HANDBOOK OF

THE STATE OF BRITISH NORTH BORNEO

1921

A Fishing Village in North Borneo [*Frontispiece*

HANDBOOK

OF

THE STATE OF BRITISH NORTH BORNEO

COMPILED FROM

REPORTS OF THE GOVERNOR
AND STAFF OF NORTH BORNEO

WITH AN

APPENDIX

SHOWING THE PROGRESS AND DEVELOPMENT
OF THE STATE TO THE END OF 1920

LONDON:
ISSUED BY THE BRITISH NORTH BORNEO
(CHARTERED) COMPANY
1921

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INTRODUCTION

A handbook of British North Borneo was prepared in 1886 for the Colonial and Indian Exhibition held in that year in London, and was chiefly intended as a guide to the British North Borneo Court and its contents on view in the buildings. This handbook was revised in 1890.

The present issue contains much of the contents of the previous handbooks, but has been carefully re-edited, and all more recent data added from the most reliable sources of information, so as to give the latest intelligence available up to the end of 1919, and wherever possible up to a later date.

In the Appendix will be found information gathered from official documents, returns and statistics, likely to be useful for reference. A Map is also appended.

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State of North Borneo

CHAPTER I

History

To a very great extent the history of Borneo is veiled in obscurity. It was apparently known to the Arabs many centuries ago, and by them was recognised as a land rich in precious stones, gold and spices. Somewhere about 1300 it is likely that the island was invaded by Kublai Khan, the ruler of the huge Mogul Empire which Genghis Khan founded about 1200. The traditions of Brunei and Sulu show that about this period there was established a Chinese province somewhere in the northern part of the island, very probably in the neighbourhood of the Kinabatangan River, and this province had dominion also over the islands of the Sulu Archipelago.

The names of many geographical features in northern Borneo are prefixed "Kina," which to some appears proof of Chinese influence, but it must be mentioned that this argument has been much disputed of late years.

There are, however, many proofs of Chinese influence, leaving the above out of the question. Jars, of which the Chinese origin is beyond dispute, are used and revered by all the aboriginal tribes of the north of Borneo, and in several other directions there is considerable evidence of Chinese influence, particularly in the agricultural methods of some of the tribes. It is known that the daughter of a Chinese prince, who was in all probability the Governor of the Province referred to above, came from the Kinabatangan river to marry the second Sultan of Brunei, and from this couple originated the royal family of Brunei of the present day. This story is also repeated in Sulu history, which fixes the date at 1375.

The Hindu Empire, which extended over Java and left there so many marks, most probably reached as far as Borneo, and this seems to be proved by the discovery of ornaments of undoubted Hindu origin. The Hindu sway was succeeded by that of the Malays, whose origin is uncertain, but who are thought to be the result of a fusion between Mongols and some former inhabitants of Southern Asia.

The Malays are first heard of at Menangkabau, in Sumatra, whence they seem to have migrated to what is now known as the Malay Peninsula, where they established settlements, which eventually became Sultanates. They succeeded finally in overthrowing the Hindu Empire in the Eastern Archipelago, and asserted their influence to a very considerable extent, founding several Sultanates in Borneo.

It is probable that the first visits to the island of Borneo by Europeans were made by Spaniards and Portuguese. The companions of Magellan, after the death of their chief in the Philippines, are known to have called at Brunei in 1521, and it is stated by Pigafetta that this city then was of considerable importance and contained no less than 25,000 families.

The Portuguese also are recorded to have paid visits to Brunei in 1526 and 1530. At that time they were well established in Malacca and no doubt kept up a regular trade with Borneo until they lost Malacca to the Dutch in 1640. It seems fairly certain that the Portuguese had a trading station in Brunei itself; undoubtedly trade between that town and their settlement at Macau in China was maintained up to the end of the 18th century.

In 1521 Manila was conquered by the Spaniards, and records prove that very soon after that date they established relations with Brunei, and in fact they placed upon the throne of that State a Malay Sultan of their own choice, though he was before long expelled. It is also stated that, as a punishment for piratical acts against their colonies in the Philippines, they sent an expeditionary force on two occasions to Brunei, the last resulting in the total destruction of the town. A Dutchman visited Brunei in 1600, and the Dutch founded establishments in Borneo about that time.

The first visit of an Englishman to the island seems to have been in 1665, when a certain Captain Cowley "visited a small island which lay near the north end of Borneo." Dampier mentions that Captain Bowry was in the island in 1686.

The earliest Dutch and British navigators all saw a splendid property in the island, and in 1602 the States-General of the Netherlands, in pursuance of a monopolising policy, consolidated their various companies and created the "Netherlands and East India Company." This proved to be the turning point in the commerce of Europe. It was the spices of the East, particularly the nutmegs and mace, the taste for which had rapidly spread throughout Europe, that brought about this revolution. The English were slow to follow the example of their commercial rivals. No serious action was taken in this direction until the wreck of a Portuguese merchantman on our coasts, the "Mother of God," attracted the attention of the public. This vessel, which was of 1,600 tons burden, was towed into Dartmouth and was found to contain a cargo of Eastern produce valued at £150,000. It was after this that we started an Eastern trade of our own, and the merchants of London, Bristol and Plymouth combined to contest the Dutch monopoly. A company was formed, and granted a charter by Queen Elizabeth. This was the East India Company, the foundation of our Eastern Empire.

In 1773 the East India Company founded a station at Balambangan, an island to the north of Marudu Bay. This island and all the north-east promontory of Borneo had been granted by the Sultan of Sulu to Alexander Dalrymple in 1756, as a reward for procuring his release from captivity in Manila. The settlement at Balambangan was attacked by Sulus and Ilanuns in 1775, and, the garrison being taken by surprise, its occupants were forced to flee in their vessels, leaving to the assailants booty valued at no less than half a million pounds. This attack was said to be the result of ill-treatment of the natives of the neighbouring islands, and there is little doubt that the European adventurers of those days were inclined to be harsh in their methods. The survivors of Balambangan fled to Brunei, where the East India

Company had another station, and eventually some of them settled in Labuan, an island off the west coast. In 1803 the Company again formed an establishment in Balambangan, but shortly afterwards abandoned it as well as the settlement in Brunei.

Though at the present day there is little trace of the former prosperity of the island, the records of our early navigators leave no doubt on this subject. Captain Blackman, in 1714, relating his voyage to Borneo, alludes to a considerable trade with China; and Mr. J. Hunt, in a report to Sir Stamford Raffles in 1812, says that "when the Portuguese first visited Borneo in 1520, the whole island was in a flourishing state. The numbers of Chinese that settled on her shores were immense; the products of their industry and an extensive commerce with China in junks gave her land and cities a far different aspect from her appearance at this day, and their princes and courts exhibited a splendour and displayed a magnificence that has long since vanished."

For some years after the abandonment of Balambangan, it appears that the Dutch were the only Europeans to make their influence felt in Borneo, and in course of time they acquired the control of all but the northern part of the island. Their influence was not of the best. The policy followed by the first settlers in the Eastern Archipelago, among islands so rich and populated, destroyed all security for life or property for the natives. With this loss of security their commercial and agricultural prosperity rapidly disappeared and Borneo was reduced, in common with many other productive and flourishing islands, to a wilderness, and the inhabitants converted into pirates and head-hunters. Under the Dutch, vessels of other nations were excluded, trade was only allowed with their own markets, and consequently the prosperity of the ports suffered. The result was the cessation of fair trade and development. The native princes were not able to maintain their state nor the people to satisfy their requirements. Sir Stamford Raffles, in 1821, wrote: "The destruction of the native trade of the archipelago by this withering policy may be considered as the origin of

many of the evils, and of all the piracies of which we now complain. A maritime and commercial people, suddenly deprived of all honest employment or the means of respectable subsistence, either sank into apathy and indolence, or expended their natural energies in piratical attempts to recover by force and plunder what they had been deprived of by fraud." Dampier relates that the natives had always been willing to trade with all nations, but the Dutch not only monopolised the trade of countries under their control but prevented adjacent countries trading with countries other than themselves.

The north and west coasts of Borneo were in a condition of wretchedness and anarchy when James Brooke visited the island in 1840. Rajah Muda Hasim of Sarawak at that time was engaged in the suppression of a rebellion, and asked Mr. Brooke's assistance. This was given with some reluctance, and with ten of the English crew of his ship, the "Royalist," and two guns, he joined the Rajah's forces and proceeded against the rebels. Finally, after several engagements, a meeting was obtained with one of the insurgent chiefs, who eventually came in to see Mr. Brooke. This meeting led to others with various of the chiefs, and they agreed to lay down their arms, but only on condition that Brooke should become Rajah. He was so installed as Rajah and Governor of Sarawak in 1841.

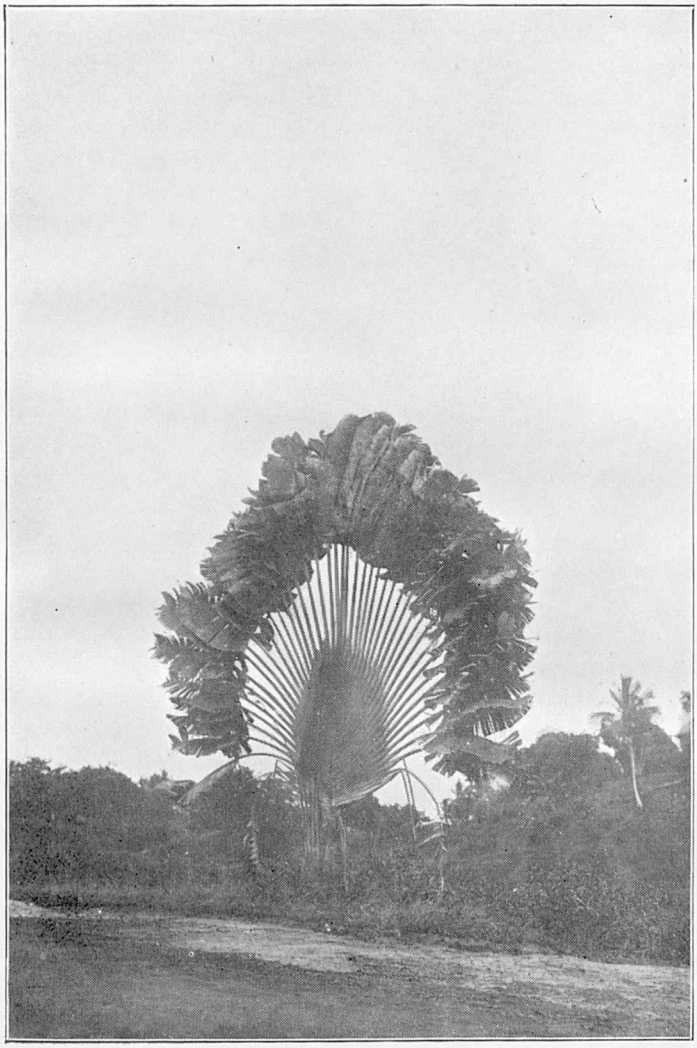
Foremost among the new Rajah's ambitions was the suppression of piracy. The principal piratical races at the time were the Ilanuns, the Balanini, the Bajaus and the Sulus, all living near the north of the island. Their vessels were of large size, sometimes reaching a burden of 60 tons, and 90 feet in length, and they were heavily armed. Their cruising grounds were extensive, covering the coasts of the Philippine Islands, Borneo, the Celebes, Sumatra, Java, the Malay Peninsula, and even the Bay of Bengal. They had settlements of considerable size in Marudu Bay, in North Borneo, and towns along the west and east coasts. Their chief in Marudu at this time was Usman, who, in addition to piracy, made profit by supplying others with ammunition, payment being made in slaves.

In 1843 Rajah Brooke, after several efforts, succeeded in getting the British Government to consider the question of the suppression of this piracy, which was doing much damage, not only to native craft, but to large European sailing vessels, and H.M.S. "Dido" was despatched to Borneo for this purpose. In 1846 another fleet of warships was sent to destroy the stronghold of Sherip Usman in Marudu Bay, and this was accomplished after considerable resistance and with a loss of six killed and fifteen wounded. Patrols were also sent among the numerous islands in the north, and many piratical craft were destroyed, while the pirate villages in Pendasan and Tempasuk were demolished.

In the same year, in conjunction with the chiefs of several friendly villages, who requested assistance, British warships attacked and destroyed the stronghold of Haji Saman, on the Membakut river.

Shortly after this the Ilanuns abandoned their old haunts in the north and fled to Tunku on the east coast. As late as 1872 Dutch squadrons had to be sent against them, and in 1874 piracy was so prevalent on the east coast that the Spanish Government ordered its cruisers to destroy all prahus proceeding from the Sulu Islands and Tawi-Tawi. In 1879 the pirate stronghold in Tunku was destroyed by H.M.S. "Kestrel," and upon the establishment of a Government by the Chartered Company, piracy virtually ceased.

The modern history of North Borneo may be said to have commenced in 1846, when the British Government entered into a treaty with the Sultan of Brunei, wherein it is recited that their desire was "to encourage commerce between Her Majesty's subjects and the subjects of the independent rulers of the eastern seas, and to put an end to piracies which have hitherto obstructed that commerce." A small additional effort in this direction was made at the same time, by the cession of Labuan, an island on the western coast of Borneo, supposed to be important as a naval station, with its harbour and coal mines. If was accordingly made a Crown Colony, with a Governor and other officers, but the naval station has not developed, and the coal mines have been closed for some years.



A "Travellers Palm" *Facing* 12

After the pirates had been extirpated, there was an immediate increase in trade. As the *Singapore Free Press* said in 1850: "A very few years ago no European merchant vessel ventured on the north-west coast of Borneo; now they are numerous and safe. Formerly shipwrecked crews were attacked, robbed and enslaved; now they are protected, fed and forwarded to a place of safety. The native trade now passes with careless indifference over the same track between Marudu and Singapore where, but a little while ago, it was liable to the peril of capture; the crews of hundreds of prahus are no longer exposed to loss of life and prosperity."

It was hoped that the opening of a free port at Labuan under the English flag would tend to develop the rich resources of Northern Borneo, and that the establishment of settled Governors on the island would exercise a beneficial influence to the mainland. Such, however, did not prove to be the case, and the Government of Brunei, freed by the prestige of the British flag from the necessity of guarding against the incursions of the pirates, sank lower and lower in administrative weakness and corruption. Its power soon became limited practically to the districts in the immediate neighbourhood of the capital, though nominally the authority of the Sultan extended as far as the shores of Marudu Bay, whence, to the Sibuku river on the east coast, the overlordship of the Sultan of Sulu was recognised in an equally nominal manner.

The United States was the only other Power which followed the example of England by entering into a treaty with the Sultan of Brunei and appointing a Consul. This Consul, Mr. Moses, in 1865, procured for himself from the Sultan a cession of territory including most of the provinces now under the administration of the North Borneo Government, with the rights of government. These rights and cessions he transferred to the American Trading Company of Borneo, which proceeded to form a settlement on the Kimanis river, some 60 miles from Labuan. The company's capital was far from adequate for the purpose, and, after a few years of experimental planting and ship-building, with no attempt at real government, the company's representative died at Kimanis, and the settlement was abandoned.

In 1872 the Labuan Trading Company, under the management of the late Mr. W. C. Cowie, established itself in Sandakan, on the east coast. This company carried on a prosperous trade for three years, when its business was taken over by Mr. Cowie in conjunction with the Sultan of Sulu, whose chiefs were in possession of the whole of the north-east coast from Marudu to Sibuku.

Further action was taken in 1875, when, it having been ascertained that the American cessions were still regarded as valid by the Brunei Government, Mr. Alfred Dent and Baron von Overbeck formed a private Association. In 1877, the Brunei Government vested in the new Association in perpetuity the government of that portion of North Borneo which extends from the river Kimanis on the west to Sibuku on the east, with the exception of a few small rivers, the property of independent chiefs, the Association undertaking to pay an annual tribute to the Sultan of 15,000 dollars, which was afterwards reduced by mutual agreement to half that amount.

As stated previously, the Sultan of Sulu claimed sovereign rights over much of the country which had been ceded by Brunei, and in 1878 he transferred all his rights to the Association for an annual payment of 5,000 dollars. In the same year the Association, flying the flag of the house of Alfred Dent & Company, established stations at Sandakan, Tempasuk and Papar. After visiting North Borneo personally, Mr. Dent returned to England, and considerable interest was soon evinced in the novel venture.

Early in 1881 the British North Borneo Provisional Association, Limited, was formed, taking over the cessions with all rights. A Charter was petitioned for and was granted on November 1st, 1881. After this was obtained the British North Borneo Company was formed in May, 1882, and thus armed and authorised it took over all the rights, sovereign and territorial, conveyed in the original grants of the two Sultans, and proceeded to organise a Service for the administration of the territory, and the development of its resources.

The Company further acquired the Putatan river and the Padas district in 1884, including the important rivers of Padas

and Klias, the Tuaran and Bangawan rivers being included in the same deed of cession. The Kawang river and the Mantanani islands were acquired in 1885. More recently, in 1898, as the outcome of the Mat Saleh rebellion, arrangements were successfully completed by which the Sultan of Brunei transferred to the Company all his sovereign and other rights over the districts of Mengkabang, Menggatal, Inanam, Api Api, Membakut, and Kuala Lama, and all lands, seas, bays and rivers in North Borneo lying north of the Padas river which had hitherto been in the possession of the Sultan.

By this means the many "enclaves" which had been the resort of disaffected inhabitants and a source of continual annoyance and trouble to the administration, became valuable possessions of the Company, and enabled it to consolidate its territory into one compact whole.

At the outset the Spanish Government, then the possessors of the Philippine Islands, strongly objected to the cessions made by the Sultan of Sulu, on the ground that the territories in question had previously been ceded to the Spanish Crown, which claimed suzerainty over the whole Sulu Archipelago and the States tributory to the Sultan. This contention was finally waived on the signing of the Protocol by the representatives of Britain, Spain and Germany in 1885. This instrument provided that: "The Spanish Government renounces, as far as regards the British Government, all claims of sovereignty over the territories of the Continent of Borneo, which belong, or which have belonged in the past, to the Sultan of Sulu, and which comprise the neighbouring islands of Balambangan, Banguey and Malawali, as well as those comprised within a zone of three maritime leagues from the coast, and which form part of the territories administered by the Company styled 'The British North Borneo Company.'"

The Dutch Government also raised objections to the establishment of the Company's Government in Borneo on the grounds that (i) the Company being British, there had been, indirectly, an infringement of the provision in the Treaty of London of 1824 whereby a mixed occupation by England and the Netherlands of any islands in the Indian Archipelago was to be avoided; (ii) the Sibuku river was included in the

cession from the Sultan of Sulu, whereas the Dutch claimed that their boundary extended to the north of that river as far as Batu Tinagat at the entrance to the bay now termed Cowie Harbour.

The first objection was withdrawn, but for some years the second was a matter of dispute. In the meantime the Company in 1883 hoisted its flag on the south bank of the Sibuku, while the Dutch erected an obelisk at Batu Tinagat and stationed a gunboat there. The dispute was finally settled in 1891 on terms which will be found in the boundary agreement mentioned in that portion of this book dealing with the geography of the country.

The Sarawak Government at the time also took up a somewhat unsympathetic attitude towards the Company, but, since the cession by the Company of the Lawas territory to the Rajah, however, the relations of the two Governments have been of a cordial nature.

The early notices in the Press were neither sanguine nor encouraging. The *Times*, in 1875, commenting on the report of the Borneo-Sulu cessions, remarked: "The Batavian papers received give a great deal of space to the purchase, by Baron von Overbeck, an Austrian acting for an English Company, of territory on the north coast of Borneo. The land acquired is described as of great wealth, but the Dutch Batavian journals suggest that the Netherlands Government have the right to compel the native chieftains, who sold the land to Baron von Overbeck, to acknowledge that the suzerainty of Holland extended over the territory parted with, which might thus be brought within the control of the Dutch-Indian Government."

Ten years later, however, the tide of doubt and suspicion had so completely turned that in a long article in the *Straits Times*, in 1888, it was stated that the country had received "an incalculable advantage in the chartering of the British North Borneo Company, which, it may be remembered, caused some excited discussion a few years ago. Whatever doubts or suspicions may have been felt at its birth the Company is rapidly living down. It has justified its existence by the energy and breadth of mind with which it has conducted

its administration. Grants of land have been given to cultivators on very liberal terms. Every encouragement has been afforded to the introduction of capital and labour on its lands, until at last it is reaping the fruit of its enterprise in a general rise in values."

The circumstances in which the Charter was granted merit detailed consideration. When the project was first mooted in the British chamber, doubts and distrust of the policy of recognising a chartered company as the heirs or successors of the Malay Sultans with territorial possessions and sovereign powers were freely ventilated. Considerable delay arose owing to the revival of the old Dutch and Spanish jealousy of a competitor to dispute their monopoly. This was hotly pressed by the two Governments in question, each of which claimed in Borneo rights of pre-emption in opposition to any cessions on the part of the Sultans.

The pretensions of the Spanish to any valid claim on North Borneo territory were definitely disposed of by H.M.'s Government after a diplomatic correspondence extending over three years, furnishing material for two Blue Books. In this correspondence may be found two very significant statements from Lord Granville, then Secretary of State for Foreign Affairs, giving a summary of the British Government's appreciation of the contentions raised.

In the one Lord Granville remarks that:

"The Protocol of Madrid, which secured foreign trade from further molestation in the Sulu Archipelago, does not extend to the mainland of Borneo. The territorial limits of the sovereignty formerly claimed by Spain in the Sulu Archipelago are clearly defined in the Treaty between Spain and Sulu in 1836, wherein they were declared to extend 'from the western point of Mindanau to Borneo and Palawan, with the exception of Sandakan and the other countries tributary to the Sultan on the continent of Borneo.'"

"North Borneo lies in the fairway of an immense British maritime trade between China, Australia, India and the United Kingdom. Its occupation by a foreign Power would be a source of disquietude to this country, and for that reason clauses were inserted in the British Treaties of 1847 and 1849

with the Sultans of Sulu and Brunei, under which they respectively engaged not to make any cession of territory to any other nation than Great Britain, without the consent of Her Majesty's Government."

Lord Granville concludes:

"As regards the general features of the undertaking, it is to be observed that the territories granted to the Company have been for generations under the government of the Sultans of Sulu and Brunei, with whom Great Britain has had treaties of peace and commerce; and far from any disorders arising out of the occupation of these territories by British subjects, under the concessions of the Sultans, the advent of the Company has been welcomed everywhere by the inhabitants. The experience of three years shows that the peaceful and intelligent development of the great natural resources of the country is steadily increasing, and there is every reason to believe that a sound and liberal system of administration will be established by the Company, which will spread the benefits of civilisation among the native population, and open up new and important fields to British trade and enterprise, and to the commerce of all nations."

There could be no doubt as to the importance, both commercially and politically, of this territory being in British hands, and on the whole there was at the time a very general approval of the action of the Government in the grant of a Charter.

The debate in both Houses, which terminated in the House of Commons by a large majority approving of the policy of granting the Charter, and without a division in the Lords, was important in other respects. The Foreign Secretary and Mr. Gladstone, Premier of a Liberal Ministry, laid down very clearly the principles which should influence a British Government in granting a Charter to colonising and trading companies, and at the same time the limitations and restrictions which these grants should be held to create.

Lord Granville began his speech with a short retrospective view of the historical and political events respecting Borneo bearing upon the present policy, and said: "Borneo, one of the largest, if not the largest, island in the world, has vast

natural resources and abounds in mineral and vegetable riches. It has long been a subject of jealous observation between this country, the Dutch and the Spaniards, and has been colonised partly by each of these Powers. During the last sixty years diplomatic communications have been going on with regard to it—during that time the Dutch have made immense acquisitions, not only in the islands south of Singapore, but also in the south of Borneo. The claims of Spain as lately developed would, if they had been verified, have placed the whole of the Eastern Archipelago, extending 2,000 miles in one direction and 2,500 in another, with the exception of the land lying on the track of our immense trade with China and Australia, the Straits Settlements, Labuan and Sarawak, entirely in the power of these two nations, with both of whom we desire to be on the most friendly terms, but whose commercial arrangements are far from being as liberal as our own. In 1877 a Protocol was signed by which England and Germany agreed with Spain as to a *modus vivendi* securing the freedom of navigation and commerce to this country in Sulu Archipelago. Subsequently, however, England and Germany thought they had reason to complain of acts which appeared to them entirely in disaccord with its provisions, and which showed that the Spaniards intended to occupy portions of North Borneo. The Dutch, on the other hand, made new claims, being alarmed by concessions which had been made by the Sultans of Borneo and of Sulu to Mr. Dent, who, on his part, applied in 1878 to Her Majesty's Government for a Charter of Incorporation.

"There seemed to be three courses open to us: either ourselves to annex this vast territory; to leave it to Mr. Dent and the important Company which he represented to make the best of the concessions granted to them—in other words, we might have left matters to take their own course; or to leave the whole country to its almost inevitable absorption by foreign nations. There were grave objections to the first and third courses that did not appear to apply to the second.

"Borneo is a most valuable and important part of the world, and, if the resources of the country are developed under the honest and intelligent supervision of a certain number of

Europeans, I believe that great results may be achieved, while no additional burden, either military or financial, will be thrown upon this country."

Lord Carnarvon, from the Opposition benches, spoke in support of the Charter, and said that the annexations which Holland had made in the last thirty or forty years were simply enormous. They stretched 2,000 miles in one direction, and still further in another. It was impossible not to remember that Holland has not shown, and indeed, did not possess the power to make use of the territory she had acquired. It would have been a source of great inconvenience and risk to ourselves if any other country than England had been lodged in the north-eastern part of Borneo, and there could be no doubt that, if we had not established our position there, some other European Power would. It was very important that the country should recognise what an enormous stake it had in the trade that passed through those waters. The trade from the west between England and China was simply vast, but there was also the trade growing up between China and Australia, which was very considerable. There could be no doubt that their position in the north-east of Borneo, whether looked at as a matter of peace or war, was of very great consequence—and he concluded by saying that they would have done a great wrong if they had allowed this territory to pass into the hands of any foreign state. He believed that the possession would be a valuable one—and as such he welcomed its acquisition.

It may be assumed that the British Government saw insuperable difficulties either to annex so large a territory or to allow it to lapse to a foreign Power, or to adopt the alternative of allowing Mr. Dent or his Company to exercise the powers that actually existed under the Sultan's grants, irresponsible to Great Britain, unrestrained and uncontrolled. The Government adopted the only course left, which was the grant of a Charter, with a majority in the Commons of 63, in a House of 187 members.

As regards the fitness of Chartered Companies for such special colonising work and the value of the services rendered by them in past and present times, a few examples may be given.

What the East India and Hudson's Bay Companies did in the past for England is too well known to need mention. In a valuable article contributed by Mr. Thomson in the early 'eighties to the *Fortnightly Review*, entitled "Downing Street *versus* Chartered Companies in Africa," writing with all his personal knowledge and experience of what had taken place in Western and Eastern Africa in recent times, he showed conclusively that, where Governments had failed, two Chartered Companies, the Royal Niger Company in the west of Africa, and the Imperial Eastern African Company on the eastern coast, had made greater and successful progress. The comparison he instituted between what had been achieved by the ordinary Government machinery in the interests of Great Britain, and that achieved by Chartered Companies, was as conclusive as it was unanswerable. He restricted himself to ground with which he was familiar—West and East Africa, where he had seen the two methods at work side by side. He showed that at one time we had no rivals in colonial enterprise; and that, by the active enterprise of the French and Germans, at the time we were practically confined in the west to the coast region "to strive and fester among its deadly swamps." He pointed out that the French had grasped "within their exclusive sphere of political and commercial influence the whole of the upper basin of the Niger, shutting in Sierra Leone from all advance into the interior, and cutting off all hope of its ever being anything but a petty settlement," and he stated that, "but for the National African Company, the middle zone of the Niger at this day would have been lost to us, as has the upper basin already, and practically have become German."

For many years past, he further contended, we have developed under the Government "the policy of treating West Africa with indifference and contempt, and, as an incubus the sooner got rid of, or at least the smaller kept, the better." And he believed "this policy of crippling all natural expansion is no doubt largely traceable to that new school of so-called Liberal politicians who have so little read their national history, and so utterly failed to grasp the secret of Britain's greatness, that they advocate the stoppage of all foreign enterprise,

and our complete withdrawal into our own islands." And lastly he asked, "Of what use would our geographical position have been to us if it had not been made use of for action abroad, and without such action where would our greatness have been?" If asked what would have been his remedy for all this mismanagement in the past, and what the cure for the future, with no uncertain voice he would answer that a Chartered Company would have prevented the one, but for the other he wanted a total reorganisation of our administrative machinery and policy in Downing Street.

He pointed out that in tropical Africa (as in other tropical countries) the answer to objections urged against the iniquity of granting Charters to private individuals or companies as being little more or less than monopolies is the fact "that enormous difficulties from the climate and the natives have to be faced, and vast sums of money spent in treaty-making, road-making, administration, exploration, etc.—work which would not be done except by a powerful company, which must have some guarantee that it will not be deprived of the fruits of its enterprise."

Mr. Thomson, referring to the progress made already by the Imperial British East African Company, whose first yearly report told a tale of work and progress of which they had a right to be proud, in a country which it was only five years since he explored for the first time. "And yet we now hear of piers, roads, and telegraph lines as in process of construction, and of railway lines projected into the heart of the country, on the faith of a purely prospective trade and profits."

All the more recent colonising and commercial enterprises in uncivilised or semi-barbarous countries have been encouraged and sanctioned by the grant of Charters to Companies. The latest instance of this policy on the part of the British Government was the grant of a Charter to the British South African Company, which included among its founders men of wealth, distinction, and practical experience. A debate took place in the House of Commons in which objections were raised similar to those adopted when the Charter of the British North Borneo Company was granted. The object

of this Company was to carry out on the territory between Cape Colony and the Zambesi in the south the same work which the East African Company was doing in another part of Africa. The proposal was passed by a very satisfactory majority, the Government, in this case, as in the Charter of the British North Borneo Company, reserving to itself the fullest control over the proceedings of the Company, which would thus carry on its work with a full sense of responsibility to the Imperial Government.

By pursuing this policy the Imperial Government secure the opening of valuable territory to British commerce and enterprise, while the native chiefs are protected from the traps laid for them by unscrupulous speculators. The Imperial Government is called upon for no expenditure or responsibility beyond a general exercise of a protecting influence against aggressive action from without. Such a policy will benefit England, which, as Prince Bismarck said, was the greatest Colonial Power in the world; and, as a consequence, British trade, unburdened with an Imperial administration, enjoys the complete liberty of action that alone renders an elastic commercial policy possible and profitable.

The object of the British North Borneo Company has been to develop the great natural resources of their territory by the introduction of capital and labour, and of all the benefits of a civilised Government. North Borneo has this, among other exceptional and special advantages, that, while the native population is small and easily governed, there is, within a few days' steam, a supply of Asiatic labour fitted to the climate in the overflowing populations of China and Java. The Chinese are a race which has already brought to fertility, by industry and persevering labour, nearly all the islands and colonies east of the Cape, and which still affords an inexhaustible reserve of labour wherever in these seas the workers can count upon fair wages and security for the fruits of their labour. This is an inestimable advantage for Borneo, where, under a tropical sun, it is impossible for Europeans to undertake the labours of the field. Enterprise in North Borneo is, therefore, not hampered as it is for example in the West Indies, where planters are reduced to great straits from the

difficulty of securing continuous labour at reasonable wages. Nor is it a less important and exceptional advantage for North Borneo that it is out of the region of typhoons and the earthquakes and volcanoes which periodically work such havoc and ruin in the American Settlements of the Philippines in the north, and the Dutch possessions in Java and Sumatra further south.

With similar, if not equal advantages to those of Hong Kong and Singapore, there is reasonable ground to hope that a brilliant future may be in store for the Company's territory. Hong Kong and Singapore were small and insignificant settlements in their first years, but they now form the great central depots of a trade which takes the whole world in its circuit. Not very many years ago Hong Kong was a barren island, a bare rock, with only a few fishermen for its inhabitants, and granite boulders its only produce. At the present time there is a large city with a population of more than 380,000 Chinese domiciled in the island, while ships crowd its capacious harbour under every flag which flies in the two hemispheres. A similar history has marked the development of Singapore and the Straits Settlements. These have only risen to their present state of wealth and prosperity within recent years. The value of the united exports and imports of Singapore amounts to £100,000,000, due mainly to three great factors: a convenient geographical situation, a benevolent Government, and a plentiful supply of cheap labour in the Chinese colonists.

From its central position, moreover, North Borneo possesses advantages, both political and strategical, which no other territory in the Eastern Archipelago can offer, and, under existing circumstances, its value from a political no less than a commercial point of view cannot well be overestimated.

That this opinion is shared by a numerous body of merchants, planters, and others is well exemplified by the fact that up to 1918 some thirty-two companies had been formed, holding from the North Borneo Government concessions in the aggregate amounting to some 373,109 acres, for the development of which £4,430,000 capital had been subscribed by their shareholders, chiefly but not exclusively for the cultivation of rubber and tobacco. The soil and climate

African Oil Palm

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have been proved to be eminently favourable for tobacco growing, and capable of producing a leaf fully equal to the best Deli tobacco grown in the Dutch Colony of Sumatra, which formerly had the complete command of the markets in Europe, to the great enrichment of the planters and the revenues of the Dutch Government; while the plantation rubber grown in North Borneo has always commanded the highest prices.

The contentions so persistently raised by the Dutch and Spanish Governments against a British occupation of any part of Borneo, taken in connection with the recent aspirations of all the chief Continental Powers for colonial extension, and the numerous annexations made in furtherance of this object in Africa and the Pacific, give an increased value and importance to the Company's concessions. Even in New Guinea, the southern fringe of the Malayan Archipelago, the disputed and rival claims there are facts which give increased importance to the acquisition of North Borneo by a British Company, secured as it is by a Royal Charter, and by the British flag from all aggression or encroachment by any alien or foreign State. Neither the Charter, nor the Protectorate, were granted too soon. That the necessity for prompt occupation of the territory was recognised by those more immediately interested was demonstrated at one of the early meetings held in March, 1878, at the Westminster Palace Hotel. The meeting was called to consider the desirability of a Company being formed for that object. Sir Rutherford Alcock, who had been requested to take the chair, plainly indicated the danger of delay in his introductory remarks, when he said:

"I confess, in taking a larger range than a merely commercial view admits, that it seems to be a matter of very great national importance that this northern part of Borneo should not pass into the hands of any other country, considering the naval supremacy we have in those seas, and that it is on the fairway to so many of our possessions; remembering, too, that for some 1,400 miles from Singapore to Hong Kong we have not a single port where any fleet of merchant ships could find refuge in case of warfare, and that there might be

the greatest possible injury, if not destruction, to our commerce and to our mercantile navy, from any enemy possessing such a port as there is in Gaya, on the north-west of Borneo, within the territory now conceded. It is a magnificent port, and in these seas there is nothing until you come to Labuan, which, it is very well known, possesses only a coaling station, and affords anchorage for but a few ships. Certain it is that, if we were at war to-morrow, and an enemy had possession of the country and port now under consideration, the first thing we should have to do would be to drive them out of it. It is wiser, in my opinion, to take it when it is offered, and, extending the protection of our flag over it, to occupy the ground, than to let others take and fortify it. So that, whether you look at it commercially or politically, I consider this acquisition one of the greatest importance."

The time has now arrived when it may safely be trusted that the encouraging anticipation expressed by Lord Granville (see page 17) will not be found too sanguine. As to the progress which has since been made in the "peaceful and intelligent development of the great natural resources of the country," and in the development of "a sound and liberal system of administration," spreading benefits among the native population, and opening up new and important fields to British trade and to the commerce of all nations, evidence will be found in the following pages of this handbook and in the appendix of trade returns. It may justly be asserted that the aims and purposes of the Chartered Company, so clearly expounded by Lord Granville, have been unswervingly pursued from the foundation of the Company. The efforts to introduce civil government in harmony with British laws, and to develop all the latent resources of a country so richly endowed by nature, have produced results sufficiently apparent and assured to attract a large investment of capital subscribed by numerous Companies.

In forming an estimate of what has been accomplished, it must be borne in mind that, unlike the East India Company, which began simply as traders in a country possessing the accumulated wealth of ages of industry, and a civilisation dating from ancient times, the British North Borneo Company,

on the contrary, had to take possession of a large territory covered for the most part with virgin forests. As pointed out in an early report—North Borneo was a land inhabited by "a barbarous few, scattered about in independent tribes, and where it was necessary to inspire confidence and attract capital before any good results could follow."

The progress made by North Borneo will bear comparison in revenue and trade with any other colony where valuable mineral deposits have not produced a sudden prosperity due largely to that source. Even without these advantages, a steadily increasing revenue, and a trade return in exports and imports, also increasing year by year, are very satisfactory features.

It only remains to add that, in 1888, the territory of the British North Borneo Company was constituted under a British Protectorate, with the title of the *State of North Borneo*, and placed in the same independent position as regards its internal administration as Brunei and Sarawak; they on their part claiming and obtaining a British Protectorate: and thus the difficult problem which so long vexed the heart of Rajah Brooke, how to secure internal independence combined with British Protection, was satisfactorily solved. This placed these States in a recognised and well-assured position internationally, while leaving them all needful independence in internal administration and commercial activity.

CHAPTER II

GEOGRAPHY

BORNEO is one of the largest islands in the world, being only exceeded in area by Australia and New Guinea. It is 800 miles from north to south, and its greatest breadth is 600 miles. The greater part of the island is in the possession of the Dutch. On the west coast lies the territory of the English Rajah of Sarawak, and adjoining Sarawak is the ancient Sultanate of Brunei, the administration of which is assisted by a British Resident, the Sultanate forming one of the Federated Malay States. Close to Brunei is the island of Labuan, now under the control of the Governor of the Straits Settlements, whilst the apex of the island is formed by the State of North Borneo.

In extent, North Borneo roughly approximates to the size of Ireland. It includes the whole of the northern portion of the island from the Bengkulit river on the west (between Lawas and Mengalong), which divides it from the territory of the Rajah of Sarawak, to the centre of Sebatik island on the east, where it meets Dutch territory.

Its form is roughly that of a pyramid, with its apex to the north, the China Sea washing its western, and the Sulu and Celebes Seas its eastern coasts.

Boundary Agreement.—The boundary between British and Dutch Bornean territories is defined in the convention of the 20th of June, 1891, between Great Britain and the Netherlands, as follows :—

Article 1.

"The boundary between the Netherlands possessions in Borneo, and those of the British protected States in the same island shall start from 4 degrees 10 minutes north latitude on the east coast of Borneo."

Article 2.

"The boundary line shall be continued westward from 4 degrees 10 minutes latitude, and follow in a west-north-west

direction, between the rivers Simangaris and Soedang, up to a point where the meridian 117 east longitude crosses the parallel 4 degrees 20 minutes north latitude, with a view of including the Simengaris river within Dutch territory. The boundary line shall then follow westward the parallel 4 degrees 20 north latitude until it reaches the summit of the range of mountains which forms on that parallel the watershed between the rivers running to the north-west coast and those running to the east coast of Borneo, it being understood that in the event of the Simengaris river, or any other river flowing into the sea between 4 degrees 10 minutes, being found on a survey to cross the proposed boundary line within a radius of five geographical miles, the line shall be diverted so as to include such small portions or bends of rivers within Dutch territory; a similar concession being made by the Netherlands Government with regard to any river debouching above 4 degrees 10 minutes on the territory of the British North Borneo Company, but turning southward."

Article 3.

"From the summit of the range of mountains mentioned in Article 2 to Tanjong Datu on the west coast of Borneo, the boundary line shall follow the watershed of the rivers running to the north-west and west coasts, north of Tanjong Datu, and those running to the west coast south of Tanjong Datu, the south coast, and the east coast south of 4 degrees 10 minutes north latitude."

Article 4.

"From 4 degrees 10 minutes north latitude on the east coast the boundary line shall be continued eastward along that parallel, across the island of Sebatik; that portion of the island situated to the north of that parallel shall belong unreservedly to the British North Borneo Company, and the south of that parallel to the Netherlands."

The actual demarcation of the Anglo-Dutch frontier was not completed until 1912.

British North Borneo extends to the north as far as latitude 7 degrees 25 minutes. The most westerly point is that of Klias, longitude 115 degrees 20 minutes east, and the most

easterly Hog Point 119 degrees 16 minutes east. The area, including the islands, is over 31,000 square miles. The coast-line of the mainland measures some 800 land miles. From a geographical and strategic point of view the State is favourably situated as regards ocean routes, being about midway between Hong Kong and Singapore, while the course recommended on the English Admiralty Charts to vessels trading with China and Japan in the north-east monsoon brings them within a short distance of the harbours of the west coast. On the east coast the trade route between China and Australia is close to the magnificent bays known as Sandakan and Cowie Harbours, both of which are now regularly visited by several steamship lines.

The following table gives the distances between Sandakan, which is the principal port of the State, and the larger commercial ports of the Far East :—

Sandakan to	Singapore	..	1,000 miles
,,	Hong Kong	..	1,200 ,,
,,	Manila ..	..	600 ,,
,,	Macassar	..	750 ,,
,,	Port Darwin	..	1,500 ,,

Mempakul, the most westerly station in the State, is only 700 miles from Singapore.

Physical Aspect.—The country consists mainly of mountain ranges, varying from four to thirteen thousand feet in height, and rising somewhat sharply from ranges of low hills. These hills are traversed by big valleys and occasional plains. The coast line is mostly formed by alluvial flats, with many creeks and swamps.

The hills and valleys in most cases are covered with dense forest, and there is an extensive system of rivers.

Harbours and Roadsteads.—On the whole, as Wallace remarks, the island of Borneo is very little indented with bays, the few it possesses being towards the north-eastern extremity, where the coast is somewhat higher and more abrupt. On the other hand, owing to the gradual tapering to its apex of the northern portion of the island, the only good navigable rivers are to be found towards the south. A detailed description of the coast line can be found in the China Sea Directory,

Vol. 2, which is published by the Admiralty. It will suffice here to mention the principal anchorages, commencing with the west coast.

The islands constituting the small group known as Pulau Tega, a few miles from Nosong Point on the Klias peninsula, afford an anchorage on one side or the other during both monsoons. Further to the north, before Gaya is reached, there is an anchorage at Dinawan with over 25 feet of water.

Gaya Island gives protection in two deep bays on its southern side, and together with the island of Sepanggar, and the point on the mainland known as Gaya Head, forms the fine bay of Gaya, on which is situated the port of Jesselton, on the west coast. The united length of the two bays is about seven miles, and there is a depth of water up to 13 fathoms. The width is about four miles, narrowing to one and a half at the north end. It has been remarked that, for the purposes of commerce, this anchorage is large enough to afford shelter to every vessel trading to the east during both monsoons. Jesselton has a good wharf, to which additions are likely to be made before long, with an excellent and unlimited supply of water piped to it, and stores for ships are always available, including fresh meat.

North of Gaya between Ambong Cape and Soundal Bay, there are three bays with a good depth of water, but open to the west and north winds.

Usukan Bay is three miles to the north of Ambong, and is an inlet about two miles long, affording good anchorage in the north-east monsoon, but exposed to the south-west.

The Mantanani Islands, twelve miles from the mainland, afford anchorage in either monsoon. They are not inhabited except in the season for collecting the edible birds' nests found in the caves.

Adjacent to the most northerly point of the island is Marudu Bay, famous formerly as one of the great strongholds of the Ilanun pirates. This bay runs nearly due north and south for some 28 miles, and is 17 miles broad at its entrance, decreasing to 9 at its southern end. It has a depth of water ranging from 3 to 20 fathoms. On its western shore 11 miles from the entrance is Kudat Harbour, where there is

an important Government station. There is here a wharf, at which vessels may lie and where supplies, except water, may be obtained.

Twelve miles north of the entrance to Marudu Bay lie the two large islands of Balambangan and Banggi (Banguey), the former 40, the latter 167 square miles in area. On the east side of Balambangan, which is not inhabited, are two inlets, known as North and South Harbours. These inlets are seldom used, and are not free from dangers.

Mitford Harbour, on the south side of Banggi, has three entrances, of which the middle is the principal. It is sheltered in both monsoons. An experimental station was started here by Government, but was afterwards abandoned. The island is sparsely inhabited by Dusuns, and is much visited by Bajaus for the sake of the sea produce it affords.

In the Malawali Channel are numerous islands or islets, of which Malawali, 15 square miles in area, is the largest. Off most of them anchorages can be found, affording shelter from the prevailing winds, but the channel is little used except by vessels of moderate size, on account of its dangers, although these are beaconed.

Paitan, Marchesa and Labuk Bays, although of large extent, are too shallow to be of much value as anchorages for vessels of large size.

About midway down the east coast of North Borneo is the magnificent harbour of Sandakan, which has often been compared with that of Sydney, and is said to be one of the finest in the world. The entrance is a mile and a quarter wide, and the bay gradually increases to a width of five miles, and is fifteen miles in length. Sandakan, the largest town in the territory, is built on its north shore about a mile from the entrance. Sandakan has a good wharf, at which vessels can lie, and water and supplies can always be obtained, while an abundant stock of coal is stored on a special wharf.

Dent Haven, south of Tanjong Unsang, is nearly two miles wide, and affords a good anchorage in the south-west monsoon in five fathoms of water. At the head of the fine expanse of water known as Darvel Bay, the north end of Sakar island

forms with the mainland a fine harbour, well protected in all weathers. On it is situated the town of Lahad Datu, the centre of a large tobacco and coco-nut industry.

Silam Harbour is well sheltered, but has many coral banks. In the southern portion of Darvel Bay there is deep water along the north and west of the island of Timbu Mata. To the south of this point is a deep passage, well beaconed, separating the island of Kuli Babang from the mainland and known as Trusan Treacher. At the northern end of Trusan Treacher, on its western side, is the Government station of Simporna, founded in 1887 for the reception of Chinese refugees from Sulu, after the destruction of that place by the Spaniards in the course of their operations against Sultan Al Karim.

Between the mainland of Borneo and Sebatik Island is the magnificent bay known as Cowie Harbour, with sufficient depth of water for any ship. The entrance is about five miles in width, and has some dangers which, however, are all beaconed, while at Batu Tinagat there is a lighthouse showing 25 miles.

Cowie Harbour has a length of about 24 miles, and is used by vessels from all parts which call for coal, of which there is a plentiful supply at a depot on the north of Sebatik Island. Near the entrance of the harbour is the flourishing town of Tawau.

Mountains.—Speaking roughly, there is a back-bone range through the State, commencing at the south end of Marudu Bay, and following the west coast at a distance of some 30 miles. This range, four to six thousand feet in height, sends short spurs to the west coast, which are dominated by the stupendous granite mass of Kinabalu. This mountain is certainly one of the finest in the Far East, and reaches a height of 13,455 feet. Situated some fifty miles from the coast, it can be seen from a very great distance. The summit is of syenite granite, and consists of ten peaks running east and west, and of another detached peak lying towards the south. From the altitude of 9,000 feet the mountain consists of rocks which rise nearly perpendicularly, and in all probability it can only be ascended from the Tempasuk side.

For some distance to the north-east the mountain throws out a spur some eleven thousand feet in height, separated from the main mass by a deep chasm. This spur leads to a lower mountain mass, of which the principal peak is Tambuyukan, which attains a height of some 7,000 feet. Another very steep spur runs to the north-west.

On the west side of the mountain there are only minor spurs, dominated by an enormous precipice of some 5,000 feet. From the south two big spurs run out. Of these the eastern is the most important, and forms the range which is seen from the sea off the west coast.

The ascent of Kinabalu has several times been made by Europeans, and does not present any exceptional difficulties from the Tempasuk side, though naturally it is a stiff climb. Several ladies have scaled its heights, and, as one of them has written: "The natives have invested it with a wealth of legendary lore. On its mist-crowned summit, the souls of the departed find their eternal home; phantom herds of buffalo follow their masters to graze on the shadowy grasses which abound in that fabled kingdom. By those who would climb its sublime heights many ceremonies have to be performed to propitiate the spirits of the mountain, and mollify their resentment at the intrusion of mortals on their sacred precincts."

The extreme north-eastern portion of the island has a mountain range running north-west and south-east, but of this not much is known. One peak named Paliu is estimated to reach a height of 4,000 feet.

There is a high range forming the watershed between Labuk and Sugut rivers, one of the peaks of which, Mentapok, was estimated by Hatton to reach a height of 9,000 feet.

The Witti range, named after the first explorer of the interior, who lost his life at the hands of natives on the Dutch boundary, separates the Pegalan system from the rivers flowing into the Sembakong.

On the borders of Sarawak and North Borneo, not far from the sea, and a notable landmark as one approaches the territory from Singapore, is the Limbakauh Range. Lim-

bakauh itself is some ten thousand feet in height and, like Kinabalu, the source of many legends. It is an object of awe to those living in its vicinity, who do not dare to scale its heights.

Behind Silam, or Darvel Bay, is a range of which Mount Silam, which rises to a height of some 3,000 feet, is the greatest peak. Madai is also in this locality, and is a limestone mountain in the caves of which are found edible birds' nests.

There is a range north of Cowie Harbour, which centres in the sharp peak of Magdalena, the height of which is not far short of 5,000 feet. A ridge projects from this mountain, culminating in Mount Saint Lucia.

Trusmadi, on the borders of the Keningau and Tambunan districts in the interior, reaches a height of 8,000 feet, while ranges of from four to six thousand feet are not uncommon in the neighbourhood of the Dutch border.

Plains.—The most extensive plain in the country is that through which flows the river Kinabatangan. It is bordered on the north by the Labuk Hills, on the west by the mountains of the interior, and on the south by the Silam Hills. Its area is some four thousand square miles, and its soil is rich and very fertile. Many rivers flow through this plain, which is covered with forest and swamps.

Keningau and Tambunan plains in the interior are traversed by the Pegalan river. The former contains great stretches of grass land, a rare thing in the interior, and is not particularly fertile, while the Tambunan plain maintains a large population of padi planters.

The Suk Plain, in the Keningau district, is of large extent, and contains some very fine land, but has only a scanty population.

Among the plains on the coast may be mentioned the delta of the Padas river; the low lands on the south of Kimanis Bay; Mengkabong Plain, and the extensive grassy lands in the Tempasuk valley.

At the head of the Labuk river is the great plain of Ranau, which lies some 1,600 feet above sea level, and seems a vast oasis in the wilderness of mountains and forests. It is grass-covered, and supports a moderate population.

Rivers.—The rivers of the country are very numerous, and of considerable importance, constituting as they do the only highways in some parts of the country.

The largest and by far the most important river in the State is the Kinabatangan. It is navigable for steam launches drawing up to six feet as far as the mouth of the Lokan tributary, some 120 miles from the sea, and for smaller launches as far as Tangkulap. The river enters the sea through a swampy delta of a breadth of fifty and a length of twenty miles, and has three main exits, the one most used being that named Mumiang, which has a fair depth of water on the bar. The Dewhurst Bay entrance is also used. In the lower reaches population is very scanty, and it is not until Sukan is reached that a village of any description is found. Sukan is the depot for the nests obtained from the famous Gomantan caves. Up to Sukan the banks of the river are low and swampy, but further up these swamps give way to high banks, covered with a great entanglement of undergrowth. Lamag, further up the river, is a Government station, and the headquarters of the officer in charge of the Kinabatangan district. The tributary Lokan has a fair population. Between the Lokan and the Kwamut rivers the country becomes more hilly, but not less densely wooded, with occasional native clearings. The Kwamut, although a river of considerable length, is much impeded with rapids, and on it only small boats can be used, and those only for a short distance. Above the Kwamut. and reached after the passage of many rapids, is the Penungah, where there is a small trading station, practically in the centre of North Borneo.

Above this place the river divides into three branches, named Melian, Melikup, and the Mungkwago. These rivers are inhabited by the Tenggara section of the Murut race, but the population is very scattered, and is not large.

The Labuk enters the sea to the north of the Sandakan Peninsula. It rises in the mountains not far from the Ranau Plain, and, passing through dense forests, enters the sea through a wilderness of mangrove swamps.

Its principal tributary is the Tungud, which enters the main stream some 15 miles from the sea. The Labuk here

TRANSPORTING SAGO LOGS TO FACTORY

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ceases to feel the effects of the tide, and the village of Tandu Batu, a few miles further up stream, is the limit of navigation for launches. Tampias, at the mouth of the Kagibagang tributory, is a village of some importance, but the country in the vicinity of the upper waters of the Labuk is only sparsely inhabited.

To the north of the Labuk is the river Sugut, which is of considerable importance. It rises in the mass of mountains near Kinabalu, and its upper waters are full of rapids. It is navigable for boats for about 70 miles, but is only available for launches for some 30 miles from the sea.

Three rivers enter Marudu Bay, the Bengkoka, the Bongon and the Marudu. Of these the Bengkoka is the most important. It has a shallow bar, and therefore can only be used by small boats, but it passes through a rich country which is of considerable value for planting purposes.

The Bongon is not navigable for launches, and, owing to its rapids and its liability to sudden floods, is not much used except by native boats. Timbang Batu, a Government station on this river, lies some 11 miles from the sea.

On the west coast are numerous rivers, but as a rule they are of no great length, and are seldom navigable, while many of them are hardly to be distinguished from salt creeks.

The Tempasuk flows for 20 miles through a grassy plain, and originates from Kinabalu. On it at Kotabelud there is a Government station.

The Tuaran enters the sea through flat and open country, with very fertile soil, and much of this district is under cultivation. The Government station of Tuaran is some three miles up the river, and is the headquarters of the officer in charge of the North Keppel district.

The Putatan, south of Jesselton, is a winding river, passing through rich native rice plantations. Near its mouth is a Government station, and higher up the river is the site of a "temu," or place of barter, where the tribes inhabiting the hills and plain near Tambunan bring their rice and tobacco to exchange for the produce of the coast.

The Papar is navigable for boats for about 30 miles, but has a bad bar. It rises in the Crocker range, no great distance

from Tambunan, and its lower reaches are well inhabited and cultivated, constituting one of the largest rice-producing districts of the State.

The Padas is the longest river on the west coast, and is certainly the most important. It flows through fertile districts, and is navigable for small launches as far as Beaufort, 60 miles from the sea. Its mouth is a vast delta of mangrove and nipa swamps, intersected by many salt water channels. Above the delta the river passes through large sago plantations, and rice fields, with numerous small native settlements. At Beaufort the low plains give way to steep ridges, and navigation ceases, even for the smallest boat, at Rayoh. The river above this is a succession of dangerous rapids and cataracts, until the Penotal rock is reached, but above this, for some miles, the river is sluggish, and is navigable for native boats as far as Tomani. Above Tomani is a further succession of impassable rapids and cataracts as far as the Pematang country, where again small native boats can be used. The source of the river is in the mountains which form the boundary of British and Dutch Borneo, and of Sarawak.

The principal tributary of the Padas is the Pegalan, itself a wide stream of considerable length, rising near Kinabalu, which, after passing through the plains of Tambunan and Keningau, joins the Padas at Tenom, just above the entrance to the Penotal Gorge. Native tradition has it that the country above this gorge was formerly a vast lake, which finally burst through the mountain range at Penotal.

The Klias is a river which enters the sea at Menumbuk, near Mempakul, and is navigable as far as Kota. It has its origin in the swampy land between Beaufort and Membakut, and on its banks are important sago plantations.

From Kota to the sea at Kuala Penyu there is a small channel, named Tunggulian, which can be used by boats at high tide. This widens into a lake just before its junction with the sea.

In the south-east portion of the territory are several rivers of considerable importance. The Segama has its mouth some 14 miles from that of the Kinabatangan. It is navigable for small launches for some 60 miles, and has been ascended with

difficulty in a native boat for over 200 miles, until the Barrier Falls have made further progress impossible. On this river are some of the most prosperous tobacco estates of North Borneo, and the gold which was found in its vicinity gave rise to considerable hopes several years ago, hopes which, up to the present day, have not been fulfilled.

Several rivers flow into Cowie Harbour, of which the most important are the Kalabakang and the Serudong. The Kalabakang is navigable for launches for a few miles, but its upper waters are full of difficult rapids. This river is important on account of the magnificent forests which fringe its banks and which contain very considerable quantities of valuable timber.

The Serudong is also navigable for a short distance, but above the village of Serudong progress is barred by a succession of difficult rapids, over which, however, boats can be dragged for some distance. From below Bukit Apas, a hill which marks the boundary of British and Dutch Borneo, for some twenty miles, there is a grand gorge, totally impassable for human beings. A well-known Swiss explorer and Alpine mountaineer attempted to force its passage some years ago, but without success.

The Sasui, a tributary of the Serudong, which joins the main river some distance above this great gorge, is again navigable for boats for some distance, but at one spot it narrows to a few yards and falls sheer for some 200 feet, and above this the country is practically unknown, except to the collectors of jungle produce.

Of the Sibuku and Sembakong only the upper waters are in North Borneo.

CHAPTER III

Population

The population of North Borneo, although increasing steadily since the advent of law and order, is nevertheless very scanty, and vast tracts of country on the east coast and in the interior are merely uninhabited forest.

Census.—The census taken in 1911 gave the total population of the State as 208,183, including some 400 Europeans, but it is probable that this census did not give full details of the population of the more remote districts.

The census taken this year (1921) shows the population to be 258,355. This figure was much in excess of the estimated figure, which was however admittedly unreliable as the returns of births among the native tribes, particularly those in the more remote districts, are far from accurate. With the native a birth is a matter of little interest, except to those directly concerned, and is in consequence possibly not reported, whereas a death is an event of importance to the whole village, necessitating much publicity and entertainment.

The ethnology of the native races of Borneo is still a matter of doubt. It is generally considered that, owing probably to the dense forest which covers most of the country, and which renders travelling no easy matter, tribes which may have descended from a common stock now differ to a very considerable extent in their customs and language.

The census returns show that the Dusuns are the most numerous of the races, their numbers amounting to almost half of the total population. They are followed by the Muruts, the Chinese, and the Bajaus.

Dusuns.—Dusun is a Malay word which signifies "people of the gardens," and was originally used by the Malays to denote large sections of the aboriginal people of the State. The tribes now known by that name, which is loosely but practically universally used in the country, although no

doubt all members of the same family, have a multitude of sub-divisions and a variety of names for themselves.

They are, on the whole, a peaceable and law-abiding race, with a strongly developed agricultural instinct, and they may be looked upon as the farmers of the country.

They are found in many parts, mainly on the north and west coasts, and their plantations are as a rule considerably superior to those of other native races. The theory has been propounded that they are the descendants of the Chinese, who formerly visited Borneo in great numbers, but there appears to be no doubt that this is not the case, although it is probable that in past times, when a large trade was maintained between Borneo and China, many Chinese who visited the island married women of the country. This is in fact going on to a considerable extent at the present day, and many of the shopkeepers, gardeners and artisans marry native women, thus effecting a slow infiltration of Chinese blood, but not of Chinese speech or manners generally.

In certain of the Dusun districts, particularly in Bundu in the Klias country, many Chinese customs are followed, and the mode of agriculture adopted is far superior to anything of the kind elsewhere in the State, and may be regarded as due to Chinese influence.

Muruts.—The Muruts, generally speaking, inhabit the hills of the interior, and are possibly of a Negrito type. They are of small size, and have a somewhat limited standard of intelligence. They are inclined to immorality, and all of them, not omitting the children, are very addicted to the consumption of a fiery liquid made from rice and tapioca. They are excellent hunters, and exist to some extent by barter of the produce collected by them from the jungle.

They again are known amongst themselves by a variety of names, and that of Murut is not generally used by them in reference to themselves. They may be considered as a somewhat lower type than the Dusuns, and it is only within recent years that some of the more remote tribes have been weaned from the practice of head-hunting.

Their modes of agriculture are as a rule inferior to those employed by the Dusuns, and they are generally of a more

restless nature, the Hill Muruts frequently changing their localities, while some of them are almost nomadic.

It is not easy to trace where the Dusun ends and the Murut begins. The languages are very similar in many respects, and a large number of their customs are identical. Both races have the same veneration for the old jars mentioned before as being of undoubted Chinese origin. Both are firm believers in dreams and omens. Both tribes are pagan, although a certain number of Dusuns have embraced the Christian faith.

Chinese.—The Chinese, who number about thirty thousand, are the trading, gardening and artisan section of the community. Their shops are to be found everywhere, even in the most unlikely places, and in the more remote districts, and their traders used frequently to risk travelling in the more dangerous parts of the country, before the establishment of order.

The race is remarkably hard-working under circumstances where it can see a chance of good profit, and, though the Chinese idea of a reasonable profit is somewhat high, these people generally may be considered honest. The Chinese intermix readily with all the pagan native tribes of the island, and are respected by them. There is not at present in North Borneo, as is the case in Singapore and Sarawak, a large Chinese community which regards the country as its only home, but this is gradually developing, and will certainly be the case as the Chinese establish themselves more on the land, and make permanent cultivations. A very considerable proportion of estate labourers are Chinese, but those, as a rule, are of a different type from those referred to above, and it is doubtful if they generally will find a permanent home in the country.

The Malay Tribes.—Of the real Malays there are few in the State, but there are several tribes of Malay origin. They, as a rule, are intelligent and quick, but probably not capable, without foreign influence, of rising much in the scale of civilisation. These Malay tribes are found scattered around the coast, and they are all Mohammedans of no particular zeal or strictness.

Bajaus.—The Bajaus form about one-tenth of the population. They are found all along the coast, gaining their living as a rule by fishing, while many families make their boats their only home. They were formerly one of the great pirate races of North Borneo and the neighbouring islands, and they trace their ancestry to Johor, in the Malay Peninsula. Lawless and arrogant, they were greatly feared in this part of the east for the raids they made, not only on neighbouring tribes, but also far afield. Reference to the annals of the Straits Settlements, Dutch Borneo and Java bears testimony to this. At the present day they cause little trouble and in many cases have settled down to agricultural pursuits, though the old predatory instinct breaks out at times in the form of cattle raiding.

The Ilanuns.—Of the Ilanuns, the principal pirate tribe of old, there are few now living in North Borneo, the census showing under two thousand, and these are confined to the north part of the island.

The Orang Sungei.—The Orang Sungei (river folk) are to be found on the Kinabatangan river, and in the neighbouring districts. There are some ten thousand of them and their origin is not clear. They are partly pagan, partly Mohammedan.

The Kedayans.—The Kedayans, of whom there are a few thousands in Provinces Dent and Clarke, are Mohammedans and are assiduous cultivators of the land. It is said that they are the descendants of people who came originally from Sumatra as body-guards to the Sultan of Brunei. They are of very different appearance from the other Mohammedan tribes of the island, and are of a most peaceable disposition.

The Besahyas.—The Besahyas are found in the neighbourhood of the Padas river, and are Mohammedans of a very lax type. It is probable that they are of Murut origin, their language being to all intents and purposes the same. They are padi planters and sago growers, and have an evil reputation among the other tribes as poisoners. They are of particularly small stature, and are far from clean in their habits.

Sulus.—There are some five thousand inhabitants of the

Sulu Archipelago settled in the State, most of them being on the coast between Sandakan and the Dutch border. They are engaged mainly in fishing, but some have settled on the land, and formed coco-nut plantations, and the race has not given the North Borneo Government a tithe of the trouble given by their countrymen in the Sulu Islands to the Americans in recent years, or to the Spaniards formerly.

Other Tribes.—Other races found in the State are Bugis, from the Celebes, a Malay race of somewhat gentle nature and great plausibility; Tidongs, the "men of the mountains," a tribe found mainly in Dutch Borneo, but also settled to some extent in the country round Cowie Harbour; Dyaks from Sarawak, a race inured to forest work and somewhat more arrogant than the native tribes of North Borneo; Tutongs, from Brunei; Javanese, generally employed as estate labourers; and several others of whom no particular mention is necessary. Curious iron-wood coffins have been found in caves near the Kinabatangan river, the history of which is unknown to the natives of the vicinity, and there are also other traces which indicate that this region was formerly inhabited by a race that is now extinct.

Varieties of speech naturally are many, and it is recorded that during one year in the Sandakan court 32 languages were spoken. Malay is the "lingua franca" of the country, and is understood almost everywhere, except in the far interior, where it is only known to a few.

From the above it will be gathered that the principal race in North Borneo is Dusun. On the coast the tribes intermix to a large extent, and a very cosmopolitan race is springing up.

Speaking generally, any bad tendencies among the tribes, to which circumstances and lack of proper restraint had driven them, have now been abandoned, and the native tribes on the whole show every symptom of thriving and increasing, and there does not appear to be any fear of their disappearing, as so many races have done when brought into contact with Europeans. The native tribes breed prolifically, but mortality among children, as elsewhere in the tropics, is unfortunately very high, and is, no doubt, intimately

connected with improper feeding and lack of attention. It was stated by a high medical authority in the early days of the British occupation that nearly a fifth of the native children seemed to die within 24 hours of birth, while many more died within the first few weeks of life, and that altogether probably one-half died within the first year.

Government is doing its utmost to teach the people the proper treatment of their children, and in some districts there are travelling dressers who go from village to village giving advice and treatment. Under improved sanitary conditions and with effective medical supervision, there is no doubt that the native population will increase to a very considerable extent. The natives themselves are beginning to take interest in the welfare of their children, and frequently come to the medical and administrative officers for advice and medicine.

The anarchical condition of the country previous to the establishment of any real government was undoubtedly responsible, to a very large extent, for the present lack of population, while the country formerly was visited frequently by scourges of smallpox and cholera. Native traditions declare that whole districts were depopulated by the ravages of these diseases.

CHAPTER IV

Climate, Meteorology and Health

The climate of British North Borneo is particularly noticeable for its equability and absence of extremes. The temperature, rainfall, winds, and natural phenomena generally are, for a tropical country, of the most mild and temperate types.

Temperature.—The temperature recorded on the coast has varied from 61° to 94°. Meteorological tables will be found in the appendix, which will show that the difference in temperature between different seasons of the year is only slight. The lowest average temperature for both maximum and minimum registers is during the wet season, which, though variable, is generally to be expected in December and January. The highest average temperature during the day is generally in August and September. The lowest actual temperatures are as a rule recorded during rain squalls in the evenings or the early part of the night, but as a rule the lowest average temperature is reached about 2 a.m. In the hills of the interior the temperature falls far below the figures given above, and it is probable that freezing point is reached near the summit of Kinabalu. During the day the clear atmosphere and free evaporation prevents as a rule any feeling of oppressiveness, while during the night throughout the country a woollen covering is generally found acceptable.

Rainfall.—The annual rainfall near the coast has during the past ten years ranged from 51·33 to 178·06 inches, and has averaged 88·36 inches. The real wet season occurs in the north-east monsoon, and includes the months of November, December and January, and as a rule part of either October or February. During this wet season the greater part of the rain falls from a uniform dull grey sky and is fairly well distributed between day and night. This wet season does not, however, imply what is commonly understood in England by

that expression—"incessant rain"—and it is very uncommon for rain to continue uninterruptedly for more than 24 hours. During the wettest months there are generally several days upon which no rain falls.

The dry season immediately follows this wet season, and includes March and April and generally the whole of May and part of February. During this time any rain that falls generally does so in showers during the night and early morning. Severe droughts are very rare, and even in 1885, when there was a particularly long drought both in Borneo and Singapore, there was a rainfall of one and a half inches in two months.

The dry season is followed by a period of moderate rainfall, generally commencing about June. The first part of this period almost deserves to be called a second wet season, and the rest of the period up to the commencement of the true wet season may be described as the second dry season.

During this period the rain falls chiefly in heavy squalls, generally accompanied by thunder, occurring most frequently in the afternoon and evening, but not confined to that period; and it is during these squalls that the heaviest falls of rain occur, such as in 1884, when over two inches fell in forty minutes. Details of rainfall are given in the appendix.

The water supply of the country is so intimately connected with the rainfall that some mention of it may appropriately be made here. The rain does not collect in lakes and pools, but disappears quickly, either carried off by the free surface drainage, or absorbed by the porous soil. Thus the supply of fresh water must be obtained from springs, wells, or artificial reservoirs. As a rule the soil is generally absorbent, and retains the moisture: thus there is little difficulty in this matter in most places. Mention may also be made here of the heavy mists that frequently occur in the vicinity of the rivers during the night, and which are not dissipated until the full force of the sun is felt.

Winds.—The monsoons are the north-east and south-west. The former commences about the middle of October and continues until about the middle of April. During the greater part of this time the wind blows steadily and with moderate strength from north and east. In the course of this

monsoon, more particularly in December and January, there are, as a rule, one or two moderately strong gales lasting from three to nine days. At other times the wind is a moderate breeze from about 11 a.m., getting rather stronger in the late afternoon and dying away at night, when a gentle land breeze prevails. At the beginning and end of this monsoon the wind is not strong or steady, and the land breeze continues until later in the forenoon.

The south-west monsoon lasts from about the middle of April until the middle of October. The wind generally is not so strong in this monsoon, and the land breeze in the morning is more marked, while the gales are not so strong nor so long-continued as in the north-east monsoon.

On the other hand, there are frequently squalls in the afternoon and evening, lasting sometimes for two hours, and sometimes blowing with the strength of a fresh gale.

In regard to peculiar natural phenomena there is little to be said. The absence of cyclones, typhoons and earthquakes is to be noted, and there is no indication of any recent volcanic action, unless it be in a hot spring which has been found on the Apas river on the east coast near Tawau. Thunder storms with much lightning are frequent from July to September and are at times severe. Mirage is generally present in the afternoons to a slight extent, and phosphorescence occurs to great perfection, particularly in Sandakan Bay.

The general opinion as to the salubrity of the climate is that it compares most favourably with other tropical regions. Diseases are generally of a mild type and amenable to treatment. As regards the influence on health of the different forces that go to make up the climate, it is difficult to draw any general conclusions. It is even impossible to say, for the country as a whole, which season of the year is the least healthy. In some individual parts the south-west monsoon is by far the more unhealthy, and this is particularly noticeable at Kudat and on the south-east coast, where, during this monsoon, fever is prevalent and somewhat severe, while during the north-east monsoon it is seldom present. The only other well-marked influences for evil in the climate are (1) in certain places diminution in the quantity and

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deterioration in the quality of the water during the dry season; (2) impurities in the water in places deriving their water supply from streams on the first commencement of rains after a drought; (3) the effect of the floods that every year cover large areas near the bigger rivers is to increase the tendency to fever and allied diseases among the inhabitants of the neighbourhood; (4) heavy river mists aid in the production of fever and asthma. Beyond this, all is mere vague impressions, the most definite of which is that there is an increase of sickness, especially of the respiratory system, about the change of the monsoon. It may be pointed out that the unhealthy season of India, the so-called "cold season," does not exist in North Borneo.

Diseases: Fever.—Malaria is the most prevalent disease, and all these forms are found, the sub-tertian variety being the most frequently seen. Reclamation work of some magnitude and the drainage of pools and swamps has done much to improve matters.

Beri-Beri.—Beri-beri is fairly common on estates, and is, no doubt, due to the small use of fresh vegetables and the excessive use of highly polished rice. The disease generally appears almost in the form of an epidemic, and is usually closely restricted both to the locality and to the races among which it first appears. It is known in two forms, wet and dry, of which the former is considered the more dangerous. In Borneo it does not appear to be particularly common among the native population, but it has caused anxiety at times to planters and others who employ large forces of coolies. The Government has endeavoured to persuade all those who employ coolie labour to supply parboiled and unpolished rice, and to see that a plentiful supply of vegetables is available, with satisfactory results in cases where the advice of the medical officers has been followed.

Ankylostomiasis.—Hookworm or Ankylostomiasis is a disease that is very prevalent among the estate coolie population of the country. It is surmised that at least half such labourers on the estates are affected, but as a rule the more severe cases present themselves for treatment. The disease is supposed to have been brought from Java by the coolies imported

from that country, and to have thence spread to the neighbouring population. The disease, though not as a rule dangerous of itself if treated properly, causes a considerable amount of lowered vitality, and consequent predisposition to the attacks of other diseases.

The Rockefeller Institute has interested itself in the extirpation of this disease in eastern countries, and has expressed its intention of adopting large and comprehensive methods of stamping it out in North Borneo, and will supply its own medical staff for that purpose. An expert appointed by the Institute has already (March, 1921) arrived in the territory.

Dysentery.—Dysentery is not prevalent, and where it does occur is generally mild and amenable to treatment.

Sunstroke.—Sunstroke is of very rare occurence.

Epidemics.—At various times, smallpox and cholera have appeared in the country. Universal vaccination, to which the people have submitted generally without any trouble, was introduced, and the former disease is not now much to be feared, although formerly it was very virulent, depopulating whole villages and even large tracts of country. Native report has it that the last epidemic previous to the British occupation accounted for more than half the population. Cholera has appeared but rarely, and, as a rule, has caused very little trouble, although an epidemic in 1882 is said to have carried off over a thousand victims. In recent years, although it has been introduced from time to time, its progress has been promptly arrested. The last epidemic was on the east coast in 1913, when the principal medical officer reported that the disease had been responsible for 150 deaths, and gave it as his opinion that the fatal cases were 70 per cent. of the total.

As to the means of safeguarding the country from similar outbreaks in future, these diseases can, to a considerable extent, be prevented by quarantine regulations, and such are applied strictly.

On Europeans the climate has a somewhat enervating effect, but with proper precautions it cannot be considered in any way dangerous. Few have fallen victims to disease, which can fairly be attributed to the climate, and the same

applies to Eurasians, who, however, seem rather more liable to fever.

Indian races on the whole stand the climate remarkably well, and few deaths occur among them.

Chinese, when fresh from their country and sent to work in the jungle before they are acclimatised, have suffered considerably from disease, but, as soon as they are accustomed to the country, the climate does not appear to affect them greatly.

The natives of the country suffer chiefly from fever, rheumatism, ringworm and spleen, and occasionally phthisis.

Precautions to be taken are the same as in all tropical countries, and need only be enumerated briefly. The most important are temperance and regularity in food and drink, cleanliness, regular exercise of not too violent a nature, and avoidance of chills.

Unnecessary exposure to the sun should be carefully avoided, while prompt attention should be paid to what may be looked upon as petty ailments. Houses should be well away from jungle and swamps, and preferably raised from the ground. The water supply should be watched carefully, and all water should be boiled before drinking.

Government Hospitals are established at Jesselton, Sandakan, Beaufort, Kudat, and Tawau. In addition, all estates have their own hospitals well equipped and supervised. There are wards for European cases in the Government Hospitals at Jesselton and Sandakan, and a resident nurse at the former. It may be pointed out that, on an order from the local administrative officer, any person without means may obtain admission to a Government Hospital.

Up to the present no actual sanatoria have been established in the country, although several sites have been suggested. A visit to any of the interior stations will ensure a considerable change of climate, while a sea voyage to Singapore or Hong Kong has a most recuperative effect in convalescence from sickness. Quite recently also increased shipping facilities have made a voyage to Java or Australia a matter of no great difficulty.

CHAPTER V

Natural and Forest Products

North Borneo and its surrounding seas are exceptionally rich in natural products, many of which, even at the present time, are very little collected and utilised.

The native himself is of an indolent disposition, while the country, previous to the British occupation, was in a state of such disorganisation that it was impossible to store up wealth without exciting the cupidity of some more powerful neighbour. It therefore became the habit for the native to provide only for his immediate wants, and this, added to the natural laziness of his character, became so ingrained that, even at the present time, the bulk of the people have little thought for the morrow.

Most of the trade is in the hands of the Chinese, many of whom carry on thriving businesses. Though the major portion of the trade of the country is with Singapore, a considerable business is carried on between the east coast ports and Hong Kong.

Sea Produce.—Sea produce is very varied. There are large quantities of excellent fish in the waters surrounding the island, many of them resembling the cod, mullet, mackerel and whiting of our own country, while a great variety of others have no parallel types in our English waters, but are none the less remarkably good eating.

The fishing industry gives employment to large numbers of natives and Chinese, the former, for the most part, selling in the local markets, the latter preferring to salt and cure their catch for export. This industry is capable of being largely increased, the demand for dried fish being very great in all Asiatic countries.

The native inhabitants of the coast districts and the Bajaus who frequently have their homes in their boats, also period-

ically collect the beche-de-mer, or sea slug, the repulsive-looking creature which occurs in quantities all round the coast. These are dried, and eventually find their way to China, where they are much appreciated for their soup-making qualities.

Enormous cockles and clams are also found, which again are much sought after in the Chinese market. Agar-agar, an edible seaweed, is found in many places, and is used by the Chinese cook in the preparation of jellies for the European table. Mother-of-pearl shell, the produce of an exceptionally large oyster, is collected and sold at very considerable profit.

Pearls, although frequently seen in the Sandakan market, are not often found locally, although seed-pearl beds occur in various localities. These small pearls, found in the oyster locally known as "selisip," are ground to a powder and utilised as medicine by the Chinese. Very few of them are large enough to be of any value individually.

Turtles are fairly common in Borneo waters, and there is a good trade in both the shell and the eggs. Sharks' fins and tails are brought in by the fishermen, and find a ready market. They are used exclusively by the Chinese.

Excellent oysters are obtained in many places. Those found adhering to the rocks make good eating, but the variety found clinging to the roots of the mangrove and other sea trees are apt to cause a violent colic, and should be avoided, although they are said to be quite innocuous when dried.

Forest Produce.—Forest produce, exclusive of actual timber, forms a large proportion of the exports of the country.

This term includes all products of the forests, exclusive of the timber itself, details of which will be found in another chapter. They are usually collected by natives, and sold to Chinese traders, and most of them are also used locally in small quantities.

Rattan.—The quantity of rattan collected is great, and the enormous stretches of forest land provide an abundant and constant supply. The rattans are spiny climbing palms, belonging to the genus Calamus. They are erect in their early youth, but, after they attain a height of a few feet, the stem needs support, which it secures by the aid of a long

flagellum, armed with hooked thorns, by means of which the plant clings to tree trunks. The rattans attain great length, sometimes more than 200 yards, and are among the longest plants known. The long flexible stem is the part which is used, and in certain forms of rattan the whole of it is utilised. These are usually of small size, and are used in certain types of furniture. In many other forms of larger size, the stem is split, and only the hard outer portion is utilised. The lightness, elasticity and strength of the rattan render it unequalled for certain classes of work. The working of rattan has long been an industry in the East, and of recent years has extended to some parts of Europe and America.

Rattan is very widely distributed in the forests, and is of fairly rapid growth. It will apparently reproduce itself. There are many varieties, of which eight in North Borneo have a commercial value.

Gutta Percha.—Certain forest trees of the family Sapotaceæ produce a sap or juice, which, when hardened, is known as gutta percha. To obtain this sap the tree is felled; and naturally the amount collected has decreased with time, as the collectors have to go further into the jungle year after year. The method of collection has been described in the *North Borneo Herald* as follows:

"The collector only fells gutta trees over six inches in diameter, because, as he says, trees of a smaller size have too thin a bark to yield gutta. Consequently, the gutta collector does not exterminate, he merely collects a ripe crop and leaves nature to furnish a further supply in years to come. Having felled a tree, the collector rings the trunk at intervals of about 17 inches, cutting through the bark to the wood, and placing below each cut a piece of bamboo to receive the juice."

The most conspicuous property of this product, and one that distinguishes it from rubber, is its capability of becoming soft and plastic on immersion in hot water, and retaining any shape then given it on cooling. It then again becomes hard but not brittle. Rubbers, on the other hand, do not soften in hot water, and retain their original elasticity.

Gutta Percha is remarkable as a non-conductor of heat, and

of electricity. Consequently, it is particularly useful in insulating electric cables, and is used for handles for surgical instruments and in dentistry.

No satisfactory substitute has been found for gutta percha, and it is possible that in the near future plantations will be necessary for its production on account of the destructive practice of cutting down the tree when it is tapped. Experimental planting has been started in the Federated Malay States, and has shown encouraging results.

The largest amount of this produce was exported from the State in 1901, when its value was 224,428 dollars. The export of this product has gradually decreased, and in 1918 the reported value of gutta percha exported was only 4,800 dollars.

Forest Rubber.—There are several forest trees and vines in the country which contain rubber. One creeper in particular grows everywhere, and the rubber obtained from it by native collectors fetches a very fair price, although this does not approach that obtained for the plantation product. Plantation rubber is of a better and more uniform quality than the jungle article, but there will always be a demand for a certain amount of the latter to mix with the estate product in the preparation of grades of rubber for certain industrial uses.

There are eleven kinds of jungle rubber recognised in North Borneo, some of which produce a very low grade rubber, while many plants produce rubber which is not collected because of its poor quality.

The largest export for any single year of forest rubber was in 1904, when its value was over 100,000 dollars.

Resins, Gums and Oils.—The gum or resin, which exudes from various trees, is known in Borneo as damar, and the collection of this from the ground beneath these trees gives employment to many men, women and children of the tribes of the interior.

The gum is of various qualities, some of it, the "mata kuching," for instance, fetching a very high price, while much of it has no market value, and is only used by the natives for illuminating purposes. Its principal use is in the preparation of varnish and drying oils.

The largest export was in 1912, when the value of the damar exported was 160,000 dollars.

Camphor.—Borneo camphor is a crystalline camphor, occasionally found in small pockets in the wood of Dryobalanops Aromatica and other species of Dryobalanops, known in Borneo as Kapor. This camphor has a very high value, and is used by the Chinese for embalming and medicinal purposes. The tree itself is common in the forests, but it is only at a certain stage of its growth that the camphor forms, and generally only a small amount of it is to be obtained from any one tree.

The collection of camphor is the subject of many superstitions among the natives, and is generally only pursued by the tribes of the interior.

The camphor appears to exist in the first place in the form of oil, which is of considerable value in itself, one kind being the well-known " kayu puteh " oil, which is known in England as " Cadjeput."

The largest export of camphor was in 1915, when the value was over 50,000 dollars.

Wood Oils.—The different species of Dipterocarpus produce what is known in Borneo as Minyak Kruin, a sticky oil which is used as an illuminant, for the caulking of boats, and medicinally. The oil is collected in some places by digging out a cup-shaped place in the trunk of the tree, into which the oil flows readily. When the flow becomes scanty, fire is applied, and greatly increases the flow. Some other trees produce wood oils, but these are not much collected.

Vegetable Fats.—Vegetable fats or tallow are extracted from the fruit or seed of several forest trees, and are used by the natives for cooking as well as for embrocation and lighting purposes under the general name of " tengkawang." These fats will keep for a very long period without becoming rancid, and have a considerable value.

Incense Wood.—Occasionally a tree forms a very resinous wood, which, when burnt, gives off a sweet odour. Such woods are known as incense woods, and are used in religious ceremonies. The best known of these in Borneo is named " Garu," and is occasionally produced by trees of the genus Gonystylus. These are large trees of soft, light-coloured wood, and occasionally a very small blackish heart-wood is

formed. This is by no means constant in its occurrence, and is exceedingly valuable when found. There is another rather low-grade incense wood, which is called "Laka," and is produced from the roots of some plant of the family Leguminosæ.

Swamp Produce.—The enormous mangrove and nipa palm swamps, with which the greater part of the coast is fringed, contain many valuable products. Baku, a small to medium-sized mangrove tree, is much used as fuel, and large quantities of it, cut into billets, find their way to the Hong Kong markets. The bark, which contains a very large percentage of tannic acid, is valuable as a dye, and for tanning purposes.

Nipa grows where the water is brackish, and large swamps of it intervene between the mangrove and the solid land. The total area of nipa swamp in North Borneo has not yet been computed, but in all probability it is considerably in excess of 300,000 acres. Dense and extensive stands of it are to be found in Labuk Bay, and along the north-east coast from Sandakan Bay to Tambisan. There are also large areas in Darvel Bay and Cowie Harbour on the east coast, and at the mouth of Padas river on the west coast. It is estimated that one acre of nipa swamp under proper management will yield approximately 4,000 gallons of sap a year. If the alcohol content is taken as 7½ per cent., the yield of alcohol will be 300 gallons. The above estimate is taken from recent data from the Philippine Islands, where the manufacture of alcohol from nipa sap is an old-established industry.

The nipa leaves attain a height of twenty feet or more, and resemble the fronds of some huge fern. The palm is utilised in various ways, the principal being in the manufacture of thatching for houses. This is quite an industry in itself, and affords employment to many natives, particularly women and children. Mats are also made from the leaves; young leaf is the favourite covering for the native cigarette; the fruit is eaten, and salt is obtained from the stem and underground roots by burning them.

Above the nipa and where the water is almost fresh are to be found the nibong palms. The stem, unsplit, is used for

the posts of native houses, and for temporary buildings and bridges. Split, it is used for flooring and rafters.

Bamboos of all sizes abound in many parts of the country, and are largely used in the erection of native houses.

Birds'-Nests and Beeswax.—Under the heading of forest produce may also be mentioned edible birds'-nests and beeswax.

The nest of a small swift is used by the Chinese for making soups, and a very high value is attached to the whiter kinds. The birds, whose nests are formed of a glutinous substance, build high up in large caves of limestone rocks, frequently several hundred feet from the ground. The task of collecting these nests is one of considerable risk, and fatal accidents occur at times.

The supply of beeswax from the very large nests which are found on the branches of some of the forest trees is considerable, and its collection is sometimes quite an important local industry. The trees chosen by the bees for their nests are the Mengaris or Tapang, and the collection of the wax or honey is difficult and attended with much risk, the trunks of the trees being so large that rough ladders have to be made to reach the nests, which are generally a very great height from the ground.

The largest export was in 1905, when the value of the beeswax exported was over 26,000 dollars.

Cutch.—The principal source of tanning material is the bark of several trees of the mangrove swamps, the best known and most useful of these being Bakau and Tengah. They contain a very high percentage of tannin, and are used extensively in the preparation of tanning extract, to which the trade name of Cutch is given.

Cutch was originally prepared from the wood of Acacia Catechu in India and Burma, but later it was found that a very satisfactory tanning extract with similar properties could be prepared from the bark of certain mangrove swamp trees. The large extent and uniform composition of the mangrove swamps was favourable to factory production on a large scale, and the resultant product was more uniform in quality than the cutch which had formerly been prepared.

In North Borneo the Bakau Syndicate began to export cutch from Sandakan in 1892, and has continued a vigorous export since that time, while at the present time cutch is exported to a greater value than any other kind of the jungle produce of the country. The largest value ever exported in one year was in 1916, when it was valued at 500,000 dollars.

In 1897 another company was started in Marudu Bay, but had rather a precarious existence for some years before it was taken over by the Bakau Syndicate. The export of cutch in 1918 fell to 1,612 tons as a result of reduced shipping facilities, but there is every indication that the trade will flourish greatly when times are normal.

Up to the present the Bakau Syndicate has confined its operations to the north and east coasts.

The Island Trading Company of Brunei has recently been given concessions on the Klias Delta, and is now working there.

CHAPTER VI

Timber

Of the large areas of virgin forest in North Borneo, the Department of Forestry estimates that there are more than two million acres of commercial forest within twenty miles of the coast. In this belt there can be located a number of blocks of fifty thousand acres on which the stand of saleable timber will average more than two thousand cubic feet to the acre, while some of the areas in the Cowie Harbour region, notably the Serudong Valley, have a stand running to well over three thousand feet to the acre, and it is safe to say that this whole area is covered with a forest which will yield an average of over two thousand cubic feet an acre of timber which the market will gladly take.

Hong Kong is the principal market for North Borneo timber, most of which is exported in the form of logs. Serayah, or Borneo cedar, is the timber which is most in demand, and this is as it should be, as this wood occurs in greater quantity than any other. Kruin, Kapor, Selangan Batu, and Billian are in considerable demand, but, as mentioned by Dr. Foxworthy, the well-known American expert in the Philippine Islands, none of the woods have been exported in anything like sufficient quantity to cause any fear of extinction, and he has further remarked that it would be possible to remove each year from an area on the east coast of 176,000 acres, which has been carefully studied, three times as much timber as has ever been exported from the country in any one year, and to do so without danger to existing forests of that region for several years. It is estimated that a supply of well over 1,000,000,000 cubic feet of workable timber is in sight.

Hong Kong can be depended upon to continue to take steady amounts of the very durable woods, notably Billian, Selangan Batu, Kruin and Kapor, and will also probably take increasing amounts of the lighter Serayahs, for light

BARKING SAGO "LOGS"

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construction and for furniture. The Australian market in past years has received shipments of Borneo woods which have been well reported on, and there should develop a good demand whenever transportation again becomes available.

The London market has taken many shipments of Serayah, which has been named Borneo Cedar, and will probably take much more in the future, and has also taken smaller shipments of Kapor and of Selangan Batu, which, under the name of Argillo Wood, has been used in the manufacture of spokes for ordnance.

Wood needs to be very much more durable for use in a tropical climate than in a temperate one. The continuous warmth and moisture are favourable to the growth of organisms producing decay, and there is an abundance of animal forms which attack wood. Most woods of temperate climates would be speedily destroyed if exposed to eastern conditions, and there are a number of Borneo woods which, though not very durable here, would be sufficiently durable for use in a temperate climate.

The following list of woods for various uses is based on experience :

Woods exposed to salt water.—The use of a wood for piling purposes is the extreme test of durability, principally because of the attacks of the toredo, which speedily destroys most woods. It is to be doubted if there is any wood in existence which is entirely free from its attacks. The best woods for piling purposes are :—Billian, Angriting (Griting), Bangkawang or Mangilas, Dungun and Perapat, while the following are also suitable for the purpose : Aru, Oba, Bakau, Tengah, Selangan Batu, Rasak, Nibong, Kayu Dusun.

Woods for Ship and Boat Building.

For Keels :—

Dungun, Penaga, Selangan Batu, Angriting.

For Planking :—

Kapor, Selangan Batu, Kruin, Oba Sulu.

For Ribs and Knees :—

Penaga, Dungun, Mirabau, Tengah.

For Masts and Spars :—

Bentangor.

Woods in contact with the ground.—These woods need to be resistant to decay, and to the attacks of white ants. The following are the best:—Billian, Mirabau, Nungun, Selangan Batu, Sasak, Kapor, Angriting.

Selangan Batu is an admirable wood for the above purpose, and can be secured in very large quantities.

Woods for Bridge and Wharf Construction.

For Beams:—

Dungun, Mirabau, Perapat, Selangan Batu, Oba, Kapor, Kruin, Aru, Kambang, Billian, and Angriting.

For Planking:—

Mirabau, Perapat, Billian, Angriting, Kapor, Kruin, Oba, Kambang.

Woods for House Construction.

For Flooring:—

Selangan Batu, Kruin, Sapetir, Mirabau, Perapat, Rangu, Oba, Kambang, Oba Sulu, Kayu Pangiran.

For Walls:—

The Serayahs and practically any of the other woods.

For Doors and Windows:—

Mirabau, Rasak, Perapat, Sapetir, Bintang Rangu, Oba Sulu, Kambang, Nyatoh, Kruin, Kapor, Kayu Pangiran, Seraiah, Gagil, Selangan Kacha, Selangan Kuning, Miamot, Nirih, and Selangan Batu.

Woods for Cabinet Making.

Kayu Arang, Kayu Malam, Mirabau, Impas, Miamot, Penaga, Oba Sulu, Perapat, Kamuning, Kambang, Rangu, Bentangor, Simpor, Taarp, Kasak, Selangan Batu, Nirih, Angsana, Kranji, Kapor, Madang.

Furniture Woods.—All of the woods mentioned as suitable for cabinet making, and the following:—Sapetir, Mengaris, Rengas, Seraiah, Gagil, Selangan Kuning, Selangan Kacha, Pulai, Jelutong, Oba Nyatoh, and Madang.

A brief description of the principal woods may be given here.

Serayah (Borneo Cedar), a soft, light wood, is the most abundant timber in the State. It is obtained in almost any size up to a diameter of five feet, and a clear length of eighty feet can be obtained. It has a reddish tinge and a more

or less cedar-like odour. There are apparently some fifteen species of this timber in the country, which is of the genus Shorea. It weighs from 25 to 40 pounds a cubic foot, and its logs float. The wood has a very pretty grain and is easily worked. Several of the species produce resin in considerable quantities.

Kruin.—This is a moderately hard timber and is produced by 15 to 20 species of the genus Dipterocarpus. It is a fairly heavy, cross-grained, dark reddish-brown wood, and contains a considerable amount of an oleoresin. It is the second most abundant wood in the country and makes up 11 per cent. of the forests of the east coast. Its weight is from 40 to 55 pounds a cubic foot, and it can be obtained in lengths up to eighty feet with diameters up to five feet. It is stated that rather more than half the logs will sink when freshly cut. It is a strong and stiff wood but not generally suitable for contact with the ground, but if used in proper surroundings and painted it is very durable. As Dr. Foxworthy points out its abundance, cheapness, and the ease with which large-dimension material can be obtained, will probably some day cause it to become the most important structural wood of the country.

Urat Mata.—Urat Mata, the produce of one or more species of the genus Parashorea is plentiful and is a wood of a light grey or pink colour. It is very widely distributed in the country and makes up 9 per cent. of the stand of the trees of the east coast. Its weight is from 35 to 40 pounds a cubic foot and its logs float. Logs up to five feet in diameter and with 50 feet clear length can be obtained. This wood is not very durable and should not be used in contact with the ground.

Camphor.—Camphor or Borneo Camphor wood is obtained from three or four different species from the genus Dryobalanops. The wood is moderately hard and heavy, straight-grained, of a brownish red colour, with a camphor-like odour when freshly cut, and the sapwood and heartwood are distinct. Camphor weighs from 40 to 50 pounds per cubic foot, and about 50 per cent. of the logs will float when freshly cut. This wood is very good for all classes of construction, except where it is placed in water or in contact with the ground. The supply

is abundant. Camphor oil and crystalline camphor are obtained from the wood and used medicinally.

Selangan Kacha is produced from one of our largest trees, and the wood is pale yellow, soft, moderately heavy, and straight grained. It is fairly common and widely distributed over large areas. It weighs about 39 pounds per cubic foot and the logs float. It is used in construction and in the manufacture of furniture.

Oba Sulu is a dark red fine-grained, soft to moderately hard and moderately heavy wood. The heartwood is fine-grained and very suitable for furniture, panelling and construction. It is a very good substitute for mahogany, but unfortunately the quantity is not great. The bark is used for dyeing. This wood weighs between 40 and 45 pounds per cubic foot and the logs float.

Very hard woods.—The excessively hard woods which are found in fairly large quantities are Billian and Selangan Batu.

Billian or Borneo Ironwood is a dark brown, very heavy, very hard and very durable wood. It has a fairly straight grain and splits readily. The wood becomes much darker in colour after prolonged exposure to the air. Its weight is from 60 to 70 pounds a cubic foot and the logs sink. It is the fifth most abundant wood in the east coast and makes up 6 per cent. of the total stand. It is often to be obtained 2 to 3 feet in diameter and 100 feet in height, though much larger sizes are found. It can be used advantageously in logs of as small a diameter as 12 inches. It is the best-known and most esteemed Borneo wood because of its very great durability and strength and its ability to withstand changes of moisture and temperature. It is remarkably resistant to the attacks of teredo and insects. It is one of the strongest woods known and shows exceedingly little checking or warping, even when placed under the most extreme conditions.

Selangan Batu is produced by several species of the genera Shorea Hopea and by Isoptera Borneensis It is a very hard and heavy wood, yellowish brown when first cut, but rapidly darkening on exposure to air, showing a glistening surface in transverse section. It is strong, elastic and durable, and

breaks with a long splinter. The timber is very widely distributed and makes up about 8.5 per cent. of the volume of the east coast forests. It weighs from 52 to 65 pounds a cubic foot and its logs sink. Logs up to five feet in diameter and fifty feet long can be obtained.

Mirabau is the 24th timber in order of abundance on the east coast and is very hard and very heavy. It is a coarse-grained dark yellowish-brown wood with sulphur-yellow deposits. It grows as a rule inland on flat land and weighs from 48 to 75 pounds a cubic foot, and its logs sink. It can be obtained in logs of five feet in diameter and with a clear length of 50 feet. It is a very strong and durable wood, and is resistant to the attacks of insects, but it is not suitable for use in salt water.

Angriting is a hard, heavy, dark grey wood of a fine grain. It weighs about 50 pounds a cubic foot and its logs sink. It is of common occurrence in the mangrove swamps, but its worth is so generally recognised by the natives that it is usually cut before it attains a large size. It is still possible to obtain a limited number of logs as much as 2 feet in diameter and 30 feet long. The wood keeps its shape even though exposed to severe weather conditions, and in regard to durability it is second only to Billian.

Kayu Dusun is very hard and very heavy, and is a dark-brown fine-grained wood. It is of common occurrence on the East coast, and is of a very durable nature. Its weight is 86 pounds a cubic foot, and its logs sink. The tree is not usually more than one-and-a-half feet in diameter, and is from 80 to 100 feet high.

Mengaris is very hard and heavy. It is a coarse-grained dark-red wood, which becomes harder as it dries. It is the eighth most abundant wood on the east coast and is sometimes known as Tapang. Its weight is from 61 to 67 pounds a cubic foot and its logs sink. It is one of the largest trees of the forest. It is not particularly durable but burns readily.

The commercial possibilities of the timbers of North Borneo are very great. Since the establishment, in 1914, of the Forestry Department much valuable data of the timber resources of the territory has been obtained. Timber was

worked for many years by four companies, two European and two Chinese, and in 1920 a powerful new company, the British Borneo Timber Company, with a subscribed capital of £300,000, was formed with the object of exploiting the forestry resources of the State on a large scale, and with modern logging equipment.

Complete descriptions of the various woods of the country and their main uses are given in a pamphlet written by Dr. Foxworthy and published by the Government. The data contained in this and the preceding chapter have been copied for the most part from the Forestry Department Bulletin No. 1, written by that gentleman.

CHAPTER VII

Minerals

The minerals of the island of Borneo have long been reported as gold, diamonds, silver, lead, tin, copper, antimony cinnabar, coal, iron, and petroleum; and it is now known that coal, iron, gold and petroleum exist over large areas in the northern part.

Coal.—Coal seams are found in North Borneo at Naluyan, near Weston on the west coast; in Marudu and Sandakan bays; and in the country at the back of Cowie Harbour. In the latter district a seam on the Serudong River was opened many years ago, and for some years the Cowie Harbour Coal Company has had workings on the Silimpopon River. This is the only coal at present worked in the State, and the Company, after some years of anxiety, is now in a position of considerable strength. An up-to-date plant has been installed under efficient management and the annual output has reached 85,544 tons. The coal has good steam qualities and has recently been used to a considerable extent by the Japanese Navy. The actual workings are some miles up the Silimpopon River, in the midst of dense forest, and the coal is conveyed by railway to a loading station where the water is deep enough for barges. These are then towed to a depot on the island of Sebatik, which is accessible to ocean-going vessels of any size. Later on it may be possible to extend the railway to a point on the west shore of Cowie Harbour, where a coaling station will be built to take the place of the present depot on Sebatik.

A large proportion of the coal is eventually taken to Sandakan, where it is supplied to vessels trading from Hong Kong and Singapore to Australia and Java and the Philippines.

The supply available at Silimpopon is estimated at eight million tons, and there are further large seams in the upper waters of the Serudong River, of which the Silimpopon is a tributary. The amount taken from Sandakan by overseas vessels in 1918 was 26,745 tons, and there is no doubt that the coaling facilities at that port and at Sebatik have attracted much shipping which otherwise would not have visited the country. Cowie Harbour coal has a caloric of 14·13, and produces 7·68 per cent of ash and 60 per cent of coke, which is a very high percentage. It has been stated by an authority that the coal is the best to be found east of Suez, and considerably better than that obtained from India and Japan.

Petroleum.—Petroleum indications occur in many parts of the State, particularly in the Klias Peninsula and in the neighbourhood of Kudat and Cowie Harbour. The mining rights are in the hands of the British Borneo Petroleum Syndicate. Deep borings have been made by the Petroleum Syndicate which owns the rights on the Klias Peninsula, and oil of a particularly good quality has been discovered, but at present apparently not in sufficient commercial quantity to justify extensive operations. A wealthy Japanese company is now (April, 1921) pursuing the search for oil in this neighbourhood, having concluded an arrangement for this purpose with the syndicate.

Gold.—Gold occurs on the east coast, particularly in the vincinity of Darvel Bay, in the form of fine sand in the alluvial deposits, and traces of it are to be found through the territory. Its existence was known as early as 1812, and in 1898 dredging operations were conducted on the Segana River. These were later abandoned and at the present time no effort to work gold on a large scale is being made.

Iron Ore.—In the Labuk district of the east coast, there are large deposits of iron ore, and "blue ground," said to be identical with that of Kimberley, is found, but neither has yet been fully investigated. The existence of tin on the west coast and in the interior has been reported.

For many years the monopoly of the mineral rights of the State were vested in a company known as the British Exploration Company. With the exception of an unsuccessful

attempt to work manganese in Marudu Bay, little work was done by this company, the rights of which have recently reverted to the Chartered Company. It is hoped and believed that a thorough investigation of the territory will result in the discovery of minerals in paying quantities.

CHAPTER VIII

Agriculture

Agriculture ranks easily first among the industries of North Borneo. Directly or indirectly it furnishes a livelihood to all but a small minority of the population and contributes the bulk of the Government revenue, and its expansion in recent years has brought about the present prosperity of the State.

As in most other tropical countries the development of agriculture in North Borneo has resulted chiefly from the introduction of alien plants. That this would be the case was foreseen in the early days of the Chartered Company's existence, and trials of a variety of crops were made at experimental stations at Tenom in the interior and at Silam on the east coast. There was no difficulty in proving that the climate and soils were eminently suited to a large number of crops. In attempting to found industries, however, a new country is handicapped by the competition of other countries where they are already well established, and occasions are but rare when, owing to this competition being practically eliminated by a sudden large increase in the demand for a commodity, a new country can enter the field on more or less equal terms.

Fortunately two opportunities of this kind have occurred since North Borneo came under European rule. The first was in the 'eighties, when there was a boom in the cultivation of cigar-wrapper tobacco ; the second, dating from the beginning of the present century, was afforded by the mushroom-like growth of the plantation rubber industry. For many years tobacco was the chief agricultural product of the territory, but in the last decade it has yielded the premier place to rubber, which therefore merits first mention here.

Rubber.—The history of the plantation rubber industry well deserves to be called romantic. Until a quarter of a century ago the rubber of commerce was obtained entirely from jungle trees and vines. It appeared highly probable that supplies from these sources would not always be adequate

to meet the growing demand, and Sir Joseph Hooker, the Director of Kew Gardens, induced the Government of India to send an expedition to Brazil to procure seeds of *Hevea Brasiliensis*, which he considered, with remarkable foresight, to prove the most remunerative tree under cultivation. The first attempt was unsuccessful, but in 1876 Mr. Wickham obtained a large number of seeds, which had to be smuggled out of Brazil owing to Government opposition to their export.

Plants raised at Kew from these seeds were sent out to Ceylon and Singapore. Mr. Ridley, who had much to do with nursing the cultivation through its infancy, states that the idea of growing the plant for profit was ridiculed at first by almost everyone. The experiments were persisted in, however, and at length, in 1898, the fall in the price of coffee and the sudden demand for rubber led planters in Malaya to turn their attention to the new product. Since that date the industry has developed with sensational rapidity. Its rise gains an added interest from the fact that rubber is one of the only two important commodities (the other being quinine) which were once derived entirely from wild sources and which have been brought into cultivation within historic times.

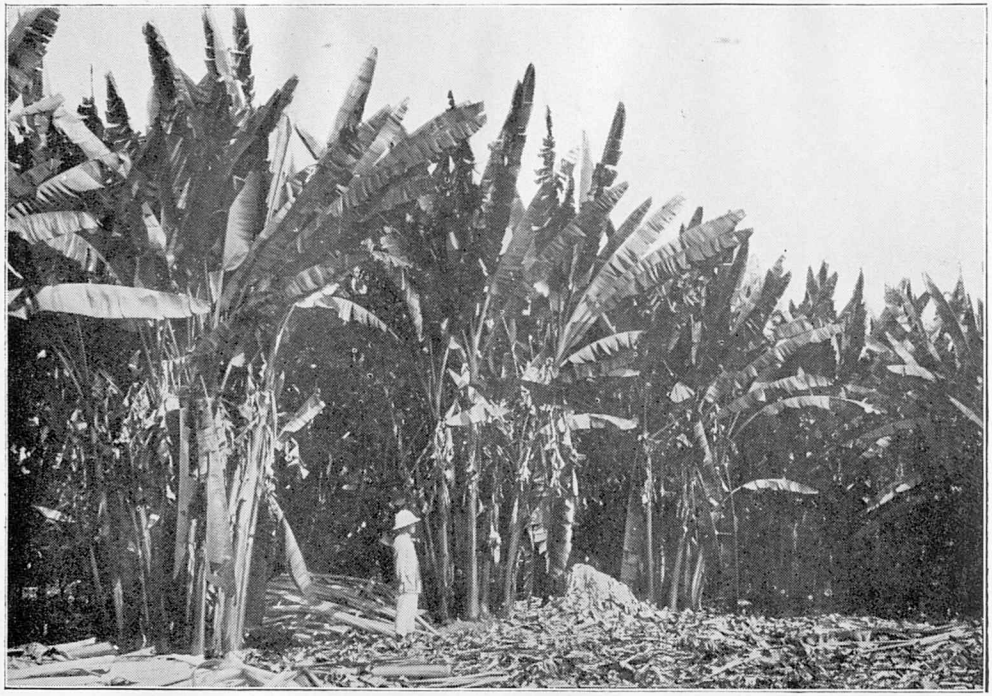
North Borneo comes into the story in 1882, when rubber plants were sent to the State from the Singapore Botanic Gardens. There is also a record of seeds being despatched from Ceylon in 1887. What happened to these early consignments cannot now be ascertained. It is hardly to be expected that the new product would arouse more enthusiasm in North Borneo than it did in neighbouring countries, and trials on a commercial scale do not appear to have been made until about 1892, when the Messrs. Wade started to plant rubber for the Mortgage Investment and Contract Corporation, Ltd., at Bongaya on the river Labuk. They appear to have cleared about 200 acres, but, according to the *British North Borneo Herald*, for 1899 only 75 acres were planted ; in 1901 the estate was advertised for sale. In 1900 seeds obtained from Ceylon were planted by the Government at Tenom, and late in 1905 or early in 1906 some of the trees were, under the agreement with the Government, tapped by Mr. F. E. Lease. This plantation was the nucleus of what is now called the Penotal estate.

By 1905, when rubber-growing had been proved to be a sound commercial undertaking, the suitability of North Borneo for its cultivation had been amply proved. The rapid expansion of the industry offered a chance of attracting capital to develop the natural resources of the State, which the Chartered Company was quick to seize. As the country was then comparatively unknown it was necessary to put forward special inducements to possible investors, one being the promise that the Government would forgo the right to impose an export duty for a period of fifty years*, and another the guarantee of dividends during the non-productive period. Twelve companies were formed on the basis of these terms, the first in 1905 and others in successive years up to the "boom" year of 1910 Enterprise was not left entirely to the Chartered Company: the North Borneo Trading Company, which owns large areas of land in the State, floated four subsidiary companies, and the large tobacco companies began to devote part of their land to rubber.

The growth of the rubber industry in North Borneo is shown by the following figures of the total area planted at the end of each year from 1907 to 1919, and the export of rubber in the same years :—

	Total Area Planted at end of year.		*Rubber Exported.*	
1907.	3,226	acres.	4,975	lbs.
1908.	5,147	,,	9,636	,,
1909.	6,888	,,	16,383	,,
1910.	14,755	,,	54,631	,,
1911.	25,064	,,	148,795	,,
1912.	29,025	,,	411,070	,,
1913.	30,258	,,	1,023,283	,,
1914.	30,851	,,	1,372,845	,,
1915.	31,046	,,	2,353,411	,,
1916.	32,216	,,	4,340,421	,,
1917.	35,087	,,	5,474,705	,,
1918.	40,986	,,	5,808,870	,,
1919.	47,739	,,	8,823,422	,,

* This concession applies only to rubber land alienated before June 1st, 1917.



MANILA HEMP (Tawau-Kuhara Estate)

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At the end of 1919, 29,970 acres were being tapped. The bulk of the land planted with rubber belongs to 23 companies with a total capital of nearly £3,500,000. Most of the companies are British, but a few large estates are owned by Chinese and Japanese, and there are numerous small plantations belonging to local merchants and natives.

The labour employed on rubber estates is principally Chinese and Javanese, but in recent years an increasing use has been made of natives of the country. Of 14,674 coolies employed on large estates in 1918, 47 per cent. were Chinese, 26 per cent. Javanese, and 27 per cent. natives.

North Borneo has now definitely taken its place as one of the few tropical countries where rubber-growing is a proved success. Its climate is as suitable for the cultivation as that of any country in the world. Vast reserves of excellent land are available, especially on the east coast and in the interior; in both places a beginning is shortly to be made with the construction of roads, and in the meantime access to land on the east coast can be had by water. Judgment in selection is of course necessary as it is everywhere, but if a wise choice is made the trees come into bearing as soon and yield as heavily as in the most favoured localities of Malaya and Sumatra. The existing estates are healthy, both for the European staff and the labour force. There can be no doubt that North Borneo, enjoying a settled government under British protection and having in its favour the advantages just mentioned, has a very promising future before it as a rubber-producing country.

Tobacco.—The cultivation of tobacco by Europeans was commenced in North Borneo about 1883. Some years before this it had been discovered that parts of Sumatra were particularly suitable for the growth of tobacco for the outside wrappers of cigars, and a large and very profitable industry had been built up, which attained its greatest development in Deli.

Need for elbow-room and possibly the desire for easier terms than could be obtained in Sumatra led planters to explore North Borneo. Climatic and soil conditions being considered excellent, a company commenced operations in Sandakan Bay. Their crop received glowing commendation from tobacco

experts at home. This success was repeated by private gentlemen who opened estates in Maruda Bay and Darvel Bay, and the golden prospect led to the formation of new companies so rapidly that the development may well be described as a boom. Land in blocks of 10,000 to 40,000 acres was taken up on almost every bay and river in the country, and for a time North Borneo seemed likely to be a formidable rival to Deli.

But, unfortunately, features common to all booms were present. A large number of managers had to be found and some of them were probably incompetent. The industry was a new one and local conditions had not been thoroughly studied, and totally unsuitable land was selected in several cases. When operations were commenced they were often characterised by a lavish expenditure only commensurate with the huge profits that were expected. Under such circumstances it is not surprising that some of the companies had only a brief existence.

It would be ungenerous, even in a short account like this, to omit mention of the energy and perseverance shown by many of the pioneer tobacco planters under difficulties which those in charge of rubber estates have rarely had to face. Nothing daunted them : they explored the country from end to end, searching for land in places previously untrodden by white men, and when land was found estates were opened in spite of the distance from civilisation and the absence of any but the most primitive means of transport. One estate was established in a district peopled by head-hunting natives then unschooled to government by Europeans, and where the crop and all supplies had to be carried over twenty miles of unroaded hills.

Cigar-wrapper tobacco is of all crops perhaps the most exacting. The soil must be rich, but not too rich or the growth is coarse and the leaves are of a bad texture. A sandy loam gives the best quality of leaf, but a single crop impoverishes it so much that it has to be rested for about seven years before another can be planted. The best soil is found on the banks of rivers, but proximity to salt water is fatal to the quality of the tobacco, and more than one company has come

to grief through planting too close to the sea. Given ideal land a crop may fail for lack of rain, and even when soil and water conditions are both perfect the unremitting attention of an expert manager is required or the crop may be spoilt before it is ready for the market. A plague of caterpillars can play havoc with the tobacco ; this often happened in the past, but the danger has been greatly reduced since scientific methods of control were adopted. The leaves have to be picked singly, and they must be ripe to a day. Drying and fermentation are operations demanding extreme care, and to get the best price for a crop the leaves must be carefully sorted according to size, colour, and the part of the plant from which they came. The difficulties are many, but in a successful year the profits are good, and with experienced management the cultivation is not as speculative as might appear : one company in North Borneo worked for eleven consecutive years and only incurred a loss in one season.

At the present time three tobacco companies are operating in the State. In 1919 these companies planted 990 "fields," covering 1,399 acres, and the total crop was 1,857,380 lbs.

A revival of the industry in the future is confidently to be expected. North Borneo appears to be the only part of the British Empire, and in fact the only country in the world besides Sumatra, where cigar-wrapper tobacco of the best quality can be grown ; and for various reasons the area available in Sumatra is being steadily reduced. The large rivers of the territory are all fringed with land which will produce leaf of the finest colour and texture. Some of the difficulties encountered by the pioneer companies will disappear as communications are improved, and long experience has led to a better understanding of local conditions, which will enable planters to avoid many of the mistakes made by their predecessors.

Most of the natives of North Borneo are inveterate cigarette smokers, and they grew their own tobacco long before the special variety used for cigar wrappers was introduced by Europeans. All the interior tribes produce sufficient for their own needs. The requirements of the more populous coastal regions are supplied by the natives of the Ranau district in the interior,

where tobacco-growing is an industry of some importance. The preparation of the crop is simple; the tobacco is not fermented but is merely dried in the sun, and is then shredded with a bamboo knife. The consumer provides his own "paper," which usually takes the form of a slip of palm leaf. Of late years the industry has not expanded in proportion to the increased consumption of cigarettes, owing to the large sale of the cheaper kinds made in Europe and elsewhere. To encourage the local product the experimental manufacture of native tobacco into cigarettes similar in appearance to those imported was recently tried, and the experiment gave every promise of success.

Coco-nuts.—The coco-nut palm has long been grown by the natives of North Borneo, but, as in other parts of the eastern tropics, Europeans have only taken up its cultivation in comparatively recent years. The wide belief in the soundness of the industry is crystallised in the description of coco-nuts as the "Consols of the East," but notwithstanding this belief coco-nuts have been somewhat neglected owing to the greater attractiveness of rubber. It is unwise, however, to put all one's eggs into a single basket, and enthusiasts have not been wanting who have declared that in the long run coco-nuts would be the better investment of the two.

It is certain that vegetable oil will always be one of the world's prime necessities, and that coco-nuts will continue to be one of the chief sources of supply. On the termination of the war a shortage of fats, long predicted by experts, began to be felt. The demand for coco-nut oil increased enormously. There was a very substantial rise in prices, and owners of coco-nut estates, after a period of depression caused by the difficulty of shipping their produce, began to reap a rich harvest. Butter substitutes have come into general use during the war and animal fats have become scarcer, and there is every likelihood of a still greater demand for coco-nut oil and of contined prosperity for the industry.

Coco-nut planting in North Borneo has made considerable progress in the last few years. In 1914 there were 11,700 acres under cultivation, and in 1919 this had risen to 24,946 acres. Exports in 1919 consisted of 1,579 tons of copra and

about half a million nuts. These figures are bound to increase considerably in the near future as the recently planted trees come into bearing.

A staff of inspectors working under the Director of Agriculture is maintained by Government to visit native plantations and enforce methods of controlling coco-nut beetles and other pests, and to give advice on matters connected with upkeep. Since their appointment there has been a marked improvement in the appearance of the native plantations.

Government is anxious to encourage the cultivation of coco-nuts, and, in order to put as little strain as possible on the capital available for planting, special terms are offered for the acquisition of land. No premium is charged; the quit rent for the first five years is fifty cents (1s. 2d.) an acre, and afterwards $2·50 or $3 (5s. 10d. or 7s. 0d.) an acre, according to the quality and situation of the land. Coco-nuts require land of rather more than average fertility. Suitable land is to be found in most parts of North Borneo, but the attention of intending planters should be directed first to Marudu Bay and the east coast. On the island of Banggi there is an excellent site for a large plantation.

African Oil-Palm.—A competitor of the coco-nut which shows signs of becoming very popular in the Middle East is the African oil-palm. The fact that it comes into bearing earlier than the coco-nut palm is a very solid advantage. The demand for the oil is large and is increasing. Its production from wild palms in West Africa is in the hands of unprogressive natives and there is no reason to doubt that, just as was the case with rubber, it could be produced more economically on properly managed plantations equipped with modern machinery and provided with up-to-date transport facilities.

The oil-palm was introduced into North Borneo about 1883. The idea was, no doubt, that it possessed commercial possibilities, but it did not at the time attract European investors and it was not suitable for cultivation on a small scale by Chinese and natives. Its value as an ornamental plant, however, has led to its wide distribution, so that there is now ample proof that it will flourish in all parts of the State.

Fibres.—Manila hemp and Sisal hemp, the chief fibres used in the manufacture of cordage, have both been grown in North Borneo, but so far only on an experimental scale.

Manila hemp, because of its superior strength and lightness, is the most suitable of all fibres for rope-making, and its immunity from serious deterioration in sea water renders it especially adapted for marine work. Of late years the finest grades have come much into use for making ladies' hats, and the consumption has so increased as to cause a scarcity and, consequently, a considerable enhancement in price. The introduction of machinery for reaping cereals gave a great stimulus to hemp cultivation, since twine has to be used for binding the sheaves. The bulk of the Sisal crop is now taken up for this purpose, and medium grades of Manila hemp are also being largely used. The rapid extension of grain-growing in the New World and the introduction of modern methods in the Old make it certain that the demand for hemp will continue to increase.

At present Mexico is by far the largest producer of Sisal and the Philippine Islands have a monopoly of the supply of Manila hemp. Both however are countries where political conditions are somewhat unstable, and capitalists desirous of investing in hemp cultivation are likely to seek a field for their enterprise elsewhere.

There is no doubt that the climate and soil of certain parts of North Borneo are admirably suited to the growth of Sisal hemp. The plant is said to dislike excessive rains, and some of the comparatively dry areas in the interior near the terminus of the railway would suit it to perfection. The soils there are excellent, and though in its native habitat land that is almost worthless for other cultivations yields profitable crops of Sisal, richer soils have been proved to give much better results. A writer in the *British North Borneo Herald,* of April 16th, 1920, estimates that the cost of production would be a trifle under £16 a ton. In a good soil harvesting can be begun after three years' growth.

The Manila-hemp plant, a wild banana, is much more exacting in its requirements than Sisal, and attempts made to establish it in several tropical countries outside its native

home in the Philippines have failed. Besides a good soil it demands an equable climate, with a high temperature, moist air and evenly distributed rainfall. The conditions essential to success are all present in most parts of North Borneo, as might be expected from its close proximity to the southern islands of the Philippines, where hemp plantations are seen at their best. Manila hemp planted experimentally at Tawau is doing very well, and the State seems marked out by nature as the place to which the cultivation will spread if it extends beyond the Philippines. There are large areas of suitable land which would be granted by the Government on cheap terms.

Kapok—the floss obtained from the pods of the silk-cotton tree—is another fibre which promises to be of increasing importance in the future. It is widely used in upholstery and for filling cushions, pillows and mattresses ; for these purposes it appears to be superior to all other substances, as the fibres are extremely elastic and do not get matted with use. When placed in water it will support thirty times its own weight, and it is unexcelled for the manufacture of life-belts and jackets. There is moreover a prospect that the difficulties of spinning the fibre will be surmounted, in which case it would be utilised for textile purposes.

The kapok tree is cultivated by natives in all parts of North Borneo, but the industry has made very little progress as the floss has always been shipped in the uncleaned state. A sample consignment of cleaned floss recently sent home was sold at the top price in the market, and a sample of the seeds was well reported on. A London company is now interesting itself in developing the kapok industry in the Territory.

Minor Products.—Coffee was one of the first crops grown by Europeans in North Borneo, but the industry fell on evil days as it did in Malaya, and the cultivation is now practically confined to Chinese who supply the local market. The varieties grown are Liberia and Robusta, which both do well.

Indigo is being grown as a catch crop with rubber on a large Japanese estate at Tawau. A plant for extracting the dye has been set up, and a high-grade product is being obtained.

Pepper cultivation was at one time a very large industry

in the island, and the gardens of Bundu in the Klias Peninsula were famous. The crop is still grown on a small scale near Sandakan.

Cocoa is grown in a few small groves belonging to natives on the Segaliud river near Sandakan; the vigour and size of the trees and the heavy crops borne are proofs that the cultivation would do well under proper management. Tea has been cultivated successfully in the interior, and where cheap native labour is available the crop should be a commercial success.

Tapioca, ground nuts, maize and sweet potatoes are grown by Chinese and natives to supply local requirements. In well-kept Chinese gardens near the towns all kinds of tropical vegetables are raised. Tomatoes grow to perfection even near sea level, and fruits weighing nearly a pound are not uncommon.

The country is well supplied with fruit. Excellent oranges of two or three varieties are grown, besides pineapples, mangoes, limes and bananas.

Rice.—In many respects rice is the most important crop in North Borneo. The area devoted to it is considerably greater than that under any other crop; its culture is the chief industry of the native population, and it provides the staple food of the great majority of the inhabitants, both native and alien.

There are two kinds of rice, and they are grown in entirely different ways. On the plains, especially those near the coast, wet or swamp rice is grown. The land requires to be ploughed and harrowed, and seedlings raised in nurseries are transplanted in the prepared soil, which must afterwards be flooded. In hilly districts dry rice is cultivated. A patch of jungle is cut down and burnt, and holes are made in the ground and a few seeds dropped into each. After two or three crops have been raised the land is abandoned and a fresh piece is cleared. A consequence of the *ladang* system, as this method of growing dry rice is called, is that large areas of land are stripped of valuable forest, and in course of time are rendered useless for agriculture by erosion; the system thus tends to exhaust the natural capital of the country. The fact that it demands a minimum of expenditure of labour, however, makes it popular with the more backward natives.

About 26,500 acres are planted with wet rice every year, and about 32,00 acres with dry rice. The average production of cleaned rice per annum is about 12,000 tons. This is rather less than half the total quantity consumed in the State. The desirability of making the country more self-supporting is fully appreciated. During the war rice cultivation was encouraged by the guarantee of a minimum price to cultivators, and plans for stimulating the industry by constructing irrigation works are now under consideration.

Sago.—The sago of commerce is chiefly derived from the pith of two palms. These palms are indigenous to North Borneo, and in certain districts of the west coast their cultivation is an important industry. In these districts sago replaces rice as the staple food of the natives, and houses are built almost entirely of the stems, leaf-stalks and leaves of the palms.

Sago palms grow on swampy land, and take from eight to twenty years to reach maturity. A mature tree, if left to itself, puts out a much-branched inflorescence from the apex of the stem ; the starch which the plant has been storing up throughout its life time passes into the fruits, and when the fruits are ripe the tree dies. Just before flower formation takes place the natives fell the tree, cut the stem in lengths and rasp the pith into a sort of coarse sawdust, which is afterwards well washed with water to extract the starch. Extraction is done in or close to the sago swamp, and the product is then carried to Chinese-owned factories where it is cleaned and becomes sago flour. Pearl sago is made by damping the flour and rocking it in a calico cradle until it aggregates into granules, which are then fried for a short time in shallow iron pans.

It is estimated that about 4,000 acres of land are under sago in North Borneo. The average export of sago flour is about 3,500 tons, and in addition a considerable amount is consumed locally. During the world shortage of rice in 1919-1920, sago proved a most valuable reserve of food not only for the native population but for alien coolies employed on estates.

The sago industry in North Borneo is capable of great expansion. The native method of extracting starch is

extremely wasteful, and the introduction of machinery would multiply the output many times. At present the plantations are being slowly but steadily reduced in size by various pests, whose depredations could be prevented if a certain amount of care was exercised by native owners.

This question is receiving the careful attention of the Government of the State.

CHAPTER IX

The Administration

The Government of the State is administered by a Governor—acting under the authority of the Court of Directors in London—assisted by a Government Secretary and a Civil Service of about 100 Englishmen.

For administrative purposes the country, which consists of the Provinces of Alcock, Cunliffe, Dent, Dewhurst, Elphinstone, Keppel, Martin, Mayne, Myburg and Clark, is divided into five divisions, called Residences, with a Resident in charge of each. These are again sub-divided into districts, of which there are in all eighteen, each controlled by a District Officer or an Assistant District Officer. The executive work of the State is under the control of the usual Departments, directed by the Judicial Commissioner, Commandant of Constabulary, Inspector of Prisons, Financial Commissioner (who also supervises the State Bank), Commissioner of Lands, Chief Surveyor, Protector of Labour, Postmaster-General, Director of Public Works, General Manager of Railways, Conservator of Forests, Director of Agriculture, Mycologist, Superintendent of Immigration, and Marine Surveyor.

The control of the Judicial Department is in the hands of the Judicial Commissioner. The Governor is the Chief Judge and presides over the High Court, which consists of five judges. There are nine Sessions Judges and there are Magistrates of the First, Second and Third Classes.

The Indian Penal, Civil and Procedure Codes have been adopted almost in their entirety and have been found well fitted to the needs of the country. Local Ordinances passed by the Legislative Council supplement these Codes where necessary. There is also an elaborate system of native law. When the country was acquired from the Sultans of Brunei and Sulu, Government undertook that native laws

and rights should be respected, and this promise has been rigidly kept. In this connection it may be mentioned that there have been established Native Courts in which adjudicate benches of authorised chiefs and headmen, which deal with all questions of native law and custom, and from which an appeal lies to the Administrative Officer in charge of the District. Authorised chiefs also have limited judicial powers under the Codes and are entrusted with the maintenance of order within their own districts. They are supervised by the European officers, and abuses of their authority seldom occur.

The Governor is assisted by a Legislative Council consisting of nine official and four unofficial members. There is also a Native Advisory Council, consisting of the more important chiefs, and there are District Councils which meet from time to time to discuss native affairs.

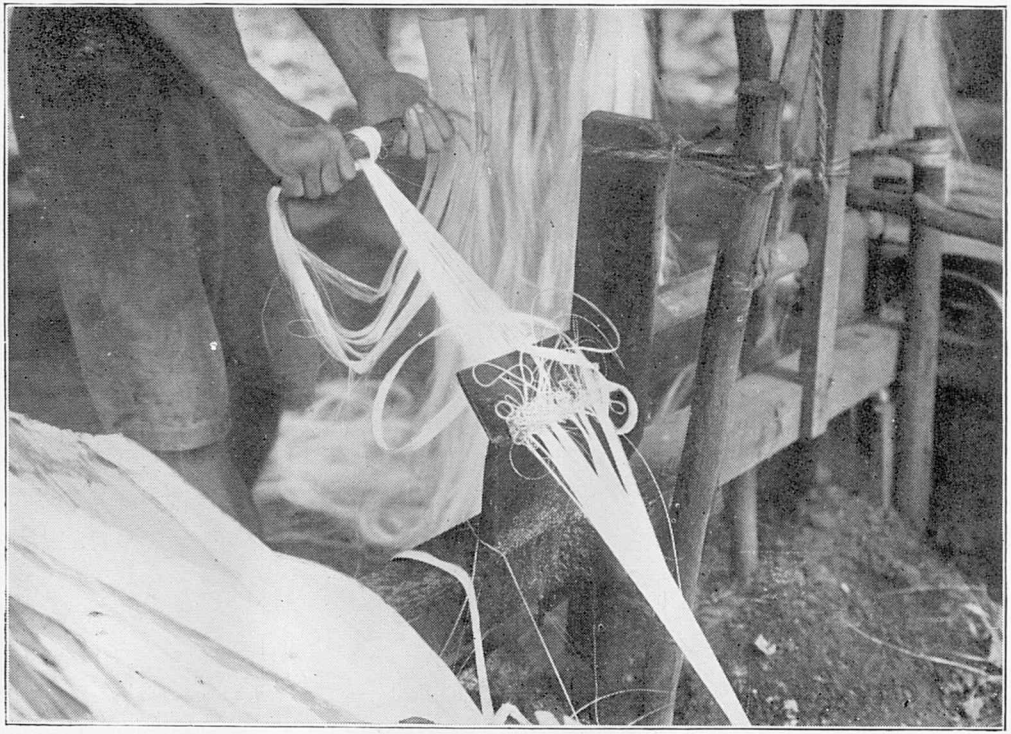
There is a Constabulary of five English officers, seven native officers, and seven hundred and fifty non-commissioned officers and men, and Police Stations are scattered throughout the country. The force consists partly of natives of India, Sikhs and Pathans, and partly of natives of the country who apply freely for enlistment and are found to be well fitted for this work at the end of their period of training. The force is armed with machine and mountain guns. The head-quarters are at Batu Tiga, Jesselton.

The sources from which the revenue is derived consist chiefly of licences ; Customs and Excise duties ; rents of land ; forest revenue, etc.

Rates are levied by the Sanitary Boards of the more important towns, and among certain tribes there is a poll tax, a source of revenue dating back to the days of the Sultans. There are in addition several miscellaneous items which make up the remaining sources of revenue.

The five Residences are Sandakan, West Coast, Interior, Kudat and East Coast, with the head-quarters of the Resident at Sandakan, Jesselton, Tenom, Kudat and Tawau respectively.

Government Stations under the charge of Administrative Officers are :—



STRIPPING MANILA HEMP (Tawau-Kuhara Estate)

Facing 84

Sandakan Residency

Sandakan, Lamag (Kinabatangan), Klagan (Labuk and Sugut).

West Coast:

Tuaran, Kotabelud, Jesselton, Putatan, Papar, Beaufort, Mempakul, Sipitang.

Interior:

Tenom, Keningau, Tambunan, Ranau, Pensiangan (near the Dutch boundary).

West Coast:

Tawau, Simporna, Lahad Datu.

Kudat:

Kudat, Timbang Batu.

In addition to these stations there are numerous Sub-Stations where small bodies of constabulary with native clerks are placed.

It will be seen that the Administrative Officers are stationed in all parts of the country and are in constant touch with the European as well as the native population. His Excellency the Governor resides alternately in Jesselton and Sandakan, and in these two towns are stationed the executive heads of Departments.

CHAPTER X

Sport and Natural History

Big Game.—The difficulty of obtaining good big-game shooting anywhere throughout the world is always increasing. The shooting grounds recede with the advance of civilisation, but really good sport is still to be found in North Borneo by those who are willing to work for their game and do not expect it to walk up and be shot.

The large-game animals in the country are elephant, rhinoceros, wild cattle, deer and pig, while bears are occasionally to be seen.

Elephants.—Elephants are to be found over most of the south-east of the State and the eastern portion of the interior, and may be shot under permit to be obtained from the Secretariat. They are probably not indigenous to the country and are indeed stated to be the descendants of those presented either by the East India Company or by the Sultan of Johore to the Sultan of Sulu many generations past. The latter, having no room for such big animals in his own island, is said to have sent them to his forest possessions on the coast of Borneo, where they became wild and multiplied. Whether this story is true or not it is impossible to say, but the fact remains that there are at the present time large numbers of elephants in the eastern side of the north part of the island.

Tuskers form a fair proportion of the herds, and the tusks are of a good size, being similar to those of the Indian, but inferior to those of the African elephant. Excellent sport can be obtained by those who desire it at a very moderate cost. In many cases the herds are of large size, of thirty head or more, and they not infrequently do considerable damage to native plantations. It seems certain that they are great travellers and have well-defined routes in their journeys from place to place. An expedition after this game is likely to be

well rewarded, and a considerable number of European hunters have had excellent sport at various times. The best sport will only be obtained by a prolonged expedition in the jungle, but those who have not a great amount of time to spare should try the country in the vicinity of Sandakan or Tawau, or the Kinabatangan river. No attempt up to now has been made to tame the local elephant.

Rhinoceros.—The rhinoceros is found over most of the country in the big forest, and in parts is not uncommon. The Borneo species is considerably smaller than the African, but affords excellent sport, and may be shot under a Secretariat permit. The horn, and in fact every part of the animal, including the entrails, is much in demand among the Chinese for medicinal purposes.

Wild Cattle.—The wild cattle are grand beasts and probably, taking everything into consideration, afford some of the finest shooting in the country. It is a disputed point whether there are two distinct varieties, but it is certain that, in respect to the flesh, those found on the west coast differ from those on the east, the former being of good flavour when young, the latter coarse.

This animal, known locally as Tembadau, Lissing, or Seladang, is of a dun colour, and is not unlike the tame variety. It however attains a much larger size and is possessed of well-shaped horns, sometimes of great thickness at the base, but with no very large spread as a rule. It is found, sometimes, in small families, sometimes in herds of considerable size. The male in particular is a dangerous fellow when wounded, and indeed has been known to attack without provocation. This, however, is rare. The tembadau is fond of grass country and is often to be found in abandoned native clearings. It is not easy game, as its sense of smell is very highly developed, and skilful hunting is necessary for success.

Deer.—Of deer there are three varieties, the sambhur, the kijang (or barking deer) and the mouse deer. The last is of such diminutive size that it cannot be classed as big game.

The sambhur or rusa is a deer of considerable size but has no big spread of horn such as is found in similar species in

India. It affords excellent sport, both to the European with his rifle, and to the native with his spear and dogs. It is to be found throughout the country and is common in many parts, coming out of the forest to feed in the grass-land towards dusk, while it is often to be seen on the seashore at that time.

Some of the best shooting is to be obtained near Mempakul, opposite the island of Labuan, where numerous deer are to be found on the grass-covered hills, which are here interspersed with patches of jungle. In this district long shots are often obtainable, which is not often the case in North Borneo.

In the Tempasuk plain the sambhur is hunted with the spear by mounted Bajaus.

This deer is occasionally snared by the natives with rattan traps into which it is driven by dogs.

Wild pig are very numerous and are of all sizes and colours, and many have enormous tusks. At times they cause great damage to unfenced native plantations, and they are much hunted with spear and dog by the native tribes, the Muruts in particular being great hunters.

Wild pig is considered vermin and no Government permit to hunt is necessary.

Pig-sticking on foot with a pack of native dogs is most exciting sport, requiring more nerve than pig-sticking on ponies in India. The native dogs are very clever little animals with a remarkably keen scent, and the way they will bail up a big boar is extraordinary.

In the interior districts the natives used frequently to set bamboo spring traps to spear pig and deer, but, owing to the danger to human life, this has been prohibited by Government.

Orang-Utan.—The Maias, commonly known as the "orang-utan," is an immense ape. There are two species, the larger attaining a considerable height and enormous strength. They are not particularly common, but may be found in the big forests, and, though of a most savage appearance, they are generally considered harmless unless attacked. Young ones are sometimes to be found in captivity and are easily tamed, becoming really domesticated, but they are inclined to

develop savage tendencies as they grow older, and, in any case, owing to their bulk and strength, they are hardly suitable as domestic pets.

They have great affection for each other, and keep together n families in the jungle, where they build their huge nests in the tops of the largest trees.

Bears.—Bears are not particularly common. There are two species of the Malayan honey-bear found in North Borneo, and, though not dangerous to the point of attacking man, both have a very nasty temper. They are not big, the larger approaching the size of a retriever dog, but their long sharp claws are objects of considerable respect to the native hunter. Young ones are often kept in captivity, but they grow fierce with age and do not make desirable pets.

Tapir, Leopard.—The tapir is reported to exist in Borneo, but it is doubtful if it has ever been seen in the northern part, There are also two species of tree leopard or tiger, but they are of small size, although beautifully marked, and they are quite uncommon.

Smaller Animals.—In addition to the above, there are hosts of smaller animals in the forests, of more interest to the naturalist than the sportsman.

Monkeys are to be found everywhere and at times even invade the kitchen quarters of European houses. The proboscis monkey is seen in many parts, especially on the east coast, and is believed to be peculiar to Borneo. There are several species of Gibbon Ape which make excellent and affectionate pets for those who like them. There are civet cats, musangs, otters, armadillos, porcupines, many varieties of squirrel, flying foxes and bats of many kinds, lemurs and many others.

Reptiles.—The crocodile is undoubtedly the most dangerous of the wild creatures and is common in most tidal rivers, attaining in many cases an enormous size. It is not a rare thing for them to attack people bathing in the rivers, and at times they even upset the flimsy native canoes. Certain tribes have great respect for these reptiles, and as a rule will make no attempt to disturb them, unless an inhabitant of the village is carried off. Then war is waged vigorously,

and an ingenious method of catching them by means of a baited stick which twists in the throat is used.

Of snakes there are many, some harmless, some poisonous. One, however, seldom hears of a case of snake-bite, fatal or otherwise, and it is doubtful if a snake will attack man unless first attacked or frightened, although the hamadryad, or king-cobra, is said to do so.

Large pythons are to be found in the forest, and have been reported as reaching a length of thirty feet. Monitor lizards look formidable enough, but are quite harmless except to chickens, of which they are very fond.

Small Game.—There is not a great deal of small game in the country. Argus and fire-back pheasants are to be found in the forests, but they do not rise, and are generally only to be obtained by means of traps, in the setting of which many natives, particularly the Kedayans, are skilful.

In certain seasons in many places are to be found green pigeon, snipe, and golden plover, which afford good sport, while at times wild duck visit the swamps of the west coast. Torres Straits pigeon and pergam shooting is to be had in some localities. The pergam is a bird not unlike, but considerably larger than, the English wood-pigeon.

There is no small ground-game of any description.

Fish.—The rivers are full of fish but few Europeans have ever tried the use of a fly, and it is doubtful if much sport can be obtained in this direction. In nearly every case the river fish is coarse and unpalatable.

Domestic Animals.—Dogs are only too common but are useful for hunting purposes. Domestic pigs are reared to a large extent by the Chinese and the non-Mohammedan tribes, while on the west coast herds of cattle and buffalo are maintained. Goats are also to be found in most villages, and ponies are bred to a considerable extent in the Tempasuk and Papar districts.

CHAPTER XI

Principal Towns

Jesselton.—Jesselton is the coast terminus of the North Borneo State Railway. It is magnificently situated on Gaya Bay, is sheltered by Gaya and Sepanggar islands, and has grand views on sea and mountain.

Jesselton is a port of call for ships running to and from Singapore, and shares with Sandakan the honour of being the seat of Government. It is the head-quarters of most of the Heads of Departments, and also of the Constabulary.

The township itself consists of the public buildings, business houses, and Chinese shops, situated in well-laid out streets close to the sea. On the hills at the back of the town are the dwellings of the European community. There is an up-to-date and well-managed hotel, a European Club with tennis courts, and a recreation ground for cricket and football, the latter game being exeedingly popular with all classes.

The streets and most of the buildings are lit by electricity and there is also an ice factory. The water supply is from a recently constructed reservoir situated four miles from the town.

Jesselton possesses a well-equipped hospital and a ward for European patients, with a resident doctor and nurse.

A good road runs through the township and the native town, past the English and Roman Catholic churches and Government House to Batu Tiga, where lies a nine-hole golf course, thence to the race-course at Tanjong Aru and the sea, where first-rate bathing is to be obtained.

At Tanjong Aru are situated the main railway workshops and the wireless station.

Another road winds over the hills to the back of the town, and, passing through many Chinese gardens and small rubber plantations, joins the main road at Batu Tiga.

Extensive reclamation of the foreshore at Jesselton has been completed within the last few years, and there is now ample room for the expansion of the town in the vicinity of the Customs House.

Papar.—From Jesselton, in the course of a little over an hour, the railway takes one to Papar. This is a prosperous little town situated on the river of the same name and within two miles of the sea. It has the usual Chinese shops and markets, and is the head-quarters of the District Officer in Charge of South Keppel Province. Papar is within a short distance of Benoni, where are situated two seaside rest-houses much in demand as holiday resorts.

Beaufort.—Further along the railway and 56 miles from Jesselton lies Beaufort, the centre of an important rubber-growing and sago-planting district. It is the terminus of the branch railway which runs to the sea at Weston.

The town possesses a good rest-house and a European club. A golf course has recently been laid out, and there are excellent recreation grounds and tennis courts.

Beaufort is the head-quarters of the Officer in Charge of the district, and has a Government hospital with a resident doctor. It has a heavy rainfall, but is one of the healthiest towns in the country. With its Chinese shops and its numerous market-gardens it is a prosperous little place. It is unfortunate in suffering periodically from the floods of the Padas River.

Tenom.—Tenom is a little over two hours by train up the Padas river from Beaufort. It is a well-laid out and pretty little town and is the head-quarters of the Resident of the Interior.

It possesses the usual Chinese shops and surrounding market-gardens, and has a well-appointed Government rest-house.

A golf course has recently been constructed, and there is a good recreation ground.

Tenom is situated 600 feet above sea level, and the nights are usually delightfully cool. In the neighbourhood are two important rubber estates, Melalap and Sapong.

The railway journey from Beaufort to Tenom through the gorges of the Padas river affords grand views of forest and river.

Kudat.—Kudat, on the north of the island, is the head-quarters of the Residency of that name. It is situated on Marudu Bay and has a good harbour. It is a port of call for vessels trading between North Borneo and Singapore.

In the neighbourhood are several flourishing rubber and tobacco estates. Kudat has both a golf course and a racing club.

One of the Government Wireless Telegraph Stations is situated not far from the town.

Sandakan.—Sandakan, situated on the bay of the same name on the east coast, is the largest town in North Borneo. Chinese shops are numerous and the port does a considerable trade with Hong Kong as well as with Singapore and Australia. There are several rubber and coco-nut estates in the neighbourhood, and there are large sawmills operating here.

Sandakan has a very good European club and a well-managed hotel. It is a port of call for steamers trading between Hong Kong and Australia, and is also the base of operations of the Sabah Steamship Company. There is an ice factory in the town, and abundant supplies of coal can be obtained by ships.

A golf course has recently been constructed, and there is a race-course near the town, close to which is the Government Wireless Telegraph Station. The town is now supplied with electric light.

Lahad Datu.—Lahad Datu is the port for the tobacco estates of Segama, with which it is connected by a light railway, the property of the estates. It is connected with Sandakan by a telegraph line and by frequent steamers. There is a considerable coco-nut industry in the neighbourhood.

Tawau.—Tawau on Cowie Harbour is the head-quarters of the East Coast Residency, and is a town which is assuming considerable importance. Its ownership was long a point in dispute between the English and the Dutch, but eventually it was acknowledged to belong to North Borneo, and a settlement was started here in 1892.

Large areas of land in its immediate neighbourhood have been taken up by Japanese companies for the cultivation of rubber and coco-nuts, and the Cowie Harbour Coal Company

has its mines at Silimpopon at the head of Cowie Harbour. Ships from all parts of the world call at Sebatik, and there is a powerful lighthouse at Tinagat, the entrance of the bay.

Tawau possesses a Government Wireless Telegraph Station.

CHAPTER XII

Openings for Capitalists and Settlers

In common with other tropical countries North Borneo offers little opportunity to the European settler, meaning the man who, possessed of little or no capital, proposes to settle on land and make a home and a living by the labour of his hands.

Capital is essential to success. A white man cannot work his own land for two reasons: (1) prolonged manual labour in the tropics for a European is physically impossible; (2) a white man can only be economically employed in directing the labour of others.

We must therefore rule out of consideration the settler without capital and confine ourselves to the settler possessed of capital. A sum of £2,000 is the minimum required. The intending settler must also have some experience of tropical agriculture as he cannot afford to buy his experience unless his capital is more ample than the sum suggested.

Above all things he requires a knowledge of handling Asiatic labour. The requisite experience is best secured by working for a year or two as an assistant on a rubber or tobacco estate.

Given the capital and experience, the selection of suitable land is not a difficult matter.

The Land Office and the District Officers are prepared to do all they can to smooth a settler's way, but he must himself select the land, as no blocks of land are surveyed before selection. On the west coast it is becoming increasingly difficult to secure blocks of 200 acres or more within easy access of a road or railway, but there are still large areas of land available within easy reach of water-transport. The same applies in a great measure to the east coast and Kudat.

As regards facilities of transportation, improvement is being

made by the construction of bridle-paths and of metalled roads. Meanwhile progress across the country is difficult owing to hills, forests and swamps. The villages are connected by narrow tracks, but these are much impeded by the luxuriant jungle growth and are of little use for transport of agricultural produce.

Wheel transport is scarce, and is only available in the immediate vicinity of the towns and estates. So far as the rivers allow, native canoes afford the best method of carrying stores and produce. Many of the rivers are also navigable for steam and motor launches. Pack animals are commonly used on the bridle-paths of the west coast and of the interior. The railway serves for a length of 129 miles.

A settler who has the tact to manage natives may be able to get all his work done by them without the initial expense of importing Chinese or Javanese labour, which is a great advantage to a small planter. On the east coast the native population is small, and if a settler can find suitable land on the west coast or near Kudat he will not only have the chance of securing cheaper labour but also the very considerable advantage of living in the more populated part of the country where greater facilities exist for social intercourse. Subject therefore to the selection of suitable land a settler would do well to settle on the west coast or at Kudat. The minimum acreage he should take up would be 200 acres. As any application for over 200 acres must be referred to the Court of Directors an intending applicant is advised to request that 100 acres be granted to him at once while the question of the whole area is being referred to London. The usual terms for areas under 600 acres are as follows:—

Coco-nut cultivation.—No premium, rent 50 cents per acre for five years, $2·50 per acre thereafter.

Rubber cultivation.—Same as above plus $2·00 per acre premium.

Tobacco, sugar, hemp, etc. No premium, rent 50 cents per acre. (Note: $1 = 2/4).

The following special terms are granted to Europeans who have resided for two years or more in the country for areas between 50 and 300 acres.

No premium, rent 25 cents per acre for 6 years, $3.00 per acre thereafter or $2·50 per acre if land fully planted with coco-nuts.

Special terms for land near the railway between Tenom and Beaufort are :—

No premium, rent 50 cents per acre for 10 years and $2·50 per acre thereafter.

For small areas in the vicinity of townships which are for use as market-gardens the terms average $5·00 per acre premium and $2·50 per acre rent, while for areas over 600 acres special terms can be arranged with the Court of Directors.

On town lots the premium payable as a rule is the price paid by the successful bidder at auction. The upset price on lots to be sold by auction, and the premium to be paid in the case of lots not sold by auction, will be fixed by the Governor and are published beforehand. The rent is usually $9·00 a lot, 33′ x 66′ or in some cases 33′ x 99′.

When the land selected is situated in areas carrying a stand of commercial timber a consolidated timber royalty may be demanded in addition to premium in order to induce the settler to sell off the timber instead of wasting it.

The timber royalty averages $3·00 an acre and the timber can be usually sold locally at a price which amply repays the outlay on royalty and labour.

CHAPTER XIII

General Information

Outfit.—In regard to clothing the prospective visitor to North Borneo will do well not to purchase an expensive outfit until experience has taught him what is best suited to his needs. European clothes, as a rule, are far too heavy for wear in a tropical climate, though they will be found of use on the voyage out and home. For day-wear drill suits are customary, and these can be made quite satisfactorily locally and are reasonable in price. They should not be bought in England where cotton clothes are nearly as expensive as tweed. Very light tweed, serge, or flannel clothes are useful in the afternoons, and these are better obtained in England. A dress suit should be brought. Underclothing is not easily obtained locally, and is very expensive in Singapore, so this should be purchased at home. The canvas boots and shoes made by the Chinese bootmakers locally are quite satisfactory and just as useful as expensive European foot-gear, except for formal occasions.

A topi is absolutely essential, and a felt hat will come in useful in the afternoons. Caps are not of much use.

Steel uniform cases should be bought rather than leather bags.

Provisions.—Practically anything may, of course, be obtained from Singapore and almost all requisites of European households and tinned provisions may be purchased in the towns in Borneo, but the latter are seldom necessary. There is abundance of fresh meat, pork, fowls, and ducks to be obtained in the local markets, and in most places there is little difficulty in obtaining plenty of good fish. Eggs are plentiful, and the Chinese gardens, which are to be found everywhere, produce ample supplies of fruits and vegetables.

There are cold-storage supplies in Jesselton and Sandakan, where may be obtained fresh butter, cheese, and meat, and all such provisions may also be obtained at places on the railway by arrangement, while coast stations can augment local supplies from the Singapore and Hong Kong steamers.

Clubs.—Jesselton, Sandakan and Beaufort have social clubs. At the two former places and at Kudat there are golf courses, and in nearly all stations and on many estates tennis can be played. Tournaments are held periodically. Cricket and football matches are often arranged, and, in spite of the climate, many Europeans play football regularly. In Jesselton there is a football league. There are racing clubs and race-courses at Jesselton, Sandakan and Kudat, where meetings are held from time to time, entries being restricted to native and Sulu ponies.

Religion and Education.—In regard to religion, the Society for the Propagation of the Gospel, and the Roman Catholic Church, have missions scattered throughout the country, and there are resident priests in the principal towns, while out-stations and estates are visited frequently. Sandakan boasts of a really fine stone church, while the places of worship at Jesselton and Kudat are adequate for their purpose.

All religious bodies pay particular attention to education, and have established schools in many places. The Roman Catholic Church in particular has made a number of converts among the Dusun tribes, and its schools, conducted by European priests and nuns, attract many pupils.

Many of the schools are State-aided, and pupils at such assisted schools number about 1,500. There are, in addition, 22 private schools scattered throughout the State.

There is a Government School for the education of the principal chiefs, where they obtain training which is calculated to fit them for responsible duties in Government service.

The Chinese have their places of worship and every Mohammedan village of any size has its mosque and priest.

Ice and Electric Light.—Ice factories are established in Jesselton and Sandakan, and in both of these towns there are power stations which supply all streets and European houses and most of the shops with electric light. An ice van is

attached to the train running to Beaufort, and those living near the railway have no difficulty in obtaining supplies.

Currency and Banking.—There is a local coinage of half cent, one cent, two and a half cent, and five cent pieces, and a paper currency of twenty-five dollars. Singapore silver and paper coinage are also treated as currency. There are agencies of the Chartered Bank of India, Australia and China, and of the Hongkong and Shanghai Bank, while Government itself has recently opened a State Bank with branches at Jesselton and Sandakan.

Post Offices.—Post Offices are situated at Jesselton, Papar, Membakut, Beaufort, Tenom, Kudat, Sandakan, Lahad Datu, and Tawau. There is a travelling post office on the mail train which runs from Jesselton to Beaufort, and postal facilities are also available at any station where there is a Government officer. Adhesive postage and revenue stamps of the following denominations are in use :—1, 2, 3, 4, 5, 6, 8, 10, 12, 16, 18 surcharged 20, 24, 25, 50 cents, and 1, 2, 5, 10, 25 dollars. The State is in the Postal Union. Money Orders are issued for local use, to the United Kingdom and British Colonies, and to foreign countries through the United Kingdom. There is a Telegraphic Money Order system locally and to the United Kingdom. British and local Postal Orders are issued.

Mails are received from and despatched to England, via Singapore, weekly in normal times, and are usually about a month to five weeks in transit. An interesting experiment is being conducted on the east coast, in the institution of a pigeon post between Tawau and the coal mines at Silimpopon. Suitable birds have been imported and are being trained. The experiment if successful may be repeated in other of the less accessible parts of the country.

Telegraphs.—Wireless Telegraph Stations are open at Jesselton, Sandakan, Kudat and Tawau, and in addition there are land-line stations at Mempakul, Beaufort, Tenom, Lamag (Kinabatangan) and Lahad Datu. Telegrams can be sent to all parts of the world by this service in connection with the system of the Eastern Extension Cable Company, to which it is joined by submarine cable from Mempakul to Labuan.

Telegrams are received by telephone in places where there is no Telegraph Office.

A service of press messages is received daily from Reuter, copies of which may be obtained by the public.

There are telephone exchanges in Jesselton, Beaufort, Tenom, Sandakan and Kudat.

Trade.—Although the Great War naturally depressed the trade of the country, the latest figures indicate that progress is being well maintained. This may be seen from the trade statistics in the appendix, reference to which shows that, while there has been nothing approaching mushroom growth, a steady development is manifest.

Railways.—The railway has been an important factor in the development of the west coast of the State. It is owned by Government, and, starting from Jesselton, serves the districts of Putatan, Papar, Benoni, Kimanis, Bangawan, Membakut, and Beaufort, passing through country well populated with natives and Chinese and serving many rubber estates.

From Beaufort a branch line runs down to the sea at Weston and is fringed with large and small rubber plantations and with Chinese and native small holdings, while the main line proceeds on its way to Tenom, the head-quarters of the Interior Residency, through the magnificent gorges of the Padas river. The total length of the State railway is 129 miles. Railhead at present is at Melalap, ten miles to the north of Tenom.

The railway, which is of metre gauge was opened on the Beaufort-Weston line in 1900, and was later extended to Jesselton and Tenom in 1902. It has recently been relaid throughout a substantial portion of its length with heavier rails and supplied with permanent bridges. Between Jesselton and Beaufort there are daily trains, and from Beaufort to Weston the service is available for six days a week, while there is communication between Beaufort and Tenom every other day.

There is a frequent local service between Jesselton and Tanjong Aru.

Labour.—The natives of Borneo—taken as a whole—are not inclined to continuous work, and to supply the labour required for the success of large industries it has been necessary

to rely to a great extent on imported Chinese and Javanese coolies. The supply of such at the present time may be regarded as adequate, and as for future requirements the Governor has recently stated that the problem is one that receives frequent and careful consideration, and machinery for a scheme of Chinese immigration, under the control of a Committee, is now ready to be set in motion should any of the existing sources of supply run dry. At several periods in the history of the State, Government has imported Chinese at considerable expense, starting as far back as 1883. There are at present settlements of these immigrants at Jesselton, Kudat and several villages in the North Keppel district.

Roads.—There are at present few wheel-traffic roads in the country with the exception of those in and near the towns, but the construction of a trunk road across the territory from Sandakan to Jesselton has been begun from the Sandakan end.

Work is also proceeding on a road from Jesselton to Tuaran, an important centre, 20 miles north-east of the former town. A road from railhead at Melalap to Keningau has also been sanctioned.

The excellent bridle-paths constructed on the west coast and in the interior are used mainly for administrative purposes. Their length is some 400 miles, and they have proved a very valuable factor in the administration of those parts of the country through which they run, and in addition have encouraged the natives to bring their produce to the more important trading centres. These bridle-paths are well graded and afford excellent opportunities for riding tours through magnificent country.

In those parts of the State where there are at present no roads or railway, communication between stations and estates is generally kept up by means of steam launches. On the east coast particularly the river system is excellent and forms ready-made highways from place to place.

Steamship Communication.—Up to the commencement of the war the shipping of the country was largely in the hands of the North German Lloyd Company. Since 1914 the Straits Steamship Company has undertaken the service from Singapore, a weekly connection being maintained. These ships

also run to the Southern Philippines, *via* Sandakan. Their ports of call in North Borneo are Jesselton, Kudat, Sandakan, Lahad Datu, Tawau and Simporna. Communication between the east coast ports and Hong Kong is maintained by the Indo-China Navigation Company, with usually two ships, now temporarily reduced to one; by three ships of the Osaka Shosen Kaisha, which make a regular monthly trip from Formosa to Java *via* Sandakan; by two ships of the Australian Oriental Line which call at Sandakan on their way to and from Australia; and by four ships of the China-Australia Line, which run between Australia, Hong Kong and Japan. The Sabah Steamship Company maintains a regular service between local ports on both the east and west coasts with three ships under Government subsidy.

In connection with shipping it should be mentioned that there is a slipway in Sandakan, the property of the China-Borneo Company, at which repairs can be effected, and where several vessels—some of them of considerable size—have been constructed.

Weights and Measures.

Avoirdupois weight:—

1 tahil	= $1\frac{1}{3}$ ounce.
16 ,,	= 1 kati = $1\frac{1}{3}$ pounds.
100 kati	= 1 pikul = $133\frac{1}{3}$ pounds.
40 pikuls	= $5333\frac{1}{3}$ pounds.

Measure of Capacity:—

2 gills	= 1 pau.
2 pau	= 1 pint.
2 pints	= 1 quart or chupak.
4 quarts	= 1 gallon or gantang.
10 gantangs	= 1 para.
800 gantang	= 1 koyan.

Newspapers.—There is only one newspaper at present published in the country. This, the "British North Borneo Herald," is the property of Government and is issued twice a month. Information of current events is received by a service of press telegrams from Reuter's Agency and copies can be obtained by the public on payment of seven dollars a month to the Telegraph Department.

Rest-Houses.—There are Government-maintained rest-houses, where visitors may obtain lodging and food, at Papar, Beaufort, Tenom, Kudat, Lahad Datu and Tawau. The charge for accommodation for non-official visitors is one and a half dollars a day. Food tariffs vary according to place, but average about two dollars a day.

W. STRAKER LTD., PRINTERS, LUDGATE HILL, LONDON, E.C. 4.

APPENDICES

THE BRITISH NORTH BORNEO (CHARTERED) COMPANY.

(Incorporated by Royal Charter, under the Great Seal, dated 1st November, 1881.)

COURT OF DIRECTORS:

President:
RT. HON. SIR WEST RIDGEWAY, G.C.B., G.C.M.G., K.C.S.I.

Vice-President:
EDWARD DENT, ESQ.

VICE-ADMIRAL SIR BOUVERIE CLARK, K.C.B.
SIR MONTAGU H. OMMANNEY, G.C.M.G., K.C.B., I.S.O.
THE HON. MOUNTSTUART ELPHINSTONE.
G. E. B. BROMLEY-MARTIN, ESQ.
SIR JOHN HEWETT, G.C.S.I., K.B.E., C.I.E.

Secretary:
HARINGTON G. FORBES.

Standing Counsel:
BERNARD A. PLATT, of the Inner Temple, Barrister-at-Law.

Consulting Medical Officer:
LIEUT.-COL. SIR ALLAN PERRY, M.D.

Under-Secretary:
C. F. COLLINS.

Assistant Under-Secretary (Administrative):
W. J. WORTH.

Assistant Under-Secretary (Financial):
E. R. C. STILEMAN.

Offices:—
37 THREADNEEDLE STREET, LONDON, E.C. 2.

GOVERNORS OF NORTH BORNEO.

1881.	SIR W. H. TREACHER, K.C.M.G.
1887.	W. M. CROCKER (*Acting*).
1888.	C. V. CREAGH, C.M.G.
1895.	SIR L. P. BEAUFORT.
1900.	SIR HUGH CLIFFORD, K.C.M.G., C.M.G.
1901.	SIR E. W. BIRCH, K.C.M.G., C.M.G.
1904.	E. P. GUERITZ.
1907.	ALEX. COOK (*Acting*).
1907.	E. P. GUERITZ.
1910.	A. C. PEARSON (*Acting*).
1911.	F. R. ELLIS, C.M.G.
1912.	F. W. FRASER (*Acting*).
1912.	J. SCOTT MASON.
1912. 1913.	F. W. FRASER (*Acting*).
1913.	The Rt. Hon. SIR WEST RIDGEWAY, G.C.B., G.C.M.G., K.C.S.I. (*Temporarily*).
1913.	C. W. C. PARR.
1915.	A. C. PEARSON.
1915. 1916.	F. W. FRASER (*Acting*).
1916.	A. C. PEARSON.
1919.	F. W. FRASER (*Acting*).
1919.	A. C. PEARSON, C.M.G.

PRINCIPAL OFFICERS IN NORTH BORNEO SERVICE.

Governor and Commander-in-Chief	A. C. PEARSON, C.M.G.
Government Secretary	F. W. FRASER.
Judicial Commissioner	Capt. D. T. J. SHERLOCK, M.B.E.
Commandant	Lt.-Col. C. H. HARINGTON.
Residents	H. W. L. BUNBURY, G. C. WOOLLEY, G. C. IRVING, W. C. M. WEEDON, J. MAXWELL HALL.
Principal Medical Officer	P. A. DINGLE, M.R.C.S., L.R.C.P.
Financial Commissioner	C. H. DUNN.
Commissioner of Customs and Excise	M. M. CLARK.
Commissioner of Lands	W. W. SMITH
Director of Works and Railways	Capt. J. W. WATSON.
Protector of Labour	D. R. MAXWELL (*Acting*).
Postmaster-General and Supt. of Telegraphs	C. F. N. WADE.

LEGISLATIVE COUNCIL.

Official Members:

H.E. The Governor.

The Government Secretary.	The Resident of West Coast.
The Judicial Commissioner.	The Resident of Sandakan.
The Commandant.	The Financial Commissioner.
The Commissioner of Customs and Excise.	The Principal Medical Officer.

Unofficial Members:

Representing the European Community	W. D. JUPP. J. MORTON (*Acting*).
Representing the West Coast Planting Community	F. E. LEASE. R. J. GRAHAM (*Acting*).
Representing the East Coast Planting Community	C. R. DEALTRY.
Representing the Chinese Community	LO TIAN CHEOK.

IMPORTS AND EXPORTS,

1900 TO 1920.

YEAR.	IMPORTS.	EXPORTS.
1900	£337,761	£353,453
1901	£305,883	£317,098
1902	£396,627	£382,395
1903	£376,753	£422,450
1904	£337,897	£498,478
1905	£330,946	£529,373
1906	£348,714	£566,760
1907	£340,795	£505,507
1908	£321,392	£533,401
1909	£340,469	£533,821
1910	£443,486	£537,719
1911	£537,025	£564,293
1912	£638,892	£660,672
1913	£634,538	£863,115
1914	£554,783	£730,366
1915	£522,648	£865,561
1916	£500,933	£1,014,142
1917	£624,487	£1,076,074
1918	£761,358	£1,019,094
1919	£925,235	£1,453,990
1920	£1,284,438	£1,405,771

PRINCIPAL ARTICLES OF IMPORT AND EXPORT

For 1920.

IMPORTS.

Article.	Value.
	£
Aerated Waters ...	2,539
Cloth	182,935
Coffee	3,930
Damar	3,745
Hemp, Ropes and Cordage	2,780
Ironware	90,392
Kerosene Oil	22,669
Matches	6,499
Oils	17,095
Provisions	85,866
Rice, Flour and Grain	347,560
Salt	9,241
Spirits and Wines ...	51,280
Sugar	50,176
Tea	8,898
Tobacco	66,402
Treasure	20,759
Threads and Yarns ..	9,865

EXPORTS.

Article.	Value.
	£
Birds' Nests	25,984
Camphor	3,891
Coal	5,036
Copra	41,002
Cutch	23,305
Damar	18,144
Dried and Shell Fish ...	37,380
Hides	10,993
Rice and Paddy ...	94
Rattans	11,396
Rubber	689,403
Sago Flour	29,296
Shells—Mixed ...	7,523
Timber	155,048
Tobacco (Estate) ...	191,169
,, (Native and Chinese)	9,207
Treasure	14,375
Trepang	4,314

METEOROLOGICAL RETURNS. 1916 TO 1920.

ANNUAL MEAN TEMPERATURE (IN THE SHADE).

Year.	Sandakan.		Jesselton.		Beaufort.		Kudat.		Lahad Datu.		Tawau.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1916 ...	88·25	73·91	87·06	69·24	89·00	72·00	89·00	70·00	85·00	47·00	87·00	70·00
1917 ...	88·00	73·58	88·00	68·00	99·00	72·00	88·25	74·74	84·00	67·00	87·58	69·66
1918 ...	87·00	73·00	87·49	69·19	91·24	73·09	88·26	74·80	85·69	64·42	88·04	70·24
1919 ...	88·43	75·24	88·06	71·19	91·83	73·00	89·50	75·56	87·24	65·43	89·58	70·20
1920 ...	86·63	74·90	87·26	70·69	92·00	78·00	90·00	74·38	—	—	89·47	69·64

RAINFALL.

Year.	Sandakan.		Jesselton.		Beaufort.		Kudat.		Lahad Datu.		Tawau.	
	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.
1916 ...	127·32	163	124·01	187	178·28	204	79·34	170	82·69	191	80·76	162
1917 ...	122·85	152	123·90	193	177·48	198	96·28	164	81·99	207	81·35	161
1918 ..	178·06	191	98·11	170	151·65	184	103·57	146	74·05	162	70·38	138
1919 ...	86 83	146	89·25	129	128·49	160	76·21	114	55·22	144	66·74	127
1920 ...	112·93	180	93·91	140	156·52	147	77·49	142	—	—	94·41	127

CENSUS.

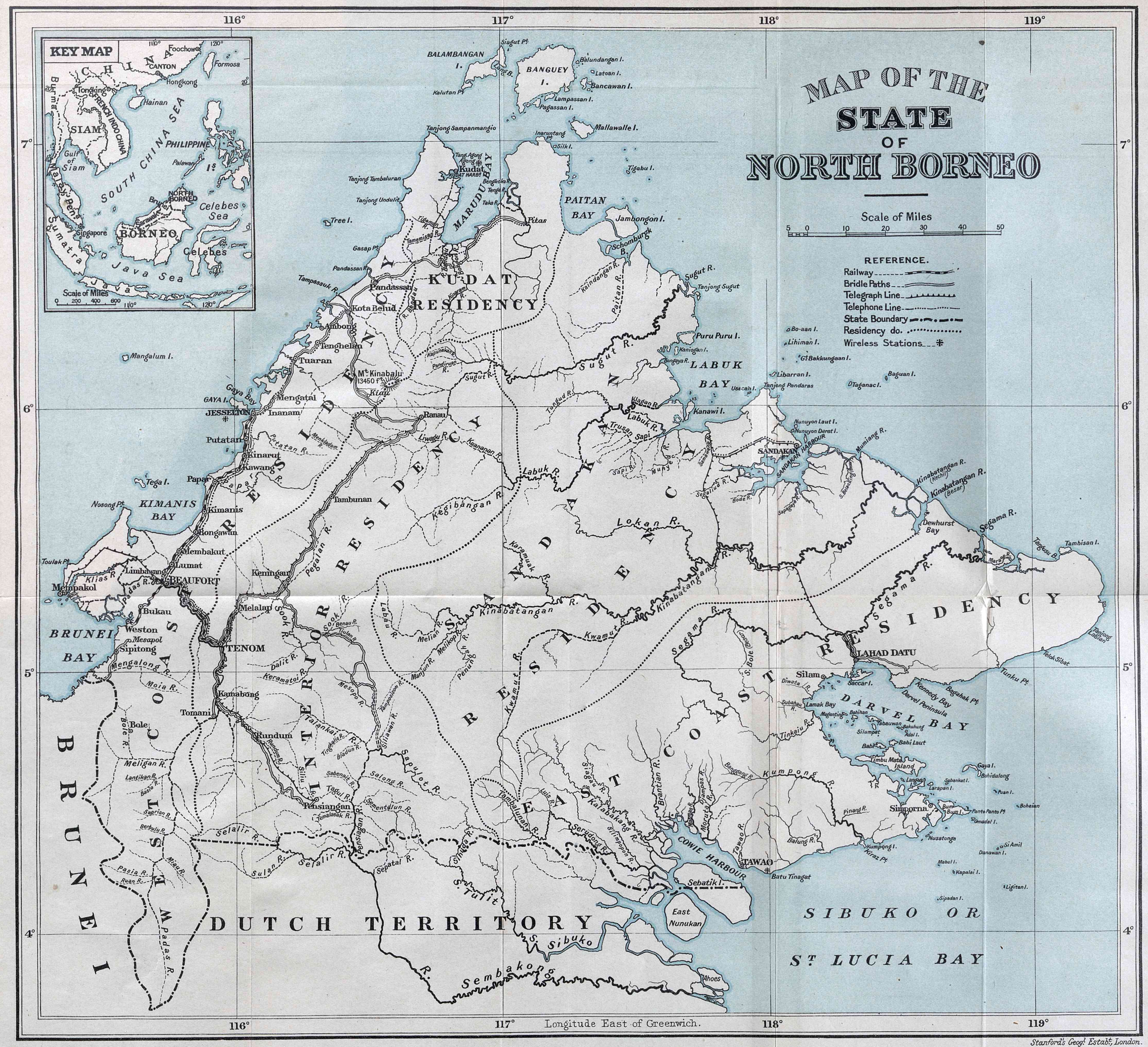
(10th and 11th March, 1911.)

NOTIFICATION 195 OF 1911.

DETAILS OF POPULATION THROUGHOUT BRITISH NORTH BORNEO.

	Adults.		Children.		Total.
	M.	F.	M.	F.	
Europeans	276	38	22	19	355
Eurasians	19	15	6	17	57
Chinese	19,354	2,845	2,157	1,646	26,002
Japanese	89	145	5	7	246
Siamese	11	1	1	4	17
Arabs	16	6	6	7	35
Soudanese	48	16	2	—	66
Somali	—	1	—	—	1
Philippinoe	166	51	46	28	291
Malays	980	298	203	131	1,612
Natives of India and Ceylon	741	60	64	37	902
Natives of Netherlands E. Indies	3,473	1,289	423	325	5,510
Natives of Sulu Archipelago	2,012	1,800	901	790	5,503
Natives of Borneo :—					
Bajau	6,756	6,935	4,521	4,375	22,587
Brunei	2,148	1,965	1,456	1,308	6,877
Dusun	26,814	28,141	16,939	16,057	87,951
Dyak	356	22	58	69	505
Idahan	282	348	148	169	947
Illanun	429	574	303	353	1,641
Kedayan	685	731	509	530	2,455
Murut	8,798	8,907	3,988	3,621	25,314
Orang Padas (Besayas) ...	1,373	1,432	1,064	1,009	4,878
Orang Sungei	2,605	2,617	1,986	1,960	9,168
Tagal	706	842	207	157	1,912
Tambunan	423	392	314	240	1,369
Tidong	536	540	398	303	1,777
Tutong	45	70	47	43	205
Total	79,141	60,081	35,774	33,187	208,183

Preliminary figures 1921 Census (24th April) ... 258,355



Stanford's Geogl. Estabt., London.

A MAP OF

BRITISH NORTH BORNEO

COMPILED FROM THE ENGLISH ADMIRALTY CHARTS
AND FROM THE SURVEYS & EXPLORATIONS OF
MESSRS. F.X. WITTI, W.B. PRYER, F. HATTON, H.J. WALKER AND D.D. DALY
in the service of
THE BRITISH NORTH BORNEO COMPANY.

Extent of Territory about 31,000 square miles.

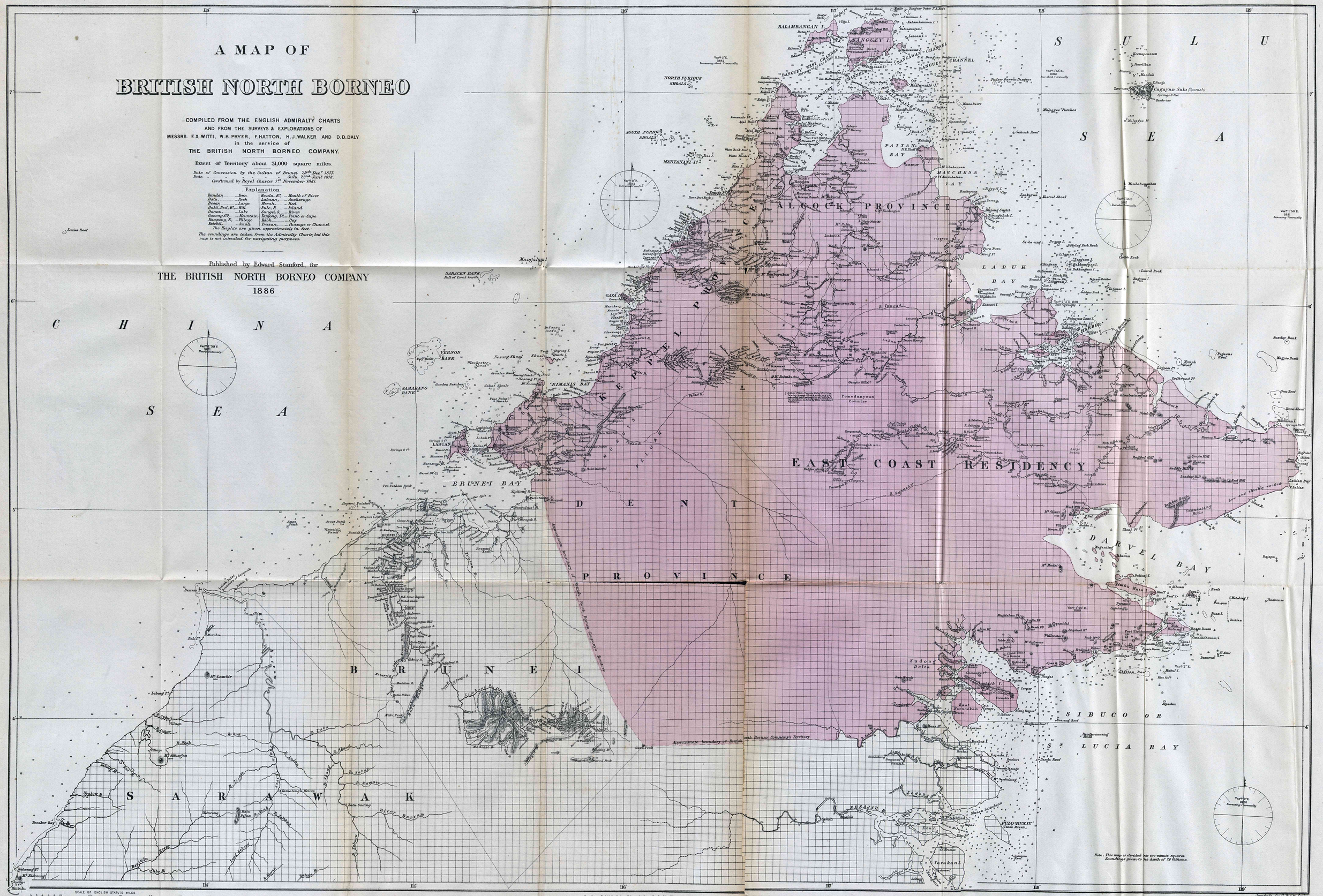
Date of Concession by the Sultan of Brunei, 29th Dec.r 1877.
Date " " " Sulu, 22nd Jan.r 1878.
Confirmed by Royal Charter 1st November 1881.

Explanation

Bandar	... Town.	*Kuala, K.*	... Mouth of River
Batu,	... Rock.	*Labuan,*	... Anchorage
Besar,	... Large	*Merah,*	... Red.
Bukit, Bed. B.	... Hill.	*Pulo, P.*	... Island.
Danau,	... Lake	*Sungai, S.*	... River
Gunong, Gd.	... Mountain.	*Tanjong, Tj.*	... Point or Cape
Kampong, K.	... Village	*Teluk,*	... Bay
Ketchil,	... Small.	*Trusan,*	... Passage or Channel.

The heights are given approximately in feet.
The soundings are taken from the Admiralty Charts, but this map is not intended for navigating purposes.

Published by Edward Stanford, for
THE BRITISH NORTH BORNEO COMPANY
1886



London: Published by Edward Stanford, 55, Charing Cross, February 15. 1886.