

C.S.

Scientific Base
No. 15/30.

1930

~~1929~~

Mr. J. E. Hamilton

SUBJECT.

1930

3rd Jan.

Previous Paper.

Reports submitted by  
Mr. J. E. Hamilton, Govt. Naturalist.

See 143/27 D 16/31.

MINUTES.

15/30

①

Report from Mr. Hamilton. 3/1/30.

②

~~3/1/30~~

3.

Letter to the Secretary, N.S. &amp; Dep. L.A. of 14/1/30.

④

Letter from Sec. F.D. Sealing Co. 16/1/30

J. E. Submitted. I will bring up  
this matter again on return of

Mr. Hamilton. J.E.H.  
Ag. C.S.  
17.1.30.

Subsequent Paper.

1. H.  
20/1/30.

J.H.  
1930.

First Report on Sealing Investigations  
by Mr. J. E. Hamilton

5-11.

Minute paper Mr. J. E. Hamilton 4/9/30

12-19

Memo to <sup>Mr. J. E. Hamilton.</sup> Government Naturalist. 5/9/30.

20.

PA 8/9/30.

J.E.

Schittkat.

5.9.30.

M  
6/30  
9

Soft Despatch to 107 of 21/10/31

21-2

Ag. for Naturalist.

Please see.

W. H. H.

27.10.30

Hon. Col. Secy:

Thank you, Sir.

Ag. Bennett of Nat.  
28.10.31

M  
30.10.31

C.S.O. No. 15/30

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Inside Minute Paper.

Sheet No. 1

23. D. of D. despatch of 20th November, 1931. No. 130.

24-31 Letter from Mr J E Hamilton 29/1/31

32. Letter to J. E. Hamilton Esq. 6/1/32.

33. Despatch to D. of D. No. 11 of 6th January, 1932.

P. Apr  
9, 1, 32.

Hon. Col. Sec.

During my visit to the Volunteer Rocks on the 31<sup>st</sup> of December I found two female Elephant Seal of breeding age. These are, I believe, the first definitely recorded in the Colony, at least of late years.

2/ I have for some time entertained the hope that the Elephant Seal may breed in the Falklands and the presence of these two animals on Volunteer Rocks lends support to the hope.

3/ Having regard to the difficulty of distinguishing females from young males I would suggest that a letter may be addressed to the Falkland Islands Sealing Company impressing on them the extreme importance of taking particular pains to avoid killing female Elephant Seals or interfering with them.  
~~if it is possible to do so~~

4/ If the Elephant Seal breed in the Colony they may, with due care, eventually become a permanent and important

factor in the Sealing Industry.

The history of the species  
in South Georgia illustrates  
my thesis.

J. E. Hamilton

3/1/30

Hon. Col. Sec.

On the 31<sup>st</sup> December 1929  
Mr. A. G. Bennett and I visited  
The Volunteer Rocks and inspected  
the Fur Seal Rookery there.

A count of the pups showed  
an increase from 50 in 1923 to  
70 this season, namely 40%.

According to the method which  
I used in my report of 1923  
this gives a total herd on  
the Volunteers of 270 seals  
and if the same rate of  
increase has been maintained  
on the Elephant parson Rookery  
the numbers there will be  
2162 as against 1544 in 1923

J. R. Hamilton.

A. G. Bennett,  
Asst. Nat.

3/1/30

15/30.

14th January, 30.

Sir,

I am directed by the Governor to attach for your information a copy of a Minute written by Mr. J. E. Hamilton on the subject of elephant seal in the Falkland Islands and to draw your attention in particular to paragraph 3 thereof.

2. I am to request that you will submit a report showing the number of seals taken in the various localities.

I am,

Sir,

Your obedient servant,

*Edw. Brown*

Acting Colonial Secretary.

The Secretary,  
The Falkland Islands & Dependencies  
Sealing Company, Limited,  
STANLEY.

# KELVIN STORE,

PORT STANLEY.

16th January 1930

( The Falkland & Dependencies Sealing Co., Ltd.  
----- )

The Hon,  
The Colonial Secretary,  
Stanley.



Sir,

I beg to acknowledge receipt of your letter No. 15/30 of 14th January date, and to inform you that a copy of the letter will be forwarded to the Manager of Sealing Company, together with a letter from the Directors informing him that the instructions contained in your letter are to be carried out under strict supervision.

The report will be forwarded as soon as received in from the Station and is expected at an early date,

I am,

Sir,

yours obediently,

*B.R. Watson*

Secretary Sealing Co., Ltd.

## FIRST REPORT ON SEALING INVESTIGATIONS.

In accordance with the instructions of the Director of Research I sailed from Liverpool in the motor vessel Laguna on the 6th. of November 1929 and after a protracted passage arrived at Stanley, Falkland Islands, on the 16th. of December.

I immediately began to make preparations for travelling to Cape Dolphin in order to begin work on the Sea Lion rookery there. This entailed the finding and hiring of a suitable man, the purchase of three horses and saddlery and the making of a large pair of saddle-bags in which to pack the equipment. The work was much delayed by the holidays of Christmas week during which it is almost impossible to get anything at all done in Stanley.

During this time I began to hear accounts of the activities of the local sealing company and was two or three times asked for my opinion officially, particularly in connection with the Fur Seal. It being my opinion that work on the Sea Lion was not only the most urgent but would also be the most productive, I was unwilling to expend the time necessary to visit the more distant rookeries of the Fur Seal.

I therefore decided to inspect the rookery on the Volunteer Rocks, which I believed would provide a useful index to the condition of the herd as a whole. Such an inspection only occupies one day if the weather is favourable.

I also received reports as to the number of Elephant Seal occurring (and being killed) in the islands, but there was no information as to the presence of ~~some~~

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females among them. It was my opinion that the proved existence of cows might be of importance in dealing with any question which may arise in connection with the control of sealing in the Falkland Islands, since the lines along which it is <sup>(? conducted - 1941)</sup> constructed must depend in part on whether the Elephant Seal breeds here or not.

For these reasons therefore, I hired Fleurus for two days. On the first day, December 30th. 1929, I visited Boat Point, near Fitzroy, which is reputed to be a favourite hauling ground for Elephant Seal. No conclusive evidence was obtained, although I found one flensed carcase which was probably that of a cow; it was unfortunately too decomposed to allow of a detailed examination. Three living Elephant Seal were seen, two being males and one probably a female.

Next day, the 31st. December, I proceeded to the Volunteer Rocks and found a reasonably good landing although some care had to be exercised on account of a rather heavy swell from the NE.

With the assistance of Mr. A. G. Bennett I counted the pups on this rookery twice over and found that the number had increased from 50 (1923) to 70, indicating an enlargement of 40% in the herd there.

Calculations made on this basis give the total number of seal on the Volunteer Rocks, Elephant Jason and Bird Island rookeries as 3132. I returned to Stanley the same evening.

On the 5th. of January 1930 I left Stanley for Cape Dolphin where I arrived on Friday the 10th in time to begin work on the seal the same day, after selecting a camping ground and pitching the tent. The camping site chosen lies in a small valley opening to the South and is on the banks of a small and sluggish stream which

that time contained a good supply of water. As time went on the stream sank lower and lower and finally became a string of detached stagnant pools, many of them frequented by Upland Geese of which there are great numbers on that ground. This is the furthest available water supply on Cape Dolphin and is about 1½ miles from the extremity of the peninsula. The camp was only about five minutes walk from the south end of the seal rookery.

Breeding was at its height or possibly just past it when I began operations and I continued my work at Cape Dolphin until it was clear that the breeding season was over.

My objects were to gain information as to the breeding habits and general behaviour of the Sea Lion and to make a census of the herd on Cape Dolphin.

The rookeries are distributed over about five miles of rough bouldery beaches and rock strewn ledges at the base of cliffs which may have a height of anything up to 150 feet. The cliffs are interspersed in places with steep clay banks and much of the ground is very dusty in dry weather so that the seal often suffer from catarrh and coughs. It is possible to climb about on most of the cliffs so that very few seal escaped notice. Counting was carried out from positions as near the rookeries as possible; field glasses were much used in this work, particularly on the pups.

A count of the entire breeding herd was made combined with repeated counts, on ~~XXXXXXXXXX~~ ~~XXXXXX~~ different days, of a chosen and well defined rookery, the latter counts having the purpose of testing the value of a single count made at the proper season, that is to say, before the harems break up. The variation was roughly 6 %.

When

When the harems had broken up a count of pups was begun and repeated over a chosen length of beach until the young animals became so active that it was no longer possible to count them. In all six counts of pups were made over a stretch of beach with a population of 1596 breeding seal. The average count of pups was 1228, with an error of just under 13%. It is unlikely that greater accuracy could be obtained by a single observer: a band of helpers would be necessary if the pups were to be driven into pods and counted.

As opportunity offered notes of the relative numbers of harem and idle bulls were made and the two hauling grounds of unattached bulls and immature seal were visited from time to time. The figures obtained by counting pups and idle bulls were applied to the count of the whole herd, with the result set out in the following table.

I do not regard the figures for idle bulls and immature seal as quite final; it seems possible that subsequent investigations may necessitate a revision.

The number of immature seal is almost certainly too low since these stages are not confined to the land during the breeding season, nor are they all likely to come ashore at one time. There was a comparatively small number of unattached bulls which have been included in the idle bulls.

Harem bulls-----	728
Idle bulls-----	736
Immature seal----	1,000
Cows-----	4,685
Pups-----	4,165
	<u>11,314</u>

It is possible that bulls which were just short of maturity have been uncluded in the idle bulls: the

distinguishing characteristics of this stage are not yet clear in my mind.

The excess of cows over pups may be due to pups having died, or not having been born at the time of the census, or to the cows having been virgins; I have not so far, succeeded in identifying the virgin cows. The death rate of pups in a rookery of known size was about 6%.

After the complete break up of the harems I returned to Stanley with intention of beginning the collection of the series of skulls which is necessary for working out the age stages of the Sea Lion. I arranged with the local Government for the use of the launch Penguin for operations on an island in Port William which is much favoured by the seal. The launch was on the slip when I came back from Cape Dolphin (18th of February) and after she was launched there was a long period of bad weather. It was the 25th. of March before I was able to effect a landing and the seal had almost all gone to sea by that time; only five were seen and two shot. There was an overcast sky and a Southerly wind of force 6 when I departed and conditions became steadily worse, the wind being about force 10 during the return trip.

I have since been informed that the seal will probably not return to that island until near the end of April, when I intend to revisit the island. I also intend to proceed shortly to one of the neighbouring ~~far~~ farms where, I understand seal may be secured.

During my stay on Cape Dolphin I took a number of photographs and made about 46 drawings and water colour sketches of the seal, the latter to illustrate the remarkable colour variation in the adults. I have enlarged all the line drawings with the pantagraph and have

begun a series of finished colour drawings based on my sketches.

A few bird skins specially asked for by the British Museum have also been collected.

Note on a servant hired to assist in the sealing research.

I had some difficulty in finding a man suitable for my purposes in Stanley, employment being at its best in summer in the Falkland Islands. Wages were higher than I expected. I finally hired an experienced man of reliable character for £10 per month, and all four which I am informed is a reasonable rate for short period engagements. In camp the cost of providing food was estimated to be 10/- per week since our fare was very simple. After returning to Stanley I was compelled to retain the services of the man (James Goodwin) since I daily hoped to ~~have~~ have a large number of seal heads to clean, and it was necessary to feed the horses. In Stanley it was necessary to make a weekly allowance of £1 to Goodwin in lieu of food. Goodwin's period of employment with me terminated on the 31st of March and I have since then hired a man to look after the horses at 30/- per week since it is only a part-time work

#### Horses.

Horses are much more plentiful in the islands than they were six or eight years ago. I was offered eight in all and purchased three at a total cost of £55.

One of them, a mare, did not prove suitable as a pack horse, I therefore arranged an exchange with Mr. J. G. Felton and secured an animal which was experienced in this kind of work and has been entirely satisfactory.

I should like to add that I received every assistance and hospitality from the managers of the three farms with whom I was in contact, namely Messrs J.G.Felton(Teal Inlet),R.Greenshields(Douglas Station) and Chr.Andreassen(San Carlos North). To all of whom my thanks are due. Cape Dolphin is on Mr Andreassen's farm.

A list of stores received or purchased locally has been prepared, with statements of expenditures.

It was necessary to purchase a wooden saddle for the pack horse, and of course bridles &c for all three. One complete set has been purchased by me privately so that the list for the most part shows gear for only two horses.

*J.E. Hamilton*  
(J.E.Hamilton)

Stanley.F.I.

5th. April 1930.

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SECOND REPORT ON SEALING INVESTIGATIONS IN THE  
FALKLAND ISLANDS. 1930.

As stated in my first report my visit to the Tussock Islands was unproductive and from information collected it did not seem probable that any progress could be made in the collection of Sea Lion skulls before May since the majority of the seal are stated ~~to~~ not to return to the land until then.

I therefore decided to revisit the well known hauling ground for Elephant Seal at West Point near Fitzroy (Mr. F. J. Langdon, Messenger). I heard that s.s. Afterglow was about to visit this place and postponed my examination until after she had been there in order to find out what classes of seal were being killed. In addition I wished to pursue my investigations relative to the occurrence of breeding females in the islands and in general to increase my knowledge of the species.

Accordingly I rode to Fitzroy on the 11th. of April and was taken over to the south side of Port Pleasant on the 14th. in the station motor boat. A walk of 12 miles resulted in the finding of 16 of the seal killed as well 8 living animals (The Afterglow's crew had killed over 30 seal.)

Of the dead seal 15 were males varying from 7'3" to 15'2" in length and the remaining animal was a female of 7'8" containing a small foetus. It was clear that killing had been indiscriminate, as I reported to the Colonial Secretary on my return to Stanley: immediate steps were taken to enforce the restriction of killing to full grown male. Measurements of three of the living animals were taken with as great accuracy as the movements of the seal allowed. Two were 13'6" and the third 13'8" in length.

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My three horses were attacked by colic at Fiteray and which ~~actually~~ delayed me two or three days, but on the 17th. of April I was able to go to Bluff Cove, on the invitation of Mr. W. Morrison, the owner, who thought that I might be able to collect some seal from East Island by using his motor boat. A spell of rough and snowy weather set in on the 18th. and on the 20th. Mr Morrison told me that he would have to go to Douglas Station on urgent affairs connected with the winding up of his father's estate. I had therefore to abandon the projected visit to East Island.

Since I <sup>already</sup> had some conversation with Mr. Greenshield of Douglas Station with reference to collecting seal on his islands in Salvador Waters, I decided to accompany Mr. Morris in order to make final arrangements. The weather having improved somewhat, we proceeded to Douglas Station on the 21st. and 22nd. by a rough route through the Wickham Heights which were more or less snow covered. I stayed at Douglas Station until the 28th. when I returned to Stanley, having arranged with Mr. Greenshields and Mr. J. G. Felton <sup>of Teal Inlet</sup> to visit their respective islands at an early date.

I left Stanley again on the 14th. of May and arrived at Teal Inlet on the same day. Mr. Felton took me to High Island on the 16th. and there I remained for five days.

High Island is about a mile in length and half a mile wide, being perhaps 250 feet high. It is covered with grass and meadowland vegetation except on the West and South sides where there is a heavy belt of tussock in parts of which the seal come up.

This island is a well known breeding place for seal but is apparently entirely forsaken in winter although seal could be heard bellowing on Green Island, only three

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three miles away and were frequently seen swimming round High island itself, but only one landed on the beach.

This was a cow which came up bellowing as if for her pup but put to sea again before I came within reasonable range.

From the beaten appearance of the ground and the flattening of the tussock bogs it was easy to see where the seal had, not long before, been in the habit of lying but it was clear that none had been up very recently.

I am unable to offer any explanation of this migration, absence of food can hardly suffice since fish could be caught almost continuously from the little beach where I landed.

There was a large number of bones of seal killed in the past and a few of more recent date, one skull was collected.

There is a corrugated iron hut on the island and I brought food with me, while firewood, peat and some rugs and sheepskins were kindly provided by Mr Felton. The weather was moderately fine with mainly northerly winds but it was usually unpleasantly cold at nights.

On the 21st. of May Mr. Felton's motor boat took me back to Teal Inlet. Next day was extremely rough and wet but on the 23rd I was able to ride over to Douglas Station.

Mr. Greenshields told me that he could not let me use his motor boat for about a fortnight since it had to be employed in station work in case frost set in. The steamer jetty is about three miles down a winding creek from the settlement and all heavy goods are hoisted up. The creek is closed if the frost is at all severe.

In actual fact frost set in about the end of May and continued until the beginning of August, with a few short intervals, accompanied by a good deal of snow, and the creek at Douglas Station was frozen over almost as soon as Mr. Greenshields' work was finished.

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The motor boat was available on the 9th. of June when I sailed for Green Island. This island is about the same size as High Island but has rather more tussock in proportion.

Since there is no hut on it I lived in the motor boat which has accommodation of a sort.

On the first day 9 seal were killed, on the second <sup>4</sup>2, on the third 3 and on the fourth 3: these were all cows and pups, only one large male was seen but he escaped. The seal were becoming scared by the fourth day (the 12th of June), I therefore decided to go to Bob's Island where we arrived about 3p.m. on the same day. A landing was made at once and 5 seal killed before it became too dark to shoot.

I wished to continue work on this island but was weather bound on board the boat next day and on the morning of the 14th. the skipper informed me that fuel was running short so that it was necessary to return to Douglas Station.

The total bag on this cruise was 22 seal killed and one skull taken from a skeleton found on Bob's Island.

Cleaning the heads by cutting off the meat occupied the next few days, the work being rather hampered by the severe frost which froze the specimens nearly solid and made the work of washing out the brain distinctly unpleasant. Mr. <sup>9</sup> ~~unshield~~ <sup>kindly</sup> allowed me the use of a shed on the shores of the creek, which provided shelter from the wind.

When the skulls had been allowed to dry for three days they were packed for transport to Stanley in s.s. Falkland which was expected in Salvador waters about that time.

These operations ended on the 22nd of June and on the 23<sup>rd</sup> I went to San Salvador Station (Messrs. Pitaluga). This farm is not on the telephone but from what I know of Mr. Donald Pitaluga, the senior partner, I considered it likely that he would be willing to help me.

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Mr. Pitaluga gave me the use of his schooner "Paloma" for the work and on the 25th. of June I sailed in her for Shag Island, a well known seal haunt. The wind was favourable but very light so that we were unable to get through the entrance of Salvador Waters before the tide, which is very strong there, turned and forced us back. The schooner was towed into a handy anchorage by the dinghy and I walked back to the station, returning next morning to the "Paloma" which a stronger SW wind took down to Shag Island in good time.

This island is almost entirely covered with tussac and is a breeding ground as well as a hauling ground for seal.

A landing was easily made but movement on the island was <sup>difficult</sup> owing to the rough and steep ground being frozen hard. Since the surface is naturally wet in winter it was at times almost impossible to stand.

17 seal were killed but the wind was strengthening so that the "Paloma" could not safely lie where she was. I walked round most of the island and collected three more seal before being picked up. A few Elephant Seal were seen.

The run back to the station was fast but very rough at times owing to the heavy tide running against the strong wind.

The next few days were spent in cleaning the heads and on the 29th Mr. Pitaluga told me that the "Paloma" was going to Bar Island for tussac, I therefore went with her.

There were far fewer seal on this island, which contains a number of cattle and I was only able to collect 4 seal.

When these heads had been cleaned and were fairly dry I packed them for shipment, and leaving them in Mr. Pitaluga's care I left for Stanley on the 5th of July.

S.S. Falkland entered Salvador Waters on that day but did not arrive in Stanley until after I did owing to engine trouble.

I was delayed at Douglas Station by a short and sudden

13  
6

sudden thaw which lasted about three days and flooded all the streams. Since it was not necessary to arrive in Stanley before the "Falkland" I travelled slowly in order to spare the horses as much as possible in the inclement weather.

I arrived in Stanley on the 12th of July and the "Falkland" came in on the 16th. On the 17th I began to boil the skulls, having been given the use of a copper for this purpose by the courtesy of Mr. E. G. Rowe. This operation was completed on the 23rd, and I am at present engaged in superintending the drying of the skulls by artificial heat, a step which is a necessary preliminary to detailed examination of the specimens.

Notes were taken of each seal killed, and although in very many the stomach was empty some information was collected as to the food of the species. With the exception of a single specimen all the cows killed were pregnant and all were in milk. Some of the pups had milk in the stomach so that it appears that the Sea Lion suckles the young for about six months. The pups feed also on miscellaneous animals while the food of the older seal is composed largely if not entirely of squids at this time of the year.

In the course of this report I have had to refer to the adverse influence of the weather conditions and would add that this winter has been one of the most exceptional severity, having been ~~making~~ the worst for a great number of years.

As soon as conditions permit I propose to proceed to the North East part of this island in order to make a preliminary survey of the coast there, In October I I propose to make use of s.s. Fleurus for about ten days in a search for breeding places of the Elephant Seal in this group. Thereafter it is my intention to attempt a census of the Sea Lion herd of the East Falkland, and if possible to visit the Fur Seal Rookery on Volunteer Rocks after Christmas. It seems likely that the census will be finished about the end of January, and if this occurs I propose to visit West Falkland in February as a preliminary to work there which might be undertaken in the summer 1931-32

*J. R. Hamilton.*  
*August 1920*

Hon. Col. Sec.

With reference to our  
recent conversation, I  
beg to submit copies  
of my first and second  
Reports on dealing  
Investigations.

J. H. Hamilton.

12 Sept '30.

No. 15/30.

(It is requested that, in any reference to this minute the above Number and the date may be quoted).

MINUTE.

5th September, 19 30.

*From*

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

To J.E. Hamilton, Esq., M.A.S.,  
F.Z.S.

Stanley.

I am directed by the Governor to acknowledge the receipt of copies of your first and second reports on your sealing investigations in the Falkland Islands, dated 5th April and - August, 1930, respectively, for which I am to thank you.

Colonial Secretary.

### THIRD REPORT ON THE SEALS OF THE FALKLAND ISLANDS

Journey to the N.E. coast of East Falkland  
13th to 26th September 1930

On the 13th of September I left Stanley for the North East coast of East Falkland with the intention of making a topographical survey as a preliminary to statistical work there when the breeding season begins.

Operations were carried out on the following farms:- Johnson Harbour (Mr.R.Smith, manager), Port Louis (Mr.J.Robson) and Rincon Grande (Mr.Arthur Pitaluga). In every case the managers were entirely agreeable to my working on their land and helped in all possible ways.

2. There are three small, unoccupied houses, or shanties, on this coast, namely Volunteer Shanty, Lockhead House and Seal Bay House and I arranged to use these during the survey, having decided from an examination of the map that sections of coast of convenient length could be worked from one or other of them, or in transit between. The sections, numbered I to VI, are shown on the attached sketch map.
3. When actually engaged on the survey I rode to the beginning of a section and thence travelled slowly along the coast to the end of it. Almost all the work was done on foot while my servant took the horses along, keeping touch with me as he did so. In this way from three to seven miles of coast were examined daily and the places which appeared to be suitable for breeding seal marked on the map, while possible camping grounds were recorded and general field notes kept.
4. On the first night, 13th September, I had to stay at

Long Island House since an important ford was barred by the tide until a comparatively late hour. Next day I went on to Port Louis and on that following to Johnson Harbour.

I bought a few stores from Mr. Smith and he kindly sent one of his men with me to the most easterly of the three huts, Volunteer Shanty, which is about five miles from Volunteer Point. This is a one-roomed house without a horse paddock <sup>ad</sup> so that the horses had to be kept in the adjacent sheep pens. Two nights were spent here.

5. On the 17th I rode to Volunteer Point itself and worked back along the coast, a distance of 5 miles. Empty saddlebags and sacks were taken and my servant was able to fill them with tussac grass sufficient to provide two feeds for the horses.

28 Elephant Seal were seen, mostly immature males. No adult males were seen.

Next day I transferred to Lochhead House, examining the next seven miles of coast en route. Lochhead House is two or three miles inland at the head of a large lake, and is a shepherd's house of the old type containing one very large room with a loft above. There is a horse paddock at this place.

6. On the 19th I attempted to find a route overland to Macbride Head, the end of section III, but overshot it by about three miles. Most of the ground inland is very soft and swampy so that the horses had to be led a great deal. The distance from Lochhead House to Macbride Head in a straight line is two miles less than that along the coast, but the latter is preferable on account of its hardness, although it is greatly cut up by burrows of the Jackass penguin. I followed the coast on the way back to Lochhead House, making the usual observations.

On the 20th it was blowing so hard that I considered it

Inadvisable to approach the cliffs, but on the 21st the wind had abated and I left Lochhead for the next house, which lies in a small valley opening into Seal Bay. During the day I examined the coast in detail, although it had been gone over on the 19th, and counted the seal on the rookery at Macbride Head. About ten miles were covered by this day's work.

Next morning I left the horses with my servant at Seal Bay and walked over the next section, no. V, three miles, returning to Seal Bay the same evening.

7. I completed the survey on the 23rd of September by riding to the end of section V and examining the coast between that place and Hut Point at the entrance to Salvador Waters.

Having finished, I rode directly to Rincon Grande settlement: it is known that the seal do not resort to the coast inside the entrance of Salvador Waters.

I spent two days at Rincon Grande in order to rest the horses before returning to Stanley, which I did on the 26th, the journey occupying about eight hours. In all over thirty miles of coast line were examined and fifteen camping grounds found.

8. There is considerable variation in the character of this coast; much of it is composed of cliff, with occasional beaches which are usually so exposed as to be entirely unsuitable for seal. At certain places, however, the type of beach ~~preferred~~ favoured by the seal was observed and its position marked on the map. Characteristic of such places are the presence of a pebbly beach, or flat rocks, to seaward of which <sup>was</sup> are protective reefs and kelp beds. It ~~was~~ noticeable at Cape Dolphin that unprotected beach was never occupied by the breeding seal.

I saw there also that a strong on-shore wind with a

high tide compelled the rookeries to move up the beach as far as they could, and yet, in spite of the natural breakwaters, the seal were more or less awash in the surf at the top of the run of the larger waves. The unprotected parts of the beach would clearly be uninhabitable, since the pups would be washed away and drowned.

9. Except for occasional individuals no Sea Lions were seen except at Macbride Head where there are two large beaches on which the rockery is situated. On one beach the herd was almost entirely composed of males of various ages and the other was inhabited by cows and their pups, now almost yearlings, together with a few immature males and some adults.

There appeared to be some faint indications of harem formation but the characteristics of the breeding season were not displayed by either sex. Perhaps the most interesting observation was that of cows still suckling last season's pups, which would be about nine months old.

10. I observed a number of cows which were probably the virgins which I had been unable to recognise previously. They were smaller than the adults and not in pup as the larger cows obviously were. I have formed the tentative opinion that the cows are two years old before they are sexually mature.

The seal on what may be termed the bachelors' beach numbered 253 on the 21st of September, but I incline to believe that more were present on the 19th. On the cows' beach 452 were counted, bringing the total to 705. Since a few seal were concealed by the overhang of the cliffs and a number were seen in the water, it is reasonable to assume that 750 seal were present at Macbride Head on the 21st September, 1930.

34 Elephant Seal were seen on the coast between Volunteer

Point and Hut Point: only one of them was an adult male.

6 Leopard Seal were found, one of them at Long Island, on Berkeley Sound: there were two males and one female (immature).

#### SUPPLIES.

- II. I was using two horses only and therefore cut down stores as low as possible in order to save weight. It is customary to keep odds and ends of provisions such as coffee and sugar in the shanties, and I was kindly invited to use them, although I did so as little as possible. I was able to take some bread with me from Johnson Harbour where I also procured groceries and meat as well.

Mr. R. Smith in person kindly renewed the stock of bread while I was at Lochhead House and also brought me a substantial supply of meat.

Upland geese are abundant on this coast and are a useful source of food supply.

#### HORSES.

12. The horses were in fair but not first class condition when I left Stanley but had fallen off somewhat on my return. The grazing in camp had not recovered from the damage caused by the prolonged frost.

13. Note on the attached map.

This map is enlarged, by means of a pantograph, to three times the scale of the Admiralty chart from which it is taken (no. 1354B).

It is not accurate as regards small details of the coast line and the lengths stated are rather too short since it is not possible, when measuring, to follow the minor curves of the coast.

## 2. SUMMARY OF RESULTS OBTAINED FROM EXAMINATION OF THE SKULLS OF *Otaria jubata* COLLECTED UP TO AUGUST 1930

When the collection of skulls was completely dry <sup>♂</sup> each specimen was examined and all loose teeth and bones glued into place. There is a tendency for the skull, except in the oldest animals, to fall to pieces, since the ossification of the sutures in this, as in most other species of seal, is not complete until several years after birth.

Its appropriate number was painted on each skull and jaw bone as a precaution against breakage of the bone label. The entire series was measured and observations made on the development, ossification and dentition of each specimen.

From this research it appears that the Sea Lion male is six years old when he becomes adult.

The following is a table of results:-

MALES		Average Total length inches	Average skull length millimetres
1st year (Pups)	10 specimens	47	197
2nd year -----	5 specimens	54	227
3rd year -----	6 specimens	58	258
4th year -----	5 specimens	68	269
5th year -----	5 specimens	83	306
6th year & over-	7 specimens	93	328.5

The canine teeth form a useful guide to age. They appear after the rest of the permanent dentition and show marked differences in condition at different ages, as is shown by the following comparison of lower jaw teeth:



## 3. SUGGESTIONS REGARDING WORK IN THE SUMMER 1930-31.

On page 7 of my 2nd Report I outlined a proposed programme of work for the season.

As will appear from section 1 of this report I have executed the project of surveying the North East coast of East Falkland.

S.S. Fleurus has been in South Georgia ever since the beginning of October and has therefore not been available for search for breeding Elephant Seal.

2. The vessel is, however, due to make a rapid trip to West Falkland about the third week of November, when I propose to travel in her, since I am informed by the Colonial Secretary that the Local Government is agreeable to her diversion for a day in order to search for Elephant Seal in the islands at the south end of Falkland Sound where it is at least conceivable that breeding seal may be found. The cost of this day's work only would be borne by the Research Fund.

3. In the beginning of November I propose going to Diamond Cove (Johnson's Harbour) to encamp beside a rookery which is known to organise itself for breeding early in the season, but I shall return to Stanley to join S.S. Fleurus as stated.

Thereafter it is my intention to return to Camp and track my way round the North Coast to Port San Carlos.

4. With reference to the telegram from the Director of Research dated 19th October, 1930, I interviewed the Colonial Secretary who told me that S.S. Fleurus would be going to West Falkland about the 10th December and returning to Stanley about the 20th. He suggested further that this would be a good opportunity to inspect the Elephant Jason and Bird Island rookeries, since this trip will take place during the breeding

season of the Fur Seal, and I agree with his view.

5. He also informed me that the cost would be divided proportionately between the Colonial Government, the Research Fund, and the Ship. It seems not unlikely that the charge on the Fund would be about a third of the total cost of the trip. Additional expense would however be incurred if it were necessary to wait on account of unfavourable weather before going to Elephant Jason, which is not always accessible for close inspection or landing. It might of course be possible to visit Volunteer Rocks during this tour, but if not, such a trip can be arranged within a few hours when a suitable day occurs while S.S. Fleurus is in Stanley.

6. I hope to have completed the census of Sea Lions in the north of East Falkland by the New Year.

With reference to January, it fortunately happened that Mr. J. Clarke, Manager of Speedwell Island Farm, paid one of his rare visits to Stanley about a fortnight ago. I interviewed him and he expressed the greatest willingness to take me to the numerous islands in the Falkland Sound which constitute his Farm, stating further that January would be entirely suitable for him.

7. Sea Lions are known to occur on the Kelp, Motley, Trieste (Elephant) and Sea Lion Islands. These places are difficult of access without hiring a vessel for the purpose and this would be costly. I have no really precise information but that the number of seal on these Islands is not large - therefore I suggest that no special steps need be taken for the present but that they be examined if a convenient opportunity presents itself.

3. In February, as I have stated, I suggest that a tour in West Falkland might prove very profitable as a preliminary to detailed work during the season 1931/1932 by the end of which

there seems to be a reasonable hope that this research on  
the Seals of the Falkland Islands will be tolerably complete.

J. E. HAMILTON,  
31.X.50

4th Report on SEAL INVESTIGATIONS in the FALKLAND ISLANDS  
NOVEMBER, 1930 to MARCH, 1931

In order to continue the research on Sea Lions as proposed in para 3 of the suggestions with regard to work during this season (attached to my 3rd Report), I left Stanley on the 3rd of November, 1930 for Diamond Cove in Johnson Harbour Camp, and eventually encamped about a mile and a half to the eastward of Diamond Cove proper.

From the 4th to the 12th of November I was engaged on a daily patrol of the adjacent section of coast where a breeding rookery of Sea Lions is formed at the appropriate season. The seal showed no sign of breeding during this period.

A cave much used by the seal <sup>was</sup> ~~was~~ found and with the help of a rope access was gained, but complete examination could not then be carried out on account of inadequate means of illumination. On a later visit the cave was examined to the end.

2. On the 13th of November I returned to Stanley in order to use s.s. Fleurus in a search for breeding Elephant Seal but I was informed that the Fleurus would not be available on this occasion but that I might expect to be able to use her for inspection of Fur Seal rookeries in December. I therefore went back to Diamond Cove and followed my usual routine until the 30th of November.

On reaching Stanley on the 30th I was once more told that Fleurus was not available, but received a guarantee of opportunity to inspect the Fur Seal after Christmas. I was again encamped at Diamond Cove on the 6th of December.

3. Since I had now a very short time in which to attempt

a census of the Sea Lions of the north coast of East Falkland I felt compelled to leave Diamond Cove on the evening of the 11th of December although no Sea Lions appeared on the breeding ground until the 10th, when 3 adult males <sup>were</sup> ~~were~~ found.

I considered that the small Diamond Cove rookery was of much less importance than the very large one on Cape Dolphin or the considerable rookery at Macbride Head, and that therefore these two should be enumerated even if all small or casual collections had to be neglected.

4. I rode from Johnson Harbour to Douglas Station on the 12th of December, the journey occupying 11 hours 40 minutes. One of the horses became very lame for the last four or five hours and progress was correspondingly slow.

Since all my horses were very tired I stayed at Douglas Station until the 14th, when I left for Cape Dolphin House, Mr. R. Greenshields (Douglas Station) having kindly lent me a horse to replace the lame animal.

5. I came to the previous season's camping ground on the 15th and found the water supply completely dried up. A spring of very inferior water was found about half a mile further from the rookery, but it proved to be so bad that water had to be carried from one or other of the lakes some distance away. It was quite clear from a survey of the Sea Lion rookery that the breeding season <sup>was</sup> ~~was~~ only beginning and that nothing like the whole herd had hauled up.

6. I left Cape Dolphin on the 19th of December and had to omit an inspection of the coast to the eastward of the Cape on account of bad weather, which compelled me to go direct to San Salvador through almost continuous fog and rain accompanied by strong wind. The journey occupied about seven hours and a half.

The gale continued, with snow and sleet showers, for the next two days so that I was unable to swim the horses from San Salvador to Rincon Grande (about a mile) and had to send them round Salvador Waters (about 50 miles), while I crossed over the narrow entrance in a boat with all the baggage on the 24th of December.

7. On the 26th I rode to Seal Bay, which is mentioned in my 3rd Report (para 6): some Elephant Seals were found during the journey. On the following day I counted the Sea Lions and Elephant Seals at Macbride Head and thence continued along the coast to Volunteer Shanty (3rd Report, para 4) from which I went direct to Johnson Harbour. Volunteer Point had to be omitted since the horses were showing marked signs of fatigue.

I arrived at Stanley on the 28th of December, the horses being very tired.

8. It was arranged that the Fleurus should sail on the 3rd of January 1921, for Salvador Waters with a large party of passengers, that my hiring of her should begin when she passed Shag Island on the way out from Salvador Waters and should continue until Bird Island and Elephant Jason Fur Seal rookeries had been visited and as far as Port Howard in West Falkland, since the Fleurus had to go to Port Howard on business for the Tønsberg Company.

The Fleurus sailed as arranged and arrived in Salvador Waters after a rough passage, having on board over 40 passengers, the majority being women and children, most of whom were seasick.

9. Next day at 8 a.m. we passed Shag Island and went down Falkland Sound in the teeth of a strong SW wind, anchoring inside the Arch Islands for the night.

The 4th of January was very fine with light SE'ly airs

which at times fell away altogether. Bird Island was reached about 10 a.m. and a landing easily made. I went at once to the cliffs overlooking the Fur Seal rookery and made an attempt to count the seal visible. On returning to the ship I persuaded Captain Carlsen to go to the seaward side of the rookery and bring the ship as close in as he cared to do, having regard to the marked on-shore swell which was running.

10. We anchored at New Island for the night and came up to the Elephant Jason Rookery about 9 a.m. next day, the 5th of January. Although the wind was about WSW it was so light as not to interfere with landing but it increased in strength as the day advanced. A count of the fur seal pups was made.

- II. Having spent the night at Carcass Island the Fleurus left for Port Howard, calling at Hill Cove, in passing, in order to pick up Mrs. Ellis, the wife of the Colonial Secretary. We had passed through Reef Channel and Port Egmont, when at 9.15 a.m. on the 6th of January the Fleurus ran on the Bold Rocks off Keppel Island and all immediate efforts failed to bring her off. Mr. Barton of Pebble Island came off in his drifter "Gentoo" and I went ashore in her. Attempts were continued to float the Fleurus but were without result until the approach of the next spring tides, since the vessel grounded two days after the full moon and about the top of the morning flood. I returned to Stanley in the Fleurus on the 19th of January. Since it <sup>was</sup> the middle of the sheep-shearing season I was unable to do any work on seals in the Pebble Island Group.

12. I had arranged to go to Speedwell Island about the 1st of January and immediately prepared for the journey. In order to save the horses I sent my servant with them to Darwin and travelled thither myself in s.s. Falkland, which arrived at Darwin on the 27th after various delays. Next day I went to

North Arm and there waited for Mr. T. G. Slaughter, Camp Manager for the Falkland Islands Company, who was going to Speedwell, since I wished to save trouble to the farm people during one of their busiest seasons.

13. I arrived at Speedwell Island in the ketch "Eileen" belonging to that farm, on the 30th of January, and, a favourable wind having come up on the 2nd of February, I sailed with Mr. J. Clarke, Manager, Speedwell Island, for the islands to the northward in Falkland Sound. During the next four days I was at the following places:- Sandbar, West Tyssen, and North Tyssen Islands and Shag Cove, Swan Island, Egg Harbour, Great Island and one of the Elephant Cays. Some of these visits were made with the special intention of furthering my work on the seal, others on business connected with the sheep farm.
14. I left Speedwell Island again on the 9th of February and visited Barren and George Islands work being much hindered by a gale on the 10th. The "Eileen" was required for farm work after this; I had therefore to return to Stanley where I arrived on the 17th of February.
15. It was my intention to attempt a visit to the Volunteer Rocks as soon as the Fleurus returned from South Georgia and I was at any rate compelled to remain in Stanley for some time to superintend the handling and stowage of my outfit and collection on account of the removal and re-erection on another site of the building in which they ~~were~~<sup>was</sup> are housed. I ~~was~~ able to land on the Volunteer Rocks on the 13th of March, there was a slight swell but not sufficient to make landing difficult. The condition of the Fur Seal herd was satisfactory. A count of the pups was made but by this time of the year they had become very active, being able to run about the rocks ~~and swim~~ fairly well,

so that an accurate count is not possible.

16. The adult male Fur Seal had entirely lost the ferocity of the breeding season and the whole herd were rather less confident than that on the Elephant Jason Rookery in January. There ~~They~~ were comparatively few Sea Lions on the rocks, but this may have been due to a seasonal movement which takes place at some sea lion haunts about this time. Six elephant seal were seen but none were adult.

The following seal population was dealt with during the season under consideration.

#### 1. Sea Lions.

<u>Actual count</u>		<u>Provisional calculation of herd</u>
@ Cape Dolphin	2219	11,214 (last seas on)
@ Macbride Head	1573	1,573 (actual count)
Tyssen Islands	1264	1,264
Elephant Cays	2498	2,498
Barren Islands	297	297
George Island (pups)	100	<u>269</u>
		17,815

The mark @ signifies that the count was not taken at the height of the breeding season, in the case of Macbride Head in particular the figure for the total herd may require revision.

#### 2. Fur Seal.

Elephant Jason	640	2,470
Volunteer Rocks	60-70	275
Bird Island		750
		<u>3,495</u>

#### 3. Elephant Seal.

Cape Dolphin	187
Macbride Head	355
Elsewhere	<u>544</u>
	586

#### Further work during the coming winter.

I intend within a day or two to start for Cape Dolphin and there to carry out repeated counts of the herd for statistical purposes, and thereafter to proceed to Macbride Head in

order to work on the same lines for an indefinite period. In the later part of the winter I propose to visit West Falkland as a preliminary to drawing up a programme of work there for next summer.

Observations regarding the Fur Seal.

On the occasion of my inspection of the Elephant Jason Rookery I arrived, partly by count and partly by estimate, at the figure 640 for the pups present. Making allowance for the natural increase in the herd during the past year and the unavoidable errors in enumeration due to the crowded state of the rock, the roughness of its surface and the ferocity of the breeding bulls, this figure is quite comparable with the figure calculated from the count of the Volunteer Rock Rookery last season, namely 560 pups.

1. The number 640 shows an increase of 840 over the last count (1928), that is to say 60%, and gives a total herd of 2470 Fur Seal at the Elephant Jason, the calculation for last season being 2162. The count on the Volunteer Rocks on the 11th of March 1931 could not be accurate for the reasons given in the Report on that visit, but in any case the increase in that small herd in one year would not be appreciable to an enumerator only working at that date since it would probably be ~~over~~ 5 or 6 individuals; so that if it is assumed to be five and that figure is added to last season's count there are now 275 Fur Seal on the Volunteer Rocks, an increase of 50%. I can see no reason to suppose that the Bird Island herd has not increased as the other rookeries have done, but the nature of the ground favoured by the Fur Seal on Bird Island is such that a count would at any time be almost or quite impossible and to form <sup>an</sup> adequate estimate of the Fur Seal population would require the expenditure of a long time encamped on the island, a course which is not

feasible having regard to the transport at present available. The 1923 estimate for Bird Island was 500 which with an increase of 50% gives a population of 750.

The entire Fur Seal population of the Falkland Islands based on these figures is as follows:-

Volunteer Rocks ...	275
Bird Island .....	750
Elephant Jason .....	<u>2470</u>

3495

I would state that it is my opinion that the only suitable policy with regard to the Fur Seal at present is one of continued protection, and further, that there is no necessity for the time being at any rate to reduce the number of Sea Lions on the Fur Seal rookeries.

On the Elephant Seal in the Falkland Islands.

This species shows every evidence of a substantial and I may venture to say remarkable increase in the Falklands, although it has not been established that it breeds in the group. During the period September to February 1930-31 I have counted 586 of which 542 were seen at Cape Dolphin and Macbride Head, neither of which are accessible to the local sealing company.

The Sealing Company has killed a total of 3852 Elephant Seal in the three years during which they have been working:-

1928 .....	741
1929 .....	1961
1930 .....	<u>1150</u>
	----
	3852 seal killed
	586 living seal counted
	----
	<u>4438</u>

The occurrence of this large number indicates that the islands are becoming restocked by the Elephant Seal, I may suggest by the overflow from South Georgia. A large proportion of the seal are immature. The returns from the Sealing Company for the

first two years are not very ~~extensive~~<sup>detailed</sup>, but mention is made quite frankly, that of the 741 Elephants killed in 1928 550 were small (1-2 years old)".

In April of 1930 I made a special trip to Fitzroy to examine carcasses of Elephant Seals which had been killed by the Sealing Company. Sixteen ~~were~~<sup>were</sup> found and measured with the following results:-

<u>Males</u>		<u>Females</u>		
feet	inches	feet	inches	
7	3	7	8	Pregnant
8	0			
8	4			
8	5			
8	8			
8	10			
9	2			
9	9			
12	10			
13	4			
13	10			
14	0			
14	0			
14	2			
15	2			

It is quite clear that all the male Elephants, up to 9 foot 9 at the least, are immature - over 50% of those measured. I have also received from an ex-employee of the Company verbal reports of small Elephants having been brought into the station. As I stated in my second Report, I reported the finding of so many immature carcasses to the Colonial Secretary, and the attention of the Sealing Company was drawn to the infringement of the conditions of their licence. I may add that it came to my knowledge that the finding of these carcasses created a certain amount of consternation among responsible persons connected with the Sealing Company. It is my belief that the results were entirely beneficial. It is clear, however, that killing had been indiscriminate. This was partly due to an unwise system of bonuses, now abandoned. There is no guarantee at all that the Sealing Company will not revert to its previous practices since

the sight of a large herd of small Elephant Seals might prove too great a temptation to be resisted.

The presence of a Sealing Officer is the only certain safeguard for the Elephant Seal herd. A man for such an appointment would have to be chosen with great care and should receive a good salary since his work would entail a great deal of discomfort and dirt and very likely a fair measure of danger. He should preferably have no connection with the Falkland Islands. The presence of such an officer would also ensure the observance of the regulations in so far as they apply to the Sea Lions. I would state my conviction that the appointment of such an officer is the only method by which the safety of the Elephant Seal herd in the Falkland Islands can be assured. The commercial importance of the Elephant Seal requires no emphasis nor the necessity for encouraging the increase of the herd by close protection which may be accompanied by the killing annually, under supervision, of a calculated proportion of adult males.

Note on edible Crustacean.

During my first trip in the ketch "Eileen", mention was made of large numbers of "crabs" having been seen at Shag Cove, West Falkland. It was necessary to anchor for the night of February 22nd and I pressed for a visit to Shag Cove where we accordingly went.

On the way I had made a circular net of wire and sacking on the pattern of a fresh-water crayfish net but much larger. This was baited with rabbits' entrails and mutton and lowered in about three fathoms of water. After three or four attempts four Anomurans of Lithodid type, measuring 3 or 4 inches across the carapace, were brought up. The net was put down again overnight: in the morning 14 more of these Crustaceans were taken. The entire catch was of very uniform size. This form

appears to prefer a bottom sand and rocks or large stones on which Macrocyrtis is growing. Other bottoms were tried at other places but without success. The occurrence of numbers of these creatures at George Island has also been reported and carapaces are common on many beaches round the Falklands. After boiling, the flesh of these animals proved to be tender and to have a pleasing and delicate flavour. Only the muscles of the legs and claws could be eaten, the liver being bitter and the muscles of the abdomen being of insignificant size. Mr. T. Slaughter, who has been many years in Patagonia, and was of the party, said that these animals closely resembled, if <sup>were</sup> they ~~were~~ not identical with, the "Centolla" of the Magellan region. I may venture to suggest that if these Crustacea occur in large numbers and grow to a sufficient size they might prove to be of some commercial importance.

Bird specimens collected.

Of the birds asked for by the British Museum the following have been collected this season:-

SKUAS

Adults

Diamond Cove	.....	6
Cape Dolphin	.....	6
Albemarle	.....	1
New Island	.....	4
Pebble Island	.....	4
Speedwell Island	...	1

22

22

Juvenile

Sandbar Island	....	2
Speedwell Island	..	4

6

6

28

GIANT PETREL

Stanley Harbour, adults	4
Elephant Cays, juvenile	4

8

STEAMER DUCKS

Juveniles	.....	2
Embryos	.....	5

7

A few other miscellaneous birds have been collected, including Lafila spinicauda and another duck which has not been identified.

On the skull of a Ziphioid Whale.

While I was on Pebble Island I found the greater part of the skull of a Ziphioid whale on the beach. Unfortunately no data are available as to date of stranding, length or sex. I considered nevertheless that any identifiable specimen from a Ziphioid of the Southern Ocean was worthy of preservation and therefore brought the skull into Stanley.

On a Dolphin stranded at Cape Pembroke.

Shortly before my return to Stanley the "Penguin" published a report of the stranding of a Dolphin near Cape Pembroke lighthouse. On my return I telephoned to the Chief Lightkeeper, who visited the animal on my behalf and informed me that there was no danger of its being swept away by the tide and further that it was one of the "common black and white ones" i.e. *Cephalorhynchus commersonii*. I rode down to collect the specimen on the 27th March and am pleased to be able to report that it belongs to a species which I have not handled before and that it is not one of the two species common to the Falklands.

The animal was a black, grey and white female dolphin, almost six feet long, of most attenuated form and had a definite beak not unlike that of *Delphinus delphis* itself. It was in a state of advanced decomposition but the skeleton has been preserved in salt along with the head, flippers and flukes. The dorsal fin, if it had been present, as seemed almost certain, had been eaten by carnivorous birds.

FALKLAND ISLANDS.

No. 107



Downing Street.

22 September, 1931.

Sir,

Reports.  
I have the honour to transmit to you, for your information, copies of Reports on Sealing Investigations in the Falkland Islands carried out by Mr. Hamilton, together with a Chart illustrating the Third Report.

I have the honour to be,

Sir,

Your most obedient,  
humble Servant,

(Signed) J. H. THOMAS

GOVERNOR

SIR JAMES O'GRADY, K.C.M.G.,

&c.,

&c.,

&c.

5th.REPORT ON SEAL INVESTIGATIONS  
IN THE  
FALKLAND ISLANDS.  
APRIL TO OCTOBER 1931.

On the 14th.of April I left Stanley for Cape Dolphin where I encamped on the 18th.

My intention was to arrive, if possible at some conclusion with regard to the age phases of the female Otaria and to observe the seasonal variations in the rookery on Cape Dolphin; data of some interest with reference to both these points have been obtained.

2. On the whole the weather of the winter was good, but there was a good deal of frost and some snowstorms. The tent proved satisfactory under the somewhat trying conditions but discomfort due to cold was experienced to a somewhat disagreeable degree.

3. As I have previously reported, Mr.G.Cox, owing to illness, was replaced by Mr.W.Reive from the 1st.of May; Mr.Reive having found permanent work in the camp I have re-engaged Mr. Cox who has been in good health for a considerable time

4. The extra horse purchased in April has proved a satisfactory animal and up to the end of September all the animals had stood the winter well. There is every reason to expect that the three which I left at Cape Dolphin, by the kind permission of Mr.Chr.Andreassen, manager of San Carlos farm of which Cape Dolphin is part, have kept up their condition, but I have had no news of them since September. The remaining two, having been kept in Stanley and hand fed, are in excellent condition.

5. Up to the 19th of June I confined myself to observation only and eventually began to believe that I could appreciate differences which might be due to difference of sex among the

the immature seal. I accordingly began on the date mentioned to shoot selected specimens in the hope that they might be females and it turned out that this was almost always the case the difference in general appearance is often very slight, but can usually be appreciated when there are representatives of the two sexes together.

6. The collection was continued until I considered that I had sufficient material when I returned to Stanley, arriving on the 15th. of August; another female has been obtained since that date. In all 18 female seals were collected during this ~~year~~ year and 5 immature males. Five of the younger females were found dead on the beach but still sufficiently fresh to be of use.

7. With one or two exceptions the entire skeleton has been prepared and dried and a series of flat skins has been preserved in order to illustrate colouration. An examination of the female reproductive organs was made except in obviously quite immature seal and some ovaries have been preserved.

8. A small collection of intestinal parasites was obtained and many specimens of a Pentastomid were found in the posterior nasal passages of almost every animal. Examples have been preserved.

9. The collection of female skulls was brought to Stanley and prepared for examination by boiling in a solution of sodium ~~bi~~carbonate under constant supervision, followed by more or less complete dehydration in spirit and thorough drying. All teeth are then examined individually and loose ones glued into their sockets. The original bone label number is painted on each skull and mandible.

10. During the winter of 1930 ~~in~~ the skulls of 13 cows were collected so that there is a series of 31 skulls of the female Otaria to be considered. Of them one, a pup, was found in April so that it is not comparable to any of the others and in the following table ~~that of~~ a breeding cow has been

been omitted for the present since I have not yet decided if it should be considered as being in its fifth or sixth year.

The cow in question was pregnant although only 5 feet long with a skull length of 233mm. It is my opinion at present that cows do not normally breed until they are six years old but this specimen suggests that they may exceptionally do so at the age of five years, an occurrence which may not be unconnected with the excess of bulls which undoubtedly exists in the Falkland Islands: on the other hand she may have been only a stunted <sup>individual</sup> specimen since there is a good deal of variation in size in Otaria.

11. Even as early as July males were taking an interest in cows which were approaching maturity and it was with great difficulty that I drove off a male from the body of a cow which I shot early in August. The male actually carried the dead cow down the beach in order to ensure possession and showed the greatest determination and ferocity in defending the carcass.

12. A vague sort of harem life seems to be kept up by some of the seal during the winter, cows and pups collecting round some male or other. The rookeries become very depleted towards the end of the winter however, since the seal ~~appear~~ leave them in considerable numbers. The males favour particular parts of the beach and stay on it even outside the breeding season: I could recognise on Cape Dolphin one or two males which I had seen on the same parts of the beach during the breeding season.

13. The death rate must be fairly heavy among seal of the first and second years, having regard to the number which is found dead. They are usually emaciated and death is probably due to an Ankylostoma infection, since, in seal dead in this condition that parasite was found in the gut which was filled with a dark mucous liquid obviously containing a good deal of blood: specimens of the parasite have been preserved.

14. The following are the results of counts of the Sea Lion herd on Cape Dolphin outside the breeding season. It will be observed that there is a steady decline in the numbers as the year advances

These are round numbers and will require some slight alteration for my final report.

April 22-----5700

May 7-----6300

May 13-----5500

June 16-----4000

Aug. 11-----2600

Dec. 13 (1930)-2300

15. Table of measurements of female Otaria.

~~Measurements of female Otaria~~

Year of age-----	1st.	2nd.	3rd.	4th.	5th.	6th.
Number of specimens--	4	3	4	3	4	9
Total length, <del>maximum</del> -ft.in.	ft.in.	ft.in.	ft.in.	ft.in.	ft.in.	ft.in.
maximum	3 11	4 2	4 3	4 8	5 2	6 3
minimum	3 7	3 9	4 0	4 6	4 11½	5 7
average	3 8½	3 10½	4 1½	4 7	5 0½	6 1
Skull length-----	mm.	mm.	mm.	mm.	mm.	mm.
maximum	189	205	213	224	247	267
minimum	182	199	212	220	230	247
average	186	201	212,5	222	237	256

20. Two photographs are attached showing male and female skulls one of each year of age of each sex.

Upper photograph, males, left to right.

Number	1090	1150	1166	1133	1139	1088
Length	ft.in. 3 9	ft.in. 4 5	ft.in. 4 11	ft.in. 6 0	ft.in. 7 0	ft.in. 7 5
	mm.	mm.	mm.	mm.	mm.	mm.
Skull	199	231	239	277	309	342

Lower photograph, females, left to right.

Number	1142	1081	1078	1023	1100	1104
Length	ft.in. 3 7	ft.in. 3 9	ft.in. 4 0	ft.in. 4 8	ft.in. 5 2	ft.in. 6 3

16. Visit to West Falkland and Search for Breeding Elephant Seal.

When he was in Stanley in March I suggested to the Director of Research that it was desirable to search for breed-  
Elephant Seal at the appropriate season (October) since so large  
a number of this species had been killed by the sealing company  
and a pregnant female was found dead in April 1930, as I have re-  
ported. The matter was laid before the Committee and there  
was sanctioned the expenditure of not more than £250 on hire of  
the Fleurus for the purpose.

17. It appeared to be desirable to visit West Falkland as a  
preparation for the summer's work on Otaria, I therefore went  
thither on the 14th of September and arranged to meet the Fleurus  
at Hill Cove on the 6th. of October. Having landed at Pebley  
Island I went to Port Howard, Fox Bay and Port Stephens, where I  
stayed for several days, during which I visited Cape Meredith and  
the so-called lagoon near it but found only a few immature Ele-  
phant Seal: there is a large rookery of Otaria in this locality.

18. Mr. James Robertson, manager of Port Stephens farm and agent  
for Mr. John Hamilton, owner of Weddell Island, kindly promised to  
help me to survey the Otaria rookeries off the West Coast of  
West Falkland with the "Penelope", a schooner belonging to Weddell  
Island.

19. From Port Stephens I ~~rejoined~~ rode to Hill Cove where I  
joined the Fleurus on the 6th. of October. I visited all the  
settlements, except one, on West Falkland and everywhere received  
the greatest hospitality and all assistance which was required.

20. On October the 6th., the weather being very fine I pro-  
ceeded to Sedge Island where I had often heard that Elephants  
might be found, only two were seen, non breeding, but a large breed-  
ing <sup>place</sup> rookery of Otaria was discovered. Sedge Island is one of  
the few places where the "Johnny Rook" Ibycter falklandicus is  
still to be found in numbers. The birds were very tame, a  
small flock following me wherever I went and coming close up if  
I halted for a minute or two.

At Carcass Island, where we spent the night, I was given the skin of Myzillus fruticeti, a finch which is new to the Falkland list. Next day I visited the twins but found only ~~xxx~~ three Elephant Seal of which two were large males, and thereafter the Fleurus sailed Southward for the Arch Islands to which Elephant Seal are known to resort. We did not make the islands that day, but on the following did so, after calling at Fort Stephens for which place the Fleurus had a bag of mails which I had been asked by the Colonial Secretary to deliver if possible.

21. This day, the 8th. of October I inspected three of the group without finding any Elephants and collected a fair sized male of the Leopard Seal; the skeleton of this animal has been preserved, as well as some parasites. The stomach was full of skin and blubber of Sea Lion pups.

22. Next day, the 9th., I visited the following islands in the Falkland Sound without finding any Elephant Seal - West, Wedge, Calista Islands and the Elephant Cays. At Speedwell Island, where we spent the night, I secured the lower jaw of a small Ziphiid whale: this animal had been found about six months previously and I had been informed that it was being kept for me: the proceedings had only comprised tying the animal to the jetty by the tail so that it very naturally broke adrift and sank. This whale was a female about nine feet in length.

23. On the subsequent day I went to Blind Island, near Speedwell, but owing to a sudden Northerly gale the day's work was curtailed and on the day following I inspected George and Warren Islands, without finding any Elephant Seal: an hour or two was spent on George Island looking for "Canvas-back" Ducks a species much desired by the British Museum, but none were found.

24. On the 13th. Fleurus went towards Sea Lion Islands which are a well known haunt of the Elephant Seal but the swell was too heavy, to permit landing so we anchored in Bull Roads in the Bay of Harbours. A landing was made on Sea Lions on the 14th. without result; the man in charge of the sheep on these islands told me that the Elephants did not come up until late in the year.

The ~~same~~ same day I went to Lively Island but found that there was not time to visit the small islands off it where Elephant Seal have been found since the time covered by the charter money was due to expire next day. The last day, the 15th was spent in Pleasant Roads waiting for the wind to abate; I had the hope that I would be able to visit Boat Point in the harbour named because it was the place where I had found the pregnant cow Elephant and many of the species have been killed there but it was impossible to land owing to bad weather. I returned to Stanley about 06.30 on the 16th. of October. The whole tour was unproductive as regards breeding Elephant Seal.

25. A day or two before R.R. William Scoresby sailed from Stanley in November I arranged with Mr. Gunther and Captain Jolliffe to visit Boat Point again and was able to do so on the 26th. of November. On this occasion a landing was easily effected and thirty three Elephant Seal were found including several pups of the year, one of which had not entirely lost its first woolly coat.

26. I invited the Honourable Colonial Secretary to be one of the party on this occasion and he suggested that His Excellency the Governor would like to be invited also; the invitation was accordingly made and His Excellency accepted.

27. The problem of the origin of the numerous Elephant Seal which now occur in the Falklands is still unsolved. According to Matthews the pups do not take to a pelagic life for some months after birth, this would indicate that the species does breed in the Falkland Islands, on the other hand the lack of evidence as to the occurrence would suggest that the Falkland Seal are the overflow from South Georgia. The sealing company has reported the killing of nearly four thousand Elephants so that the number to be considered is not small. It is not unreasonable to expect that if the Elephant Seal does not breed in the Falklands it may begin to do so any season and I consider that a close watch should be kept on it since it is potentially an asset of some value to the Colony, and the history of the animal in South Georgia shows that it responds rapidly to protection..

*J. H. Hamilton.*

FALKLAND ISLANDS.

Downing Street,

NO: 130

20 November, 1931.

Sir,



*Red 22*

I have the honour to refer to my predecessor's despatch No. 107 of the 22nd of September which enclose copies of Mr. Hamilton's reports on Sealing investigations in the Falkland Islands.

2. I shall be glad if you will furnish me with your observations on Mr. Hamilton's suggestion on page 10 of his Fourth Report that a Sealing Officer should be appointed to safeguard the Elephant Seal herd.

I have the honour to be,

Sir,

Your most obedient

humble servant,

(Sgd.) P. CUNLIFFE-LISTER.

GOVERNOR,

SIR JAMES O'GRADY, K.C.M.G.,

etc., etc., etc.



STANLEY

29th. December 1931.

The Honourable Colonial Secretary.

In accordance with instructions which I have received from the Secretary of the "Discovery" Committee, I beg to submit herewith for the information of His Excellency the Governor, a copy of my most recent Report on the Seal of the Falkland Islands.

*J. E. Hamilton*

(J. E. Hamilton)

29th. December 1931.

15/30.

6th January,

52

Sir,

I am directed by the Governor to acknowledge with thanks the receipt of your letter of the 29th of December, 1931, and of the enclosed copy of your most recent Report on the Seal of the Falkland Islands, which Report His Excellency has read with much interest.

I am,

Sir,

Your obedient servant,



Colonial Secretary.

MA, M.Sc.,

J. E. Hamilton, Esq., M.A., M.Sc., F.Z.S.,  
Stanley.

GOVERNMENT HOUSE,

STANLEY.

6th January, 1932.

FAULKLAND ISLANDS.

No. 11.

Sir,

In reply to your despatch No. 130 of the 20th of November, 1931, I have the honour to state that I am in full agreement with the view expressed by Mr. J. E. Hamilton as to the desirability of appointing a Sealing Officer to safeguard the elephant seal herd in the Falkland Islands and generally to enforce the observance of the regulations relative to the killing of seals of all kinds.

2. When sealing operations re-open in the Colony therefore I shall not fail to make the necessary arrangements, either by detailing for the duty an officer already in the Government service or by engaging a suitable person from an outside source.

I have the honour to be,

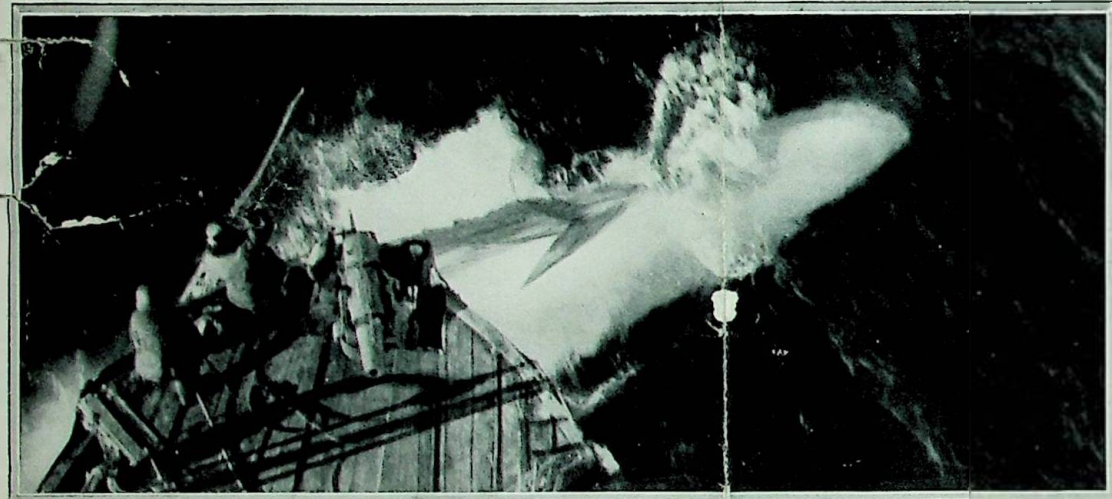
Sir,

Your most obedient  
humble servant,

JAMES O'GRADY

THE RIGHT HONOURABLE  
SIR PHILIP CUNLIFFE-LISTER,  
G.B.E., P.C., M.C., M.P.,  
SECRETARY OF STATE FOR THE COLONIES.

**THE FLOATING FACTORY:** The mother ship of a whaling fleet to which are lashed the carcasses of the catches. These are inflated and sealed to enable them to be towed and dealt with in rotation. A factory can to-day extract 1,500 barrels of oil *per diem* instead of the sixty or seventy of earlier times. The Norwegian fleet is now composed of 100 vessels, including twenty-three "factories" and the tank capacity exceeds 1,000,000 barrels.

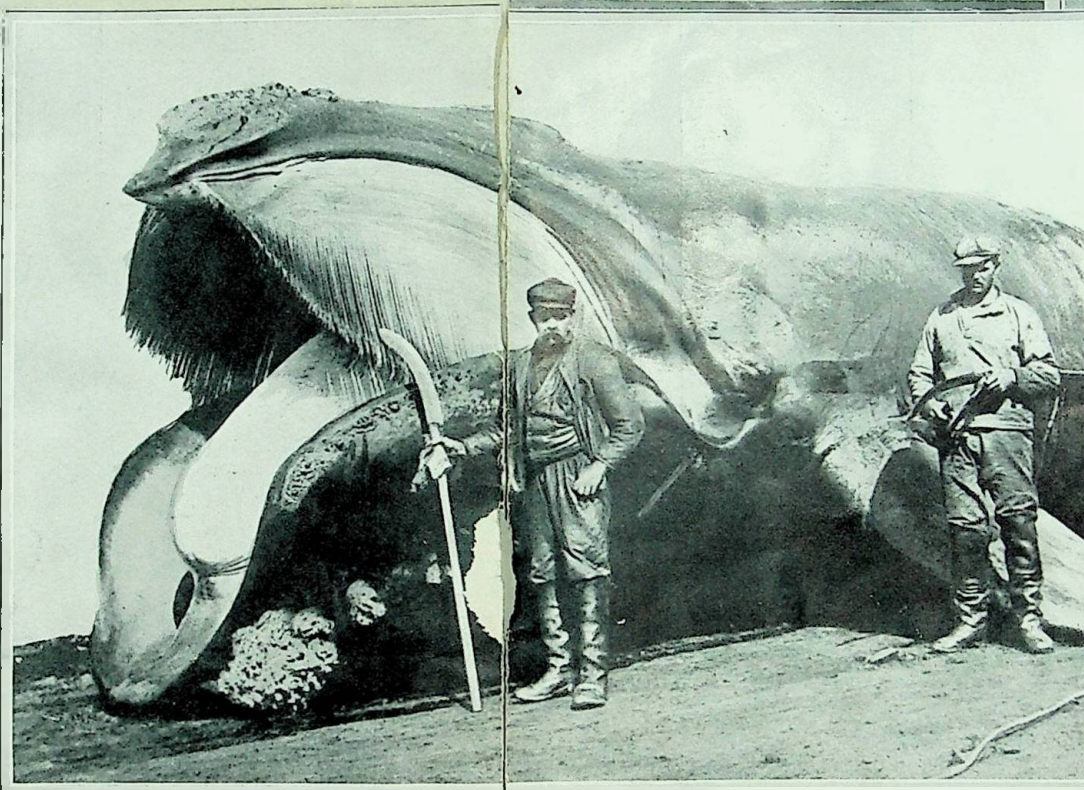


**FROM THE CROW'S-NEST:** The old science of harpooning by hand immortalized in *Moby Dick* has given place to a small cannon firing a harpoon and high explosives.

The largest whaling fleet that has ever sailed from Norway is now down in the Antarctic where the whaling season is in full operation. The fleet comprises 42 floating factories, 20 transport vessels, and 230 whale catchers. Such an armada, as this has never before been seen in the Antarctic and grave fears are expressed that the whales are in danger of extinction in these waters. This is, however, groundless, as the whales of to-day are more productive of oil than those caught in previous years. The total capacity of the factories is 2,400,000 barrels, and 20 tankers with a capacity of 950,000 barrels have also been chartered. Most of the oil has already been sold to American buyers on the basis of £25 a ton. Whaling is no longer the romantic affair of past years. The whole enterprise is organized to cut out adventure and to pay dividends to shareholders. The technique of whaling has been enormously developed in recent years and is still advancing. Fast and speedy craft, improved harpoon equipment carrying deadly explosive charges, the full use of the wireless telephone between mother ship and chasers, and the intensive study of ice, weather, and whaling grounds,

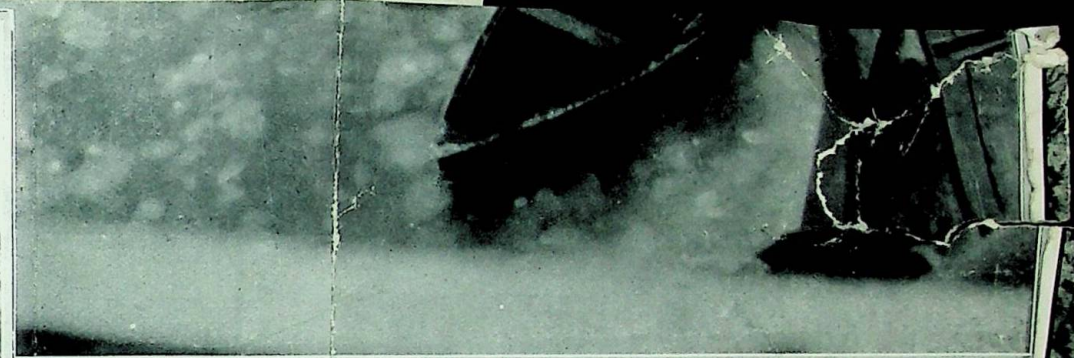
all combine to make whaling a well-organized and highly technical proposition. To such a pitch has this organization been brought that the mother ship is able to inform the headquarters at Oslo of the daily catch in the Ross Sea.

Only last year, Admiral Evans, the Antarctic explorer, stressed the importance of the whaling industry as an outlet for British capital and as a source of employment, not only for our ex-naval officers and men, but also for our shipbuilding trades. He complained that we had sat still while the Norwegians wrested from us an industry that is now bringing them millions of pounds. On the other hand, it is to the credit of the Norwegians that British seamen were forgetting all they ever knew about whaling.

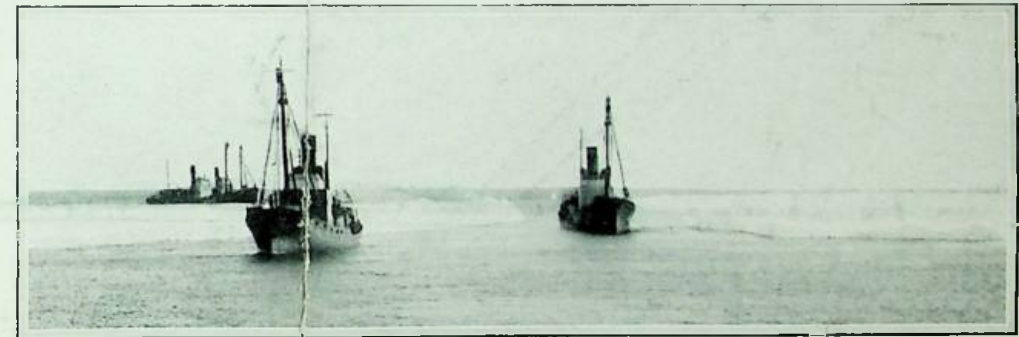


**EIGHTY YEARS OLD:** A Right whale caught off South Georgia, lying on a flensing platform. The fringe from the upper jaw is the balreen from which corsets and crinolines used to be built up.

the Norwegians themselves were putting the industry on a sound commercial footing. Science and modern appliances have been brought to their aid by the Norwegians at every turn, both for "spotting" and killing and treating the whale. Aeroplanes are likely to be used for observation purposes in the near future, and experiments are being made with apparatus intended to kill the whale by passing an electric current along the wire attached to the harpoon. At present a skilled gunner makes £5,000 a year. Increased



**THE MATERIALS FOR MARGARINE:** A factory ship with whales tethered to the stern. Whale oil is used mainly to make the popular butter substitute. The feared extinction of whales is a groundless terror for, though fewer, the present type of aquatic mammalian is larger both in size and oil-producing capacity.



**THROUGH THE ICE:** The "chasers" follow the mother ship of factory ships (from the stern of which this picture was taken) through the leads in the pack ice.

whaling activities during recent years appear to have had the curious effect of improving the individuals both in quality and size. This is probably due to the killing of old bull whales who formerly kept their younger rivals away from the cows. This is only another version of the sportsman's old policy of destroying old cock pheasants to improve the breed. Certainly looks as though the ideal combination in whaling enterprise must be British capital and British-built ships manned by Norwegian crews.

THE PRESENT POSITION OF SEALS IN THE FALKLAND ISLANDS AND SOME  
SUGGESTIONS AS TO CONDITIONS OF SEALING LICENCES.

Southern Fur seal (Arctocephalus australis)

In the course of a recent visit to some of the principal Fur seal rookeries in the islands, a total approximately 14,000 seal were seen. Estimates for the individual rookeries were as follows:

Volunteer Rocks	2,000 (all ages)
Elephant Jason	4,000 ( " " )
Landsend Point (New Island)	3,000 ( " " )
Bird Island	38 pups

Only at Bird Island was it possible to examine the seal closely. In addition to these localities Fur seal are known to occur in considerable numbers at North Island and Beauchene Island, and there are reports of small numbers at Cape Meredith and Macbride Head. It is reasonable to assume that no other rookeries of any size exist at present, and a figure of 22,000 is probably a moderate estimate for the total numbers of this species in the islands.

I am very reluctant to suggest any figure without a detailed census to confirm this estimate, but until this detailed census is undertaken not more than 1500 should be taken annually, and this figure should be divided proportionately to the actual numbers estimated for the different rookeries. It would also be advisable to proclaim one rookery as a reserve, Volunteer Rocks by virtue of its proximity to Stanley being probably the most suitable.

As regards a lower size limit for seals to be taken, it is known that the male is the same size as the male of the Northern Fur seal (Callorhinus alascanus), although the female is larger than that of the latter species. Therefore only male seals above the age of three years and a length of 48 inches should be taken. The upper size limit will be set by the quality of the skins, which decreases with age, but it will probably be about 58 inches, in any case once sealing is begun on this species the men taking the seal will soon see which skins are of value.

little is known of the dates of the breeding season but pups are first born in the early part of December. I would suggest that until more exact knowledge is available a closed season from December 1st. to say January 15th. should be imposed.

In my opinion the licence should be subject to revision after a period of not more than three years, or until such time as a detailed investigation is possible.

Southern Sea lion (Otaria byronia)

Hamilton has given a figure of approximately 380,000 for the total number of this species in the islands in 1937, but there is reason to believe that this figure is too conservative at the present time. A figure of 14,000 to be taken per year would not be too liberal, but the total to be taken annually from the Arch Island group (which is the main sealing ground at present) should not exceed 6,000 per year. The Killing should be confined to males over 72 inches in length, as stated in the current licence. The closed season should be from mid November to February 28th.

Elephant seal (Mirounga leonina)

Reliable figures are not at present available but there are probably less than 1,000 Elephant seal pups born in the islands each year. The total numbers of this species hauling out in the course of the year is probably not more than 14,000 (of which the majority are from South Georgia). In view of this the licence authorising the taking of 2,000 bulls should be revised to permit the killing of only 1,000; no seal under a minimum of 120 inches should be taken. This corresponds to an age of 4 years.

The minimum period for the closed season should be from October 1st. to November 30th.

It would be as well to restrict the number of Elephant hides to be exported to the U.K. to about 250-300 per year, so as to command the best price and ensure a regular market.

(Sgd.) R. M. Laws.

11.3.51