylostomiasis) is also very common. Dysentery, beri-beri, and cholera all occasionally break out as epidemics, and cholera is always endemic. Judging by the recorded cases, typhus and small-pox are rare in Sumatra, and they have become even less common of late years; there are no figures available showing the incidence of plague and tuberculosis, but both diseases are widespread in the archipelago. There are 1,760 lepers. It is very difficult to make the natives pay attention to the rules of hygiene, and the laws of the Mohammedan religion as regards ceremonial washing, &c., are by no means strictly observed by the majority of the Sumatran natives. The general death-rate for Europeans in 1914 was 15 per thousand, malaria and typhoid accounting for more deaths than any other diseases.

(5) RACE AND LANGUAGE

Race

Native Peoples.—The peoples of Sumatra are ethnographically complicated, and there is, speaking generally, a marked difference between those living on

the coasts who have been for centuries in contact with foreigners, and the inland tribes, who are still little known. From time to time many Arabs, Chinese, Hindus, Klings, and Bengalis have settled on the Sumatran coast, and Hindu-Javanese colonies were established for trading purposes at an early date in Palembang and Jambi. The mixed races which have resulted from such settlements have reached a higher standard of civilization than the tribes of the interior.

The whole of the indigenous population had probably a common Malayo-Polynesian origin, but differences of habitat and economic conditions have caused the formation of many tribes, differing considerably from one another in appearance, customs, and language.

The two main ethnical groups in Sumatra are the Indonesians, representing the people of the island before the Malay invasion, and the Malays, an Asiatic race which invaded Sumatra at an early date, and swept thence over large parts of the archipelago. (The use of the term Malay in this wider sense must not be confused with its narrower use as the name of an east-coast Sumatran people.) There is, however, no great difference in physique between the Malays and Indonesians, and the peoples of Sumatra, with the exception of some of the most primitive tribes, approximate more or less closely to the Malay type.

The chief peoples of Sumatra are :

Achinese, in north Sumatra, divided into peoples of the coastal and of the highland districts; *Gayos* and *Alas*, in the mountain country of north Sumatra, between about 3° and 4° 30' north latitude, related to the *Bataks*, but under Achinese influence; *Bataks*, in the country round Lake Toba, Tapanuli, and part of the East Coast Residency; *Malays*, in the East Coast Residency, Riouw-Lingga, and Palembang, a seafaring people; *Menangkabau Malays*, in the Padang High-

lands, a remnant of the original Malay race, which has developed separately owing to its isolated position; *Lebongs*, in Lebong on the west coast; *Rejangs*, in Rejang to the west of Palembang; and *Lampongs*, in the Lampong Districts, who have a considerable admixture of Javanese blood.

Besides these more important groups, there are the small and savage peoples who live mostly on the east coast, and the inhabitants of the islands adjacent to Sumatra.

The most primitive tribes of Sumatra and the adjacent islands have in many places become Islamized in recent years, and they all take a pride in copying the manners and customs of the Malays when they are brought into contact with them. There are, however, several small tribes still living in their original primitive condition, particularly the Kubus in Jambi, the Sakais, Tapungs, and Akits in Sumatra East Coast, the Lubus in Mandailing, the Benua in the Riouw-Lingga Archipelago, the Orang darat or Orang gunong of Banka and Billiton, and the Orang laut. They are all despised by the Malays, and they are as much behind them in civilization as the Malays are behind Europeans; their religion consists, as a rule, of a superficial animism, and their language is some low form of Malay.

Non-Native Population.—The majority of the 9,610 Europeans in Sumatra live in Deli and Padang, and are occupied with the tobacco plantations. The proportion of Government officials is low, as in the rest of the Dutch East Indies, where there are 9,000 Europeans in Government employ, as compared with 14,000 in agriculture, trade, and the professions. The large class of adult male Europeans with no occupation is formed mostly of the half-castes, who rank as Europeans, but are usually not competent to do

a white man's work, and consider manual labour beneath them. Of the pure Europeans, 92 per cent. are Dutch, but only 7 per cent. of these are born in Holland. There are a number of Germans in Deli, which is a young colony, and bears a more international character than most East Indian settlements.

There were in 1912 in Sumatra 223,153 Chinese, 4,145 Arabs, and 19,575 other non-native Orientals.

The Japanese in the archipelago are technically the equals of Europeans, and are looked up to by the natives, but they take no part in European society. They are largely shopkeepers.

The large number of Chinese in Sumatra are employed mostly in the tin-mines of Banka and Billiton and in the pepper-gardens of the Riouw-Lingga Archipelago, and on the Deli tobacco plantations, four-fifths of the Chinese in the island itself being settled in Sumatra East Coast. They consist largely of emigrants of the poorest class, who are attracted by the higher rate of payment obtaining in the East Indies. Apart from employment as coolies, the Chinese form a universal class of middlemen, and trade in the islands would be paralysed by their departure.

The Arabs, unlike the Chinese, are rapidly assimilated to native society, and when, as is usually the case, they marry native wives, their Semitic character is soon lost.

Language

A variety of languages and scripts are used by the different peoples; some are related to Malay, but many are Hindu in origin. Malay forms a *lingua franca* for traders and officials, since it is a simple and widely-used tongue; Dutch is only used by the Europeans among themselves. Menangkabau Malay,

which is a second branch of the language, and probably the more ancient, is spoken in Sumatra West Coast and the adjoining country. The Achinese language, which is related to Malay, is divided into four dialects. The Bataks have many differing languages, and use a Hindu script. The Rejang script and language are Hindu in origin, but now include many Malay words, and the Menangkabau Malays, who formerly used a Hindu script, now employ the Arabic form of writing. The Lampong tongue has affinities with both Batak and Sundanese.

(6) POPULATION

Distribution

The total population of Sumatra in 1912 was only 5,751,583, a very small figure when compared with the large size of the island or with the crowded condition of Java.

The most thickly inhabited part of Sumatra is the region of the western mountains, and the scantiest population is found in the marshy wooded plains on the east. In 1912 the density of the population varied from 76 per square mile in Sumatra West Coast to about 11 per square mile in Jambi.

Towns

There were, in 1905, only 31 settlements in Sumatra itself having a population of over 1,000, and only seven of these had more than 5,000 inhabitants.

The largest towns are Padang (capital of Sumatra West Coast), population (1905) 47,607; Padang Sidimpuan (capital of Tapanuli Residency), 3,128; Siboga (Sibolga), 17,611; Benkulen (capital of Benkulen Residency), 7,721; Telok Betong (capital of Lampong

Districts), 3,759; Menggala, 8,976; Palembang (capital of Palembang Residency), 60,985; Sekaju, 3,040; Jambi (capital of Jambi Residency), 8,815; Medan (capital of Sumatra East Coast), 14,250; Kuta Raja (capital of Atjeh Government), 3,704; Tanjungpinang (capital of Riouw Residency), 4,088.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

- 1596. First visited by Dutch.
- 1599. Cornelis Houtman murdered off Atjeh.
- 1662. Dutch conclude trade treaty with Palembang.
- 1664. Important extension of East India Company's trade.
- 1685. English set up an establishment at Benkulen.
- 1781. All Dutch possessions on the west coast captured by England.
- 1783. Restored by Treaty of Versailles.
- 1795. All Dutch possessions again captured by England.
- 1814. Again restored by Treaty of London.
- 1818. Raffles Governor of Benkulen.
- 1824. England retires from Sumatra.
- 1825. Sultanate of Palembang abolished.
- 1837. Conquest of Bonjol ; overthrow of Padris.
- 1838. Conquest of the Thirteen Kutas.
- 1839. Barus invested by the Dutch.
- 1840. Tapus and Singkel taken from Atjeh.
- 1871. England withdraws objection to action against Atjeh.
- 1873. Holland declares war on Atjeh.
- 1878. Atjeh formally incorporated under Dutch rule.
- 1899. Padang Highlands definitely annexed.
- 1907. End of the Atjeh war.

(1) DUTCH SETTLEMENTS

SUMATRA, the island known to Marco Polo in 1295 as Java Minor, was first visited by the Dutch in 1596. They found the following states existent there : Atjeh (Achin) in the north ; Siak, Kampar, Kwantan, and Indragiri in the north-east ; Menangkabau in the centre ; Indrapura, south of Menangkabau, on the west coast ; Jambi and Palembang, in a south-easterly direction from Indrapura, both colonized by

Javanese in the fourteenth century and acknowledging the nominal supremacy of the Sultan of Bantam. All these states already professed Islamism, introduced in the twelfth century.

In 1599 Cornelis Houtman was treacherously murdered off the coast of Atjeh by natives at the instigation of the Portuguese, and for a long time the west coast proved very unfriendly; but in Palembang the Dutch East India Company was more successful, establishing a factory there and concluding a trade treaty in 1662. At first the trade was principally in pepper, but later also in tin from Banka. In 1663 the Sultan of Menangkabau sought Dutch support against Atjeh; a treaty followed in 1664, after which the Company was in a position to trade from Singkel to Indrapura, whilst a fortified factory was established at Padang. Forts speedily followed at Barus, Ayer Bangis, and Priaman on the west, in the Lampong Districts in the south, and at Muara Kompeh on the east. The English East India Company soon followed its Dutch rival in Sumatra, and at Benkulen, where a footing had been obtained in 1685, Fort Marlborough and several factories were already in existence by 1714.

(2) BRITISH POLICY

During the fourth naval war with England (1781-3) the Dutch lost all their possessions on the west coast, but recovered them by the Treaty of Versailles in 1783. All they held in Sumatra was again lost when Holland was incorporated with France, but was again restored by the Treaty of London, August 13, 1814.

Sir Stamford Raffles, Governor of Java from 1811 to 1816 and of Benkulen from 1818 to 1823, endeavoured during the latter period to substitute British for Dutch influence in the whole of the East Indies. The alliances he made with the rulers and tribes of central Sumatra

and the extension of the sphere of British influence throughout the island would have created a great colony in the immediate vicinity of Java, the hub of Holland's Indian empire. But Raffles's policy was not supported by the British Government. Dutch diplomacy succeeded in concluding a treaty in 1824, by which the English, who had held Benkulen for 150 years, ceded it to Holland and pledged themselves not to allow any British factory to be established in Sumatra, nor any treaty to be made under British authority with any of its states or rulers.

(3) CONSOLIDATION OF DUTCH RULE

This brought the whole of the coast, with the exception of Atjeh, exclusively under Dutch influence. To maintain and extend this, operations had already been commenced in Palembang in 1817, and ended with the abolition of the Sultanate in 1825; from 1819 there was for many years a struggle with a dangerous Mohammedan sect named Padris, who remained formidable until the conquest of Bonjol in 1837. Their hands now freed, the Dutch turned their attention to the subjection of other inland districts, and that known as the Thirteen Kutas was conquered in 1838. In 1839 Barus was occupied, and in 1840 Tapus and Singkel.

In a note accompanying the Treaty of 1824 the Dutch Government had promised to apply itself without delay to the regulation of its relations with Atjeh, in order to ensure security for trade and shipping, and in this note had also been included an undertaking that Holland would not enter into hostilities with Atjeh. But a long series of unfriendly acts on the part of the Achinese followed. The British Government, which had already had to warn the merchants of Penang and Singapore of the insecurity of Achinese waters,

at length by a treaty concluded in 1871¹ desisted 'from all objections against the extension of the Netherlands dominion in any part of the Island of Sumatra', in return for trade concessions in Siak.

The Achinese, fearing Dutch aggression, secretly sought protection from the United States, Italy, France, and Turkey, through the consuls at Singapore. The Dutch demanded an explanation of these secret negotiations; and, this being evaded, war was declared on the Achinese in March 1873, and dragged on in one form or another, with heavy cost of blood and treasure, until December 1907, when the Sultan surrendered and was deported to Amboina. In 1878 the state of Atjeh and its dependencies had been incorporated as a government division of Sumatra. The rich, highland country inland from Padang now called the Padang Highlands remained under the rule of native sovereigns till 1899, when these last remnants of the great empire of Menangkabau were formally annexed by the Dutch.

¹ Hertslet, *A Complete Collection of Treaties, &c.*, vol. xiii, pp. 665, 666.

III. SOCIAL AND POLITICAL CONDITIONS

(1) RELIGIOUS

NOMINALLY the peoples of Sumatra are nearly all Mohammedans, except a large proportion of the Bataks, and the bulk of the inhabitants of the islands off the west coast, who are pagans. Actually there is very little Mohammedan zeal or orthodoxy. Christianity has made little progress. At the end of 1914 the Protestant missionaries claimed that their congregations throughout the Outer Possessions had a membership of 538,000, and the Roman Catholic congregations were estimated at 40,000.

(2) POLITICAL

The Dutch Government includes Sumatra in the 'Outer Possessions' of the Indies, Java and Madura forming the more important division of the Possessions.

There are still large areas in the interior of Sumatra in which Dutch rule is merely nominal. It is necessary to maintain garrisons at a number of strategic points; but outbreaks among the natives have rarely occurred in recent years. Atjeh and Sumatra West Coast are still administered by governors. There is an army of occupation in Atjeh, and a small military force in Sumatra West Coast. In Deli, Siak, Jambi, and Palembang the native Sultans have become protected rulers. The Lampong Districts, Benkulen, and Tapanuli are directly administered by the Dutch. Now that the country is pacified, it may be expected that the population will rapidly increase, and the fertility of its soil will encourage immigration from Java.

(3) EDUCATIONAL

Education of the natives in the Outer Possessions, like that of the Europeans, is divided into public and private. Public education is conducted by religious societies and institutions and by private persons, and is both secular and religious. Schools founded by the numerous missionary societies, which are active throughout the archipelago, have always a religious basis; some of these are Mohammedan.

There are two classes of schools founded by the Government: (a) Dutch-native schools, which are primarily intended for the children of native chiefs and other important or wealthy natives; (b) secondary schools, originally intended for the instruction of native children in general, but now, owing to the increasing establishment of national schools (which are founded by the people, under Government supervision and, if necessary, with the support of the Government), restricted to the places where more advanced instruction is required.

There are also special Government schools in Deli, Asahan, Langkat, Serdang, Menado, Tondano, Amurang, Amboina, Saparua, and Sambas, which correspond to the Dutch-native schools to a certain extent, having partly European staffs, but are intended to meet the peculiar requirements of certain districts. The special school at Amboina is intended for the children of the Amboina burgers, and the rest for native children, preferably from the well-to-do class. Some are to a limited degree available for children of Europeans and foreign Orientals. At Kuta Raja (Atjeh) and Macassar (Celebes) there are special schools for the children of Christian soldiers from Amboina, Ternate, Timor, and Menado.

The native staffs for the Government schools in the Outer Possessions are trained at the Government colleges at Fort de Kock, Amboina, and Macassar. Normal

courses of instruction for assistant teachers are provided at Kuta Raja, Palembang, Macassar, Banjarmasin, Kendangan (south and east Borneo), and Singaraja (Bali).

Instruction in the Dutch-native schools of the first grade includes reading and writing in Dutch and Malay (the latter both in Arabic and Latin characters), and in the local language, arithmetic, geography of the Dutch East Indies, drawing, and elementary natural science. Many of these schools prepare pupils for the Minor Officials Examination. The secondary schools have a much simpler curriculum, including as a minimum the reading and writing of the local language, unless it is unsuitable for education, or the Malay language, while Dutch can be added. Arithmetic, without fractions, is also taught.

It was only in 1912 that a beginning was made with the introduction of national education, when 111 national schools were established in Sumatra West Coast, and 67 in Benkulen, of the type existing in Java. There were already in these two Residencies a number of institutions for elementary education conducted by administrative officials or native communities. These schools were in 1913 incorporated in the organization of national education, which brought up the number of national schools in Sumatra West Coast to 302 and the total in Benkulen to 83. By the end of 1914 there were 681 national schools in Sumatra. For most of these schools one instructor is sufficient, as they have only three classes, corresponding to the three lower classes in the secondary schools, and the daily lessons have a duration of two and a half hours for each class. Teachers are recruited from natives who have satisfactorily passed through a public secondary native school and have then received a year's theoretical and practical instruction from the head of a secondary school and are certified capable by him or have obtained a teaching diploma. There are 8 school inspectors in Sumatra West Coast, 3 in

Benkulen, 4 in Palembang, 2 in the Lampong Districts, and one each in Jambi and Riouw and Dependencies.

The number of pupils in 621 national schools in Sumatra at the end of 1914 (excluding those in the Lampong Districts and Atjeh) was 37,838 boys and 3,420 girls.

There were, in 1913, 149 National Schools with 7,240 pupils in the Government of Atjeh and Dependencies; and these schools were made available for the spreading of a better knowledge of agriculture, the teachers undergoing a special course of instruction.

Private schools founded by natives or by missionaries in the Outer Possessions obtain subsidies from the Government if they fulfil certain conditions. The schools and pupils of the Outer Possessions were tabulated in 1913 thus:

	<i>National Schools.</i>	<i>Pupils.</i>	<i>Private Schools.</i>	<i>Pupils.</i>
Sumatra West Coast	49	13,160	17	1,398
Tapanuli	24	5,547	611	46,376
Benkulen	19	3,545	1	73
Lampong Districts	9	1,914	5	190
Palembang	32	5,836	1	142
Jambi	7	740	25	3,774
Sumatra East Coast	21	3,456	166	12,510
Atjeh	19	2,866	4	568
Riouw	5	595	9	503
Banka	6	980	1	54
Billiton	2	335	—	—
Total for Sumatra	193	38,974	840	65,588
West Borneo	6	709	7	442
South and East Borneo	20	4,717	92	5,743
Celebes	22	3,452	50	3,946
Menado	117	23,637	403	32,112
Ternate	2	535	139	4,915
Amboina	65	10,592	161	7,958
Timor	21	2,704	136	7,551
Bali and Lombok	14	2,382	5	307
Total for whole of Outer Possessions	460	87,702	1,833	128,562

There were, therefore, at the end of 1913 in the Outer Possessions 2,293 schools for natives of all kinds, with a total attendance of 216,264.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) INTERNAL

(a) *Roads*

THE development of Sumatra has been greatly hampered by the scarcity of good roads. There is no connexion by road from end to end of the island as in Java. The pacification of Atjeh would probably have been effected many years ago if better roads had been available in the north of Sumatra. In the mountain districts in the centre of the island there are sometimes only forest tracks.

A road has recently been completed from Medan to the port of Belawan-Deli. Its last section, from Labuan-Deli to Belawan, though only 4 km. in length, cost fls. 325,000, owing to the number of bridges required. At the end of 1914, fifteen large works of construction were in progress, and a number of smaller. The total cost was estimated at about fls. 12,000,000, of which fls. 7,000,000 had already been spent in about five years. In 1915 there existed 3,500 km. of main roads, of which about 2,700 km. were metalled, and 6,700 km. of by-roads, of which about 900 km. were metalled. Another 970 km. of roads were in course of construction, or about to be begun.

The Government has established automobile services for the conveyance of travellers, mails, and goods. In 1907 a joint river and motor-car service from Palembang to Benkulen was initiated. The motor-cars connect at Penangiran with the stern-wheel steamers

of the Koninklijke Paketvaart Maatschappij, which ply along the Lematang and Musi to Palembang. The cars were originally intended for Government officials only, but are now available for private persons, at a fixed tariff. A new West Coast service has also been established, starting from Padang. In the year 1915 the Palembang-Benkulen service carried 24,822 passengers, while the West Coast service carried 40,267 passengers between May and December. The mileage of the former service for 1915 was about 290,000, and of the latter service (May-December) about 110,000.

Statute labour for making and mending the roads can be demanded by the Government in all directly administered areas, but some of the main highways which are now being made pass through districts so sparsely populated that no use can be made of statute labourers, who must not be required to work more than a limited distance from their homes. Moreover, the making of roads in the mountains is so difficult that skilled labour is often essential.

(b) *Rivers*

The mountains of Sumatra are much nearer the west coast than the east, with the result that the rivers on the west are short; they are for the most part unnavigable, and the largest, the Singkel, is almost useless for shipping owing to the bar at its mouth, though farther up it forms an excellent means of communication in spite of the rapids in its course. The deep waters of the Indian Ocean would more readily absorb the alluvial accumulations of the rivers on the west, were it not that a row of islands extends for several hundred miles opposite the west coast of Sumatra, at an average distance of about 60 miles from the shore.

On the east many of the rivers flow across wide plains after leaving the mountains, and are rapidly silting

up the coast. Tradition states that Palembang, now 55 miles inland, was once a seaport. The *Musi* (*Palembang*) river divides into a number of channels dispersed amid a vast unhealthy swamp covering an area of some 4,600 square miles. It is navigable by steamers for more than 200 miles, and by small boats for 335 miles. Palembang is the only inland town which has important river-traffic. At present the best route across the island to Benkulen from Palembang is by steamer up the Musi and its tributary the *Lematang*, and thence by motor-car. The *Jambi* river is the longest in the island, and opposite the town of Jambi it is 1,300 ft. wide, with a depth at low water of about 16 ft. It is navigable by small boats for about 500 miles, but its lower reaches are much more obstructed than those of the Musi. The *Asahan* river, which drains the Lake of Toba, and the *Serdang* and *Deli* rivers, are navigable by small vessels only. The *Kwantan* (*Indragiri*) is navigable as far as Tjenako, where the *Tjenako* river enters; between this point and Rengat there is very little water during part of the year. All the rivers on the east coast are impeded by mud-banks at their mouths, and the depth of the water constantly changes, on account of small bores (*benas*) which rush up their courses at intervals, at the time of the new and full moon.

The Government has supplied military engineers and provided the necessary explosives for deepening operations and the removal of obstructions from the beds of the Musi, Ketahun, Kwantan, and other rivers, but the results have been disappointing.

(c) Railways

In the west of Sumatra there is a State railway of 1·067 metre gauge, connecting Emmahaven with Fort de Kock (245 km.). In 1914 it carried 3,001,079 pas-

sengers and 639,694 tons of goods. Its construction, including harbours and coal-sheds, cost fls. 23,869,760, and the net revenue after payment of working expenses was fls. 1,016,379. This system has its head-quarters at Padang.

In the south of the island there are 12 km. of State railway, of 1·067 metre gauge. There was also in 1915 a line in course of construction connecting Telok Betong with Muara Enim and Palembang, the terminus being at Oosthaven, a few miles south of Telok Betong, and opposite Merak in Java, with which it is connected by a ferry. This line was constructed with great difficulty, owing to the fact that it ran through a sparsely populated district, where labour was scanty and the natives disliked the work. The Government decided to construct the line itself, being assured that if private concessions were granted attention would be paid to those stretches only which could be laid easily and would be at once remunerative.

In Atjeh and Dependencies there is a narrow-gauge steam-tramway 471 km. in length from Langsar to Kuta Raja and Oleh Leh (Oelee Lheue); the gauge is 0·75 metre, whereas the narrow gauge in Java is 0·60 metre. The Atjeh Steam Tramway, as this line is called, was constructed originally for strategical purposes, but was handed over by the Department of War to the Department of Government Enterprises in January 1916. In 1913 it carried 2,627,000 passengers and 209,000 tons of goods; of these 190,000 passengers and 19,000 tons of goods were carried on Government account.

On the east coast of Sumatra the Deli Railway Company controls a railway from Tebing Tinggi to Pangkalan-Brandan *via* Medan, with branches to Timbang-Langkat, Belawan, Labuan-Deli, and Kwala (Koealo). To this company was transferred in 1883 a concession granted to the Deli Maatschappij, valid till

1973. The line is being extended eastwards to Tanjung Balai, and westwards will eventually be connected with the Atjeh line. The Deli Railway Company also controls about 170 km. of tram-lines, and a concession was granted in 1913 for 150 km. of additional lines. The company's capital is fls. 4,000,000, and in 1914 it paid a dividend of 15 per cent. Its 92 km. of railway track in 1914 carried 1,746,364 passengers and 397,994 tons of goods. The capital outlay on this railway then amounted to fls. 9,019,131, and the net revenue, after payment of working expenses, was fls. 1,206,302. It had become necessary to double the track from Medan to Belawan, owing to the increase of traffic, and altogether about 124 km. of railway or tramway were in course of construction.

The Ombilin coal-mines, already connected with Emmahaven by railway, will before long be connected with Palembang and the east coast. Elaborate plans have been prepared for the railway development of central Sumatra, and in a few years there will be railway communications from end to end of the island.

(d) *Posts, Telegraphs, and Telephones*

In 1914 there were 175 post offices in Sumatra. Where no railway is available, the mails are conveyed, whenever possible, by motor-car, but there are considerable difficulties, for the cars have often to cross the rivers on rafts for want of bridges. Postmen also travel on horseback or by *prau*. Wherever there is a railway or tramway, the postal services run in connexion with it. In order to facilitate the delivery of mails from Europe, a sea post office travels between Batavia and Padang. There are auxiliary post offices on many of the boats of the Koninklijke Paketvaart Maatschappij.

In 1914 there were 4,972 km. of surface telegraph

lines in Sumatra. The principal towns are in telegraphic communication with each other, though the difficulty of maintaining the telegraph wires has been very great. There are more wild animals than in Java, and much damage is done to the wires by monkeys and elephants. The railways and roads now in course of construction will assist the development of telegraphic communication throughout the island.

The telephone system in the Outer Possessions is very little developed, but there are extensive local exchanges at Padang and in Sumatra East Coast. As in most parts of the Outer Possessions, there are telephone systems for military and administrative purposes, which to a limited extent are available for public use.

(2) EXTERNAL

(a) Ports

(i) Accommodation

Belawan-Deli lies on the north-east of the island, and is connected by railway with Labuan and Medan. The channel is buoyed. The river Deli affords good anchorage in from 3 to 7 fathoms. The depth on the bar, which is six miles from the piers, is 16½ ft. at high water at ordinary springs and 14 ft. at ordinary neaps. The rise and fall of the tide is 8 ft. at ordinary springs and 3 ft. at ordinary neaps. The depth of water is less from October to March, during the north-east monsoon.

The Government is building two piers in the southern part of the harbour, and the Eastern Steamship Company one in the northern part. There are five piers at the port, belonging to the Government, the Ocean Steamship Company, the Koninklijke Paketvaart Maatschappij, the Norddeutscher Lloyd, and the Deli Railway Company, and at all of these, except at the end of the

pier belonging to the Koninklijke Paketvaart Maatschappij, there is not less than 12 ft. at low water at ordinary springs and about 20 ft. at high water. Dredging was still in progress in December 1913, and Government shed accommodation was being provided. The Government dredger *Java* reported an additional depth of 4 ft. in the channel at the bar as a result of the operations of 1913, the cost of the year's work being about fls. 240,000. It was hoped to increase the depth ultimately to 25 ft. Additional wharfage was estimated to cost fls. 408,000. It was intended to purchase a floating crane at a cost of fls. 84,000. The aim was to make Belawan an ocean harbour, the cost being estimated at fls. 2,040,000.

Benkulen, on the south-west coast, was formerly of great importance, and a century ago was regarded as likely to become the principal port in the Dutch East Indies. It is now of little account, and the harbour has to a great extent silted up.

Padang (Emmahaven) is the most important harbour of the west coast, and is the shipping port for the produce of the Ombilin coal-mines. There are four piers, besides a coaling pier, three being 278 ft. long and one 170 ft. long. At low water vessels drawing 26 ft. can moor. The maximum draught allowed is 28 ft. Bunkering is done at the rate of 100 tons per hour. Pilotage is compulsory. The cost of improvements now in progress is estimated at fls. 885,000, of which fls. 136,514 were spent in 1913 and 1914.

Pangkalan-Brandan has a pier about 322 ft. long, with a depth alongside of 16 ft. at high water and 8 ft. at low water. The Bataafsche Petroleum Maatschappij has also a few wooden piers, with a total length of about 1,300 ft. There is a good anchoring place, and the Balaban river channel is lighted at night by gas buoys. In 1907 a channel was made about 120 ft. broad, the

lowest water in January, February, and March being $12\frac{1}{2}$ ft. at low-water springs, and in the other months $13\frac{1}{2}$ ft. The greatest depth of the high-water springs, viz. 21 ft. 6 in., occurs in May and June.

Sabang, on the island of Pulu Weh, off the north coast of Sumatra, is principally a coaling station, but in 1914 held the first place among the ports of the Dutch East Indies for total volume of traffic. The clear entrance to the harbour is about 2,460 ft. wide, and may be safely entered by day and night without the aid of a pilot. The anchorage is safe, with a bottom of sand and coral in 15 to 22 fathoms, to within about 328 ft. of the shore. The coal wharf is the property of the Sabang Bay Harbour and Coal Company.

Steamers go alongside the wharf in smooth water, and at lowest spring tides there is a depth of 30 ft. Coaling can continue day and night at an average rate of 100 tons per hour, and cargoes of coal can be discharged at the rate of 2,000 to 2,500 tons daily. The total length of the coaling transport and liquid fuel wharves is 3,000 ft. Repairs to steamers and boilers can be executed in the workshop attached to the 3,000-ton floating dry dock. This workshop is specially equipped for building dredgers, lighters, &c., and for electric welding.

There are five electrically driven coal transporters, and also one automatic bunkering barge (900 tons), and a 30-ton floating motor crane. Salvage accommodation is provided. The coal sheds have a capacity of 75,000 tons. There are godowns for the storage of tobacco and other merchandise, covering 62,000 square feet. The freshwater supply is abundant. To improve the harbour, fls. 91,000 were spent in 1910, fls. 52,000 in 1912, and fls. 252,683 in 1913.

Singkel is fortunately placed on an island in the delta of the Simpang river. The outlets of the river have

bars, but the roadstead is good, and dredging has lately improved the principal entrance.

Ports of minor value are *Siboga (Sibolga)*, *Telok Betong*, *Priaman*, *Bengkalis*, *Oleh Leh* (the port of Kuta Raja), *Natal*, and *Ayer Bangis*. They are all small places. Besides Padang, Palembang, and Belawan, the only ports in Sumatra open to ships of all nations for import and export trade are Oleh Leh and Telok Betong.

(ii) *Nature and Volume of Trade*

The following table shows the number of vessels entering and clearing at the three principal ports of Sumatra in 1913 and 1914, and their tonnage:

	1913.		1914.	
	<i>No.</i>	<i>Tonnage.</i>	<i>No.</i>	<i>Tonnage.</i>
Sabang	1,184	6,006,000	1,011	5,028,000
Belawan-Deli	1,395	1,037,000	1,261	1,103,000
Padang (Emmahaven)	876	3,025,000	853	3,068,000

There is constant steamer communication between Belawan-Deli and Singapore and Penang. The following is a return of vessels entering the port in 1913:

Steam Vessels.

	<i>Number.</i>	<i>Tonnage.</i>
British	171	146,845
Dutch	216	321,508
German	180	191,486

Sailing Vessels.

	<i>Number.</i>	<i>Tonnage.</i>
British	193	37,442

(b) *Shipping Lines*

Vessels of the Koninklijke Paketvaart Maatschappij maintain regular services between the principal ports of Sumatra and the adjacent islands on the one hand, and the ports of Java and the rest of the Dutch East Indies and Singapore on the other. With some of the

smaller ports, such as Siboga, Natal, and Barus, the company has instituted a weekly service; at others, such as Kroë in Benkulen Residency, its vessels call regularly once a fortnight.

The Rotterdamsche Lloyd and the Nederland Stoomvaart Maatschappij transport tin from Banka under contract.

Other steamship companies which have interests in these waters are the Norddeutscher Lloyd and the Ocean Steamship Company.

(c) Cable and Wireless Communication

Java and Sumatra have been connected by cable since 1859. The eruption of Krakatau in 1883 destroyed a cable laid between Anjer in Java and Telok Betong. In 1894 a cable, still in use, was laid between Anjer and Kalianda. In 1914 a direct cable (600 miles) was laid from Padang to Batavia.

There is a wireless station at Sabang, which, it is said, can perceive signals from the wireless station at Nauen, near Berlin. A wireless station has also been erected on Engano, which has assisted the development of that island. It is proposed to set up other wireless installations in Sumatra, as they are less costly than cables.

(B) INDUSTRY

(1) LABOUR

(a) Supply of Labour

The chief obstacle to the development of Sumatra is the dearth of labour. The local supply is supplemented to a great extent by imported labour. Of the native races the most important for economic purposes are the Bataks, Achinese, Gayos, and Menangkabau Malays.

The Bataks (about 250,000) appear to be one of the most promising races in the islands, though until recently they have vigorously resisted all foreign influences. They prefer the highlands, but many have been induced to work on the coasts as coolies and shopkeepers, and have developed inland trade. They show intelligence and adaptability; they do admirable work in wood, copper, and ivory.

The Achinese (about 800,000) have probably a considerable latent capacity for industry, but are a vicious, thriftless race. The highland Achinese (*Orang baroh*) have been described as fanatical brigands, and those on the coast (*Orang turong*) as servile, thievish, treacherous, and intemperate. Silk-weaving is a considerable industry among them, but craftsmanship in Atjeh has suffered from the effects of the long war.

The Gayos (about 60,000), a highland race akin to the Bataks, have long been under Achinese domination. They are industrious and peace-loving, though forced by the Achinese into opposing the Dutch. Besides being excellent workers in wood, copper, and ivory, they weave fine material, plait elaborate mats, and make good pottery.

The Menangkabau Malays in the Padang highlands are the most civilized of the natives; they learn very quickly where they have the opportunity, and are excellent traders and agriculturists. They are inclined to be servile to their superiors and arrogant to their inferiors, and are generally dishonest, but nowhere in Sumatra do the agricultural conditions more nearly resemble those of the most prosperous areas in Java than among these people.

In the Ombilin coal-mines the labourers are chiefly native convicts. At the end of 1914 the total number of labourers was 6,939, of whom 3,223 were actually convicts, while a large proportion of the remainder were

ex-convicts, who, having learnt to be useful, contracted to continue their labour.

Among the imported labourers the Chinese form the most considerable element. They have practically all the domestic trade in their hands, and provide the skilled labour class. They are principally engaged in the Deli tobacco plantations, the tin-mines of Banka and Billiton, the timber-felling industries of Sumatra and Riouw, and the pepper gardens of Riouw and Banka. One German firm used to bring to the tobacco plantations every year 25,000 Chinese, a large proportion of whom returned to China at the expiration of their three years' contract. The majority of the Chinese in Sumatra, however, were born there, but these are not so strong physically nor so industrious as the immigrant Chinese. It is probable that the reason why the planting of tobacco is attended with better results in Sumatra than in Java is that the Chinese from Amoy and Swatow who do the work there are more intelligent than the Malay coolies employed in Java. The Chinese coolies employed in the tin-mines come from the dregs of the population of Amoy and Canton.

An increasing number of Javanese labourers emigrate to Sumatra on contract to work there. In 1909 there were about 45,000 of such labourers at work in Sumatra East Coast. The reluctance of the natives to do railway work led to the organization in Java of a special emigration service to supply labourers for work on the railways under construction in southern Sumatra. In 1914, for the Palembang section of the line, there were imported 2,901 coolies, and for the Telok Betong section, 5,716 coolies. The fact that the total number of hands employed at the end of the year on the Palembang section was 5,096, and on the Telok Betong 4,113, seems to indicate that in the former the natives had been induced to take some part in the work; in the

latter, however, the natives of the Lampong Districts would take no part.

(b) *Labour Conditions*

The relations between employers and employees are governed by Coolie Ordinances, or, in the case of agreements not made under those Ordinances, by special laws. In Sumatra, as elsewhere in the Outer Possessions, no agreement may be made under the Coolie Ordinances with labourers who belong to the province in which the estate of the employer is situated. Included among these are the descendants of Orientals born and brought up in that province.

Contracts under the Coolie Ordinances are made for a period of three consecutive years or less, and must be drawn up in a prescribed form. Oppression is prevented by the rights and obligations of both parties being detailed. The number of working hours may not exceed ten a day, and when the contracts expire, or earlier if the labourers are unable to perform their duties, the employers are compelled to send them back to the place where they were recruited. The majority of the employers realize that it is to their interest to treat their labourers well, and some estate owners even supply them with cinematograph performances and native musical instruments. On estates it is not usual to provide the labourers with food, but rice, which is their staple diet, is supplied at a fixed price, so that no profit may be made by the employer. The Government insists on medical treatment by a fully-qualified European or native doctor. Many estates have their own private hospitals, but a more usual arrangement is for several estates to combine and build central hospitals, some of which are model institutions. Employers are fined for breaches of labour contracts, and employees are fined or imprisoned

for disobedience, inciting to desertion, refusal to work, fighting, or drunkenness. All labourers hired under the Coolie Ordinances are registered by the Government.

Contracts with labourers not made under the Coolie Ordinances may be either verbal or in writing, for a definite period; the labourers' names must be registered, and the registers must always be open to inspection by Government officials.

The Chinese coolies in the tin-mines are employed sometimes in *kongsis* (gangs) under contract and sometimes under direct Government supervision. The coolies' agent, or labour contractor, is paid all the costs of importing them, including passage-money, contract, commission, and medical examination, and the value of the wages at the rate of fls. 1.20 per diem. The coolie himself receives wages at the rate of 12s. 6d. a month, with about 4d. a day for food. He must engage himself for at least a year, and often remains working at the mines for no other reason than that he has run so deeply into debt that he cannot get away. Of the 12,547 labourers who completed their contracts in 1913 only about 18 per cent. returned to China.

Employers are authorized to sign labour contracts only through the medium of a qualified recruiting agent, who has to pay all the expenses of medical examination, transport, &c. In 1908 the cost of recruiting amounted to about fls. 65 per head, but in 1914 it had increased to fls. 125 or more. In 1914 in the whole of the Outer Possessions, but mainly in Sumatra, there were 400 estates working with contract labourers, and the number of labour contracts registered was 133,203. Of these contracts 72,397 were made with native inhabitants, 59,012 with Chinese, and 1,794 with labourers from Ceylon, Bengal, and elsewhere.

(2) AGRICULTURE

(a) Products of Commercial Value

Vegetable Products.—Besides the numerous varieties of forest produce, such as wild rubber, gums, rattans, and bamboos, the island furnishes many valuable crops. Agriculture may be divided roughly into European and native. The European planters direct their efforts almost exclusively to obtaining products in bulk for the European market (e. g. rubber, tobacco, tea, coffee, copra); the native farmer mainly devotes himself to satisfying his own needs by growing rice, maize, sugar-cane, areca palms, and vegetables, but he is beginning also to grow crops intended for the market and only to a small extent destined for native consumption, such as cotton, kapok, gambier, pepper, and nutmegs.

Areca (or Pinang) palms are second in importance only to the coco-nut among the palm-trees of Sumatra. The natives grow this palm everywhere for the sake of its fruit, the betel-nut. Under the name of areca-nut the young fruit is used as a remedy for dysentery, and is given to cattle as a protection against cold. But the chief consumption in the East is due to the almost universal habit of chewing the ripe nuts. The wood is used for the manufacture of various articles, and the leaves for colouring fishing-nets and lines. The principal exporting areas are Atjeh and Palembang. In 1913 Atjeh exported 12,091 tons, of which 11,565 tons went outside the Dutch East Indies, while Palembang exported 4,649 tons, of which 3,837 went outside. The nuts are sent chiefly to Singapore and Penang, but also in considerable quantities to Germany and America.

Cinchona is grown in Sumatra West Coast. In June 1914 four estates in that province were planted with it, containing 110 *bouws* (1 *bouw* = $1\frac{3}{4}$ acres) planted with

cinchona alone, and 100 *bouws* planted with cinchona mixed with other crops.

Coco-nut palms are grown extensively in several provinces of Sumatra. The figures for 1917 were as follows :

	<i>Bearing.</i>	<i>Not Bearing.</i>	<i>Total.</i>
Sumatra West Coast .	2,009,585	1,355,760	3,365,345
Sumatra East Coast .	1,254,821	1,868,573	3,123,394
Riouw and Dependencies	2,704,348	3,045,794	5,750,142
Lampung Districts .	876,131	489,895	1,366,026
Tapanuli	548,069	610,343	1,158,412

Coco-nut plantations have been established by Europeans chiefly in Riouw, Sumatra West and East Coast, and Atjeh. There is a certain amount of inter-insular trade in coco-nuts; thus Banka and Dependencies exported 289,000 nuts in 1913 to Jambi, and the Lampung Districts sent 672,000 nuts to Java. Including exports to other islands in 1913, Sumatra West Coast exported 15,473 tons of copra, Sumatra East Coast 5,404, and Atjeh and Dependencies 3,909. There is also some export of coco-nut oil from Sumatra West Coast. The manufacture of brushes and yarn from coco-nut fibre has not made much progress in the Dutch East Indies.

In 1913 there were altogether in Sumatra about 63,000 acres planted with coco-nut palms alone, and about 67,000 planted with coco-nut palms and other crops. In Sumatra East Coast there were 14,258 acres belonging to European companies. Native cultivation has been much hindered by the Chinese middlemen, who systematically rob the native by making advances on the coco-nut crop while on the trees, thus obtaining the nuts at far too low a price. One of the results of the system is that the native devotes little care to the condition of the product, since it is only the middleman who benefits. The native has also an interest in drying his copra badly, and adding foreign substances, in

order to keep up the weight. At one time Padang copra obtained such a bad reputation through being taken from unripe fruit and badly dried, generally over a fire, that there was practically no market for it. Organization is needed, for at present if one merchant refuses copra because the quality is bad, there is always another ready to buy it because of the contracts which he has to fulfil.

Coffee was grown by forced cultivation till 1908, when the Government gave it up. In 1913 there were 30,000 acres in Sumatra East Coast planted with *Robusta* coffee and 6,000 with Liberia. Most of this coffee was interplanted with permanent crops such as rubber. The Sumatra crop of 1913-14 consisted of 36,817 *piculs* (1 *picul* = 133.33 lb. avoirdupois) of *Robusta*, 49,875 of Java (*Arabica*) coffee, and 7,709 of Liberia. It was estimated that in 1914 there were about 419,000 acres planted with coffee interplanted with other crops, and 27,500 planted with coffee exclusively. The East Coast product is said to be the best. The Government has never succeeded in producing coffee crops in Sumatra as plentiful or as good as those in Java; it has been gradually abandoning its plantations, letting the land upon long leases, as in Java. Sumatra does not export its coffee direct, but sends it to the markets of Java.

Cotton is grown mainly in Palembang. The native crop is short fibred and of small commercial value. Measures have been taken by the Government in Sumatra, as in Bali and Lombok, to introduce foreign varieties, yielding more valuable crops. The long staple Bourbon cotton has been introduced and appears suitable for extensive planting in young rubber plantations. But as yet cotton cultivation by Europeans is insignificant and most of the cotton produced is grown by native farmers, generally in rotation with rice. The

raw cotton exports from Palembang increased from 6,000 tons in 1904 to 7,900 tons in 1913. No cleaned cotton was exported in 1904, but 411 tons were exported in 1913, of which 380 tons went direct to foreign countries, the bulk going to Germany. There are several large ginning plants in Palembang, notably that of the Jambi Company.

As America tends to consume more and more of her cotton crops at home, placing only the surplus on the world's markets, there is a strong movement in the Dutch East Indies to stimulate cotton cultivation, but the native cotton will not be of much importance for the European market while it continues to be shipped raw; in this condition it can find purchasers only in China and Japan. Machinery for removing the seeds to make the raw cotton fit for the European market is too costly for the native grower. If large installations are made in the principal centres of cotton cultivation, the problem may be solved. But costly factories can be erected only if there is a certainty of constant supplies of cotton. Such factories would, however, encourage the grower, making him independent of the Chinese middleman, and enabling him to obtain better prices than he can hope for now, while oil and cattle food could be made as by-products.

The preparation of the seeds in the Dutch East Indies will be an important economy, in view of the very high freights for cotton seed. At present seed is exported from Palembang only; in 1913 the export was about 500 tons (value fls. 41,000), which was almost all shipped to England, while 12 tons of seed of the best available varieties of cotton were sent to various parts of the Outer Possessions.

Gambier is largely exported to Java. In 1913 6,689 tons were exported from Riouw and Dependencies. Much of it goes *via* Singapore.

Ground-nuts are greatly increasing in importance. They are popular as a 'second crop', for they make very small demands upon the soil and require but little irrigation, while the necessary disturbance of the earth prepares the ground for the cultivation of rice. The exports from Sumatra West Coast began in 1910, and the agricultural adviser at Fort de Kock reported them as amounting to 6,024 *piculs* in that year, and to 11,350 *piculs* in 1912. The native farmers in Palembang have also been induced to turn their attention to ground-nuts, largely by means of official trial plantations, and have taken up the new industry with such zeal that it is not improbable that it may supersede cotton cultivation in Palembang.

Kapok is not cultivated systematically to any large extent. Most of the product is supplied by the trees along the roads on European plantations and the supporting plants in pepper gardens. In the hills, however, there is a rich volcanic soil which is eminently suitable for the cultivation of kapok in conjunction with maize and other food-stuffs. Most of the exports go to Holland. In 1913 Atjeh exported 141 tons and Palembang 325 tons. The oil, obtained by primitive native methods of crushing, was mainly used in soap factories, a much smaller part being used for human consumption, while the residue of the crushed seed was made into cattle-cake. A good deal of kapok seed is wasted because the natives have not the costly machinery necessary for separating the seeds from the fibre.

Maize is a popular food in most of the Outer Possessions, especially when the rice crop is unsatisfactory. It is grown in several areas, especially in the uplands, but is exclusively consumed by the native population.

Rice is the chief product of native agriculture and the chief food of the people. It is grown in all the

provinces of Sumatra, but the 'wet' system of cultivation is found only in the Padang district and to a small extent in Atjeh and Palembang. The only Residency that exports more than it imports is Sumatra West Coast. In 1913 the exports and imports of husked rice were as follows :

	<i>Exports.</i>	<i>Imports.</i>
	<i>Metric Tons.</i>	<i>Metric Tons.</i>
Sumatra West Coast	2,892	1,055
Tapanuli	35	6,111
Benkulen	—	2,331
Lamong Districts	8	4,439
Palembang	2,112	10,092
Jambi	249	2,951
Sumatra East Coast	365	99,586
Atjeh	65	12,369
Riouw	1,471	12,250
Banka	—	27,655
Billiton	140	550
Total	7,337	179,389

Rubber developed in importance enormously a few years ago. At the end of 1911 it was estimated that in Sumatra East Coast there were 150,000 acres under rubber, and in 1912 about 55,000 acres more were planted. During these two years the Hollandsche Amerikaansche Plantage Maatschappij, registered in Holland but controlled from the United States, alone planted 27,500 acres with rubber. At the end of 1913 there were 217,300 acres in Sumatra East Coast planted with *Hevea* rubber, and about 6,000 with *Ficus*. On the east coast of Atjeh there were 8,000 acres under *Hevea*. At Langsar in Atjeh the Government controls a rubber estate, of which 468 *bouws* were under cultivation in June 1914. At that date there were altogether 213 rubber estates in Sumatra, of which 184 were in Sumatra East Coast, 17 in Atjeh and Dependencies, and 12 in the Lampong Districts. Sumatra East Coast

alone is expected to produce 29,000 tons of rubber in 1919.

The total export of plantation rubber from Sumatra East Coast in 1916 was about 8,209 metric tons as compared with 7,109 metric tons in 1915. The destinations were as follows :

	1915.	1916.
	Metric tons.	Metric tons.
United States	2,037	4,170
United Kingdom	3,591	2,818
Straits Settlements	524	1,197
Netherlands	946	14
Italy	11	—
Canada	—	10

Spices.—There has been a tendency for European enterprise to abandon the cultivation of spices, but between 1904 and 1913 there was a decided increase in their cultivation by natives in Sumatra West Coast, Tapanuli, and Atjeh. The export of *nutmegs* in 1913 from Sumatra, including what was exported to other islands of the Dutch East Indies, was 400 tons of nutmeg and 69 of mace. Sumatra West Coast exported 262 tons in that year to all destinations. Of *cloves*, which are mainly important in the Moluccas, about 43 tons were exported from Benkulen in 1913, and small quantities from Tapanuli and Sumatra West Coast. *Pepper* is exported largely to other islands of the Dutch East Indies, the black pepper of the Lampong Districts in particular being exported to Java. Of the 5,000 tons of white pepper exported in 1913, Banka and Dependencies exported 2,779 tons, while of the 19,000 tons of black pepper exported in the same year the Lampong Districts exported 11,537 tons and Atjeh 3,020 tons.

Tea was first cultivated in Sumatra East Coast in 1912, when about 2,000 acres were planted; in 1913 about 6,000 acres had been planted, and in 1917 the

area under cultivation was more than 12,350 acres, of which, however, only 4,200 were producing. The mountainous districts of Sumatra are particularly suited to the cultivation of tea, and the best results are obtained in a moist atmosphere at an altitude of between 1,000 and 2,500 ft. Sumatra teas are mostly sold in England. The first tea crops were shipped in 1914. In 1916 the total quantity produced was 3,377,800 lb.

Tobacco is grown much more extensively in Sumatra than in any other of the Outer Possessions. The seed of the Sumatra tobacco came originally from Java, but the quality of the tobacco is superior owing to the advantages given it by the climate and soil and the greater intelligence of the coolies who grow it. Java tobacco is less expensive to prepare and more uniform in quality, but the best Sumatra tobacco has a thin silky-looking leaf of such excellent colour and quality that the Java planters have never equalled it; it is second only to that of Havana for the manufacture of cigars. The natives produce also a large quantity of *krossok*, a coarse native tobacco.

The Deli Maatschappij was formed in 1869 for tobacco cultivation in the district of Deli. It has a capital of £750,000. An experimental station has been established at Medan for the purpose of giving scientific advice to tobacco-growers. In 1913 99 plantations in Sumatra produced 19,933,000 kg., but in the following year 123 plantations produced only 5,351,000 kg. In 1913 the Deli exports were 25,777 tons, valued at fls. 69,598,000. Besides the increasing cultivation of tobacco in Deli a great deal of tobacco is produced in the south and west of Sumatra.

Live-stock.—The most useful domestic animal in Sumatra is the buffalo. In 1913 there were 323,280 buffaloes, 292,200 cattle, and 61,300 horses. Cattle, buffaloes, horns, and hides are exported. The non-

Mohammedans breed pigs, particularly in Nias and Tapanuli. Roe-deer are abundant, and the flesh is largely eaten, generally dried.

(b) *Methods of Cultivation*

In the Dutch East Indies it is hardly too much to say that the degree of civilization attained by a people can be measured by the extent to which they have carried the cultivation of rice, which is regarded essentially as a product of civilized men. Although in Sumatra rice is generally grown, it is difficult to persuade the natives to improve their antiquated methods, to which they cling with fanatical attachment and religious fervour. So the 'wet' system of cultivation is found only in certain districts, where it has been inherited from Hindu-Javanese settlers.

In 1905 a Department of Agriculture was created in the Dutch East Indies. Its chief business is the promotion of native agriculture. In 1908 an assistant inspector of native agriculture in the Outer Possessions was appointed, and in 1910 an agricultural adviser for Atjeh and two others for the rest of Sumatra. There are now two agricultural instructors for Sumatra West Coast and Benkulen, and two agricultural advisers for Atjeh and Palembang.

The relation of imports to exports in rice shows how great is the need of systematic Government assistance. It is only by constant persuasion, and especially after observation of experimental rice-fields cultivated on modern methods, that the natives can be induced to increase their output. Courses of lectures are given to the natives, and some improvement is gradually taking place. Better methods of planting, the use of better seed, and improvements in irrigation would greatly increase the production. At present the only province where the exports of rice exceed the imports

is Sumatra West Coast, where the rapid rivers on the plateau in the middle of the Barisan Mountains are used for irrigation by means of wheels.

Instruction is also given in the planting of 'second crops' such as beans, maize, cassava, potatoes, &c., for native consumption, and oil-seeds, ground-nuts, tobacco, &c., for commercial purposes. The natives greatly prefer to cultivate perennial crops for sale, and to buy their own food with the money thus obtained.

(c) *Forestry*

Sumatra is enormously rich in forests, which have been very little exploited. The forests begin at a much lower altitude than in Java, and contain oaks and chestnuts, teak, sandal, and ebony, besides gum trees (especially camphor, benzoin, and damar) and palms in profusion. Timber produced in Palembang has been extensively used in the construction of the railway in the south of Sumatra.

Four districts of forest administration were established in Sumatra in 1913. Before that date there was no forest administration outside Java and Madura. The forest staff of the Outer Possessions in 1914 numbered 52, the majority being employed in Sumatra. They were engaged in a preliminary investigation of the position, composition, and condition of the woods. Exploitation may be undertaken only after a special forest concession has been obtained, which may be withdrawn if exploitation does not begin within a year after it has been granted. A great many concessions have been applied for, but few have been worked. In order to stop the wasteful methods of felling practised by the natives of Palembang regulations have been drawn up which include the levying of a tax. Owing to the large size of some of the tracts of land required on long leases for various purposes in the

Lampung Districts, it has been found necessary to reserve a number of forest areas where there are wells.

The timber trade of Singapore is almost entirely dependent on exports from the mainland of Sumatra and the Riouw-Lingga Archipelago. This trade is called the 'Panglong Exploitation' (Panglong = *Kongsi*, a Chinese gang) and Chinese are employed on the felling.

The Panglong Exploitation comprised, in 1914, 93 places where timber was worked into beams, 37 places at which firewood was cut, 10 at which planks were sawn, and 71 at which charcoal was prepared. The timber is usually exported in beams to Singapore, where it is sawn into planks before re-exportation. The total revenue received by the Sumatra Government from timber taxation in 1914 was fls. 100,435, as compared with fls. 130,883 in 1913. In the island of Simalu, north-west of Sumatra, two large forest concessions were granted in 1914.

(d) *Land Tenure*

The numerous sultans are allowed to grant concessions, subject to the approval of the Government. The general conditions of land tenure described in *Java*, No. 82 of this series, apply also to areas under direct Government administration in Sumatra. The Government claims ownership of all the soil and subsoil, but, as a very large part of the island is not even surveyed, official control is necessarily only partial. The Dutch Government will not grant concessions of land directly to foreigners, though Dutch concession-holders are allowed to transfer their estates.

(3) FISHERIES

Though fish are even more plentiful off the coasts of Sumatra than off the coasts of Java, the main business of the Sumatra fisheries is to supply purely local

demands. Bagan Si Api-Api, at the mouth of the River Rekan in Sumatra East Coast, has become a centre of export, but the river is silting up, thus making it more and more difficult to fish with stationary nets from the land. However, the production of dried and salted fish at that centre in 1913 was no less than 20,400 tons, of which a large proportion was consumed in Sumatra East Coast. Bengkalis exports a great deal of dried fish. Sharks' fins are sold to the Chinese, and the prepared roe of the Indian shad or trubuk, as well as its dried flesh, is extensively exported. Mackerel, tunny, and ray abound in the seas, and carp, barbel, and eels in the rivers. Crabs and crayfish are abundant.

(4) MINERALS

Sumatra is immensely rich in minerals, and it is probable that some of its most valuable deposits have not yet even been tapped.

Coal.—The Ombilin coal-mines near Sawah Lunto in the highlands of Padang were opened up in 1892. About 5,320,475 metric tons were extracted between 1892 and 1914. The mines are worked by the Government. The field is about 10 km. by 9 km., and has been estimated to contain about 200,000,000 tons; some seams are as much as 23 metres thick. The coal is shining black, clean-looking, and in general reputation superior to all the other Dutch East Indian kinds. Its burning qualities are good, and it ignites easily with a bright flame; it produces very little ash and residue, and gives off little smoke and soot.

The greater part of the production is sold to private buyers, who took 80 per cent. of the total output in 1913, and 76 per cent. of the total output in 1914. The Government uses nearly all the remainder. Coal for private buyers is delivered at Emmahaven (connected with Ombilin by a railway 156 km. long), or

is shipped to Singapore, Surabaya, Macassar, and Tanjong Priok (Batavia).

The output has grown rapidly and consistently. In 1892, the first year of working, it was 1,758 metric tons; in 1893 it was already 46,075 tons; in 1903 it amounted to 201,292 tons, and in 1909 to 325,000. In 1914 the output was larger than ever, as all external works of preparation were suspended, and efforts were concentrated on the actual working of the coal, for which the demand exceeded the supply. The total, 443,141 metric tons, was a very large proportion of the 609,888 tons supplied that year by the principal coal-mines of the Dutch East Indies.

The financial position of the Ombilin mines can be best shown by the following table for the years 1912-14:

	1912.	1913.	1914.
Production (metric tons)	407,452	411,071	443,141
Receipts (florins)	3,614,208	3,678,138	4,104,689
Working expenses (florins)	3,276,068	3,309,051	3,604,954
Net profit after deducting share paid to the Sumatra Railway (florins)	338,140	369,087	338,909

The sum of fls. 160,826 was written off from the net profits for interest for the first time in 1914.

There is coal also in the Residency of Benkulen, 70 miles inland from Benkulen, where an Australian Company has a concession through a Dutch Company.

In the Residency of Palembang the Lematang Exploratie Syndicaat has been working a concession since 1896, but the output has not exceeded 1,000 tons in any year. The Dutch East Indian Government is now obtaining good steam coal in the same Residency at Tanjung, near Muara Enim, on the new South Sumatra Railway. This coal is said to be superior even to that obtained at Ombilin. In March 1918 the production was 2,500 metric tons, and in May probably 5,000, while it is hoped soon to increase the production to 20,000 metric tons monthly.

At Indragiri the Tjenako Steenkolen Maatschappij holds a concession, but has produced little coal. There are also coal-fields in the Lampong Districts, at Tapanuli Bay (Atjeh), and at Tapan, near Padang, but very little coal has yet been produced from them.

Copper is said to be plentiful in the valley of the Paningahan, Sumatra West Coast, but has not been worked.

Gold is believed to have been worked in Sumatra and the island of Nias before the Christian era, long-neglected workings having been found by the Portuguese at the end of the fifteenth century. Tradition has for centuries identified Mount Talamau (or Ophir) with the site of King Solomon's mines. In 1914 the production of gold in Sumatra was more than 2,000 kg., and in 1915 had risen to 3,764 kg.

Gold in Sumatra occurs in vein deposits, Tertiary gravel beds, and alluvial and beach deposits. The natives wash the river sediment in the rivers of Atjeh, Tapanuli, Jambi, and Palembang, and also work the Tertiary beds in a primitive way by means of adits, but the more important gold-mining companies exclusively work the vein deposits. A new gold-mining centre is now being actively opened up in the neighbourhood of Padang.

The principal gold-working mines of Sumatra are those controlled by the firm of Erdmann & Sielcken in the Residency of Benkulen. These are the Rejang Lebong, capital fls. 2,500,000, the Ketahun with equal capital, and the Simau, capital fls. 1,875,000. In 1914 the production of gold from these three mines was 2,108 kg., or 60 per cent. of the total production of the Dutch East Indies, and that of silver 9,910 kg., or more than 30 per cent. of the total production of the Dutch East Indies. In 1911 the value of the gold produced by the Rejang Lebong mine was fls. 4,280,375 of that produced

by the Ketahun mine fls. 813,725, and of that produced by the Simau mine fls. 1,306,800.

The area known as the Rejang Lebong district lies about 50 miles north of the town and harbour of Benkulen. The veins sometimes extend a length of 4 km., and water-power can be made use of everywhere for the working of the ore. Silver-mining is carried on conjointly with gold-mining, silver always being found with gold in the East Indies, in the average proportion of three to one. A century ago the Rejang Lebong mine could be reached only by a path over steep mountains and through dense jungle, but now there is a road on which motor-cars can run, and the journey from Benkulen, which once took three weeks, is made in three hours.

The Rejang Lebong mine declared a dividend in 1908 of 100 per cent., and subsequent dividends were :

	<i>Per cent.</i>		<i>Per cent.</i>
1909	85	1913	15
1910	90	1914	15
1911	50	1915	15
1912	25	1916	15

The Ketahun mine paid no dividends between 1912 and 1916. Poorer ore has had to be worked recently. The first dividend in 1903 was 16 per cent. on the ordinary and 25 per cent. on the preference shares. The Simau mine declared its first dividend of 20 per cent. in 1912, and in the four following years paid 20 per cent., 30 per cent., 30 per cent., and 17 per cent.

Iron is worked by Europeans in the Lampong Districts to a small extent, and is also found in Tapanuli, Sumatra West Coast, and Benkulen.

Manganese and *tungsten* ores exist in Sumatra and in the island of Banka, but neither they nor such *lead* ores as occur have ever been extensively worked.

Petroleum.—The first concession granted in the

petroleum industry in the Dutch East Indies was that granted in 1883 at Telaga Said in the district of Langkat, in the north of Sumatra, and taken over in 1890 by the Royal Dutch Petroleum Company. It is about seven miles from Pangkalan-Brandan. This company also bored wells at Tamiang, and in the Palembang Residency, notably at Muara Enim. All the Sumatra petroleum wells are now controlled by the Bataafsche Petroleum Maatschappij, which was incorporated in Holland in 1907 and has a capital of £13,200,000. It combines the interests of the Royal Dutch Petroleum Company and the Shell Transport and Trading Company, which hold respectively three and two of the five shares into which its capital is divided.

The exports from the Sumatra East Coast in 1912 were 43,698,484 gallons of kerosene shipped to the Straits Settlements, China, British India, British East Africa, and Australia, 38,249,511 gallons of benzene shipped to the Straits Settlements, Australia, and South Africa, and 1,423,230 gallons of liquid fuel (residue) shipped to the Straits Settlements and British India.

The production of the principal petroleum districts in Sumatra about 1910 was estimated to be as follows :

<i>Name of Concession.</i>	<i>District.</i>	<i>Metric tons.</i>
Muara Enim	Palembang Residency	112,000
Karang Ringin	"	14,000
Banjarsari	"	21,000
Babat	"	115,000
Suban Jerigi	"	105,000
Lematang	"	25,000
Telaga Said	Sumatra East Coast .	10,000
Bulutelang	"	135,000
Peureula	Atjeh	230,000

In 1907 the Palembang Residency produced 72,010,000 gallons of petroleum, Sumatra East Coast 30,605,000 gallons, and Atjeh 54,430,000 gallons.

In 1913 the production of the oil-wells in the north of Sumatra was recorded as 290,097 tons, and that of the wells in the south as 231,850 tons.

The Jambi oilfields are now to be developed by the Jambi Petroleum Company, which was established in the spring of 1918 in Holland with a capital of fls. 5,000,000, of which the Colonial Government holds a large proportion. The colony will therefore receive a large share of the profits, and has power to take over the crude petroleum products at fixed prices.

The benzene obtained from the Sumatra wells is of the finest quality, and is shipped in large quantities to Europe. Formerly, when the demand for benzene was small, Sumatra oil was less esteemed, for generally it is of much lighter quality than Borneo oil, producing a higher percentage of benzene, kerosene, and lubricating oil.

Tin is not worked in Sumatra, though it is found on the west coast and at Siak; but tin-mining is the chief industry of the islands of Banka, Billiton, and Singkep. Tin has been worked in Banka for 200 years; the Government owns the workings. Since 1820, when the Government placed the industry under European supervision, Banka tin has maintained a high reputation for purity. Since 1852 the industry has been directed by mining engineers who have qualified in Europe. In recent years the tin has undergone a chemical test before export, so that the Banka stamp is now a guarantee of purity.

There are practically no tin veins in Banka. The ore is worked almost exclusively in open pits, excavated in the alluvial deposits of rivers and the alluvial strata on the slopes of small hills. They are mostly situated on the north and east coasts. The strata are generally from 1 decimetre to 4 decimetres in thickness, though here and there they are several metres thick.

After the ore has been washed it is generally smelted in a local smelting-house by means of a simple blast furnace. In each of three districts there is a central smelting-house, but it is proposed eventually to establish a single central smelting-house for all the ore produced in Banka.

During the war increasingly large quantities of tin from Banka were exported to the United States after trans-shipment at Batavia. Before the war Banka tin was sold almost exclusively by auction at Amsterdam and Rotterdam in alternate months. Only small quantities were sold by auction in Batavia, or supplied to Government services in the Netherlands and the Dutch East Indies. Banka tin is shipped and sold by the Nederlandsche Handelmaatschappij, who act as commission agents for the Dutch East Indian Government, and it is transported, under contract, by the Rotterdamsche Lloyd and the Nederland Stoomvaart Maatschappij.

It is estimated that the production of tin in Banka in 1917 was about 240,000 *piculs*. In the years 1911 to 1913 the production was as follows :

	1911.	1912.	1913.
Number of mines	366	376	362
Average number of labourers	21,292	22,296	21,436
Production in piculs	250,496	244,749	255,035
Metric tons sold in Holland	15,358	16,329	15,390
Cost price (florins) per picul, including cost of freight and selling	39	43	45
Average sale price (florins) in Holland per picul	142	154	152
Net receipts (florins) for tin sold	33,967,966	39,387,606	36,566,674
Net profit (florins)	25,940,397	30,323,600	25,219,074

Chinese coolies are employed to work the tin, sometimes in *kongsis* under contract and sometimes under direct Government supervision. In the year ending March 1914, 6.06 per cent. of the total production of tin was obtained under direct Government supervision. Modern machinery has been introduced in the mines

directly supervised by the Government, and has of course enabled the managers to achieve equal results with much less manual labour.

In Billiton, though the ore is mostly found in open pits, as in Banka, yet there are also tin veins rich enough to be worked. In May 1914 there were 47 mines in Billiton. Tin-mining is carried on by a company called the Billiton Maatschappij. It is farmed out to *kongsis* of Chinese, who are supervised by Europeans and work at fixed prices settled in advance. Formerly the Rajahs of Palembang used to compel the natives of the island to work the tin, which was shipped to Singapore to be smelted. The Billiton Maatschappij received their original concession in 1852, and it was extended in 1892 for a further period of 25 years; they are bound by the terms of their charter to surrender five-eighths of their net profits to the Government, and the value of the Government's share in 1916 was estimated at fls. 1,000,000. In the year 1907-8 Billiton produced about 4,000 tons from 73 mines, in which the average number of workers was 11,128; a small amount of tin was also produced by natives. The production of the Billiton mines in 1910-13 was:

	1910.	1911.	1912.	1913.
Kilograms	4,541,802	4,147,708	4,453,174	4,614,495
Share of profits paid to Government (florins)	2,286,961	1,858,775	1,938,062	819,184

Billiton tin is sold by public auction in Batavia, and the largest buyers for many years before the war were Maintz & Company, a firm with head-quarters in Paris, and the International Trading Company of Rotterdam.

In Singkep the tin is worked mainly in open pits, but in the hills the working is also carried on with horizontal adits. Near Singkep tin ore is found at the bottom of the sea, and is being worked by the use of steam dredgers. The mud brought to the surface is

washed on board, and the ore is then landed at Singapore for smelting. The Singkep Company operates under the terms of a concession granted in 1889 by the Sultan of Lingga. The production of the Singkep mines in 1910-13 was :

1910.	1911.	1912.	1913.
<i>Kg.</i>	<i>Kg.</i>	<i>Kg.</i>	<i>Kg.</i>
405,154	869,016	635,091	671,592

The total production of the tin-mines in Banka, Billiton, and Singkep was :

	<i>Metric tons.</i>
1910-11	20,885
1911-12	19,607
1912-13	20,219
1913-14	21,156
1914-15	20,526

In addition to the minerals already named, *alum*, *naphtha*, *sulphur*, and *saltpetre* abound near the volcanoes, and *antimony*, *nickel*, *cobalt*, *zinc*, *quicksilver*, *bismuth*, and *arsenic* are known to exist. There is some *marble* in Sumatra, but it is reported to be of too soft a quality for building purposes.

(5) MANUFACTURES

A British engineering company, the United Engineers, Limited, has established itself at Medan with a fully equipped plant for the construction and repair of machines for rubber factories and others. It meets with vigorous Dutch and German competition.

There is a large Portland cement factory at Padang, producing cement of excellent quality. Bricks and tiles are made at Medan and elsewhere. Ice and mineral waters are made at Medan, Padang, and Kuta Raja. Vegetable oil factories have recently been established at Padang and Medan.

The native manufactures are local and unimportant.

They include basket-work, rattan furniture, iron weapons, pottery, and clothing. There is a great deal of hand-loom weaving by women, who chiefly use imported yarn.

(6) POWER

Hydro-electric installations in Sumatra are in the experimental stage. The inconstancy of the flow of water in most of the rivers is a serious obstacle, but in the regions of the mines the rainfall is sufficiently abundant to ensure an ample supply of water for mining operations at all times.

(C) COMMERCE

(1) DOMESTIC

(a) *Principal Branches of Trade*

The principal areas of domestic trade in Sumatra are Sumatra West Coast (which comprises only a portion of the west coast of the island), Sumatra East Coast, including Medan and the intensively cultivated areas north and south of it, and the southern area, in which Palembang is the most important settlement. Local markets are held in all the chief towns and settlements every few days, and there is much bartering. The trade of the interior of Sumatra is chiefly carried on by native *praus*, which bring down to the coast gambier, rattans, gums, resins, and other produce. Small coasting vessels carry the produce from port to port, and the vessels of the Koninklijke Paketvaart Maatschappij call fortnightly at the principal coast towns.

In the domestic commerce of Sumatra West Coast, the railway which starts at Pajokumbo (Pajakombo) in the Padang highlands and connects at Padang-Panjang with a branch to the Ombilin coal-fields is a very

important factor. Coffee and other crops are brought to Padang by this railway, and there is a busy native market held weekly at Pajokumbo, to which crowded trains travel from Fort de Kock, 10 miles distant.

The domestic trade is largely in the hands of Chinese, but some of the native tribes make good traders. The industries in petroleum, tobacco, rubber, and tea have only recently been established in Sumatra, and are entirely directed by Europeans.

(b) *Towns and Markets*

Barus was formerly the principal export centre on the coast of Tapanuli for rattans, benzoin, and camphor. Both Barus and Singkel were superseded by Siboga, when Government control of the hinterland of Siboga enabled Bataks bringing their produce from the highlands to reach it in safety. It is a distributing centre for fish and imported rice.

Bengkalis, the port of the island of that name, has a considerable trade in timber and fish.

Benkulen is on the west coast. Sir Stamford Raffles always believed that he could make it one of the most prosperous cities in the East Indies, but partly, no doubt, on account of its unhealthy site and the silting up of the old harbour it has failed to fulfil these expectations. The country around Benkulen produces rice, tobacco, pepper, gambier, and rattan. The population is about 8,000; in 1905 there were 163 Europeans and 802 Chinese.

Fort de Kock is the capital of the highlands of Padang. The non-military population is less than 2,500. This town is the principal sanatorium for Padang Europeans, as it is about 3,000 ft. above the sea. Native hawkers sell beadwork, native jewellery and arms, and native brocades and other fabrics. The shops, including the numerous 'portret' studios, are

nearly all owned by Chinese. The town has a weekly market, inferior in size and interest to that of Pajokumbo.

Kuta Baru, in Tapanuli, was a great city under the Hindus, and ranked next to Padang as a market for benzoin and camphor in the seventeenth century, but its trade was killed by the Achinese occupation in the eighteenth century.

Kuta Raja has now a small population, but pepper cultivation is still important, and in time the town is likely to become as populous and prosperous as it used to be in the days when Atjeh exported annually 18,000 tons of pepper, which represented nearly two-thirds of the world's consumption. Its port is Oleh Leh (population under 1,000), with which it is connected by a steam tramway.

Medan lies on the Deli at its confluence with the Babura. Until fifty years ago its site was surrounded by jungle. It is a modern city in appearance, though it contains a large Chinese quarter. The port of Belawan-Deli (about 40 miles distant) is connected with it by railway.

Natal is a small port on the Natal river in Tapanuli. Fishing is one of the chief local industries and there is a Government salt warehouse. There is direct trade with Singapore in native produce.

Padang is on the west coast. The bulk of the coffee, rubber, tobacco, copra, gums, hides, and timber of the central districts passes through it. (For details of the port, see above, p. 26.)

Padang Sidimpuan, the capital of the Residency of Tapanuli, is an active commercial centre. Its port is Siboga, with which it is connected by a good road.

Pajokumbo (Pajakombo), the terminus of the railway, 10 miles beyond Fort de Kock, is surrounded by luxuriant coffee plantations. Its population is under 2,000. It

is chiefly famous for its weekly native market; this has a bird section, comprising edible, plumage, singing, and fighting birds, a butchers' section, where whole carcasses of buffaloes are trussed up, and cuts carved from them on demand, and a large area given up to foreign manufactures, including chromos, table-covers and draperies, and cheap Dutch porcelain. Candlesticks and other articles made by the natives from old kerosene tins, native jewellery and beadwork, and native fabrics of all kinds, including gold thread brocade of some artistic value, are profusely displayed. The region is inhabited by Menangkabau Malays, the most civilized of the natives of Sumatra, who cultivate rice with skill and industry.

Palembang stands on the Musi river, at a point where it is more than 1,000 ft. wide. The houses rest on large rafts, and the Chinese and Arab merchants who live in them take them up into the interior of the country when they go to purchase goods.

Rengat, the ancient capital of the kingdom of Riouw, which had large territories on the mainland of Sumatra, is now almost a dead city. Its population is only a few hundreds, but small steamers maintain a service between it and Singapore, though the Kwantan river is seriously obstructed by a huge delta. Navigation has been improved by dredging.

Siboga (*Sibolga*), in Tapanuli Bay, is the principal port of Tapanuli. It is the main outlet for the agricultural and forest products of the interior of Tapanuli, and is also the chief mart of the natives. There is a large domestic trade in fish, and there is also trade in rice, sago, cattle, and native fabrics. Many of the shopkeepers and coolies are Bataks.

Though coffee and other crops can be successfully grown, Siboga is notoriously unhealthy, and the immediate hinterland is not regarded as productive, but

that is mainly because the forests have not been much reduced. Trade is largely by barter.

Singkel, on an island in the delta of the Simpang river, was under the Achinese an important town, but has declined since its occupation by the Dutch (1840). It is an important mart for natives of the highlands.

Telok Betong, the capital of the Lampong Districts, lies at the head of a bay, with deep water. Most of the trade is in the hands of Chinese. Coffee, pepper, and rattans are the chief exports.

(c) *Organizations to promote Trade and Commerce*

In 1911 the Department of Agriculture, created in 1905, took over the responsibility for trade and industry, and has since been called the Department of Agriculture, Industry, and Commerce.

There is a Chamber of Commerce at Padang, founded fifty years ago. It is an official institution with five members, appointed to advise the Government. Medan has no official Chamber of Commerce, but both Medan and Padang have active commercial unions of old standing, which compile local statistics, petition the Government to remove obstacles to trade, and so forth.

(2) FOREIGN

Sumatra's share in the trade of the Outer Possessions¹ is preponderant. Taking an average of recent years, the value of the import trade of Sumatra has been about 70·8 per cent. of the whole import trade of the Outer Possessions, and that of the export trade about 64·4 per cent. of the total for the Outer Possessions. The foreign trade of Sumatra East Coast is the principal component of Sumatra's trade as a whole. In 1915 and 1916 that district did about 36·8 per cent. of the import trade of the Outer

¹ See above, p. 16.

Possessions, and about 36.7 per cent. of the export trade.

Statistics for the trade of Sumatra are incomplete and contradictory. The figures most easily obtainable are those for the Outer Possessions as a whole. Where export and import statistics are separately compiled for Sumatra, they often relate only to Sumatra East Coast, with or without the port of Sabang.

In 1916 the values of the imports and exports of Sumatra were as follows :

	<i>Imports.</i> <i>Florins.</i>	<i>Exports.</i> <i>Florins.</i>
Sumatra East Coast	42,600,000	126,300,000
Rest of Sumatra (including Riouw, Banka, and Billiton)	32,300,000	95,500,000
Total	74,900,000	221,800,000

Principal Exports.—The quantities of the principal articles exported from Sumatra East Coast in the years 1910 to 1912 were as follows (figures for values are not available) :

	1910.	1911.	1912.
Benzene gallons	33,583,224	35,377,400	38,249,511
Petroleum "	47,500,192	54,604,800	45,121,714
Black pepper . . . tons	2,250	1,353	1,673
Candles "	1,522	1,071	173
Coffee "	1,123	1,120	527
Copra "	3,797	4,264	4,043
Fish, salted or dried . . "	6,090	5,264	2,878
Gambier "	1,931	1,981	2,560
Guttapercha "	53	43	46
Paraffin "	2,155*	1,521	—
Rattans "	2,349	4,542	3,300
Rubber "	539	813	1,807
Tapioca flour "	521	398	933
Tobacco bales of 78 kg.	234,133	280,704	282,920
Horses and ponies . . . number	809	713	342

Principal Imports.—(a) *East Coast.* The principal articles imported into Sumatra East Coast in the years 1910 to 1912 were as follows (figures for values are only available in a few cases) :

	<i>In Value.</i>	1910.	1911.	1912.
		£	£	£
Cotton goods		200,605	202,834	225,073
Drugs and medicines		19,946	23,950	26,255
Haberdashery		21,108	18,166	18,766
Iron and steel goods		110,072	83,626	102,546
Machinery and implements		68,057	94,157	100,251
Manures		25,176	25,123	40,722
Soap		12,760	16,288	18,816
Sulphuric acid		18,968	19,788	1,642
Tin plates		106,598	113,980	78,239
Yarns		24,207	30,156	36,968
	<i>In Quantity.</i>			
Beer	kg:	136,373	152,195	211,877
Bicycles	number	232	240	647
Biscuits	lb.	237,278	155,844	221,979
Butter	"	49,962	54,799	68,314
Cement	barrels	18,247	27,364	30,749
Flour	tons	2,953	3,486	3,824
Matches, European	gross boxes	17,622	4,857	—
„ Japanese	"	143,176	96,326	111,779
Motor-cars	number	13	13	18
Rice	tons	71,196	81,052	89,475
Sewing machines	number	1,107	1,592	1,557
Tea	lb.	504,545	604,427	617,389

(b) *Sabang.* A large proportion of the imports into the port of Sabang are trans-shipped to Sumatra East Coast, but do not appear in the returns of Sumatra East Coast. The principal imports into Sabang for the years 1910-12 were as follows :

	<i>In Value.</i>	1910.	1911.	1912.
		£	£	£
Cotton goods		67,921	93,119	97,363
Drugs and medicines		6,979	8,748	14,386
Haberdashery		13,137	13,487	15,457
Iron and steel goods		52,343	88,445	143,395
Machinery and implements		22,252	78,734	127,278
Manures		63,495	61,920	59,700
Soap		2,482	2,211	2,682
Sulphuric acid		—	1,399	18,796
Yarns		2,096	4,206	3,072
	<i>In Quantity.</i>			
Beer	kg:	93,600	105,400	104,932
Bicycles	number	1,164	1,282	2,812
Biscuits	lb.	147,582	161,088	240,890
Butter in tins	"	261,343	258,181	341,682
Cement	barrels	30,566	21,106	30,668
Flour	tons	141	32	45
Matches (Japanese)	gross boxes	117,503	316,610	283,654
Motor-cars	number	63	26	61
Rice	tons	7,243	1,646	1,391
Sewing machines	number	1,010	1,326	1,996
Tea	lb.	6,294	536	—

Cotton Imports.—The values of the imports of cotton manufactures of all kinds into Sumatra ports in 1913 were as follows :

	£
Belawan-Deli	231,000
Padang	390,600
Palembang	173,600
Other ports	161,960

The consumption of European yarns had increased nearly fourfold since 1904 in the whole of the Outer Possessions. In 1913 about 39 per cent. of the total imports of cotton goods at Penang, Straits Settlements, valued at £765,000, were re-exported, principally to Sumatra, and a less but very considerable quantity was re-exported from Singapore to Sumatra. Large quantities of cotton yarn are imported for the native hand-loom weaving industries in Sumatra and the Dutch East Indies generally. Before the war the grey yarn came chiefly from India and England, bleached yarn from England, and coloured yarn, principally red, from Bombay, Italy, England, Germany, and Holland.

(D) FINANCE

(1) *Public Finance*

The finances of the Dutch East Indies as a whole are dealt with in *Java*, No. 82 of this series.

(2) *Currency*

Dutch currency alone is legal in all the Outer Possessions, as in Java. In some Residencies, however, there is still a great deal of bartering.

(3) *Banking*

The Java Bank has branches at Medan, Padang, Palembang, Asahan, Tanjung Pura, Tanjung Balei, and

Bengkalis. The Nederlandsche Handelmaatschappij has branches at Medan, Padang, Palembang, and Kuta Raja. Besides these, the Chartered Bank of India, Australia, and China has branches at Medan and Padang, the Nederlandsch-Indische Handelsbank a branch at Medan, the Nederlandsch-Indische Escompto-Maatschappij a branch at Padang, and the Mercantile Bank of India, Ltd., a branch at Padang.

The establishment of credit banks has been of great assistance to the natives, as it has made them less dependent upon Chinese middlemen.

(4) *Influence of Foreign Capital*

Recently the Dutch have shown more inclination to welcome the introduction of foreign capital into their industries, provided always that the Dutch East Indian Government retain control of all their territory.

At the outbreak of war Germans were more numerous than British in Sumatra, as in Java. Firms like Güntzel & Schumacher (a company formed in 1905) are strongly rooted in Sumatra, though their business has been almost at a standstill since 1914. Before the war the firm held the agencies not only of the Nord-deutscher Lloyd and Hamburg-Amerika lines, but of the Canadian Pacific Railway Company, the German Kali Syndikat, the Langkat Petroleum Works, and many English, Dutch, and German insurance companies.

British capital in Sumatra is almost entirely invested in tobacco, rubber, and tea. In Langkat, north of Deli, there are many British residents, and the principal British enterprise is the United Langkat Plantations Company. In 1911 nearly 10 per cent. of the tobacco crop of Sumatra East Coast was produced by British companies, and over 30 per cent. was shipped in

British vessels. Rubber is a still more important field for British capital. Before the great rubber boom of 1909 there were already several British rubber companies established in Sumatra, including the Anglo-Sumatra Rubber Company, founded in 1907 with a capital of £90,000, the Sumatra-Deli Rubber Estates, founded in 1907 with a capital of £240,000, and the United Langkat Plantations Company, mentioned above. This last was originally founded, in 1889, for the cultivation not of rubber but of tobacco, with a capital of £450,000. The Asahan Rubber Estates was founded in 1910 with a capital of £250,000; the Insulinde (Sumatra) Rubber and Tobacco Estates in 1910, with a capital of £100,000; and the Mendaris (Sumatra) Rubber and Produce Estates in 1911, with a capital of £300,000. All these companies, and others of a similar kind, are doing well, and just before the war British companies owned about 36,000 acres of *Hevea* rubber, about half the total acreage then under *Hevea* rubber in Sumatra. The issued capital of British companies invested in rubber at the end of 1913 in Sumatra East Coast was about £6,000,000.

Tea is another British interest. At the end of 1913 about 6,000 acres had been planted in Sumatra East Coast, and of these plantations all except some 500 acres had been started with British capital.

As already mentioned (see p. 53), a British engineering company, the United Engineers, Limited, has established itself at Medan, with a fully-equipped plant for the construction and repair of machines for rubber and other factories. An Australian company, through a Dutch company, has a concession for coal-mining in Benkulen, 70 miles from the port of that name (see p. 46).

The official return of the chief sources of the capital

invested in tobacco, rubber, and tea in Sumatra at the end of 1914 was as follows :

	<i>Tobacco.</i>	<i>Rubber and Tea.</i>	<i>Totals.</i>
	<i>Thousands of Florins.</i>	<i>Thousands of Florins.</i>	<i>Thousands of Florins.</i>
Dutch	44,401	46,000	90,401
Dutch East Indies	—	5,000	5,000
British	9,432	60,000	69,432
French	—	3,000	3,000
German	—	2,000	2,000
Belgian	—	1,800	1,800
Swiss	600	—	600

(E) GENERAL REMARKS

It will be clear from what has been already said, that Sumatra possesses considerable vegetable and mineral resources. The chief obstacle to its prosperity is the dearth of labour. The population is very scanty, and probably, owing to internecine wars, no greater than it was several centuries ago. The island is three times the size of Java, but its population is not more than one-sixth that of Java. The natives, who are gradually being trained in habits of industry, now show less distaste for unfamiliar forms of work, and several tribes are proving themselves adepts in newly-acquired arts. Industry and ambition are hampered by the fact that every village is practically self-supporting, but the demand for the luxuries of civilization is increasing, and acts as a spur.

Extended communications throughout the island ought to secure a very rapid increase in prosperity. The bulk of the interior of Sumatra has yet to be opened up, and for this purpose the strategic railway in Atjeh will be available, now that the Achinese have apparently been brought into subjection.

Tobacco and rubber are the two products that of late have contributed most to the prosperity of Sumatra. Prices of tobacco have advanced so much during the war that the Sumatra crop of 1916 realized over

£5,000,000, compared with about £4,000,000 in the best previous years. Between January 3 and December 30, 1916, the shares of the Deli Maatschappij rose from fls. 467 to fls. 506, those of the Deli-Batavia Maatschappij from fls. 342 to fls. 411, and those of the Arendsburg (Sumatra) Maatschappij from fls. 509 to fls. 607. But the Dutch authorities and Dutch colonials generally fear that after the war Europe will be too much impoverished to consume as much tobacco as formerly.

It is not probable, however, that the demand for rubber will diminish, except in the unlikely event of synthetic rubber ousting the natural product. The abundant rainfall of Sumatra and its constant high temperature make it peculiarly suitable for rubber cultivation. In one respect it has a decided advantage over Java, for in that island there can never be equally large areas available for rubber. Not only is Java very much smaller, but the population is far larger, and a large part of the cultivable area of Java must be kept available for rice-fields and for other food crops.

It has been estimated that the Dutch East Indies should now be producing about one-quarter of the world's rubber supply. Between 1912 and 1916 the world's production of rubber increased fivefold, but consumption kept pace with it, and in 1916 the cost price of rubber was still, according to a Dutch estimate, only about one-third of the market quotation. The Sumatra crop of 1917 went mainly to America, where the demand for rubber has been increasing to an unequalled degree, mainly owing to the enormous development of the motor-car industry. Out of the 266 rubber estates of the Outer Possessions in 1914, no less than 213 were in Sumatra, so that it may be safely anticipated that a large proportion of the increased prosperity attending the trade will fall to this island.

ISLANDS OFF THE WEST COAST

Simalu (Simeulu), 54 miles by 14 miles, is hilly, rising to 1,870 ft., and covered with forest. It is surrounded by reefs, and the short rivers are difficult of access. There is some coal, but it is not worked. The coast-line is cultivated.

Banjak Islands.—The largest of these 66 islands is Great Banjak. They have been little explored, and the inhabitants are savages. Coco-nut palms are the chief agricultural product. The islands are reputed to be haunted.

Nias has an area of about 2,796 square miles, and is the largest island off the west coast of Sumatra, but it is almost entirely uncivilized. The population is not less than 250,000. Earthquakes are frequent and violent. The climate is good, and there are plenty of coco-nut palms on the south and south-east coasts. The existence of inferior coal and some iron, copper, and gold is reported. Landing is dangerous. The natives grow rice, maize, and sago, as well as coco-nuts. The island has lost all its valuable old forests by fire in the frequent native wars, and the new growths are of little value.

The Niassese resemble the Bataks in many respects. They have been maltreated by Europeans for centuries, and the women, who, with those of Minahasa in Celebes, share the reputation of being the best-looking in the archipelago, were always in the past much sought after as slaves. The natives are intelligent, and show industrial capacity in weaving, dyeing, and colouring mats and other materials, and working in copper. Inland the funerals of their chiefs are still accompanied with human sacrifices. Head-hunting is even now practised to some extent. Those Niassese

who have emigrated to the mainland have proved capable labourers and artisans.

Batu Islands.—There are three large islands, inhabited on the coast only, and 48 small ones. Coconut palms are abundant. The islands are hilly. Two or three have excellent timber, but the natives are unwilling to do the work necessary for its exploitation.

Mentawai Islands are about 70 in number altogether. They are subject to earthquakes. Siberut, the largest, is about 57 miles long. They are very little known, especially on the western side. The natives live on coco-nuts, on the pith of the sago palm, and on fish.

Engano (Enggano).—This group consists of one large island and six small ones, with a total area of about 276 square miles. Engano Island, the largest, rises to 1,180 ft., and all the islands have abundant timber. The trees grow right down to the sea. As on all the other islands off the west coast of Sumatra, the production of copra is now the chief industry. The inhabitants are only a few hundreds, and their numbers have much decreased in the last fifty years.

Banka has an area of 4,446 square miles, and is covered with thick tropical vegetation, though the valuable forests of heavy timber have for the most part disappeared owing to mining and agricultural operations, and the present growths are commercially unimportant. The greatest length of the island is about 100 miles. Klabat Bay, on the north, running 19 miles into the land, is the best anchorage. The highest point of the island is only 2,300 ft., and the rivers carry little water, so that there is often scarcity of water for the tin-mines.

There are many Chinese in Banka. They do all the work of the tin-mines, and cultivate pepper in increasing quantities. The natives of Banka are miserably

poor. They are afraid of the Chinese and foreigners generally, and live in semi-savage conditions, cultivating coco-nut palms, areca-nut trees, potatoes, and bananas. There is little hunting and fishing.

The native population, consisting chiefly of Malays of Sumatran ancestry, is under 100,000. The total population of the island in 1912 was about 114,000. Muntok is the capital, and had in 1905 a population of 4,699, including 155 Europeans and 1,051 Chinese. The climate of Banka is remarkably variable: the temperature reaches 100° F. (38° C.) in the shade on the plains, while in the mountains it may fall as low as 39° or 41° F. (4 or 5° C.) during the night. The island is notoriously unhealthy.

Billiton (Blitung) has an area of 1,860 square miles. Its population numbered 36,860 in 1905, including 2,520 Chinese, 136 Europeans, and 16 Arabs. The population is now probably about 60,000. The capital, Tanjong Pandang, in the west of the island at the mouth of a short river, the Tjarutjup, had in 1905 a population of over 23,000, including 6,135 Chinese and 88 Europeans. The highest hill in Billiton is only 1,673 ft. above sea-level. The coasts are, on the whole, low and monotonous, with many marshes. All the streams are short. As in Banka, the natives do not work in the mines. They weave mats, make pewter vessels, and export a little copra, rattans, gums, resins, wood for furniture, and tortoise-shell. Billiton is under the direct influence of the monsoons, and the climate is very damp. There are 135 small adjacent islands.

The Riouw-Lingga Archipelago consists of the Kari-mun, Batam, Bintang, Lingga, and Singkep groups. These islands form part of a granite prolongation of the Malay Peninsula, and are covered with undulating hills. The highest point is the peak of Lingga, which

rises 4,400 ft. above the sea. Riouw, or Rio, in Bintang, the largest of the islands, is a free port, established in September 1828 to compete with Singapore; but this tardy enterprise of the Dutch was a dismal failure. The actual port, seat of a Residency, and capital of the island of Bintang, is called Tanjung Pinang, and had in 1905 a population of 4,088, including 2,408 Chinese and 128 Europeans. It is 47 miles south-east by east from Singapore.

The rivers in all the islands are insignificant. The climate of the archipelago is tempered by abundant rains and the surrounding sea. Teak, resinous trees, palms, and sugar-cane grow abundantly. Sugar-cane flourishes here better than on the mainland of Sumatra, owing to the drier soil. The total population of the archipelago is about 200,000. At Pulu Sambu, $7\frac{1}{2}$ miles south-south-east from Singapore, the Bataafsche Petroleum Maatschappij has five wharves, with depths alongside varying from 12 to 30 ft. at low water.

The Riouw Residency also includes for administrative purposes the unimportant Anambas, Tambelan, and Natuna groups off the north-west coast of Borneo, which are referred to in *Dutch Borneo*, No. 84 of this series. These groups of islands are now producing considerable quantities of copra, and in 1918 the Insulinde Oliefabrieken made contracts with the natives for copra supplies, and the Japanese South Sea Trading Company were contemplating sending a 4,000-ton steamer monthly to Taremba, in the Anambas group, and to other ports, to load copra.

APPENDIX

CONVENTION BETWEEN GREAT BRITAIN AND THE NETHERLANDS, FOR THE SETTLEMENT OF THEIR MUTUAL RELATIONS IN THE ISLAND OF SUMATRA, NOVEMBER 2, 1871.

(See Hertslet, L., *A Complete Collection of Treaties, &c.*, vol. xiii, p. 665.)

Art. I. Her Britannic Majesty desists from all objections against the extension of the Netherland dominion in any part of the Island of Sumatra, and consequently from the reserve in that respect contained in the notes exchanged by the Netherland and British Plenipotentiaries at the conclusion of the Treaty of the 17th of March, 1824.

II. His Majesty the King of Netherlands declares that, in the Kingdom of Siak Srie Indrapoora and its dependencies, as it is defined in the compact concluded by the Netherland-Indian Government with that Kingdom on the 1st of February 1858, the trade of British subjects and the British navigation shall continue to enjoy all the rights and advantages that are or may be granted there to the trade of Netherland subjects and to the Netherland navigation ; and further, that the same assimilation shall be granted to the trade of British subjects and to the British navigation in any other native State of the Island of Sumatra, that may hereafter become dependent on the Crown of the Netherlands, provided always that British subjects conform themselves to the laws and regulations of the Netherland Government.

III. The stipulations of the preceding Article shall not interfere with the distinction established by the Netherland-Indian laws and regulations between individuals of Western and individuals of Eastern extraction, nor with the application of the stipulations of the Convention of the 27th of March, 1851.

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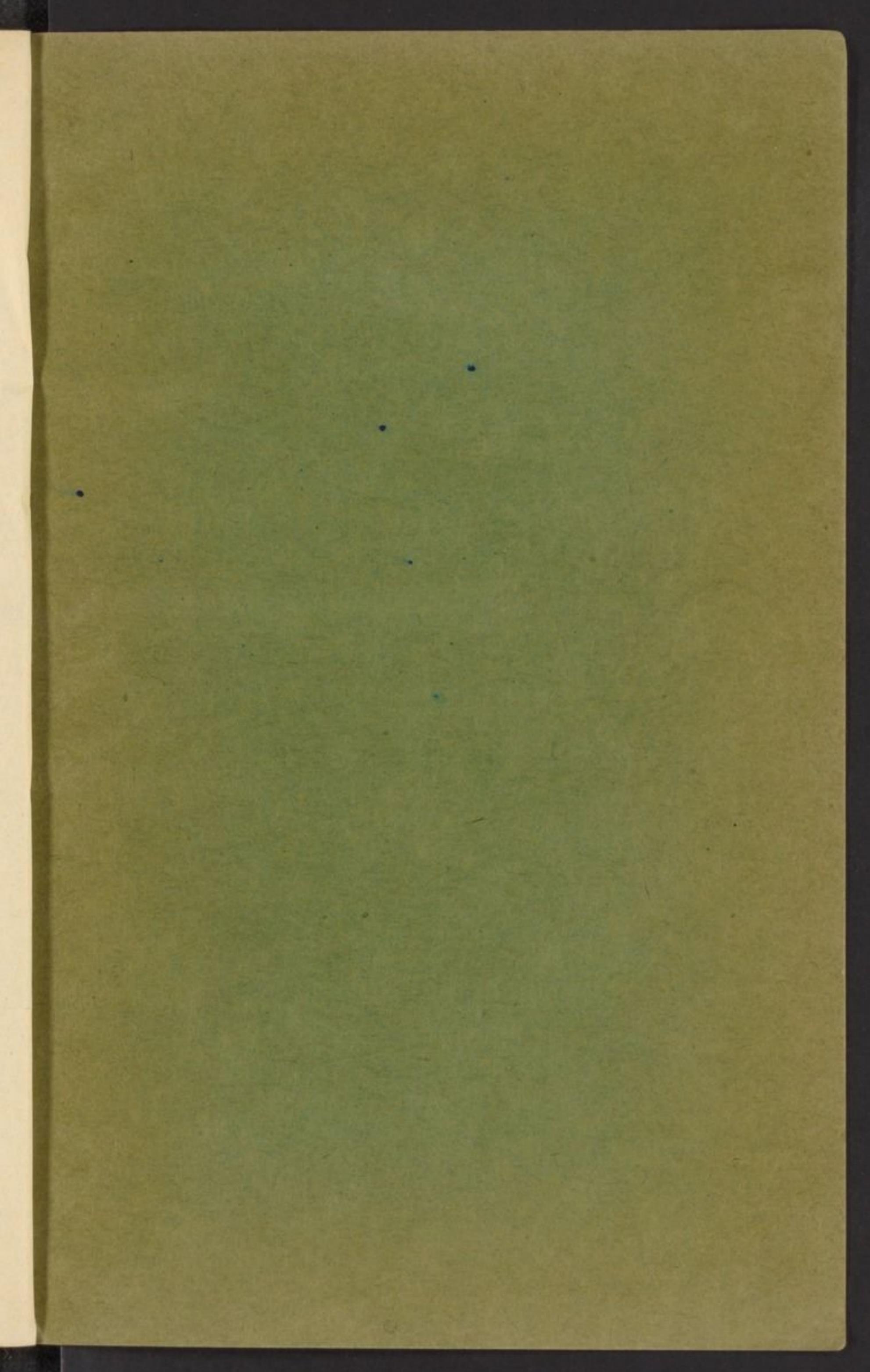
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