

HANDBOOKS PREPARED UNDER THE DIRECTION OF THE  
HISTORICAL SECTION OF THE FOREIGN OFFICE.—No. 138

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ISLANDS  
KERGUELEN

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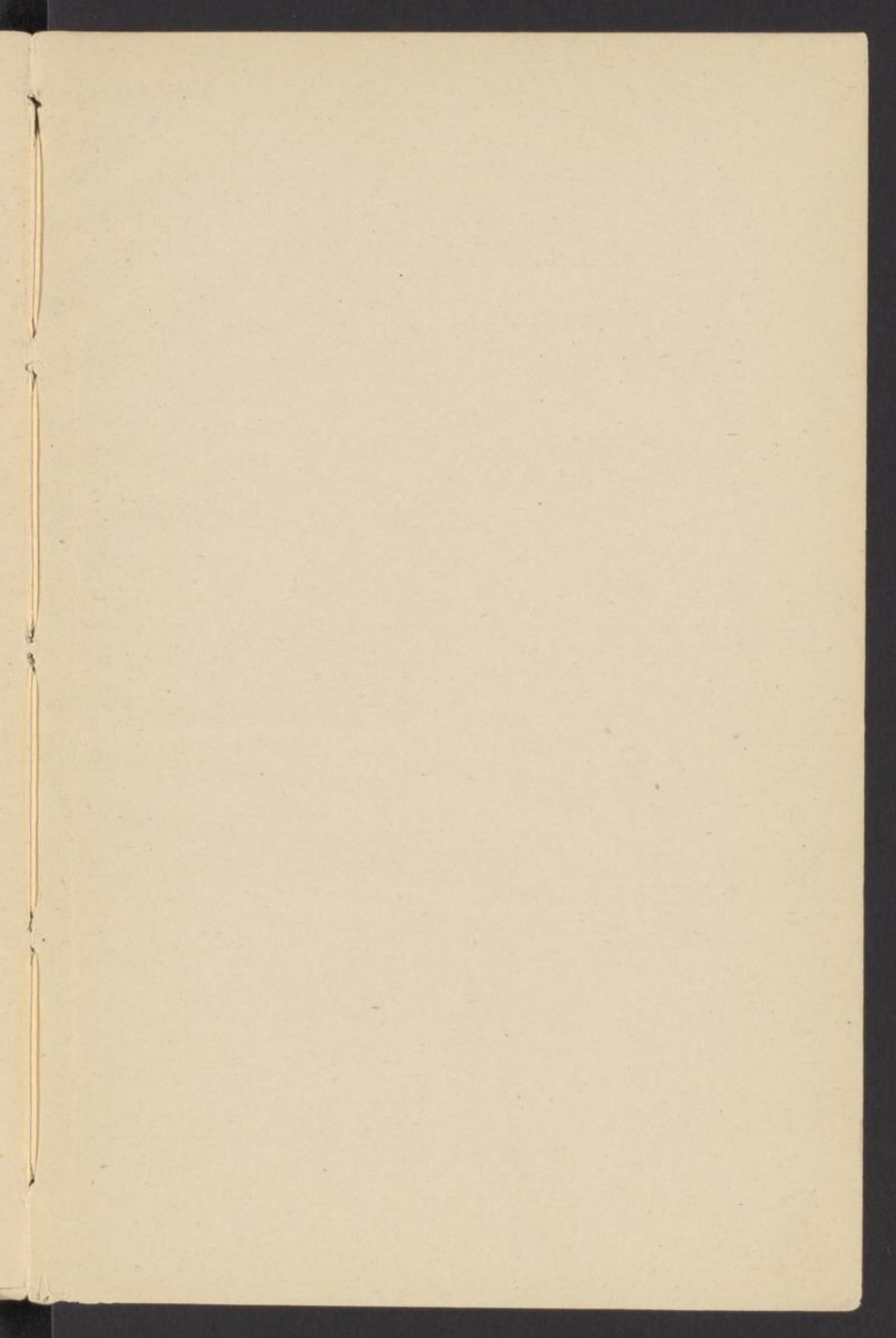
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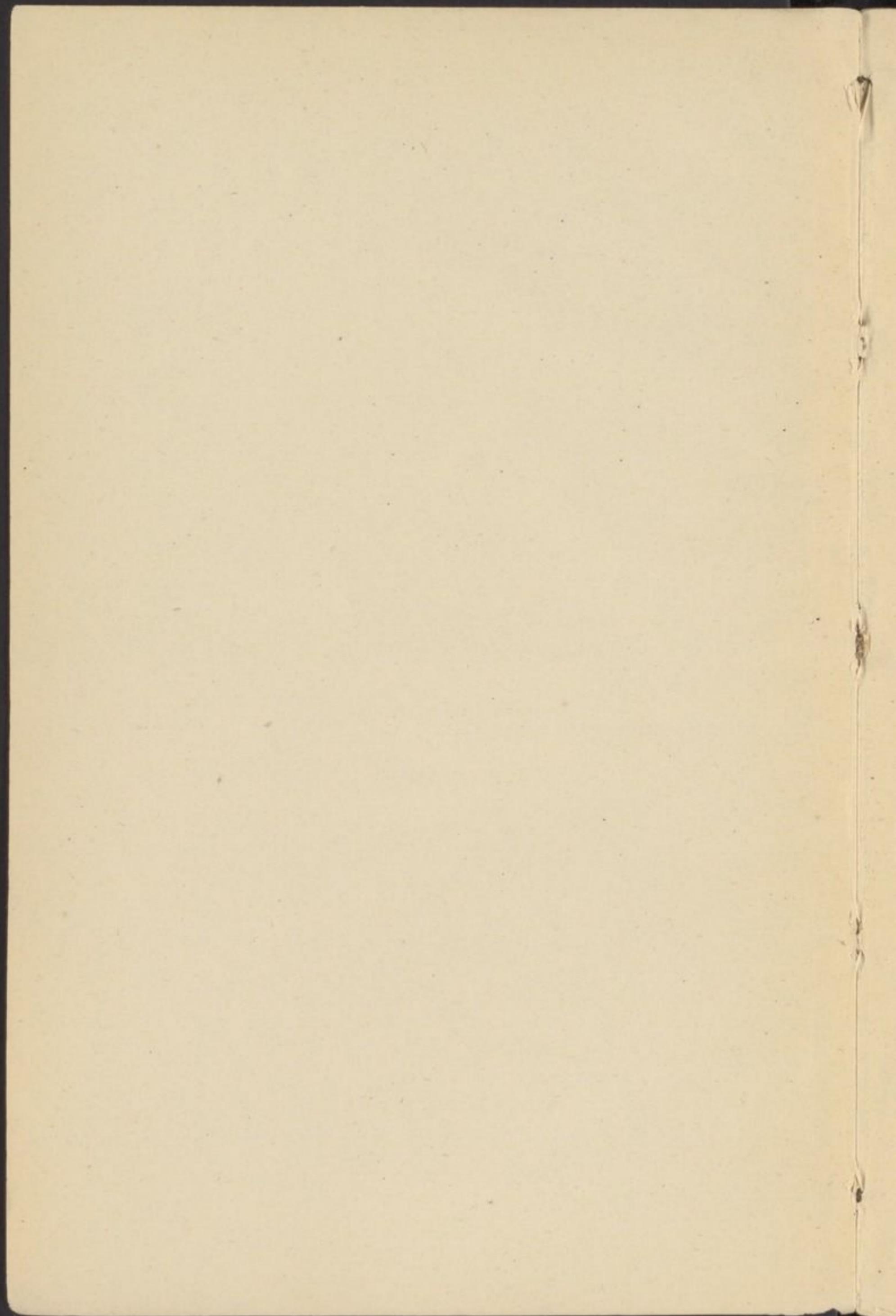


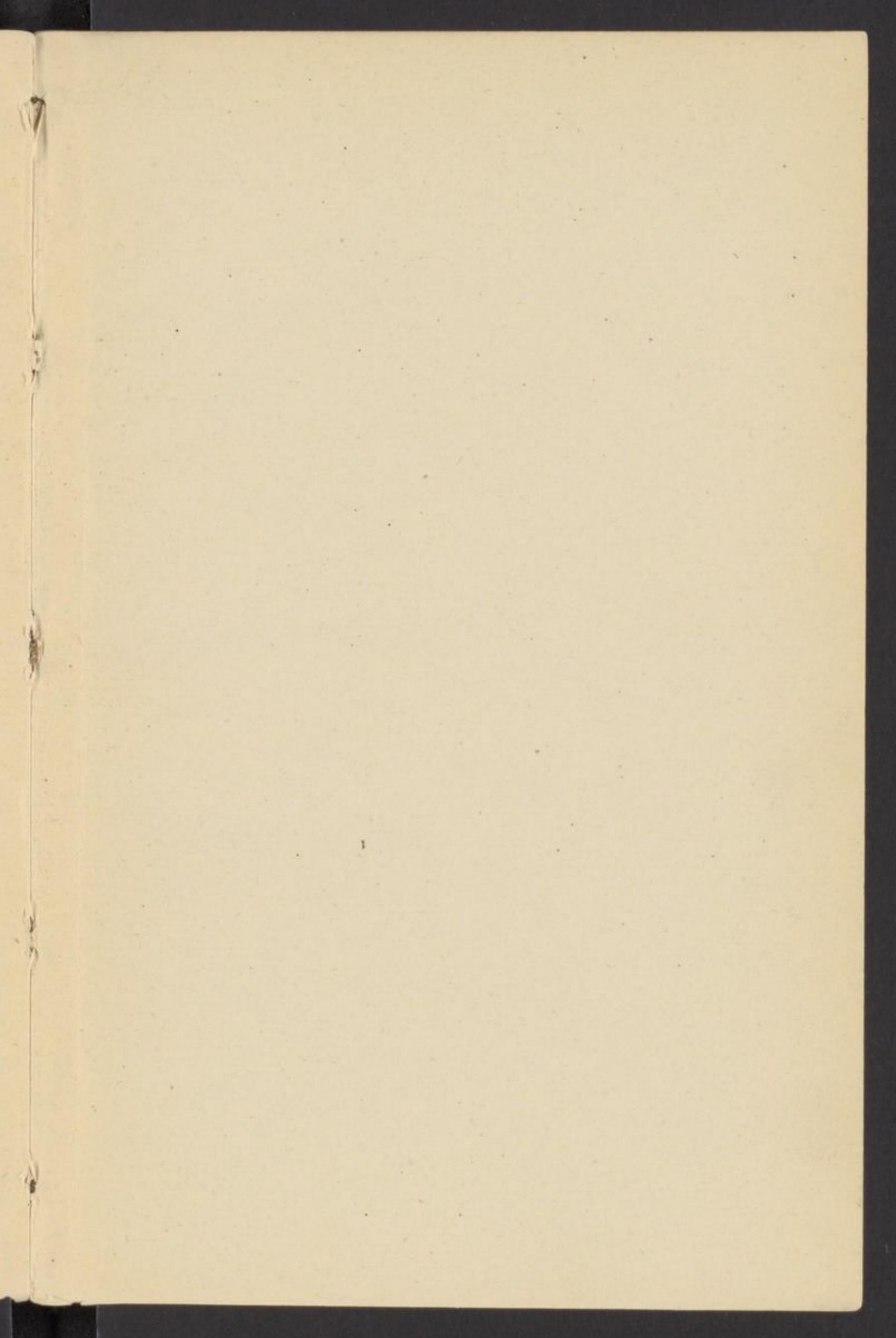


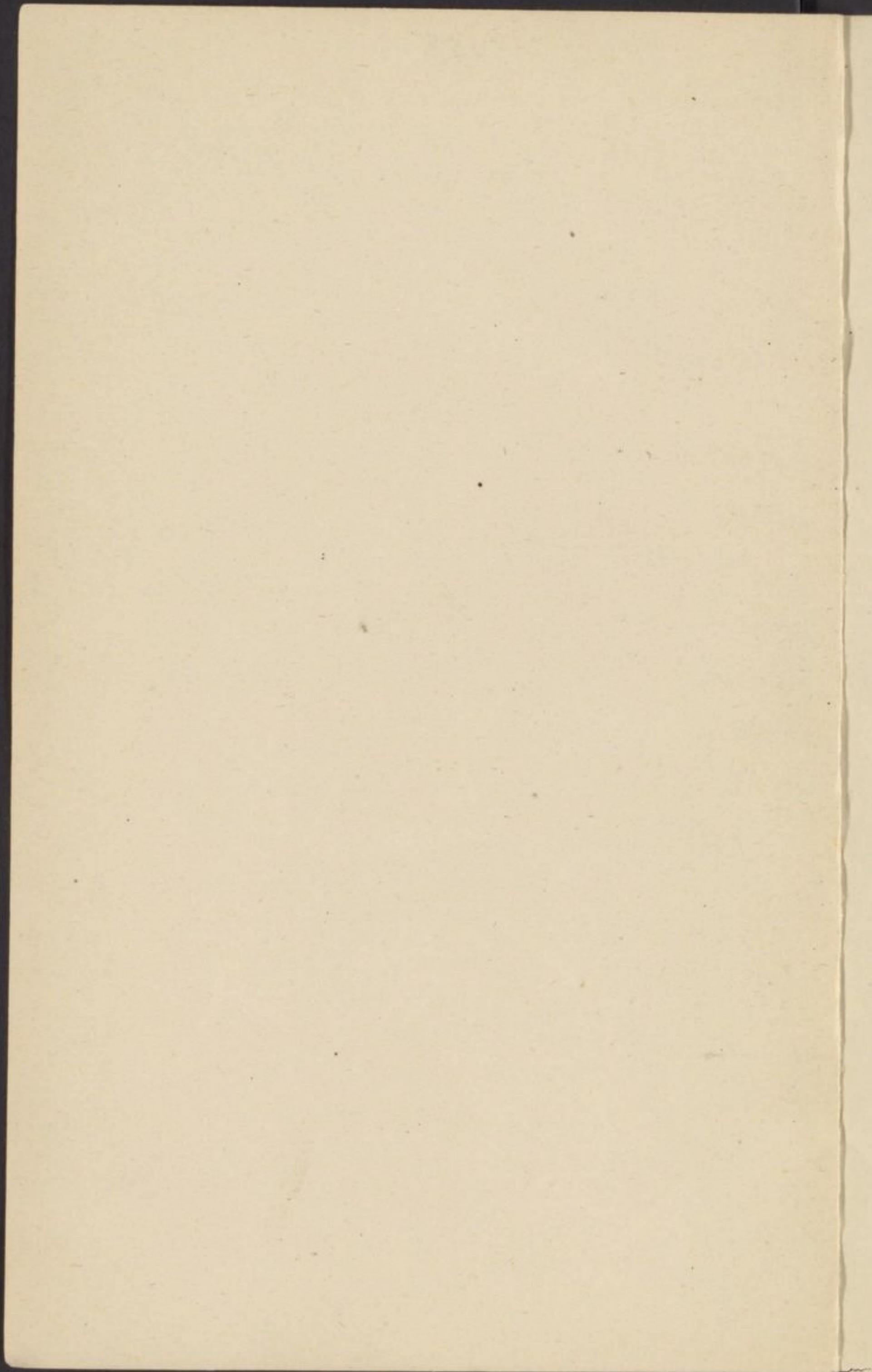
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## Editorial Note.

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

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

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

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

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

G. W. PROTHERO,

*General Editor and formerly*

*Director of the Historical Section.*

*January 1920.*

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## I. GEOGRAPHY PHYSICAL AND POLITICAL

### (1) POSITION AND AREA

THE Falkland Islands consist of a group of two large and about 100 small islands, lying in the South Atlantic about 350 miles east of Magellan Strait. They extend roughly between  $51^{\circ}$  and  $53^{\circ}$  south latitude, and  $57^{\circ} 30'$  and  $61^{\circ} 30'$  west longitude. The Dependencies of the Falkland Islands include all islands and territories south of  $50^{\circ}$  south latitude and between  $20^{\circ}$  and  $40^{\circ}$  west longitude, and also those south of  $58^{\circ}$  south latitude and between  $40^{\circ}$  and  $80^{\circ}$  west longitude. These Dependencies may be divided into two sections, the South Atlantic group, lying north of  $60^{\circ}$  south latitude, and the Antarctic group, lying south of  $60^{\circ}$  south latitude. Few of them are well known and most are only roughly charted. The extent of most of the British Antarctic possessions is unknown.

The following are the chief islands and lands included within the area of the Dependencies: (1) South Georgia, a large island lying between  $54^{\circ}$  and  $55^{\circ}$  south latitude, and  $35^{\circ} 50'$  and  $38^{\circ} 15'$  west longitude; (2) the Sandwich group of eight islands, south-east of South Georgia, extending between  $56^{\circ} 18'$  and  $59^{\circ} 30'$  south latitude, and  $26^{\circ}$  and  $28^{\circ} 15'$  west longitude; (3) the South Orkneys, lying south-west by south of South Georgia between  $60^{\circ}$  and  $61^{\circ}$  south latitude, and  $44^{\circ}$  and  $47^{\circ} 50'$  west longitude; (4) the South Shetlands, to the west of the South Orkneys, stretching south-west for over 250 miles; and (5) Graham Land, including the Palmer, Biscoe, and other islands, separated from the South Shetlands by Bransfield Strait. Graham Land is a peninsula of the Antarctic

continent, merging towards the south into a quite unknown region. On the south-east of the Weddell Sea is Coats Land, which includes Caird Coast and Luitpold Coast.

The area of the Falkland Islands is 6,500 square miles; of South Georgia, 1,000 square miles; of the South Shetlands, about 1,000 square miles; of the South Orkneys about 450 square miles; and of the Sandwich group probably not less than 100 square miles. It is impossible to give any accurate estimates for Graham Land, Coats Land, and other parts of the Antarctic continent.

## (2) SURFACE, COASTS, AND RIVERS

### *Surface*

The Falklands constitute an undulating plain traversed by low rugged ridges, between which are wide valleys with winding brooks and much boggy ground. The principal range is that of the Wickham Heights in East Falkland, and the highest peaks are Mount Adam (2,315 ft.), in West Falkland, and Mount Usborne (2,245 ft.), in East Falkland. A remarkable feature of the two islands are the so-called "stone rivers," relics of glacial times, which fill the bottoms of many of the valleys with rugged blocks of rock.

South Georgia is traversed by the rugged Allardyce Range, which rises in Mount Paget to a height of 8,383 ft. Most of the valleys are filled with glaciers. The Sandwich group contains at least one active volcano, in Zavodovski Island. Some of the islands have glaciers. The South Orkneys are steep and mountainous, Laurie Island rising to a height of 1,760 ft., and Coronation Island to 5,397 ft. They are so heavily glaciated that only the ridges and peaks and a few narrow beaches are free from ice or snow. The South Shetlands are equally rugged, but are comparatively clear of glaciers; Clarence and Smith Islands, in this group, rise respectively to heights of 4,557 and 6,600 ft. Graham Land and its adjacent islands are steep

and rugged, rising in places to heights of 10,000 ft., but almost all the mainland, except a few coasts and ridges, is covered by an ice-cap.

### *Coasts*

The coasts of the Falklands are mostly low and rocky, and fringed with islets and many dangerous reefs. In the west there are some precipitous cliffs, and there are dangerous tidal currents. All the coasts are deeply indented by long, branching arms of the sea, many of which afford splendid land-locked harbours. Falkland Sound, which divides East and West Falkland, is navigable by large vessels. Among the many good harbours in East Falkland are Port William and Stanley Harbour, Berkeley Sound, Port Salvador, Port San Carlos, Bay of Harbours, Adventure Sound, Choiseul Sound, Port Pleasant, Port Fitzroy, and Port Harriet; of these Stanley Harbour is the chief. In West Falkland there are many large sheltered harbours, but they are little used.

The coasts of South Georgia are very similar to those of the Falkland Islands, but are on the whole steeper. The south-west coast is little known.

The South Orkney coasts are steep, and glaciers descend to the head of the bays.

Graham Land is fringed by steep coasts and glacier faces.

*Sea-ice.*—The Falklands themselves are outside the limit of floating pack-ice, and icebergs are rare in the vicinity of the islands, but the presence of floating ice in the more southerly seas adds to the already considerable difficulties of navigation.

The seas south of  $50^{\circ}$  south latitude and east of  $55^{\circ}$  west longitude, and, farther west, south of about  $57^{\circ}$  south latitude, normally contain drifting pack and icebergs, although close pack is seldom found north of  $60^{\circ}$  south latitude, and may recede considerably farther south. Bransfield Strait is most open from December to March, but its eastern end may be blocked in any

month. The west coast of Graham Land and the Bellingshausen Sea are normally open for two or three months in summer, but may even then in bad ice years be unnavigable in parts. The Weddell Sea is probably the most difficult of all Antarctic seas to navigate. There is a general movement of the pack round the shores from east to west, so that the western part is almost always blocked with heavy ice, and is quite impenetrable. From the west this pack drifts north past the South Orkneys into the Southern Ocean. The result is that the Weddell Sea is least difficult to penetrate on its eastern side, and vessels have on occasions got far south on that side without encountering ice. This chance, however, cannot be depended on, and in any case a vessel on reaching the south is very likely to be jammed, and is either crushed or else drifts north and north-west with the pack. The icebergs of the Weddell Sea are often of enormous size.

### *Rivers*

The only rivers are those in the Falkland Islands, and few of them are properly charted.

### (3) CLIMATE

The climate of the Falklands at the sea level is cool and equable. The July mean is  $37^{\circ}$  F. ( $2.7^{\circ}$  C.), and the February mean  $50^{\circ}$  F. ( $10^{\circ}$  C.). Frost is uncommon. The lowest temperature recorded is  $19^{\circ}$  F. ( $-7.2^{\circ}$  C.). Wind is almost incessant, north-west winds prevailing in winter and south-west winds in summer. Brief fine intervals occur with light easterly winds. Overcast weather is normal, but the rainfall is not exceptionally heavy. At Stanley it averages 20 in. (50 cm.) a year, and in West Falkland it is probably somewhat more. Snow never lies long on the ground.

South Georgia has a more severe climate, with a July temperature of about  $28.5^{\circ}$  F. ( $-2.0^{\circ}$  C.) and a January temperature of about  $42.5^{\circ}$  F. ( $6.0^{\circ}$  C.). Winter lasts from May to September. Precipitation averages the

equivalent of about 50 in. (125 cm.) of rainfall a year, and occurs in all months.

The climate of the Sandwich group is probably not unlike that of South Georgia, though considerably colder. Easterly winds are frequent. The Antarctic Dependencies have a much colder climate, with a summer temperature little if anything above freezing point, and a winter mean varying from about  $11^{\circ}$  F. ( $-11.5^{\circ}$  C.) at the South Orkneys to about  $3^{\circ}$  F. ( $-16^{\circ}$  C.) on the east coast of Graham Land (Snow Hill),  $-2.5^{\circ}$  F. ( $-19.2^{\circ}$  C.) on the west coast of Graham Land (Port Charcot), and probably less than  $0^{\circ}$  F. ( $-18^{\circ}$  C.) in the south of the Weddell Sea.

Precipitation in the Antarctic Dependencies is practically all in the form of snow; the fall is not heavy. At the South Orkneys it averages the equivalent of 15 in. of rainfall a year, but falls on about 250 days in the year. On all the Antarctic coasts the climate depends to some extent on the movements of the pack-ice.

#### (4) SANITARY CONDITIONS

The climate of the Falklands and South Georgia is healthy, rheumatism and catarrhs being the only common illnesses.

The water supply at Stanley is derived from rain water, and is not very satisfactory, but in South Georgia the glacier streams provide a good supply.

There is a small hospital at Stanley. The medical service consists of two Government surgeons in the Falklands, and in South Georgia one, who is maintained by the chief whaling company.

#### (5) RACE

The settlers in the Falklands are practically all of British descent, the majority being of Scottish ancestry, though in Stanley stranded sailors and their descendants form an appreciable proportion of the population. Of the floating population which the develop-

ment of whaling has brought to the Falklands and several of the Dependencies, most are Norwegians, but there are also a few Argentines and Chileans.

## (6) POPULATION

### *Distribution*

The total population of the Falklands in 1916 was 3,220, of whom about 1,000 lived at South Georgia. The number of males was 2,267, and of females 953. Several hundreds at the South Shetlands are not included in the above-given total, as they stay in the Dependency only from November to April.

### *Settlements*

Stanley, in East Falkland, which is the seat of government, has a population of 900; the other centres of population being merely settlements which consist of a few houses. Particulars of these are given below in the section on Economic Conditions (Towns).

With the permission of the British Government the Argentine Republic maintains a meteorological station on Laurie Island in the South Orkneys, the staff of which is relieved at intervals.

### *Movement*

Apart from the influx of Scandinavian whalers in recent years, the population of the Falklands increases at the rate of about 230 in ten years, which is less than the balance of births over deaths. Many of the younger men leave the colony for Patagonia, and a small proportion of the older people retire to the British Isles. New emigrants are very few.

In 1916 the birth-rate of the whole colony was 16·14 per thousand, and the death-rate 7·14 per thousand. If

the population of South Georgia (almost entirely male) be excluded, the birth-rate for 1916 was 23·4 per thousand, which has been about the average rate for many years.

## II. POLITICAL HISTORY

### CHRONOLOGICAL SUMMARY

- 1592 Islands sighted by Davis.
- 1594 Hawkins sights "Hawkins's Maiden Land."
- 1599 Sebald de Weert sights "The Sebaldines."
- 1690 Falkland Sound named by Strong.
- 1748 Anson suggests British settlement; Spain protests.
- 1764 Bougainville colonizes Port Louis in the "Malouines."
- 1765 Port Egmont in West Falkland founded by British.
- 1766 French settlement sold to Spain.
- 1770 British occupants of Port Egmont ejected by Spaniards.
- 1771 Restitution agreed to by Spain.
- 1774 British garrison withdrawn, but signals of possession left.
- 1775 South Georgia taken possession of by Captain Cook.
- 1810 The islands deserted.
- 1820 Buenos Aires settlement formed in Falklands.
- 1831 Buenos Aires settlement broken up by the United States.
- 1832-3 British sovereignty established and Port Louis occupied.
- 1843 Falkland Islands become a British Crown Colony.
- 1844 Port Stanley made headquarters.
- 1851 Falkland Islands Company founded.
- 1904 Development of whaling industry in South Georgia.

### NAMING OF THE ISLANDS

THE Falkland Islands have been variously named. They are referred to in old books as John Davis's Southern Land or Southern Islands, from their first discoverer. Richard Hawkins called the land he sighted, in 1594, after himself and Queen Elizabeth, "Hawkins's Maiden Land." They gained the name of "The Sebaldines" from the Dutch Sailor, Sebald de Weert, who sighted them in 1599. Captain Strong, who visited the islands in January 1690, named the

wide strait between them Falkland Sound, after Lord Falkland, then Treasurer of the Navy. The name afterwards passed on to the islands themselves; and Woodes Rogers, who visited them in December 1708, spoke of them as Falkland's Land. Woodes Rogers's ship had Dampier on board, Dampier having already sighted the islands in January 1684. The French name for them was "Îles Malouines," after visits from St. Malo ships; and the name was confirmed by the fact that Bougainville's colony started from St. Malo. The Spaniards adopted the French name, and knew them as Las Malvinas.

#### DISCOVERY AND EARLY HISTORY

In view of the remoteness of these islands it is curious how much history attaches to them and how many well-known names—some already mentioned—occur in their story. The first chapter of the Annual Register for 1771, written at the time of the friction between England and Spain in regard to the islands, tells what was known at that date on the subject. They were marked on old maps of the sixteenth century, and their first discovery was vaguely attributed to Magellan or Vespucci; but the first recorded discovery was made by an Englishman, the Elizabethan sailor John Davis, who sighted them in August 1592. As already indicated, "Hawkins's Maiden Land" is generally identified with the Falkland Islands; but there is no doubt that the Dutchman, Sebald de Weert, sighted the small islands to the north-west of the group.

The history of the islands really begins after Lord Anson's famous voyage round the world in 1740-4, and the publication of the narrative of that voyage in 1748. The need for a British station and port of call in these seas was suggested; and, while Lord Anson was at the Admiralty, it was proposed to send out an expedition to make a report upon the islands, with a view to forming a station; but, according to the Annual Register, the scheme was given up owing to protests

from Spain, though there appears to be no official record of such protests.

#### SPANISH RIGHTS RECOGNISED BY FRANCE

Nothing more was done until the end of the Seven Years' War and the Peace of 1763. In the summer of that year, Bougainville, the French explorer, organized at St. Malo an expedition for forming a settlement in the Falklands. The ships sailed in September, carrying a few Acadian families as settlers, and live-stock of all kinds. The Falklands were sighted on January 31, 1764, and Bougainville landed on February 3. He chose a site for his settlement at the head of Berkeley Sound, and called it Port Louis. He went back to France in the same year to report to the French Government, and arrived again in the Falklands, with some more settlers, in January 1765. But his colony was short-lived. The French and Spanish Governments became involved in a dispute over the French settlement. An angry correspondence took place between the Spanish Prime Minister and the Duc de Choiseul, and the two countries were actually beginning to prepare for war, when Louis XV intervened, and proposed to the King of Spain that the French should withdraw from Port Louis on the payment of compensation by Spain. Bougainville was sent to Madrid; and an agreement on these lines was arrived at (1766), France receiving a sum of money equivalent to £24,000. Port Louis was renamed by the Spaniards Port Soledad.

#### FIRST BRITISH OCCUPATION

Meanwhile, in 1764, the British Government, inspired probably by the action of the French, had at length carried out their intention of sending an expedition to report upon the Falkland Islands, with a view to establishing a station there, the royal instructions to that effect being given in June of that year. The commodore in charge was the Hon. John Byron, who, as

a midshipman, had been wrecked on the coast of Chile in a ship belonging to the squadron in which Anson made his famous voyage. On January 15, 1765, Byron sailed into a harbour on the north coast of West Falkland, which he called Port Egmont, or Egmont Harbour, after the Earl of Egmont, then at the head of the Admiralty. "Of this harbour," he wrote, "and all the adjoining islands I took possession for His Majesty King George the Third of Great Britain under the name of Falkland's Island." On his report, Captain MacBride was immediately sent out in H.M.S. *Jason* (whence the Jason Islands, adjoining this part of the Falklands), to form a settlement, which was begun at Port Egmont early in 1766, the site of the station being on Saunders Island, near the mouth of the inlet.

#### CONTROVERSY BETWEEN GREAT BRITAIN AND SPAIN

The existence of the station was not at first known to Spain, and the British were not molested for two or three years. But in 1769 the British and Spanish commanders warned each other off as trespassers; and in the next year, on June 10, 1770, a fleet of five Spanish frigates, with a strong armed force on board, obliged the small English garrison to capitulate and return to England. It should be noticed that during these proceedings, in 1769 and 1770, the protests of the British commander laid great stress on the first discovery of the islands by Great Britain. The ejected settlers reached England in September 1770; and the action of Spain roused strong public feeling there. Lord Weymouth, the Secretary of State, demanded the immediate restoration of the colonists to Port Egmont and reparation for the insult offered to the British Crown. At the same time he began with vigour to prepare for war. The King of Spain appealed to the King of France for assistance in virtue of the "Family Compact." The matter was referred to the Duc de Choiseul, who endeavoured to arrange a settlement

between the two countries on the same lines as that arrived at between France and Spain. Lord Weymouth refused to negotiate on this basis; whereupon the Duc de Choiseul promised the Spanish Government the support of France in the event of war with Great Britain.

At this point, however, it became clear that Lord Weymouth was unable to carry his Government with him in his warlike schemes, and he was obliged to resign office. At the same time, Louis XV again intervened, dismissing the Duc de Choiseul, and declaring to the King of Spain his intention of preserving peace with other Powers if possible. Negotiations were reopened between Great Britain and France, and eventually, by a Convention of January 22, 1771, the Spanish Government agreed to make complete restitution, but with a reservation that the engagement "to restore to His Britannic Majesty the possession of the fort and port called Egmont cannot nor ought any wise to affect the question of the prior right of the sovereignty of the Malvinas Islands, otherwise called Falkland Islands."

#### PORT EGMONT REOCCUPIED AND ABANDONED

Lord Rochford, the new Secretary of State, in his reply, took no notice of this reservation, which therefore stood on record without being controverted. On this ground mainly Lord North's Government was strongly attacked in Parliament and outside. Lord Chatham, among others, took a hand in Parliament, declaring that Port Egmont alone had been restored, and not the Falkland Islands; while outside Parliament "Junius" wrote against the Ministry, who were defended by Dr. Johnson in "Thoughts on the late Transactions respecting Falkland Islands."

A British ship of war, the *Juno*, was forthwith sent out, with two smaller vessels, to have the Agreement duly carried into effect; and on September 16, 1771, the commander of the *Juno* was formally placed in possession of the station by the Spanish officer on the

spot. A sloop, with some seamen and marines, was left to hold it; but the number of the garrison was reduced in the next year; and in 1774 the garrison was withdrawn altogether, while leaving behind "the proper marks or signals of possession and of its belonging to the Crown of Great Britain." Port Egmont was abandoned on May 20, 1774, but the British flag was left flying; and the commanding officer affixed to the door of the blockhouse an inscription engraved in lead, in the following terms:—

Be it known to all nations

That Falkland Islands, with this fort, the storehouses, wharfs, harbours, bays, and creeks thereunto belonging, are the sole right and property of His Most Sacred Majesty, George the Third. . . . In witness whereof this plate is set up, and His Britannic Majesty's colours left flying as a mark of possession.

It should be added that, in 1775, Captain Cook took possession of South Georgia, and gave it its name.

#### THE ISLANDS FROM 1774 TO 1831

It is not clear how long the Spaniards remained at Port Soledad; they are said to have used the Falklands as a place for deportation of convicts; but, at any rate, there is no question that by 1810 the islands were left without any European garrison or permanent inhabitants. In 1820 the Republic of Buenos Aires established a settlement at Port Louis (or Soledad). By this time the development of the seal fishery had led to the islands being frequented by ships of various nations, especially American. In 1829, Louis Vernet, the Governor of the settlement at Port Louis, in virtue of the exclusive right to the seal fishery which he claimed, warned off American vessels; and in 1831 he followed this up by seizing some of the ships and detaining their officers and crews. Thereupon the commander of an American ship of war, the *Lexington*, sailed from Buenos Aires to Port Louis, and on December 31, 1831, broke up the settlement.

## GREAT BRITAIN TAKES POSSESSION

At the end of November 1832, H.M. sloop *Clio* was sent from the British squadron on the South American Station. She reached Port Egmont on December 20, 1832, and during his stay the commander set up an inscription on a board:—

Visited by H.B.M.S. *Clio* for the purpose of exercising the right of sovereignty over these islands, December 23, 1832.<sup>1</sup>

After ten days' stay the *Clio* sailed on to Port Louis; and on January 3, 1833, the British flag was hoisted and possession was taken. At the same date another British ship, the *Tyne*, visited Port Egmont, and a similar ceremony took place. Since that time the Falkland Islands have remained continuously and without interruption a British possession.

In March 1833, almost immediately after the visit of the *Clio* and the hoisting of the British flag, the *Beagle*, under the command of Captain Robert FitzRoy, and having on board Charles Darwin (whose name is perpetuated in Port Darwin), arrived at Port Louis, paying a second visit to the islands in March of the following year, 1834. FitzRoy's instructions included an order to make a sketch or running survey of the Falklands and to note the best harbours. The instructions were duly carried out; and the map, which is given in the Parliamentary Papers of 1841 and 1843,<sup>2</sup> relating to the Falklands, was based upon the surveys which were made in 1834. FitzRoy's narrative of his memorable voyage<sup>3</sup> gives a full description of the islands and an excellent account of their history and the political controversies up to date, as well as a notice of the Vernet settlement, which appears to have

<sup>1</sup> See the account given in *The Falkland Islands*, by G. T. Whittington, London, 1840.

<sup>2</sup> *Papers Relating to the Falkland Islands*, House of Commons, August 27, 1841; *Papers, Falkland Islands*, House of Commons, April 3, 1843.

<sup>3</sup> *Voyages of the "Adventure" and "Beagle,"* 1839, vol. II, chaps. xi, xii, and later in the volume.

been a praiseworthy and substantial effort to form a colony.

#### FORMATION OF THE BRITISH COLONY

For a few months after the British occupation Port Louis was left in charge of Mr. Matthew Brisbane, Vernet's partner or agent, who had accompanied Weddell on his Antarctic expedition. He was murdered by a gang of Gauchos and Indians on August 26, 1833, as is told in FitzRoy's narrative. In January 1834 a naval officer was placed in authority, and the islands remained under the Admiralty until 1842. A body of opinion grew up in favour of taking steps to colonize the islands; concessions were sought for; a Falkland Islands Association was formed; and the need for a fully constituted Government on the spot to administer law and keep order became more and more apparent. The question was referred to the Colonial Land and Emigration Commissioners, whose report, dated August 22, 1840,<sup>1</sup> enumerated four grounds upon which the establishment of a regular colony had been urged—the usefulness of having a port of refuge for merchant ships plying round Cape Horn, the expediency of a port roughly half-way between the two oceans for the South American Squadron, the advantages of the islands for a penal station, and their general fitness as a settlement for agricultural and commercial purposes. The first three reasons were fully endorsed; as to the fourth, the Commissioners were in doubt, their final conclusion being that “the Falkland Islands would be able to support a small body of colonists of frugal and industrious habits.” Settlers from the Orkneys and the Hebrides were suggested. The Colonial Office was opposed to the idea of a penal station, but favoured the establishment of a colony, and recommended a Parliamentary grant to cover the expenses of government. The Admiralty concurred; so did the Treasury; and in

<sup>1</sup> *Papers Relating to the Falkland Islands*, House of Commons, August 27, 1841.

the first instance a Lieutenant-Governor was appointed under the Colonial Office in August 1841. This was Lieutenant Moody, R.E., who reached Port Louis in January 1842.

After some hopeful reports from Moody, the Government took further action. On April 11, 1843, an Act of Parliament was passed (6 and 7 Vic., cap. 13), "to enable Her Majesty to provide for the government of her settlements on the coast of Africa and in the Falkland Islands." Under this Act, Letters Patent and Royal Instructions were issued in the following June; Moody was appointed Governor; provision was made for a Legislature; and the Falkland Islands became a Crown colony of the ordinary type, with Governor, Executive Council, and Legislative Council, as they have since remained.

FitzRoy had noted the excellence of Port William; and the question arose as to whether Port Louis or Port William should be made the chief centre. In 1842 Captain James Ross, on his Antarctic expedition, visited the islands in his ship, the *Erebus*, having, like FitzRoy, on board his vessel a scientist, afterwards of high distinction, the late Sir Joseph Hooker. Hooker was consulted as to the respective merits of the two ports, and unhesitatingly preferred Port William. Moody held that the country surrounding Port Louis, which was renamed Anson, was far more favourable for settlement than the vicinity of Port William, and recommended that the seat of government should be kept for the time at Port Louis, though he recognised that Port William must become the chief port of the islands. On hearing these views, Lord Stanley, Secretary of State for the Colonies, decided in favour of Port William, and on March 23, 1843, sent instructions to move the headquarters to that place as soon as possible. This was done, and in 1844 the capital of the colony was fixed at Stanley Harbour in Port William inlet, the name Stanley superseding the older name.

## ECONOMIC PROGRESS OF THE COLONY

The Blue Book report for 1846 gave a population of only about 270, including 106 immigrants introduced by Mr. Lafone, a rich merchant resident in Montevideo. By a contract with the Crown, dated March 16, 1846, Lafone was granted, for the sum of £60,000, payable in instalments, the concession of a very large tract in East Falkland, estimated at first at about one-third of the whole island, and the possession for six years of all the wild cattle and stock in the islands. This agreement was modified by a new contract of January 9, 1850;<sup>1</sup> and shortly afterwards Lafone transferred his rights to a company, the Falkland Islands Company, whose charter dates from December 23, 1851, and which has since played an outstanding part in the history and the life of the colony.

From about 1867 onwards sheep-farming became more and more the predominating industry of the Falklands. Sheep took the place of wild cattle, Scotsmen of South American Gauchos; and at the end of the nineteenth century wool was the one export of the colony.

Meanwhile South Georgia was visited by sealers and also by scientific expeditions; and, as the result of the Swedish Antarctic expedition of 1902, Captain Larsen, a Norwegian, succeeded in 1904 in forming a company in Buenos Aires and establishing a whaling station in South Georgia. This was followed by other companies, mostly Norwegian, for exploiting the whale fisheries in these seas, with the result that the whale oil and produce, which comes from or through the Falklands, represents something like half the output of the world, and the trade returns of the colony show an enormous increase on former years. For some years

<sup>1</sup> The two Agreements will be found in Appendix No. 25, pp. 124-8, of the General Report of the Colonial Land and Emigration Commissioners for 1846, and Appendix No. 54, pp. 202-8, of their Report for 1849.

prior to 1906 the chief British company, Messrs. Salvesen and Co., of Leith, operated in West Falkland as well as in the Dependencies, but the Dependencies supply the main bulk of the trade.

### III. SOCIAL AND POLITICAL CONDITIONS

#### GOVERNMENT, EDUCATION, &c.

THE Falklands have long been self-supporting. The Legislative Council consists of three official members in addition to the Governor, and two unofficial members nominated by the Crown. The Governor is also Chief Justice, and there is a resident magistrate in South Georgia. The only settlement in the colony of any substance other than Stanley is Darwin, also in East Falkland. Here the Falkland Islands Company maintains a school; at Stanley there are two schools—one a Government, the other a Roman Catholic, school. Outside these two settlements, in the "camp" (Sp. *campo*), as the countryside is termed, education is provided by travelling teachers.

## IV. ECONOMIC CONDITIONS

### (A) MEANS OF COMMUNICATION

#### (1) INTERNAL

##### (a) *Roads*

THERE are no roads, except at Stanley, and even these are very poor. All inland travelling is done on horseback, and is rendered difficult by the soft peaty soil.

##### (b) *Rivers*

The rivers are shallow and winding, and of little use for navigation. Brenton Loch affords water communication for 8 miles from the centre of East Falkland to the sea. Murrel River can be ascended by boats for about 8 miles. The San Carlos River is navigable by small vessels for 3 or 4 miles, and by boats for 6 miles.

##### (c) *Posts and Telephones*

Mails between Stanley and other parts of the colony are conveyed on horseback and by local steamers.

A telephone system is established between Stanley and the settlement at Darwin Harbour, and there is another line between Stanley and Cape Pembroke lighthouse.

#### (2) EXTERNAL

##### (a) *Ports and Anchorages*

In the Falkland Islands, Stanley is the principal port, but excellent harbours, easy of access, and with good holding ground, are formed by the numerous

indentations of the coasts. If due care be exercised they offer ample protection from the frequent gales.

In East Falkland Island, *Port William*, which includes *Stanley Harbour*, affords good anchorage, sheltered from all the prevailing winds. The entrance to *Stanley Harbour* is extremely difficult and dangerous; a large vessel never attempts to pass in or out of the harbour at night. The harbour itself is excellent, being a large natural dock, 3 miles long by about a third of a mile broad, with depths of from 20 to 30 ft. over stiff mud. For large vessels, however, the anchorage is somewhat confined. The amount of coal kept in stock is about 450 tons, but, though there are three lighters holding 80 tons, coaling is slow, being greatly impeded by strong winds in summer and snow squalls in winter. Small vessels can go alongside the hulks at the jetty, but the depths are only from 8 to 10 ft. There are five small jetties abreast of the town. Small repairs to machinery can be undertaken by the Falkland Islands Company, which possesses a crane on the wharf lifting half a ton and another in the smithy lifting one ton. There is a steam tug fitted with salvage pumps to render assistance to disabled vessels. On the far side of the port from the town there is a dock and coaling station, constructed for the Navy. *Stanley* is a port of registry, and had on December 31, 1916, six vessels of a total tonnage of 807 tons. It forms a convenient coaling station for vessels going through the Strait of Magellan, and ships which have been damaged in heavy weather off Cape Horn call there for repairs. The charges, however, are high, owing to the cost of labour, and many owners instruct their ships to avoid the Falklands and make for Montevideo.

*Port Salvador*, on the north of East Falkland Island, is a magnificent and spacious harbour, but difficult to enter, owing to the narrow channel and the rapidity of the tidal streams. After clearing the entrance channel, vessels can find good and secure anchorage.

*Berkeley Sound* has an entrance  $4\frac{1}{2}$  miles in width; it is 16 miles long, and terminates in the three excellent anchorages of Johnson Harbour, Stag Road, and Port Louis.

At *Port Harriet* there is excellent anchorage, but the shores are generally swampy, so that the port will probably never be of importance except as a temporary shelter.

At *Port FitzRoy* there is a bar across the entrance, but for 3 miles above this point the harbour is fully a mile wide, is clear of danger to within two cables of the shore, and affords excellent anchorage.

*Port Pleasant*, immediately to the south of Port FitzRoy, has two entrances, each with a bar on which the deepest water is  $2\frac{1}{2}$  fathoms.

*Choiseul Sound* is studded with islands forming sheltered anchorages for small vessels, while large vessels can bring up almost anywhere in from 12 to 18 fathoms. There are good anchorages at Mare, Victoria, Arrow, and Darwin Harbours. Mare Harbour is one of the finest on the coast, and easy of approach for the largest vessels. Inside the entrance it opens to a clear piece of water about half a mile long and one mile wide, with excellent anchorage in 6–10 fathoms. On the east side of Mare Harbour there is an opening leading to East Cove, another very fine harbour.

*Adventure Sound*, which is 20 miles long, contains several good harbours, the best being in the southern part at Adventure Harbour and Moffit Bay; the former will accommodate vessels of any class.

*Bull Road*, in the Bay of Harbours, is the most convenient anchorage in the southern part of East Falkland; there is completely sheltered anchorage on the south side close to the shore in 7–10 fathoms. There are also several other anchorages in this bay.

*Port San Carlos* is one of the finest harbours in the Falklands, being capacious, secure, and, as far as is

known, clear of all dangers; there is a good cove for beaching vessels.

With the exception of Stanley Harbour, these harbours are seldom used except by coasting schooners.

The harbours in West Falkland are little used.

*Pebble Sound*, in the north, is about 15 miles long and 9 miles wide, and has good anchorage in every part, but the entrances are dangerous. Good anchorage is also found at *Port Egmont* in Keppel Sound, where there is a rough pier in Sealers' Cove. *Whaler Bay*, in King George Bay, is a safe and good anchorage with coves for small craft.

*Queen Charlotte Bay* possesses several good harbours, among others a large land-locked harbour at Port Philomel, where there is excellent anchorage in every part in from 7 to 10 fathoms, and in all the creeks there is good anchorage in from 2 to 4 fathoms. There are also small well-sheltered anchorages at Anthony Creek and Carew Harbour.

*South Harbour*, in the southern part of Ship Harbour, on the east side of New Island, was the site of Messrs. Salvesen and Co.'s whaling station, and is the most frequented harbour in West Falkland. It is a port of entry, and a Customs official is stationed there.

At *Port Stephens* there is a good anchorage off the settlement, in 13 fathoms. Communications are maintained with Stanley by means of a steamer which conveys mails and supplies.

There is good anchorage also at Port Albemarle, Port Edgar, Port Howard, and White Rock Bay. *Port Edgar* is a very secure harbour, and a small pier affords landing to boats.

In South Georgia by far the best anchorage is *King Edward Cove*, situated half way up the arm of Cumberland Bay. This cove affords perfectly safe anchorage in any weather for vessels of any size in 10 fathoms over a clay bottom, and Cumberland Bay rarely freezes over sufficiently to prevent vessels getting

in and out. There is a whaling station at *Grytviken* with a boiling-down factory lighted by electricity. There is a blacksmith's shop, and a slip fitted with powerful winches for heaving whales up on the shore. A wooden pier opposite the factory allows a vessel of 16 ft. draught to come alongside.

Antarctic Bay and Fortuna Bay both possess good anchorages, used by steam whalers; Moltke Harbour, in Royal Sound, is not so good.

In the Sandwich group there is said to be a harbour in Southern Thule, but it is nearly always icebound, and is not used by the whalers.

In the South Orkneys few of the bays afford more than temporary shelter, and they are all more or less obstructed by ice. Scotia Bay, in the south of Laurie Island, is fairly safe, but is liable to be frozen over until the summer. There are several small harbours suitable for whalers on the south of Coronation Island.

In the South Shetlands the best known harbour is at Port Foster, on Deception Island. It is 5 to 6 miles across, and has good anchorages in Pendulum Cove and Whaler's Anchorage.

Hospital Cove in Greenwich Island, Admiralty Bay and St. George Bay in King George Island, and Blythe Bay in Desolation Island are also good. New Plymouth or Rugged Harbour in Desolation is found convenient by sailing vessels, but cannot be recommended.

In Graham Land there are several known anchorages, but their use depends on the movement of the ice. A good harbour, Port Lockroy, is to be found at Wiencke Island.

The only harbours that are blocked with ice are those in the Antarctic Dependencies. The South Georgia bays may be frozen at their heads but not sufficiently to inconvenience a strong vessel, and they are not invaded by pack ice. The South Orkney harbours are completely frozen for a period that varies from year

to year; the average period for Scotia Bay is 177 days in the year. The South Shetland harbours are open for at least five months. In Graham Land the bays are closed for nine months or more. The harbours of the Dependencies are only used by whalers and explorers.

The following table shows the number of vessels which entered the ports of the Falkland Islands from 1909 to 1913:—

	<i>British.</i>				<i>Foreign.</i>			
	Steamers.		Sailing Vessels.		Steamers.		Sailing Vessels.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1909	44	144,024	4	7,202	12	5,652	9	3,625
1910	37	135,505	5	10,089	21	13,616	9	9,010
1911	38	121,711	9	6,036	26	20,218	5	6,904
1912	39	142,144	4	6,251	49	44,835	8	4,573
1913	59	165,681	—	—	82	76,135	18	19,021

### (b) *Shipping Lines*

Before the late war the Falkland Islands were in mail communication with England every month. The Pacific Steam Navigation Company's steamers called at Stanley on voyages to and from Callao. The voyage between Stanley and London takes 28 days. The Falkland Islands Company (see below, p. 33) are the sole shipping agents in the colony, and with their tugs, lighters, and jetties control most of the commerce of the place. Their vessels carry on the inter-insular mail, passenger, and traffic services.

Before the late war there was a regular mail service between South Georgia and Buenos Aires, a distance of 1,500 miles, for which a subsidy was offered by the Colonial Government but refused.

(c) *Wireless Communication*

A Marconi wireless station was completed at Stanley in September 1912. It can communicate with Cerrito (Uruguay) and the Strait of Magellan.

(B) INDUSTRY

(1) LABOUR

There is a great shortage of labour in Stanley, so that it is difficult to carry out necessary works. A large number of the younger men drift away to Patagonia and the southern parts of South America.

The prosperity of the colony is visible in the conditions of the individual colonists. In 1915 a shepherd in the "camp"<sup>1</sup> districts of the colony received from £72 to £80 a year, a farm hand from £60 to £70, and a farm boy from £36 to £48. Free housing and mutton were given in addition to these wages. In Stanley, skilled labourers (joiners, carpenters, blacksmiths, &c.) were paid 1s. 1½d. per hour with 1s. 8d. for overtime, and in many cases free housing; the wage for unskilled labour was 9d. per hour and 1s. 3d. for overtime. There is no necessity for any institution in the nature of a workhouse.

(2) AGRICULTURE

(a) *Products of Commercial Value*

*Vegetable Products.*—Nearly all the soil of the Falkland Islands is peat, and supports only a poor growth of yellowish grass, which has little sustenance for cattle, but on which sheep do very well. The tussock grass, a valuable natural product which affords fattening food for cattle, has now almost disappeared from East and West Falkland, but still abounds in the smaller islands. A minor occupation carried on in

<sup>1</sup> This term, derived from the Spanish, is used in speaking of the countryside outside the settlement.

Stanley by the owners of small cutter-boats is the bringing in of tussock grass from the outlying islands. Peat, which is abundant, is the principal fuel used in the islands.

The cultivation of fruit and vegetables is made difficult by the damp, cold nature of the soil and the prevalence of high winds; but potatoes, carrots, turnips, cabbages, Scotch kail, and rhubarb do well. All the gardening soil is artificial. There is not enough sunshine to ripen grain, except on one of the small outlying islands to the west.

Hay was cut and sold in the Falklands for the first time in 1911. This was a very desirable innovation, as the price to the buyer was decreased, and there was less risk of introducing disease from abroad. In 1913 it was stated that probably sufficient hay for home consumption was then being produced in the colony. Lucerne was also tried that year, but did not give good results; good crops of oaten hay, however, were raised in East and West Falkland. Since then there has been a steady increase in the area of land under cultivation. In 1916 an experiment was made of turning oaten hay into ensilage, which was completely successful.

*Animal Products.*—The principal animal products of commercial value are wool, tallow, hides, whale oil, and guano.<sup>1</sup> The steady growth of the prosperity of the colony dates from the period when the settlers discovered that the wide expanses of marsh and moorland over which they had been roaming in search of wild cattle might be profitably utilized as sheep-rearing areas. The year 1867 has been given as the date when the first efforts were made to establish the industry on a permanent footing. It was an uphill task, owing to the uncongenial climate and the transport difficulties, but the farmers persevered, and the industry increased each year in importance. Whereas the number of sheep in the colony in 1867 was 35,000, 10 years later it was 283,000. In the following decade the number

<sup>1</sup>The term "guano" is locally used to denote an artificial fertiliser made from the flesh and offal of whales.

rose to 563,000, and reached in 1896 the record total of 801,000. The average for the 10 years ending 1908 was 720,000. In 1917 the total number of sheep was 696,975, the decrease being due to the number used in the canning industry, but the 1917 figures show an increase on those for 1916, which were 689,904. Sheep-farming is remunerative. A farm carrying 10,000 sheep will make between £2,000 and £3,000 gross a year. The flocks, generally speaking, vary from 2,000 to 30,000, but in one instance there were 200,000 sheep on one station. The export duty on wool brought in an annual revenue of over £1,000 before the war. In 1913 and 1914 a large trade was done in the sale and shipment of live sheep to the Argentine for slaughter.

Besides the wild cattle, which are still found in small numbers, there are fairly large herds on every station. A shepherd may have as many cows as he cares to tame, so that in summer there is no shortage of milk or butter. The total number of cattle in 1917 was 6,844, and they were stated to be in a flourishing condition. The number of horses in the colony was 2,653.

In South Georgia there are inconsiderable lowland areas round the coast, divided by high ridges into small valleys with tussock grass and luxuriant vegetation. Reindeer and Falkland upland geese have been imported, and are stated to be doing very well; they are likely in a few years' time to be a valuable asset to the colony, as at present all the meat has to be imported from the Falklands or Buenos Aires.

#### (b) *Land Tenure*

Practically all the land in the Falkland Islands is bought up, and in several cases a man and his family are the sole human occupants of their own island. The farmers have the right to purchase their leaseholds from the Crown at the rate of 3s. per acre (10 per cent. in cash and the balance in thirty annual payments of 3 per cent.), and most of them have taken advantage of these terms.

## (3) FISHERIES

One of the most important industries of the Falkland Islands and Dependencies is the whale fishery, which has made great progress in recent years. In 1904 the *Compañía Argentina de Pesca*, of Buenos Aires, was founded, with an initial capital of £40,000, to exploit the whales and seals in these waters. This company made its working headquarters at Cumberland Bay, in South Georgia, then entirely uninhabited, and the Falkland Islands Government granted the first whaling lease to the company, to date from January 1, 1906. Thenceforward the growth of the industry in South Georgia was rapid, and it is now one of the most important whaling centres of the world.

The success of the early operations led to an almost immediate establishment of similar whaling companies in the other Dependencies of the Falkland Islands and in the colony itself. In April 1914 there were seven whaling companies in South Georgia, with an invested capital of about £625,000, employing some 1,700 men in summer and about 500 in winter. Two of these companies were English. In the South Shetlands and Graham Land there were ten companies, of which one was English; in the Falkland Islands one English company, and in the South Orkneys three Norwegian companies. In South Georgia there are five land stations, where large and up-to-date factories have been built; the lease is for a period of 21 years, at an annual rental of £250, this sum giving the company the right to use two catchers in connection with the factory. For a further sum of £100 a licence may be issued granting the use of a third catcher. A licence for the South Shetlands, including Graham Land, or for the South Orkneys costs £200 per annum, and gives the company the right to use two floating factories and two catchers, while for another £100 a third catcher may be employed, if approved by the Governor in Council. The *Hektor* Company holds the only lease in the South Shetlands, and under this lease it may use

its shore station, at Port Foster, Deception Island, one floating factory, and two catchers. During the war whaling entirely ceased in the colony and in the South Orkneys, and the number of floating factories and catchers visiting the South Shetlands greatly decreased.

A floating whale factory consists of a steamer or sailing-ship up to 7,000 tons burden, fitted with all the necessary reducing plant and with accommodation for storing the oil. These vessels must be moored in a harbour, as smooth water is required to enable the whales to be flenched alongside the vessel. A few steamers have been fitted with drying kilns for the manufacture of guano, but so far the results have not been satisfactory, and it is open to doubt whether the expenses of manufacturing and marketing the guano are covered by the prices realised.

In South Georgia whaling continues all the year round, but about five-sixths of the whales killed are caught between November and May. The South Shetlands season lasts some 4 to 5 months, from November to April. The South Orkneys season is shorter on account of the more severe weather conditions.

With the growth of the whaling industry, ordinances have been passed in the colony and regulations made with a view to controlling the operations of the whaling companies. A stipendiary magistrate, who is also Deputy Controller of Customs, is permanently established with two assistants at King Edward Cove in South Georgia. Each year a Government official is sent to Deception Island, South Shetlands, for the whaling season, and another is sent to the South Orkneys when there are ships going there.

The whaling licence dues before the war brought in an annual revenue of about £3,000, and a like amount was realised by the export duty on whale oil, though the rate was only 3*d.* per barrel.

The following are the only species of whale which are hunted:—

The southern Right whale (*Balaena australis*). A full-grown specimen in good condition will yield from 60 to 70 barrels of oil and 4 to 5 cwt. of baleen (whalebone). The price of baleen is now so low that no special efforts are made to kill this species, which used to be much the most valuable.

The Humpback whale (*Megaptera boops*), which is rapidly decreasing in numbers.

The Blue whale (*Balaenoptera sibbaldii*), which is more difficult to kill than the Humpback, and therefore was not much hunted while Humpbacks were plentiful. It is the largest living animal in the world.

The Finner whale (*Balaenoptera musculus* or *physalus*).

The Fish whale or Seihval (*Balaenoptera borealis*), which is the smallest of the whales killed in the south, and is only pursued when there is a scarcity of the larger kinds.

The Cachalot or Sperm whale, which is seldom met with in these waters, as its natural habitat is in warmer zones.

The chief products of the whale fisheries are oil, whalebone, whale meat, and whale guano. The value of the catch of the different fisheries during the 1913-14 season was as follows:—

		£
Falkland Islands	... ..	15,196
South Shetlands and Graham		
Land	... ..	720,474
South Orkneys	... ..	76,150
South Georgia	... ..	489,727
		<hr/>
Total	... ..	£1,301,547

Details of the whaling operations during this season are as follows:—

	Number caught.	Whale oil.		Bone.		Whale guano.		Bone meal.	
		Barrels.	Value.	Tons.	Value.	Bags.	Value.	Bags.	Value.
Falkland Islands ... ..	300	4,505	£ 13,515	80	—	3,363	£ 1,681	—	—
South Shetlands and Graham Land	approx. 5,259	222,940	714,021	111	275	10,148	6,178	—	—
South Orkneys ... ..	621	21,750	76,120	20	30	—	—	—	—
South Georgia ... ..	3,349	166,578	445,063	213	4,066	81,324	40,028	1,327	570
Total ... ..	9,529	415,773	1,248,719	424	4,371	94,835	47,887	1,327	570

Since 1914 no whaling has been carried on in the Falklands or the South Orkneys; in 1917-18 the value of the other fisheries was as follows:—

South Shetlands and Graham Land	£ 466,000
South Georgia	1,100,000

Early in 1918 a committee was appointed to facilitate prompt action at the conclusion of the war with regard to the preservation of the whaling industry in the Dependencies of the Falkland Islands.<sup>1</sup> The Colonial Office had already been in communication with scientific experts regarding the protection of whales.

The seal fisheries have considerably decayed, owing to the decreasing number of seals found. In these waters are found the sea-elephant, sea-leopard, and Weddell seal. The seals are protected by law, and penalties are imposed for killing or capturing them without a licence. A licence costs £50, and no licence may be granted in respect of seal reserves, which are defined as areas of land or water set apart for the breeding of seals.

There is reason to believe, from investigations made by the *Scotia* in 1903, that profitable white fishery undertakings might be established in the waters of the archipelago. The British have not attempted this, although Uruguay and the Argentine are now making

<sup>1</sup> For the Report of this Committee, see "Authorities," p. 42.

efforts to investigate the fishery resources of the South Atlantic. The only varieties of fish caught round the coasts of the Falkland Islands are the mullet, which attains a great size, and the smelt. Probably more species would be found if the fishermen went farther afield; as it is they only drag the shallow coves or throw a line from the shore. A peculiar trout, weighing up to 1 lb., is found in the islands; it lives equally well in fresh or salt water.

#### (4) MINERALS

There are no metallic ores, but there are quarries from which good stone for building purposes may be obtained.

#### (5) MANUFACTURES.

In 1910 two canning factories, capable of dealing respectively with 600 and 300 sheep daily, were established at San Carlos North and at Goose Green, where 120 men are employed. Formerly, the only sheep killed for mutton were for local consumption or for sale to passing vessels. The surplus stock were boiled down for tallow. In 1913 the production of these canning factories was 5,119 cases, valued at £6,470, and 68 cases of meat extract, valued at £1,700. During the 1913 season about 1,000 head of cattle were canned at the Goose Green factory, this being the first year that cattle were used. Since then only the Goose Green factory has been working. During 1917, 42,000 sheep were canned. The directors propose enlarging the canning factory, and hope to introduce plant for the manufacture of fertilizers, and also a skin-drying apparatus.

### (C) COMMERCE

#### (1) DOMESTIC

##### *(a) Principal Branches of Trade*

The Falkland Islands Company, which has its headquarters at Stanley and an important station in the

"camp" at Darwin, carries on an extensive business in sheep farming and general import trade. This company was founded in 1851 to take over from Mr. Lafone of Montevideo<sup>1</sup> the district in East Falkland now known as Lafonia, the original object being the capture of wild cattle. This was, however, not found profitable, and the company engaged in sheep farming on an extensive scale, not only on their own freehold at Lafonia but also on 97,128 acres purchased from the Government. In 1913 it was stated that they owned about half East Falkland and had about 20,000 sheep. Besides this they engaged in the importation of goods of all kinds and the repair of ships. They have a large business connection with other farmers, and are the bankers of the island and the sole shipping agents in the colony. Their capital is £110,000, entirely paid up, and they have paid very large dividends.

#### (b) *Towns*

*Stanley*, in East Falkland, is the only town. It consists of two or three streets with cross roads extending along the southern shore of Stanley Harbour. Most of the buildings are of wood.

The whole country is divided up into stations, as they are called, each with its settlement, where the shearing is done, the wool shipped, and stores kept, and where the manager lives. The most important of these is Darwin, the Falkland Islands Company settlement on Choiseul Sound, but it has less than 20 houses. At New Island settlement, in the extreme west, a large whaling station has recently been established. The rest of the settlements seldom consist of more than the houses of one farm. Shepherds' houses are scattered all over the "camp."

South Georgia has now several settlements, the chief being the whaling station of Grytviken, in King Edward Cove, Cumberland Bay. It consists of a

<sup>1</sup> See above, p. 17.

number of wooden houses and a church, and is lit by electricity. There are other settlements at Leith Harbour, in Stromness Bay, and at Fortuna Bay.

The only settlement in the South Shetlands is at Deception Island, and this is deserted in winter.

### (2) FOREIGN

The following table shows the value of the imports and exports from 1907 to 1917:—

				Imports.	Exports.
				£	£
1907	..	..	..	73,619	246,435
1908	..	..	..	73,062	189,972
1909	..	..	..	89,862	261,514
1910	..	..	..	94,294	308,930
1911	..	..	..	93,913	471,156
1912	..	..	..	93,264	623,875
1913	..	..	..	239,222	1,460,219
1914	..	..	..	233,379	1,505,464
1915	..	..	..	368,272	1,576,126
1916	..	..	..	591,017	2,053,719
1917	..	..	..	1,256,906	1,870,903

The very high trade return, amounting in 1917 to £3,000,000, though the total population of the Falkland Islands and Dependencies is under 4,000, is worthy of remark. The trade with the United Kingdom alone, exclusive of the goods reconsigned from Brazil or the Argentine, was in 1915 valued at £1,707,191. In 1905 the total trade returns amounted to only £225,605.

#### (a) Exports

The exports consist chiefly of wool, tallow, hides, oil, and guano. The following table shows the value of the articles exported in 1910 and 1913:—

	1910.	1913.
	£	£
Extract of meat .. .. .	—	1,700
Guano .. .. .	—	34,343
Hides .. .. .	963	1,236
Live sheep .. .. .	—	5,229
Seal oil .. .. .	—	9,840
Sealskins .. .. .	170	598
Sheepskins .. .. .	4,138	17,905
Tallow .. .. .	8,439	4,516
Tinned meat .. .. .	—	6,470
Whalebone .. .. .	2,280	11,693
Whale oil .. .. .	120,995	1,206,396
Wool .. .. .	161,666	158,443
Miscellaneous . . . . .	—	1,850

The bulk of the exports before the late war went to the United Kingdom, and in 1915 a proclamation directed that goods should be exported thither exclusively. It will be noticed, however, that in the following table a sum of £93,416 is assigned to countries other than the United Kingdom. The explanation is that certain goods ultimately destined for the United Kingdom were exported *via* Brazil; and an Argentine whaling company received special permission to export their whale oil to Buenos Aires on condition that a certain proportion was re-exported to the United Kingdom and that the remainder should be disposed of within the Argentine.

The countries of destination of exports in 1910, 1913, and 1917 were the following:—

	1910.	1913.	1917.
	£	£	£
United Kingdom ..	232,192	730,994	1,777,487
Argentina .. .. .	—	80,552	—
Chile .. .. .	394	37,700	—
Norway .. .. .	—	414,490	—
Other Countries ..	76,344	196,483	93,416

*(b) Imports*

The principal imports are textiles, groceries, alcohol, hardware, coal, timber, and ships' stores. The following table shows the value of the imports in 1910 and 1913:—

	1910.	1913.
	£	£
Aerated water .. .. .	380	501
Building material .. .. .	3,314	5,623
Coal .. .. .	9,576	58,125
Corn, hay, &c. .. .. .	1,635	2,275
Drugs, &c. .. .. .	1,478	219
Fruit and vegetables .. .. .	878	2,122
Furniture .. .. .	2,521	4,490
Glass and earthenware .. .. .	450	957
Groceries, &c. .. .. .	21,176	31,316
Haberdashery .. .. .	7,847	15,135
Hardware .. .. .	13,147	37,764
Live-stock .. .. .	2,848	4,523
Malt liquor .. .. .	1,022	2,388
Metals and minerals .. .. .	2,381	3,506
Miscellaneous textiles .. .. .	1,628	2,455
Ships' chandlery .. .. .	3,801	8,248
Timber .. .. .	6,073	42,512
Tobacco, cigars, &c. .. .. .	1,262	2,786
Wearing apparel .. .. .	10,106	11,107
Wine and spirits .. .. .	2,271	3,170
Coin and bullion .. .. .	500	—
Total .. .. .	94,294	239,222

The following table shows the countries of origin of imports in 1910, 1913, and 1917:—

	1910.	1913.	1917.
	£	£	£
United Kingdom ... .. .	81,924	152,958	681,603
British Colonies ... .. .	—	4,351	89,088
Argentina ... .. .	192	43,482	—
Chile... .. .	3,949	1,986	—
Uruguay ... .. .	7,093	1,781	—
Other Countries ... .. .	1,136	34,664	486,215

*(c) Customs and Tariffs*

During the late war the export duties were increased as follows to meet increased expenditure:—

- Wool, from 1*d.* to 3*d.* per 20 lb.
- Sheep, from  $\frac{1}{2}$ *d.* each to 3*d.* each.
- Sheepskins, from  $\frac{1}{2}$ *d.* each to 1*d.* each.
- Hides, from 3*d.* each to 6*d.* each.
- Whale oil, from 3*d.* to 3 $\frac{1}{2}$ *d.* per barrel of 40 gallons.

The following new duties were also imposed: meat (canned and preserved), 6*d.* per case of 72 lb.; guano (of all kinds), 1 $\frac{1}{2}$ *d.* per 100 lb. or part thereof.

The chief import duties are on wines and spirits, malt, and tobacco; they amounted in 1913 to £6,199.

**(D) FINANCE***(1) Public Finance*

The chief sources of revenue are the customs, rents of Crown lands, licences, and land sales. Since 1885 the colony has been entirely self-supporting, and there is no public debt. The following table shows the revenue and expenditure from 1907 to 1913:—

—	Revenue.		Expenditure.	
	Ordinary.	Total.	Ordinary.	Total.
	£	£	£	£
1907	17,430	21,765	15,248	17,134
1908	17,775	23,847	15,685	20,369
1909	17,609	27,409	16,386	19,913
1910	18,535	26,580	16,034	18,200
1911	24,207	36,146	17,650	23,407
1912	22,155	34,037	20,872	33,508
1913	32,285	42,929	20,646	25,238

The following are the chief heads of revenue and expenditure for the year ending December 31, 1913:—

				<i>Revenue.</i>	£
Customs, &c.	...	...	...	13,050	
Port and Tonnage dues	...	...	...	856	
Internal Revenue	...	...	...	4,541	
Fees of Court, &c.	...	...	...	1,586	
Interest	...	...	...	6,195	
Post Office	...	...	...	2,692	
Rents	...	...	...	3,229	
Miscellaneous Receipts	...	...	...	136	
Total, Ordinary Revenue				...	32,285
Land Sales	...	...	...	9,822	
Stock Ordinaries	...	...	...	822	
Total, General Revenue				...	<u>£42,929</u>

				<i>Expenditure.</i>	£
Pensions	...	...	...	707	
Governor	...	...	...	1,540	
Colonial Secretary	...	...	...	1,077	
Treasury Customs	...	...	...	1,633	
Credit	...	...	...	23	
Port and Marine	...	...	...	572	
Legal	..	...	...	395	
Police and Prisons	...	...	...	635	
Medical	...	...	...	1,512	
Education	...	...	...	955	
Ecclesiastical	...	...	...	270	
Transport	...	...	...	578	
Miscellaneous	...	...	...	1,018	
Post Office	...	...	...	3,776	
Colonial	...	...	...	2,069	
Savings Bank	...	...	...	1,680	
Currency Note Fund	...	...	...	9	
Drawbacks and Refunds	...	...	...	310	
Public Works (recurrent)	...	...	...	1,887	
Total, Ordinary Expenditure				...	<u>20,646</u>
Public Works (extraordinary)	...	...	...	3,965	
Stock Ordinaries	...	...	...	627	
Total, General Expenditure				...	<u>£25,238</u>

The assets and liabilities of the colony at the close of the years 1913 and 1917 respectively were as follows:—

—	1913.	1917.
	£	£
Assets .. ...	186,647	294,921
Liabilities .. ...	79,449	131,815

### (2) *Currency*

British gold, silver, and bronze are current. There is, however, little gold in circulation. A Government paper currency was established under an Order in Council dated March 7, 1899. Notes may be issued of any of the following denominations: 5s., 10s., £1, £5, and any multiple of £5.

The redemption of currency notes in circulation is a charge on the moneys and securities in the hands of Commissioners and on the general revenue of the colony. The Note Guarantee Fund must have a cash reserve covering not less than half of the value of the notes in circulation. The balance may be invested in approved securities. The total value of the currency notes in circulation at the end of 1917 was £12,000.

### (3) *Banking*

A Government Savings Bank was established in 1888, in which, on September 30, 1916, the deposits amounted to £103,578, belonging to 612 depositors. In East Falkland banking business is carried on by the Falkland Islands Company.

## (E) GENERAL REMARKS

As will be seen from the foregoing account, the Falkland Islands are in a very prosperous condition. The whaling and canning industries are both of compara-

tively recent development, and have added considerably to the prosperity of the islands. The colony has been little affected by the war, as the smallness of the population and the necessity for the retention of those engaged in the wool industry made it impossible for it to assist much in the way of providing men. The large quantities of wool and whale oil sent to the United Kingdom were a more important contribution. The financial position of the colony, the chief exports of which realised record prices, remains favourable.

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### ECONOMIC

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Lawrence A. J. ...  
 Journal of the American Anthropological Association  
 Volume 11, Number 1, 1911  
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KERGUELEN

KERGGELIX

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## I. GEOGRAPHY PHYSICAL AND POLITICAL

### (1) POSITION AND EXTENT

THE French possession of Kerguelen lies in the southern Indian Ocean between  $48^{\circ} 27'$  and  $50^{\circ}$  south latitude and between  $68^{\circ} 25'$  and  $70^{\circ} 35'$  east longitude. It includes one large island (area 1,400 square miles) and many small islets and rocks. The total land area is about 1,700 square miles. The group lies about 2,300 miles from Cape Town and the same distance from Fremantle, in Western Australia. The nearest port is East London, in South Africa, 2,000 miles distant. Kerguelen lies to the south of the route followed by vessels plying between the Cape of Good Hope and Australian ports. The Crozet Islands, also a French possession, are about 720 miles west by north from Kerguelen.

The British Admiralty chart of Kerguelen (No. 2,398) was amended from the surveys made by Captain du Baty in the *Curieuse* in 1914, the results of which are not yet published. Captain du Baty reports numerous changes and additions, including new harbour surveys. In May 1915 the hydrographic service of the French Navy announced that certain German names had been replaced by French ones (see *Avis aux Navigateurs*, May 29, 1915).

### (2) SURFACE, COASTS, AND RIVERS

#### *Surface*

The principal island is about 70 miles in length from north to south, and about 80 miles in breadth from

east to west, but is so much dissected by long narrow fjords running far inland that the distance across from sea to sea is nowhere more than 14 miles. The necks between these fjords are often so narrow that boats can be hauled across at places called *haul-overs*. Kerguelen is mountainous, only about 5 per cent. of the total area being composed of plains at or near sea-level. The main watershed, which lies near the west coast, runs north-west by north and south-east by south. The highest peak is Mount Ross in the south (6,120 ft.). Several others range between 3,000 and 4,000 ft.

The greater part of the island is composed of basaltic rocks, but the only record of volcanic activity since the island was discovered is a report of an unnamed volcano in the south-west, which in 1914 was emitting steam. Hot springs are said to exist.

Permanent snow is found only in the main range, where it forms a small ice-cap, covering perhaps one-sixth of the interior. On the west side of this range several glaciers fall into Thunder Bay, while others end before reaching the sea, and give rise to short turbulent streams. The glaciers on the east side of the range are farther from the coast, the only point at which they reach the sea being in the narrow inlet known as London River. The fragments of ice which break off such glaciers as enter the sea are too small to be called icebergs. The mountains in the east have no glaciers or permanent ice-cap.

The interior is not yet fully explored. Most of the surface is boggy and badly drained, while the rest is bare, rugged, strewn with blocks of basalt, and broken with cliffs and ridges, so that travelling is very arduous. There are many dangerous bog-holes or sink-holes. The soil is formed of decomposed basalt, and would be fertile if it were not for the rigour of the climate.

### *Coasts*

The coasts are generally steep and landing is difficult, except in the sheltered inlets, on account of the heavy swell. The long, deep fjords are a characteristic feature of Kerguelen, especially on the east. They are generally steep-sided, but in some places sandy beaches afford easy access to the interior.

Pack-ice and bergs are rare in the neighbourhood of Kerguelen. Relatively shallow water occurs at some distance from the shores, and there are probably a number of uncharted rocks, particularly off the east coast. The presence of kelp at the surface is often an indication of sunken rocks.

### *Rivers*

Numerous short rivers and small lakes give the island at all seasons a supply of water in excess of any possible requirements. The rivers are of no use for navigation, but their numerous waterfalls, of which one at least is said to be over 2,000 ft. high, afford a considerable source of unused water-power. Most of the waterfalls run throughout the year, and in any case their period of decreased flow owing to frost is short.

### (3) CLIMATE

Kerguelen lies within the belt of westerly gales and is reached by no drying winds, while the Antarctic drift which washes its shores keeps down its temperature. The climate is fairly equable, though cold and boisterous. The mean summer temperature is about 45° F. (7° C.), and the mean winter temperature about 36° F. (2° C.). Temperatures of 65° to 68° F. (18° to 20° C.) may occur at midsummer, and of not less than 18° F. (-8° C.) at midwinter. Ice strong enough to bear a man rarely forms on the most sheltered bays, and the coasts are never blocked by ice.

Westerly and north-westerly winds prevail. Gales are common and in winter almost incessant. The west winds are divided on striking the island, so that on the east side they have a northerly and southerly tendency. Calm, clear weather is rare, and eight successive days of it seem to be a record. It is generally followed by strong northerly winds.

All winds bring rain or snow. Precipitation is heaviest on the western and lightest on the eastern side. Snow may fall in any month, but seldom lies long at sea-level. Fogs are common.

#### (4) SANITARY CONDITIONS

The climate, though unpleasant, is healthy for any one in good physical condition. Scurvy can be avoided by outdoor exercise and the use of fresh food, which is abundant. There are no noxious insects. Information as to health conditions is naturally scanty in an island without permanent inhabitants, and arguments have occasionally been based on particular instances, notably the attack of beri-beri which the German Antarctic Expedition experienced at Kerguelen in 1902. It has been proved that this was due to their rice supplies from the Far East.

#### (5) POPULATION

There has never been any permanent population. In the early years of the nineteenth century whalers and sealers, chiefly American, used to frequent the island during the southern summer. There are traces of old blubber-boiling stations at various places on the east coast. When this industry died, the island was abandoned, except for occasional scientific expeditions, several of which wintered there. The buildings of the German Antarctic Expedition in Observatory Bay are

no doubt still standing. In 1893 the firm of Bossière, of Havre, obtained a fifty years' lease of Kerguelen from the French Government. In 1908 they started sheep-farming, whaling, and sealing, and built a small settlement with a wooden jetty and repair-shops at Port Jeanne d'Arc. This station is probably inhabited only during the summer. Most of the staff are Norwegians.

## II. POLITICAL HISTORY

KERGUELEN was discovered in February 1772 by Joseph de Kerguelen-Trémarec, in command of the French *flûte* (storeship) *La Fortune*. He reached the group of small islands off the west coast which now bear the name of his ship, but could not himself land on the principal island. One of his officers did so, however, near Cape Bourbon, and took possession of it for the King of France. On his return to France, Kerguelen declared that he had discovered a southern continent, and in 1773 he was sent to 'verify and complete his discoveries'. In January 1774 he again took formal possession, in the Baie de l'Oiseau in the north. His explorations were not extensive, but they were sufficient to dispel his belief that he had found a new continent. James Cook visited Kerguelen on his third voyage in 1776 and entered the Baie de l'Oiseau on Christmas Day, whence came its new name of Christmas Harbour. He subsequently examined some of the eastern and southern parts of Kerguelen, and was so unfavourably impressed that he wrote:

The land in question is an island, of no great extent; which from its sterility, I should, with great propriety, call the Island of Desolation, but that I would not rob Monsieur de Kerguelen of the honour of its bearing his name.

The name 'Isle of Desolation' appears, indeed, on the chart of this voyage.

In spite of this character, sealers and whalers, British and American, were attracted to it during the next hundred years. Sir James Ross's Antarctic Expedition,

in the *Erebus* and the *Terror*, visited Kerguelen in the winter of 1840, and remained two months. In 1868 a British firm asked permission to open a coaling station, but the proposal was shelved during the Franco-German War and not revived.

In 1874 H.M.S. *Challenger* explored the eastern side. Since then the most important explorations have been made by the *Gazelle* with the German Transit of Venus Expedition in 1874; by H.M.S. *Volage*; and by the German Antarctic Expedition, which had a meteorological observatory in Observatory Bay in 1901 and 1902 on the site of the Transit of Venus Observatory. In recent years considerable amendments of the charts and additional surveys have been made, notably by Captain du Baty in 1908-9 in the *Jean Charcot* and in 1914 in the *Curieuse*, and in 1909-11 by the Norwegian Commander Theodore Ring in the *Jeanne d'Arc*.

French claims to Kerguelen were re-established in 1893 by the *Eure*, which hoisted the French flag in Christmas Harbour and Gazelle Basin, and placed a depot of provisions and clothing for shipwrecked sailors in the latter. In 1909 it was reported that the contents of this store had been partially destroyed by damp. The sole official act on the part of France since the re-establishment of French claims was the grant of the lease to the firm of Bossière (p. 53). No rent seems to have been charged.

Several French writers have urged that Kerguelen might be used as a penal settlement in place of New Caledonia. They point out that there are no natives or free settlers to disturb, that the climate is suitable for hard work, that sheep-farming and harbour works could be carried on, and that escape is practically impossible.

### III. GENERAL OBSERVATIONS

INTEREST in Kerguelen has grown in France during the last twenty years, as is shown by articles in geographical journals, the Press, and elsewhere, and by schemes to make use of the possession. In 1901 it was reported that Australia had offered to buy Kerguelen. During recent years Germany paid some attention to the island.

Situated almost midway between Australia and South Africa, Kerguelen, in spite of its remoteness, might become dangerous in unfriendly hands and in time of war. Since it is ice-free, well watered, and capable of sustaining human beings and animals, it cannot be ignored.

## IV. ECONOMIC CONDITIONS

### (A) MEANS OF COMMUNICATION

#### PORTS

MANY of the fjords afford excellent sheltered harbours, especially those on the east coast; others, particularly those on the west coast, are dangerous except in northerly winds, and all are often swept by squalls from the surrounding hills. None of the harbours are ever blocked by ice.

Christmas Harbour, which is the best known port of refuge, has good anchorage in sand, but is very liable to dangerous squalls. Cumberland Bay is a safer harbour, but is not sounded. There are several good harbours in Rhodes Bay and Whale Bay. Gazelle Basin is probably the best harbour in Kerguelen. Royal Sound has many good harbours, including Port Jeanne d'Arc, the entrance to which, however, is difficult. On the south coast, Swains Bay is said to afford sheltered anchorage. The west coast bays are less known and are comparatively few in number. Those which are wide and relatively open are safer than those which are apparently very well sheltered by high cliffs, for the latter are particularly subject to violent squalls.

Several harbours might be greatly improved by the removal of rocks and the fixing of mooring buoys. The Kerguelen Whaling Company maintain a light on Murray Island, at the entrance to Royal Sound, when their whalers are at work outside.

## (B) INDUSTRY

## (1) AGRICULTURE

The soil in most parts is very damp, but the conditions could be improved by drainage. It is thought that radishes, beetroot, and many other vegetables which grow in Iceland and the Falkland Islands might equally well be cultivated here, at least on the sheltered eastern side of the island. Oats have also been grown in small quantities, but only experimentally. The conditions appear to be unsuited to agriculture on any considerable scale.

Peat is plentiful but very sodden, and the climatic conditions make it difficult to dry. It has been suggested that, with the power derived from the waterfalls, the peat might be converted into fuel for the sugar refineries of Réunion and Mauritius. Other industries which have been proposed include the extraction of iodides from kelp, a species of coarse seaweed which is abundant on the north and east coasts, and the export of guano.

There appear to be considerable possibilities for the breeding of sheep on Kerguelen Island. The climate and conditions are very similar to those of the Falkland Islands and Patagonia, where sheep-rearing has been introduced with great success. There is a plentiful supply of good water, and abundant pasture is supplied by the *acaena*, a plant which flourishes in many parts of the island and provides excellent nourishment for sheep. The firm of Bossière, of Havre, started sheep-farming, together with whaling and sealing, in 1908. Twenty sheep from Iceland were deposited on the island in October 1908, and passed the winter without shelter or care, finding nourishment in the open. Their wool grew long and thick. No further information is avail-

able as to the success of this experiment, but it was hoped to establish in due course an export of wool and meat. A few pigs thrive at the whaling station. The pastures are wet and often water-logged, but they could be improved by the cutting of drainage channels.

The fact that the island has no permanent inhabitants; and that the few experiments carried out have been restricted to short periods of time, makes it difficult to estimate the possibilities.

## (2) FISHERIES

Kerguelen is one of the last considerable breeding-places of the sea-elephant, which is hunted for its blubber and skin; sea-leopards and other species of the seal are also found in large numbers. The fur seal, which used to be plentiful, is now practically extinct. There are right whales, humpbacks, and finner whales in the surrounding seas; and these shores used to be greatly frequented by whalers, who made marvellous catches, but the stock was reduced by reckless slaughter. Seal-hunting and whaling ceased to be profitable with the ships and methods then employed, and were abandoned for about fifteen years.

By reason of the respite thus gained, the animals multiplied rapidly, and it is alleged that they are again plentiful. Whale-fishing, however, is not nearly so remunerative as it used to be. Marine oils are now less important, on account of the decrease in the use of oil for lighting purposes and the increased use of vegetable and mineral oils; and there was a large decline in the price in the years 1889 to 1900. They are, however, used in the manufacture of jute, for admixture with other oils for lubricating purposes, and for hardening steel.

It is not possible to give any estimate of the value

of these fisheries, as they have only been exploited by occasional vessels of different nationalities. In 1908 a whaling station was established at Port Jeanne d'Arc by the firm of Bossière, but no information is available as to its output. In the same year Captain Daste, on a private expedition with sixteen men, only half of whom were engaged in hunting, killed in two months 2,249 sea-elephants, which yielded 150,000 kilogrammes (147 tons) of oil. As regards whaling, in 1905 the ship *Josephine*, of 385 tons, brought back from her last two cruises 1,800 barrels of oil and 400,000 francs (£16,000) worth of whalebone. In 1909 some Norwegians, who had contracted for part of the island, brought back in their last cruise 1,800 tons of oil, value about 900,000 francs (£36,000).

The French themselves have made very little use of the fisheries of Kerguelen, which have mainly been exploited by other nations. Recently, however, a society has been formed called the *Pêcheries de Kerguelen*, which has sole rights over one-third of the coast of the island. The society is very anxious for the revival of the bounty which used to be given to whalers at the rate of 70 francs per ton of tonnage, up to a maximum of 600 tons. It is evident that, as whalers in those days were simple sailing schooners and are now large and powerful steamers, the maximum should not remain the same if the bounty were restored. The future success of the fisheries undoubtedly depends upon Government encouragement. It would be an advantage to the industry if the customs duty on marine oils coming from the French colonies, which is 4 francs per 100 kilos, as compared with 8 francs on those coming from foreign countries, were abolished altogether.

It has been suggested that an export trade in salt fish might be established.

## (3) MINERALS

Few minerals have been found in Kerguelen, and it is unlikely, owing to the geological formation of the island, that further exploration will reveal more. At several places on the north and east coasts a poor form of lignite has been discovered in seams varying in thickness from a few inches to 4 ft. The best deposits are in Breakwater Bay, Cumberland Bay, and Sandy Cove, at the entrance to Gazelle Basin. An analysis gives 48 per cent. carbon, 35 per cent. volatile matter, and 17 per cent. ash. In another sample the percentage of carbon was only 23, and that of ash as much as 34. A British company in 1877 proposed to begin to mine the coal in Breakwater Bay, but the scheme came to nothing. Though it is unlikely that valuable coal exists in the island, the question deserves careful examination, as the situation of Kerguelen makes it a possible port of call, at which a coal depot would be of importance.

Traces of oil and pitch springs have been reported, but the reports have never been confirmed.

Nickel ore has also been reported. Agates are common.

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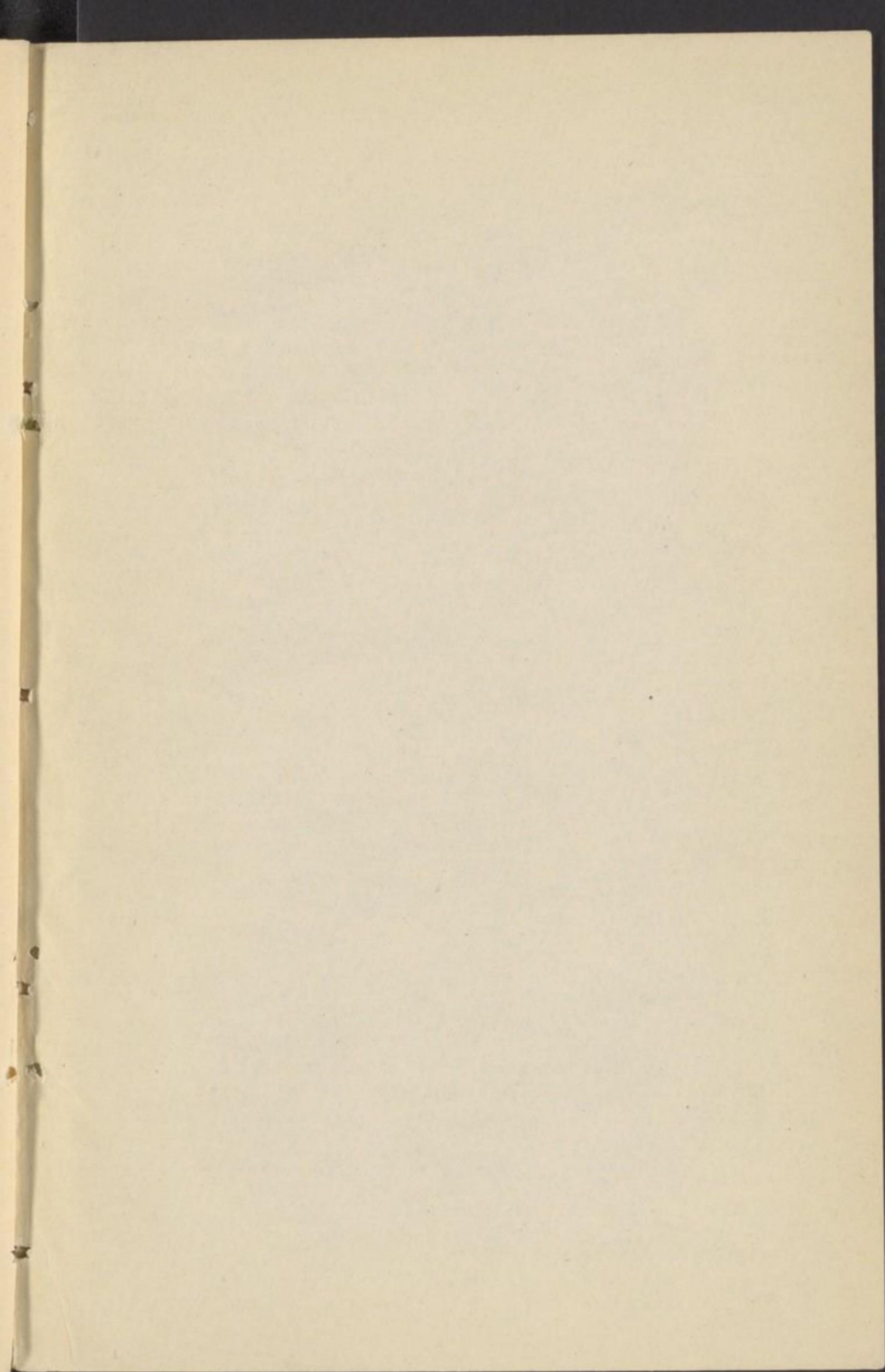
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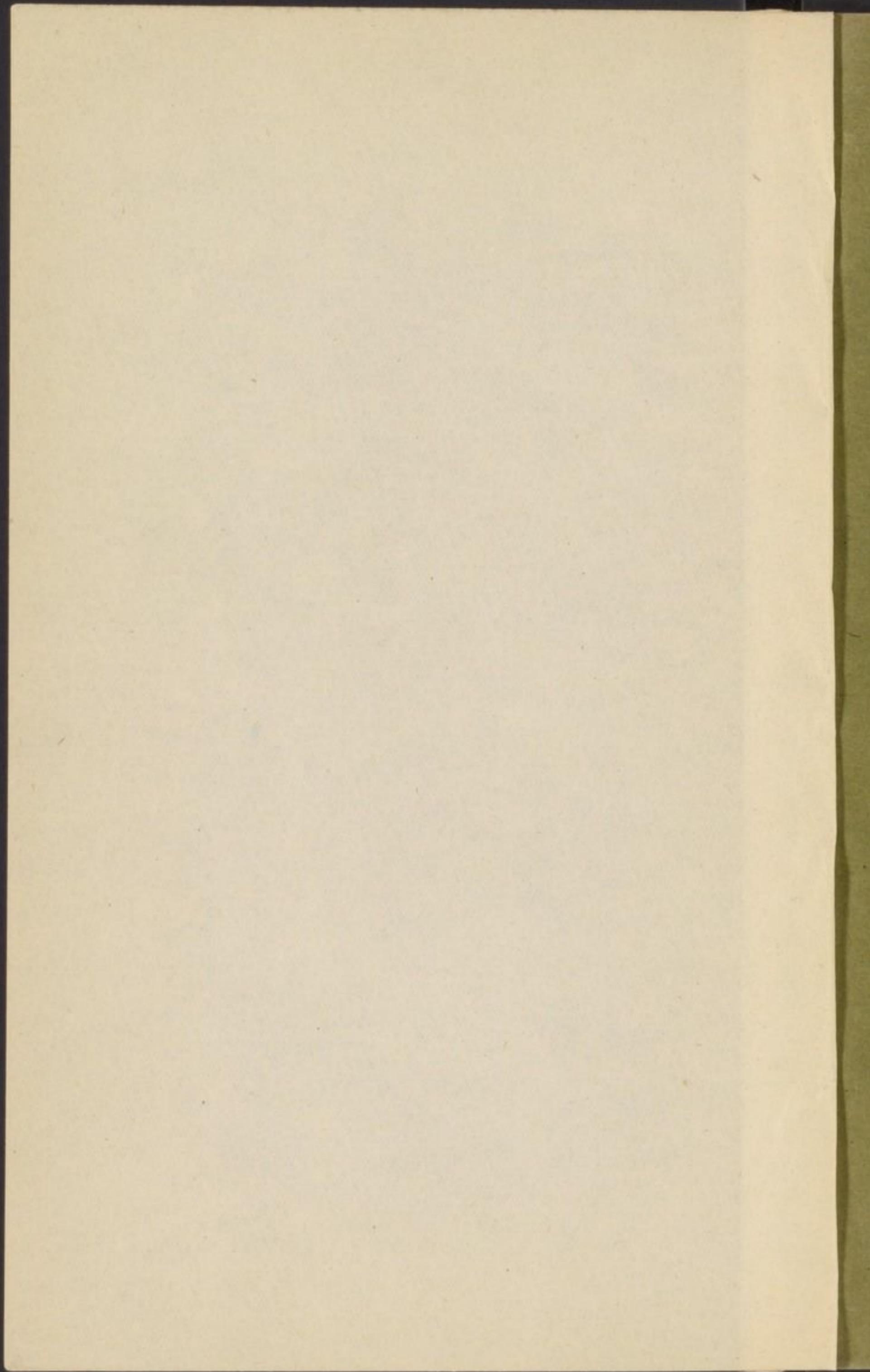
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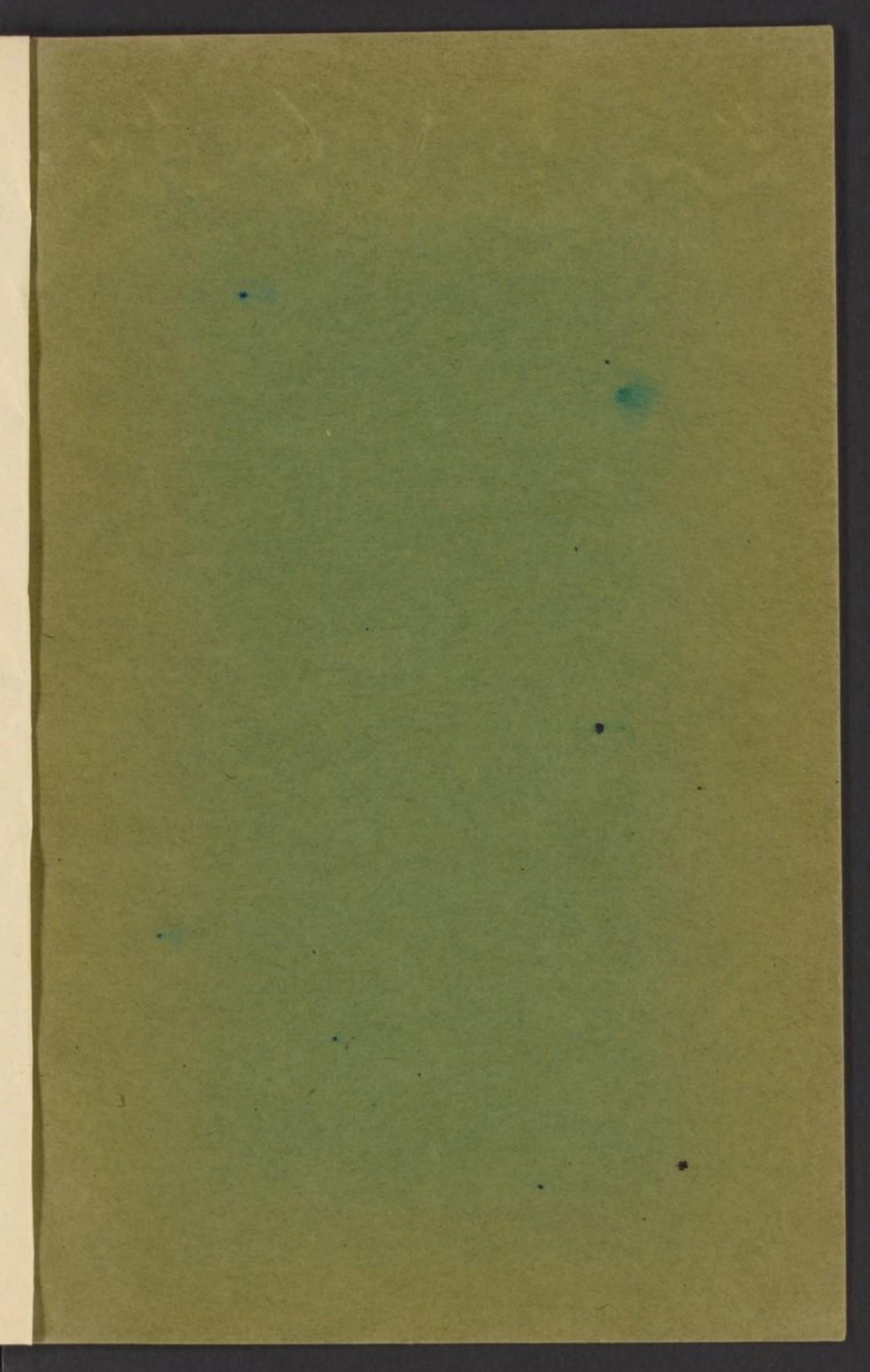
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## MAPS

A map of Kerguelen Island (G.S.G.S., No. 2899), on the scale of 2·2 inches to 10 miles, has been issued by the War Office (December, 1918) in connexion with this series. It is transferred from Admiralty Chart No. 2398.







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