



Jan 13 = 1893

BRITISH MUSEUM (NATURAL HISTORY),

CROMWELL ROAD,

LONDON: S.W.

My dear Dr. Dawson

I send a few notes
upon your mention, but I
fear they are of just much
value. You really seem
to have exhausted the subject.

I will send the printed
papers all together to the Foreign
Office soon, but I thought you
could like to have this book all
over believe me

very truly yours

W. H. Flower.

Jan 19 - 1893

BRITISH MUSEUM (NATURAL HISTORY)

(General Dept)

London, E.C.



My dear Dr. Johnson

I have just received
your letter of the 15th
and am glad to hear
that you are well.
I am very sorry to hear
that you are not
able to visit London
at present. I hope
you will be able to
do so in the future.
I am, dear Dr. Johnson,
very truly yours,
W. H. Storer

Access.

Page of Dubl.

~~Handwritten notes at top left, including "I don't think it is..." and "I don't think it is..."~~

p. 100. Flower = by Decker, an introduction to the Study of Mammals fr - (I omitted to note the page to which the extract should be credited) p. 592

p. 102. That the extract here given also be credited to the "Introduction etc." and if so to what page, p. 591

I think this is wrong p. 104. Every one who reads the account that the early emigrants went from a few species of mammals to sheep & cattle needs of not doubt to specify the words if it can be found in a book or paper.

That it is in the... I am afraid many are... not safe America... especially in Spain... "I think it is..." already done... Western part... After the... and... out of... appeared... showed... and...

would it be possible to give here marginal note, a good reference to some authentic writer respecting such "strays" in migration!

Is it safe to say, as here done, that no naturalist has drawn specific sub-specific distinctions between breeds and varieties etc of some different parts of Northern North America?

The statement in italics, marked here, is of course generally correct, but would it be worth while referring to the sometimes very marked effects of weather, food, etc, especially in marine animals. If so where can such references be found?

p. 148-149. Can any suggestions be given respecting the treatment here of

admirable... unfortunate... upon... one... counting... would... p. 148-149

X. Man not however leaves out of sight, into regard to

Uah, that they are probably derived from land animals, and their aquatic life is still (especially in the *Storia*) only imperfectly acquired, as they must retain to land to perform reproduction, in this sense to land is their "old home". The Cetacea if so, probably also, though less certainly, derived from land animals, have gone much further, and have thus become truly aquatic, as much as our fishes, which have been always aquatic.

As to the land I see no proof that the present elements of the Pribiloff Islands, as distinguished from the neighboring coasts in the Aleutians is necessary to the persistence of the few seals, as contained by the U. S. You see that the absence of human inhabitants may have been as much the reason of their presence as there is to the flourishing then is just as likely. But we know my little as yet of the causes of the distribution of animal life.

The
of
the
name

which
is
a
word

that
is
not
a
word

which
is
not
a
word

which
is
not
a
word

I don't think that would be a natural arrangement of any of the important places where seals breed and a word appropriate to the word "home" as applied to the breeding area only? a migrating species?

p. 150. The references to destruction of food fishes by seals here made, will be set out at length in the Appendix. If any further such references can be indicated, we can arrange to have them copied out for incorporation, as the subject is important in showing rights along the British Columbian Coast.

I have not been able to find any.

Part II

p. 42 et seq. Can anything further be value be obtained on observation? No seals etc, during breeding season? Absolutely nothing exists to show that any class of seals feed regularly during the breeding period in the Puget Bay Islands, but the assertion is made so confidently in the U.S. Case that it is desirable to show it to be a

In the preceding
of the Geological
Survey of Canada
1881. p. 380
There are some very
interesting observations
on the feeding habits of
the Puget Bay seals
(which occur in Norway
in the case of the
R. Collett?) and that
the time of the
Puget Bay seals is
the same as that of
the Puget Bay seals
and that the
feeding habits are
very different.

W.H. Flower

skins taken ~~to~~ less
than 100 were females
and that none of them
were nursing
were females ~~in~~ ~~with~~.

Page 42, Par. 3, 5, 4

The stomachs of

Several hundred seeds

were opened in Mr. Meconi

presence in 1882 and no

trace of food found in

the any of ~~them~~. It also

reports the absence of

excrement from the

feeding-ground.

Page 41. Bottom of

Page. The following reports

from Bryant's reports seem

to be on them there seedbed.

"The seeds are about 6 or

weeks old when the females go

to feed"

"The females after going back

to their young temporarily after

go into the water to feed when

the pupae are some 6 weeks

old.

fewest
females
p. 103,

"On 2 and 3 seeds p. 103,

Senate, 4th Cong. 2nd Session

Ex. Doc. No. 32 p. 5.

Mr. Maccom reports that until after the first week in July ~~the~~ cows do not begin to go in to the water as was shown by the absence of wet cows in the workings and by the fact that in barrels where all the seeds could be counted the number of fecerals comes headed with the number of seeds. After the first week in July they did begin to enter the water in considerable number but they seemed content to swim about near the shores and were not seen baled out in some places nor after they had been but a few minutes in the water.

~~See~~ Page 44 Par. 2

Middle of Paragraph

Testimony Secured in 1892 shows that a large percentage of the fecerals taken ~~are~~

~~are~~ are dying up, some

Fecerals feeding

1

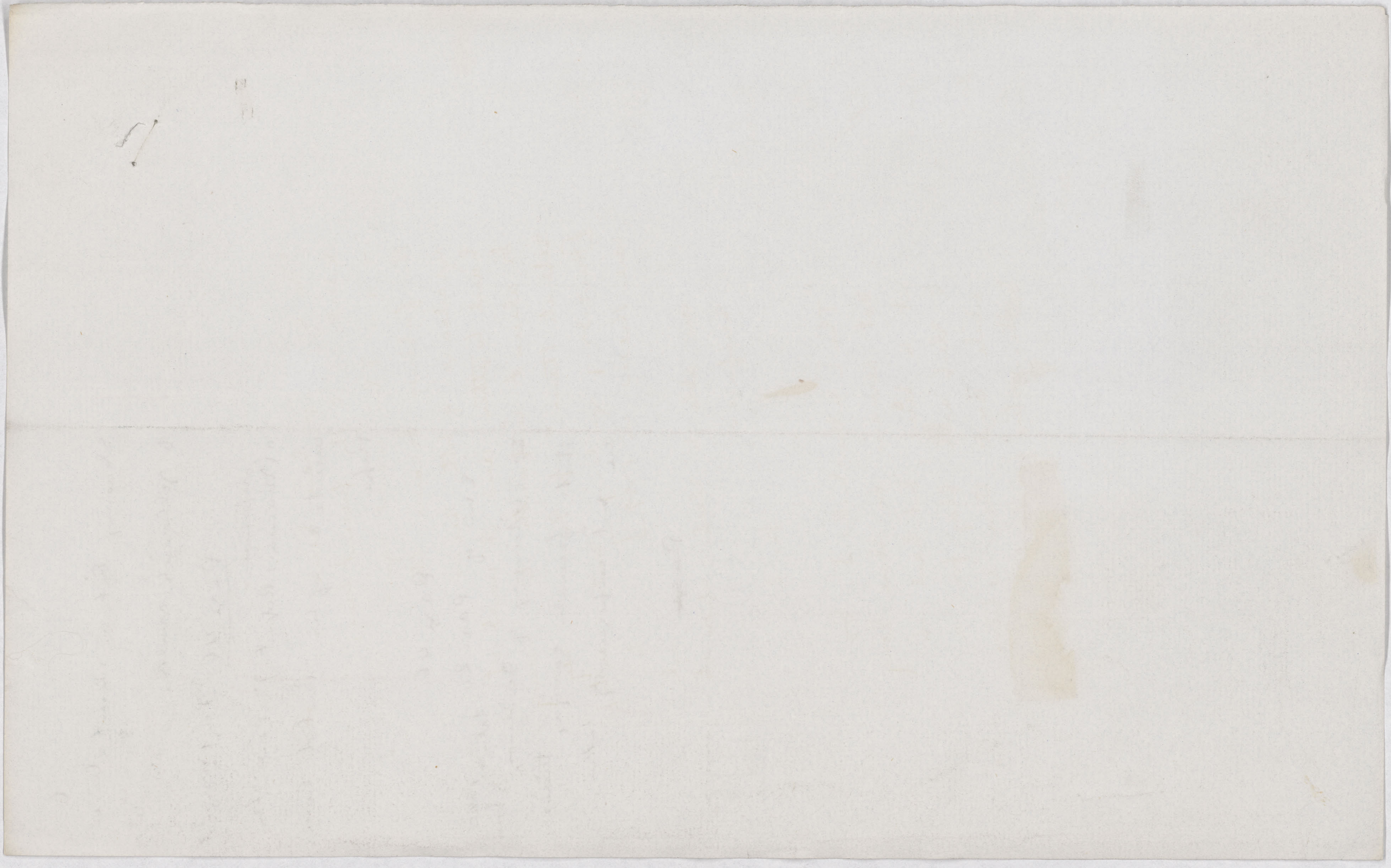
Showing but a slight trace
of yellowish milk.

Page 46, First Marginal
reference
" (Maccom's Report)" covered by
inserted of the "British Com.
Repts."

Page 46.

End of Par. 2. taken in 1892
to testimony of Dudley's
that peculiar camp in
are not unhesitatingly taken.

~~Page~~



"No yearlings have been
killed up to the present time,
+ + + This would injure
the fisheries because the
yearlings of both sexes
haul together and it would
be almost impossible to
separate them" p. 9.
[Thousands of young seals
were killed in 1889]

~~W. M. Bennett~~

Woods' Report
H.R. 44 Aug. 1889
S.C. Dec. 43.

and was very all
kind to me it is the best
I have ever had

the most kind of it
I ever had of anybody
I know the only thing I
to thank in the world

18th "18th" 18th
and [unclear] [unclear]
[unclear] [unclear] [unclear]

Myrman's Petrel,
FR, 44 Curv. (Sens. & Doc. 43.

Home.

"There seems to be no
reason why they ^[the seabirds] cannot
remain in the water during
the whole entire time they
are absent from the islands,
for they eat their food
there at all times and
are able to sleep upon its
surface."

p. 2.

"The [Holluschicki] do
not remain on shore long
at a time, but haul up
to sleep and play for a
while and then return
to the water for food."

There seems to be no
reason why they cannot
remain in the water during
the whole winter time they
are about from the clouds,
for they eat their food
then at all times and
are able to sleep up in the
"perforation."

P.S.

"The [unclear] do
not remain on shore long
at a time, but haul in
to sleep and flap for a
while and then return
to the water."

of females - at least equal
to that of males ~~is theoretically~~
if - we be ~~proportioned to~~
~~the~~ as many times the no. of
males. as the no of breeding
females is of the breeding males;
and that further selection
must be exercised in the
slaughter of males. by
picking out the lame the
halt - the blind &c. & leaving

the best for breeding purposes.

In the absence of definite
information - we must in any
case maintain that any replication
must be tentative and
that provision shd be made
for the continued scientific
observation of the facts, with
a view to the revision
& adaptation of the regts
to the need of the Carl.

Excuse this long
scrawl. I know your good nature

and interest in the question,
and the fact that we depend
mainly on you for the second
part of the case is I venture
to hope sufficient apology
for pestering you.

Yrs very truly

John Anderson



It appears to me that from all
this we might fairly argue that
the N.S. practice of killing ^{and those the finest} all
males if unchecked would
cause the deterioration of the herd
~~and decrease both the number~~
by ~~destroying~~ causing an excessive
draught on the vitality of the
inferior males who are left,
and that to restore equilibrium
and improve the herd the
killing of a certain number



further that the increase
in the Seal herd has been
according to the ^{Br} Behning's
Sea Commissioners' Report
coincident with the determined
& wholesale slaughter of
some of the principal com-
petitors with the fur seal
for food - the whales. Is that
the case.

This theory is per.

haps not much to the point
of the present controversy,
but from a natural history
point-of view it is interesting.


By the way I may mention
that my 'Deer' expert says that
they kill every year a large
number of fawns - male & female,
and that it is found by ~~the~~
experience that it is best to
kill those dropped latest in
the season. He gave me a
very curious instance of this
in the case of a herd where

The $\frac{1}{2}$ number of fawns desired had for a long time been taken indiscriminately. On the introduction of the plan of killing only the larger ones, it was found that in a few years the character of the herd experienced a very marked improvement - which could be and was measured in Arctic Sleds. I presume the killer whales &c perform the same sort of natural selection on the fur seal pups.



The further question arises of how if nature has made the equilibrium, the herd of seals has in historic times in spite of the heavy toll brood by man experienced a large increase.

This would it seems to me to be accounted for partly by the fact - that in the struggle for existence the killing of one seal improves the chances of life of those that remain, and



of the New York Commercial Co. Further in the case of deer at least as many does as bucks are killed every year, and the does are killed about six weeks or two months after they have received the males.

Yet - this waste of two lives is not found to endanger the preservation of the herd. are not the circumstances of

the 'sealions' very similar and are not females slaughtered indiscriminately with males, and without regard to pregnancy. Yet the continued existence of the sealion species is not endangered.

If a very lay man may venture to theorize on the matter it appears to me that the difference of age at which the male & female become effective breeders is the result of ~~natural selection~~ 'natural selection'.

of the continual struggle for the possession of the females among the males - which has forced back the age of puberty in the male - and would be ~~an instance~~ an instance of Rousseau's retention of Darwin's Theory of natural selection, and I should therefore expect to find it a universal feature of gregarious animals, an instance in fact of nature's efforts to bring about an equilibrium between the herd and its environment.



about the same as the male does not begin to breed till 4 yrs after the female his service as a breeder is much shorter than that of the female. If the average life is ten yrs, a female breeds for 8 while a male only for two; hence a further subtraction from the surplus provided by Providence for the benefit



I have been trying to get some information about the habits of deer in regard to breeding, & had a long talk with the Supt of Richmond Park the other day. He is going to furnish a memo on the subject.

There is a most extraordinary similarity between the habits of the deer and of the seal, and I should imagine that

the similarity will be found to extend to all gregarious animals, more or less.

The female deer first receives the male at two yrs of age. The male is able to acquire and maintain possession of a harem about six. The male fasts through the rutting season having previously developed flesh & fat. They guard & fight for their does as the stags do for his cows. The average harem wd be about ten - but a male deer is

only efficient for cutting for two seasons. The strain and drag of the cutting is too much for his vitality - to enable him to go through more than two seasons & they are killed just before the third season begins, to prevent the deterioration of the herd: The ~~Cows~~^{Does} also are killed about the same age as the bucks.

Note now in addition to the point I raised in my last - that ~~the~~ of the average life of the male & female seal is



Recd.
Nov. 9.

27. 10. 92.

Dear Dr. Dawson,

I am much obliged for your letter.

I have just been reading through your further notes on Part II of the Case. They are admirable, and will form just the basis that is wanted for the draft.

of power in maintaining the
annual temperature on the island
from May to July, without food,
and with almost daily battles
for supremacy with great rivals.

They assume also that an exhausted
or impotent bull will herd with
the bachelors of his own accord,
though I do think the analogy
of other animals wd lead to a
contrary conclusion.

The statements about the slaughter
of milking cows are curious, and
Webster has a sympathetic feeling
with one of the witnesses who sicken
at the sight. I wish you joy of the
task of answering ^{the} ~~the~~ ^{rept.} ~~memoir~~ to
you of kind
John Anderson



number of breeding males ready
to take their stand on the
rookeries at byro of age to
very modest proportions com-
pared with the annual no.
of cows added.

In other words if there was
no killing on the Island or
killing by man, the annual
addition of breeding males
wd. be the number of seals who
have managed to reach the age
of 6 while the number of
Cows added is the number who

have reached the age of two.

This ~~would~~ obviously necessitate either polygamy to a large extent or barren females.

If the males are further diminished by at least $\frac{1}{2}$ by man the remainder must serve more cows or the cows must go untraced.

Further the young bulls killed by man are admitted the finest in the herd and

in Helluy so large a proportion of the finest males the herd is bound to deteriorate.

It appears to me that in order to justify the position of the U.S. they must assume that there is little or no ~~natural~~ mortality from natural (including killer whales) causes among male seals between the ages of two or six.

In their estimate also of the number of cows a bull can serve they take little or no account of the ~~need of consumption~~

Case if males & females
want on the rookeries
at the same age. There
is however a difference
of three or four years
between the age of maturity
in the male seal & the
age of puberty in the female.

Natural causes during
these three or four years
must make the number of

males which, ~~say~~ any given
year's increase of the herd, be
greatly inferior to the number
of females which are added.

Suppose for instance the
year's births are $\frac{1}{2}$ a million
bulls & $\frac{1}{2}$ a million cows,
then according to Elliott
and about $\frac{1}{2}$ of them reappear
on the Islands as yearlings
(U.S.) 250,000 males & the
same number of cows. ~~at~~
~~the end of the~~ during the
2nd year of existence also

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(U.S.) 250,000 males & the
same number of cows. ~~at~~
~~the end of the~~ during the
2nd year of existence also

There must be a considerable
mortality - If we say 10% c. it
will be moderate, this would
give in the 3^d year 225,000
Cows added as breeders to
the rookeries. The bulls on the
other hand have four years
longer to face their natural
enemies & disease, and what
the mortality from these causes
during these years may be
it is difficult to guess at,
but if during these three or four
years 112,000 ^{of the males} are killed by man
on the islands, a very small
mortality will reduce the

Anderson.



14. 9. 92

Dear Dr. Dawson,

There is an
Extraordinary statement in
the N.S. case, that the
killing of a certain number
of seals (bachelors) is not
only harmless but good for
the herd.

Now it seems to me
that this might be the

*Callorhinus Ursinus.*Howe

Breeding off the Coast of Washington Territory.-- In a letter from Mr. James G. Swan, Field Assistant of the United States Commission of Fish and Fisheries, dated Neah Bay, Washington Territory, July 17, 1880, kindly communicated by Dr. Coues, contains the following respecting the breeding of the Fur Seal off the coast of Washington Territory :

"Several new facts and theories have been developed by my investigations about Fur Seals this season. The fact they they do have pups in the open ocean off the entrance to Fuca Strait, is well established by evidence of every one of the sealing captains, the Indians, and my own personal observation. Doctor Power says the fact does not admit of dispute. The theory of the captains is, first, that this fact proves conclusively that these seals do not go to Pehring's Sea to have their young, and hence they argue that they do not go there at all, but haul out for purposes of reproduction on some undiscovered islands in the North Pacific, or go at once to the shores of Japan or Siberia where they are known to abound. It seems as preposterous to my mind to suppose that all the Fur Seals of the North Pacific go to the Pribylov Islands as to suppose that all the salmon go to the Columbia and Frazer's River or to the Yukon.

The question is one of interest, and I have suggested to Professor Baird his having blank forms of questions furnished the captains of all the vessels engaged in sealing, for them

to fill out with their observations during the season or during their voyages. These blanks could be sent to the Custom-houses at San Francisco, Port Townsend, and Victoria, and given to the captains, with their other papers, when they clear on their sealing voyages, with instructions to fill them out and return them to the custom-house at the end of their voyage.

"A series of such observations, made during several successive seasons, would enable us to ascertain definitely the facts about the Fur Seal, whose habits are but little known except at the rookeries."

Prof. D.S. Jordan, the well known ichthyologist, to whom the letter was addressed, adds : "I may remark that I saw a live Fur Seal pup June 1 (1880), at Cape Flattery, taken from an old seal just killed, showing them the time of bringing them forth was just at hand."

*Allen's
account
cut off*

10

to fill and with their observations during the season of their
in their voyages. These letters could be sent to the London
houses at San Francisco, New York, and Victoria, and
given to the captains, with their other papers, when they
clear up their sailing papers, with instructions to fill them
out and return them to the custom-house at the end of their
voyage.

"A series of such observations, made during several
excessive seasons, would enable us to ascertain definitely
the facts about the fur seal, whose habits are but little known
except at the fisheries."

Prof. D.S. Jordan, the well known ichthyologist, to whom
the paper was addressed, adds: "I say remark that I saw a
live fur seal pup June 1 (1880), at Cape Jackson, north-west
on the seal just killed, showing that the time of parting
them forth was just at hand."

Extracts from "Report on
Bread Wheat in the Mississippi
Valley in the years 1884 & 1885" by Wm. Cootner
1888. U.S. Dept of Ag., Div. of Econ. Omth., Bull no 2.

~~for
H. M. C.~~

[Faint, illegible handwriting on a piece of aged, yellowed paper.]

Foot-note on page 47.

There is no evidence to show that in any species of bird a sufficiently large proportion of the total number of individuals comprising the migratory host move forward together at one time to justify the description of such a movement as that of "the bulk of the species." On the contrary, migration consists of a series of successive movements or waves, each of which brings a variable number of individuals to places a variable distance in advance of the point or points from which they started.

Extract from "Report on the seal-Islands of Alaska " by Henry
W. Elliott, 1884.

*Got in
in connection
with land animal*

Page 45.

They all swim rapidly, with the exception of the pups, and may be said to dart under the water with the velocity of a bird on the wing; as they swim they are invariably submerged running along horizontally about two or three feet below the surface, guiding their course with the hind-flippers as by an oar, and propelling themselves solely by the fore-feet, rising to breathe at intervals which are either very frequent or else so wide apart that it is impossible to see the speeding animal when he rises a second time.

How long they remain under water without taking a fresh breath, is a problem which I had not the heart to solve, by instituting a series of experiments at the island; but I am inclined to think that, if the truth were known in regard to their ability of going without rising to breathe, it would be astounding. x x x x x x x x x All their movements in water, whether they are traveling to some objective point or are in sport, are quick and joyous. xxx x x x x x x. They sleep in the water a great deal, too, more than is generally supposed, showing that they do not come on land to rest - very clearly not.

not.

showing that they do not come on land to rest - very clearly the water is great deal, too, more than is generally supposed, sport, are quick and joyous. xxx x x x x x. They sleep in whether they are travelling to some objective point or are in sauntering. x x x x x x x x All their movements in water, their spility of going without raising to breathe, it would be inclined to think that, if the truth were known in regard to instituting a series of experiments at the island; but I am pressed, is a problem which I had not the heart to solve, by

How long they remain under water without taking a breath when he rises a second time.

so wide apart that it is impossible to see the speeding animal to breathe at intervals which are either very frequent or else rare, and propelling themselves solely by the fore-feet, rising surface, guiding their course with the hind-flippers as by an running along horizontally about two or three feet below the a bird on the wing; as they swim they are invariably submerged and may be said to dart under the water with the velocity of

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Page 42.

W. Elliott, 1884.

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Extract from the Bulletin of the U.S. Fish Commission, Vol. VII,
for 1887.

Page 81.

Injuries to the Fisheries in the Baltic by Seals.

by Mr. Hinckelmann.

" The constantly increasing number of seals on our Baltic coasts has become so serious a danger to our coast fisheries, that it appears high time to find ways and means to keep these injurious animals away from our shores. Ten or fifteen years ago, when our fishermen still underrated their destructiveness and at best were amused to see one of them, it was hardly thought possible that these animals would one day endanger the fisheries on the coast of Schleswig-Holstein, where they formerly appeared only in small numbers and at places where there was not much chance of their injuring the fisheries. "

Page 82.

" It is not easy to answer the question as to how the evil can best be remedied, for even the use of poisoned fish as bait (apart from the danger connected with this method) would not be of any use, because the seals are very choice and exact in the selection of their food, and would only take to the dead bait if there was absolutely no chance to get fresh fish, a case which will hardly ever occur in the open sea. It might be recommended to make an experiment with bow-nets made of galvanized-iron wire, painted brown, like the color of the bow-nets usually employed. The shape of these bow-nets should be that of the common bow-nets used for catching cod, but the entrances to the different chambers should be so arranged as

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importance to the different questions should be so arranged as to kind of the common house-hold used for collecting cod, but the best mode usually employed. The shape of these house-hold articles of galvanized-iron wire, painted brown, like the color of the fish, be recommended to make an experiment with house-hold wire fish, a case which will hardly ever occur in the open sea. It the good bait if there was absolutely no chance of not fresh food to the collection of their food, and would only take so not be of any use, because the seals are very choicer and swim bait (taken from the danger surrounded with this method) would not best be remedied, for even the use of poisoned fish is

It is not easy to answer the question as to how the evil
Page 88.

X X X X X X X X X X X X X X X X

was not much chance of their catching the fish-herds. "I
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The constantly increasing number of seals on our Baltic
by Mr. Hinckelmann.

Injuries to the Fisheries in the Baltic by Seals.

Page 81.

1875.

In rivers and their mouths where there are to make it easy for the seals to slip in. Live fish - especially cod, of which the seals are very fond - might, if necessary, be put in these bow-nets when they are set; but there would probably be no lack of bait to attract the seals, as even in wire bow-nets plenty of fish are caught. Such an experiment, which should be made in places frequented by seals, would not involve any great expense, and would certainly be a step toward solving the question as to the best way of protecting the fishermen against the seals. //

Page 124

Notes on the Hatcheries and Fresh-Water

Fisheries of Iceland

by Bened. S. Thorarinnsson.

x x x x x x x x x x x x x x x x

" The attention of the legislative assembly was not specially directed to this matter of protecting the fisheries, nor were laws enacted on this subject before 1885; and the present laws are in many instances primitive, imperfect, and inconvenient, according to the conditions of the country. One of the worst features **xx xx** is that in regard to seals, which are so injurious to the salmon fisheries. This is contained in section 4 of the following statute. The defective point about this bit of legislation is that in all salmon rivers (with one exception) and their mouths, where there are seals, there are also seal-catching places; so that the law is of little or no benefit to the salmon, as it is forbidden to disturb the seals in the places where they are at all easily accessible. "

Section 4 referred to is as follows:--

In rivers and their mouths where there are to make it easy for the seals to slip in. Live fish - especially cod, of which the seals are very fond - might, if necessary, be put in these bow-nets when they are set; but there would probably be no lack of bait to attract the seals, as even in wire bow-nets plenty of fish are caught. Such an experiment, which should be made in places frequented by seals, would not involve any great expense, and would certainly be a step toward solving the question as to the best way of protecting the fishermen against the seals. //

Page 124

Notes on the Hatcheries and Fresh-Water

Fisheries of Iceland

by Bened. S. Thorarinnsson.

x x x x x x x x x x x x x x x x

" The attention of the legislative assembly was not specially directed to this matter of protecting the fisheries, nor were laws enacted on this subject before 1885; and the present laws are in many instances primitive, imperfect, and inconvenient, according to the conditions of the country. One of the worst features **xx xx** is that in regard to seals, which are so injurious to the salmon fisheries. This is contained in section 4 of the following statute. The defective point about this bit of legislation is that in all salmon rivers (with one exception) and their mouths, where there are seals, there are also seal-catching places; so that the law is of little or no benefit to the salmon, as it is forbidden to disturb the seals in the places where they are at all easily accessible. "

Section 4 referred to is as follows:--

// "Soc. 4. In rivers and their mouths where there are salmon, it is allowed to shoot or frighten seals with the restriction that the inviolability of breeding and seal-catching places, which are thus especially proclaimed, must not be infringed upon, except with the penalty of full damages, according to the estimate of good men nominated by the judge and sworn in court." // by Mr. Hindelmann.

The continually increasing number of seals in our Baltic waters has become so serious a danger to our coast fisheries, that it appears high time to find ways and means to keep these injurious animals away from our shores. Ten or fifteen years ago, when our fishermen still underrated their destructiveness and at that time dared to use one of them, it was hardly thought possible that these animals would ever endanger the fisheries on the coast of Heligolandstein, where they formerly appeared only in small numbers and at places where there was not much chance of their injuring the fisheries. "

X X X X X X X X X X X X

Page 52.

" It is not easy to correct the mistake as to how the seal can best be handled, for even the use of poisoned fish baits (apart from the danger connected with this method) would not be of any use, because the seals are very choice eaters. Even in the presence of white food, and would only take to the land bait if they are absolutely no longer to get fresh fish, a case which will hardly ever occur in the open sea. It might be recommended to use an experiment with bayonets made of galvanised iron wire, pointed by the blue color of the bayonets usually employed. The object of these bayonets should be that of the common bayonets used for catching cod, but the bayonets to be employed should be so arranged as

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Comparison of differences stated as between Commander Island skins and Pribyloff skins by United States witnesses. App: II.

.....

Substantive
The witness

Commander Islands or "Copper" skins ~~as~~

distinctly marked by the following Characteristics: —

W. L. Martin.

Narrower at neck and tail--fur shorter--
hair, yellower tinge.

C. W. Price. -- coarser, fur darker, more of a cherry colour. The top hair is darker. p: 521.

G. Bantle. Skin coarser-- under wool darker and coarser. p: 508.

J. J. Phelan. Hair shorter, thinner, darker, --also difference of shape in skins. Copper skins less porous-- pelt harder, stiffer, hair more brittle -- more difficult to unhair. pp: 519--520.

Sungeroff. See Morgan. Slimmer in neck and flank-- hair and fur longer.

G. Liebes. "The foundation of the fur is much coarser and at the same time does not cover the belly as thickly as on the Alaska seals. p: 511.

S. Liebes. Says he has found Russian skins flat, smaller, somewhat different in colour. p: 516.

M. Windmiller. smaller seals and fur not so close. p: 550.

M. Windmiller. smaller seals and fur not so close.
p: 250.

p: 210.

smaller, somewhat different in colour.

G. Hebes. Says he has found Russian skins like,

p: 200 211.

belly as thickly as on the Alaska seals.
and at the same time does not cover the

G. Hebes. "The foundation of the fur is much coarser,
hair and fur longer."

Sungeroff. See Morgan. Stimmer in neck and flank--
p: 219--220.

more brittle -- more difficult to unhair,
less porous-- belt harder, stiffer, hair
difference of shade in skins. Copper skins

J. J. Phelan. Hair shorter, thinner, darker, -- also
coarser. p: 208.

G. Bantle. Skin coarser-- under wool darker and
color. The top hair is darker. p: 221.

G. W. Price. -- coarser, fur darker, more of a shaggy
hair, yellowish tinge.

W. E. Morgan. *hairs* of neck and tail--fur shorter--

distinctly marked by the following characteristics: --

Commander Islands or "Copper" skins

*The under
fur is
shorter*

by United States witnesses. App: II.

near Commander Island skins and Pribiloff skins

Comparison of differences stated as be-

H.S. Berrington. Lighter in colour and when dyed
a close, short, and shiny fur. p:552.

H. Poland. Lighter in colour--fur shorter. p:571.

A. Teichmann. Darker top hair and more yellow on
the cheeks. Depends more on difference
of shape of skins, narrower at head.

Fur shorter on flanks and toward tail.

pp: 580--581.

*See captioned
with intercommunication*

S.M. Buynitsky.

H.R. 3883.
50 Cong., 2 Sess.
p. 78.

G. Was there a large number of seals which left the Pribylov group and went over to the Russian islands? A. You could hardly expect them to go in a body. There had hardly been sealing or seal life to any extent on the Commander Islands or Copper and Bering. It had not attracted the attention of the Russians, but after the indiscriminate killing on the islands of St. Paul and St. George, it was noticed that seal life increased rapidly on the other islands, and the supposition is a natural one that they were diverted from the islands on which they had heretofore been undisturbed and sought other places.

Geo. R. Tingle.

H.R. 3883.
50 Cong: 2 Sess.
p: 164.

Q. What will be the effect if more stringent measures are not taken to protect the seals by the Government.

A. If more stringent measures are not taken it is only ~~because~~ a question of time when these seals will be driven ultimately to seek some other home where they will not be molested. They will not continue to be harassed, and if this marauding is continued, they will, in my opinion either be gradually exterminated or will leave the Islands permanently and land at some other place. They may go on the Russian side.

may go on the Russian side.

permanently and land at some other place. They gradually exterminated or will leave the Islands as continued, they will, in my opinion either be not continue to be harassed, and if this menacing home where they will not be molested. They will seals will be driven ultimately to seek some other it is only maximum a question of time when these

H. R. 3883.
50 Cong., 2 Sess.

p. 164.
A. If more stringent measures are not taken Government.

measures are not taken to protect the seals by the Q. What will be the effect if more stringent
Geo. R. Fringle.

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tion is a natural one that they were diverted from
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St. George, it was noticed that seal life increas-
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G. Was there a large number of seals which

H. R. 3883.
50 Cong., 2 Sess.

S. M. Bournitzky.

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H. R. 3883.
50 Cong., 2 Sess.

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2. M. Bournitaky.

H. R. 3883.
50 Cong., 2 Sess.
p. 165.

*taken in the
Domesticity.*

Report of Lieut. W. Maynard, U.S.N. on Fur Seal Fisheries, 1874.

H. Ex. Doc. 43, p. 6
44 Cong., 1 Sess.

If they could be under our control and protection at all times, and if a sufficient supply of food for them could be procured, we should doubtless be able to cause them to multiply, for there are more of both sexes born each year than necessary to meet the loss from the natural causes of old age, disease, (unless epidemic,) and accident. But in reality we do not even know where they are for seven months in each year, while we do know that they have deadly enemies, which made sad havoc, particularly among the pups and fearlings, as a single killer-whale was found to have fourteen young seals in his stomach when killed. Our protection of them can only be partial, that is to say, we can limit the number to be killed, when they are within our reach, and prevent their being distributed on the breeding-rookeries or driven from the islands. On the other hand, the question arises whether the killing of the number above mentioned has or has not caused a decrease of the seals.

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Report of Lieut. If they could be under our control and protection

44 Cong., 1 Sess.
H. Ex. Doc. 43, p. 6
eries, 1874.

on Fur Seal Fish-
W. Hayward, U. S. N.

February 1874

Extract from "Animal Coloration", by Frank E. Beddard, M.A. &c
published in London by Swan Sonnenschein & Co., and in
New York by McMillan & Co., 1892.

Page 19.

Nevertheless, there are certain colour changes, which can be produced by the direct action of external conditions such as light, heat, cold, etc., and seem to be altogether independent of any selective process. It is very possible that colour is more largely affected by such causes than has hitherto been admitted. A few cases where these environmental effects appear to have come into play will be discussed in the next chapter.

Page 42.

There are numerous cases where the coloration of an animal appears in part to be due directly to the influence of the surroundings, and to have no possible relation to natural selection. I shall reserve what is probably the most striking instance of this - viz., the fauna of caves - to the last, and commence with some ~~xxx~~ other cases.

The Scarlet Ibis of South America is frequently exhibited alive at the Zoological Society's Gardens. It invariably happens that the brilliant colour fades in captivity, and becomes much duller as well as paler. Such a change does not happen with all birds, and cannot therefore be set down at once to insufficient food or neglect of any kind. It may depend upon the nature of the food, or upon temperature; many other causes might be suggested, but the real cause is not certainly known.

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Page 48.

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New York: Wm. H. Williams & Co., 1898.

Published in London by Swan Sonnenschein & Co., and in
Extract from "Animal Coloration," by Francis E. Regnard, M.A., F.R.S.

Such differences of colour, due to obscure causes, are also frequent in nature; they give rise to "local varieties," which are familiar enough to entomologists.

Page 48.

If the nature of animal colours is borne in mind, it seems impossible to doubt the modifying action of food; those that are due to structural peculiarities of the parts coloured (e.g. feathers of many birds) may be altered just as much as those that are caused by the deposition of pigment; for the "structural" colours depend largely upon pigment for their manifestation.

The mere increase in the deposition of pigment may lead to an alteration of colour, oftenest perhaps in the direction of melanism; and there is evidence that various substances when taken into the body do influence the amount of excreted matter. Where there is an obvious relation between waste matter and the skin pigments, it cannot be doubted, that variation in the amount only of the food may lead to colourbrink-changes.

The variation that of such animals is frequently exhibited in the fact that the same animal taken in captivity, and become duller in all its colors, such a change does not occur in all birds, and even where it can be set down at once to insufficient food or neglect of any kind. It may depend upon the nature of the food, or upon temperature; many other causes might be suggested, but the real cause is not certainly known.

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Extract from "The Geographical Distribution of Animals", by Alfred Russel Wallace, Vol. I, some short time later, but do not go so far as their parents.

migrations

This is very strongly opposed to the notion of an imperative Page 18.

The term "migration" is often applied to the periodical or irregular movements of all animals; but it may be questioned whether there are any regular migrants but birds and fishes. The annual or periodical movements of mammalia are of a different class. The annual movements of many fishes are more strictly analogous to the migration of birds, since they take place in large bodies and often to considerable distances, and are immediately connected with the process of reproduction. Some, as the salmon, enter rivers; others, as the herring and mackerel, approach the coast in the breeding season; but the exact course of their migrations is unknown, and we must remember too that owing to our complete ignorance of the area each species occupies in the ocean, and the absence of such barriers and of such physical diversities as occur on the land, they are of less interest and less connected with our present study than the movements of birds, to which we shall now confine ourselves.

x x x x x x x x x x x x x

Taken in home

Page 25.

The preceding summary of the main facts of migrations of (which might have been almost indefinitely extended, owing to the great mass of detailed information that exists on the subject) appears to accord with the view already suggested, that the "instinct" of migration has arisen from the habit of wandering in search of food common to all animals.

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Page 27.

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It is also a curious fact that in so many cases the old

birds migrate first, leaving the young ones behind, who follow some short time later, but do not go so far as their parents. This is very strongly opposed to the notion of an imperative instinct. The old birds have been before, the young have not; and it is only when the old ones have all or nearly all gone that the young go too, probably following some of the latest stragglers. They wander, however, almost at random, and the majority are destroyed before the next spring. This is proved by the fact that the birds which return in spring are as a rule not more numerous than those which came the preceding spring, whereas those which went away in autumn were two or three times as numerous. Those young birds that do get back, however, have learnt by experience, and the next year they take care to go with the old ones. x x x x x x x

We must remember too that migration at the proper time is in many cases absolutely essential to the existence of the species; and it is therefore not improbable that some strong social emotion should have been gradually developed in the race, by the circumstance that all who for want of such emotion did not join their fellows inevitably perished.

x x x x x x x x x

fallen in love

It is assumed by some writers that the breeding-place of a species is to be considered as its true home rather than that to which it retires in winter; but this can hardly be accepted as a rule of universal application.

It is also a curious fact that in no way does the old

Page 101.

x x x x x x x x x x x

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Page 102.

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Page 28. *The Geographical Distribution of Animals*, by the Vol. I,

For the purposes of study of geographical distribution therefore, we must, except in special cases, consider the true range of a species to comprise all the area which it occupies regularly for any part of the year, while all those districts which it only visits at more or less distant intervals, apparently driven by storms or by hunger, and where it never regularly or permanently settles, should not be included as forming part of its area of distribution.

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Page 24.

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It is common to find that the preceding phase of a species is to be distinguished as the one more readily accepted as a rule of individual application. It is not to which it refers in winter, but this can hardly be so a species is to be distinguished as the one more readily accepted

March 1911

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Page 27.

It is also a curious fact that in so many cases the old

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We must remember too that migration at the proper time is in many cases absolutely essential to the existence of the species; and it is therefore not improbable that some strong social emotion should have been gradually developed in the race, by the circumstance that all who for want of such emotion did not join their fellows inevitably perished.

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Page 23. It is also a curious fact, leaving the young once behind, who follow

Extract from "The Geographical Distribution of Animals", by
Alfred Russel Wallace, Vol. I,

Page 18.

The term "migration" is often applied to the periodical or irregular movements of all animals; but it may be questioned whether there are any regular migrants but birds and fishes. The annual or periodical movements of mammalia are of a different class. The annual movements of many fishes are more strictly analogous to the migration of birds, since they take place in large bodies and often to considerable distances, and are immediately connected with the process of reproduction. Some, as the salmon, enter rivers; others, as the herring and mackerel, approach the coast in the breeding season; but the exact course of their migrations is unknown, and owing to our complete ignorance of the area each species occupies in the ocean, and the absence of such barriers and of such physical diversities as occur on the land, they are of less interest and less connected with our present study than the movements of birds, to which we shall now confine ourselves.

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It is assumed by some writers that the breeding-place of a species is to be considered as its true home rather than that to which it retires in winter; but this can hardly be accepted as a rule of universal application.

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the geographical distribution of animals, for the purposes of study of geographical distribution therefore, we must, except in special cases, consider the true range of a species to comprise all the area which it occupies regularly for any part of the year, while all those districts which it only visits at more or less distant intervals, apparently driven by storms or by hunger, and where it never fishes regularly or permanently settles, should not be included as forming part of its area of distribution.

It is strictly analogous to the migration of birds, since they take place in large bodies and often in considerable numbers, and are invariably connected with the process of reproduction. Thus, at the season, early in the year, as the herring and mackerel, approach the coast by the breeding season; but the exact course of their migrations is unknown, and owing to our complete ignorance of the habits and stations occupied by the birds, and the absence of any trustworthy and of such physical characteristics as occur on the land, they are of great interest and have attracted much of our present study than the movements of fishes, to which we shall now confine our selves.

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The preceding summary of the main facts of migration (which might have been given in a more fully extended, and to the great mass of details in relation thereto exists in the subject) appears to accord with the views already suggested, that the "instinct" of migration has arisen from the habit of migrating in search of food common to all animals.

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It is also a curious fact that in so many cases the old

It is necessary to have a clear idea of the geographical distribution of the species in order to be able to determine the geographical distribution of the species in the present case.

REFERENCES

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FOOTNOTES

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Extract from "Nature", Vol. X, 1874., Page 459.

A. R. Wallace.

Migration

It appears to me probable that here, as in so many cases, "survival of the fittest" will be found to have a powerful influence. Let us suppose that in any species of migratory bird, breeding can as a rule be only safely accomplished in a given area; and further, that during a great part of the rest of the year sufficient food cannot be obtained in that area. It will follow that those birds which do not leave the breeding area at the proper season will suffer, and ultimately become extinct; which will also be the fate of those which do not leave the feeding area at the proper time.

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Migration

With these two ~~facts~~ sets of facts before us we may begin to try and account for the cause or causes of Migration. In some cases want of food would seem to be enough, as it is undoubtedly the most obvious cause that presents itself to our mind. The need which all animals have of finding for themselves proper and sufficient sustenance is all powerful, and the difficulties they have to encounter in obtaining it are so great that none can wonder that those which possess the power of removing themselves from a place of scarcity should avail themselves of it, while it is unquestionable that no Class of animals has this facility in a greater degree than birds. X

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Extract from "Report on the Seal Islands of Alaska" by Henry
W. Elliott, 1884, page 66.

*Included
under Domestic*

Increase of the Seal life. - I am free to say that it is not within the power of human management to promote this end to the slightest appreciable degree over its present extent and condition as it stands in the state of nature, heretofore described. It cannot fail to be evident, from my detailed narration of the habits and life of the fur-seal on these islands during so large a part of every year, that could man have the same supervision and control over this animal during the whole season which he has at his command while they visit the land, he might cause them to multiply and increase, as he would so many cattle, to an indefinite number - only limited by time and the means of feeding them. But the case in question, unfortunately, is one where the fur-seal is taken, by demands for food, at least six months out of every year, far beyond the reach or even cognizance of any man, where it is all this time exposed to many known powerful and destructive natural enemies, and probably many others, equally so, unknown which prey upon it, and, in accordance with that well recognized law of nature, keeps this seal-life at a certain number - at a figure which has been reached, for ages past, and will continue to be in the future, as far as they now are - their present maximum limit of increase, namely, between four and five million seals, in round numbers.

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W. Elliott, 1884, page 66.

Extract from "Report on the Seal Islands of Alaska" by Henry

Extract from the American Encyclopedia, Vol. XVI, page 79.

Turtles

All are marine, excellent swimmers, and rarely approach the shore except to deposit their eggs; x x x x x x x x x. They come on shore toward the end of spring to lay their eggs on the sandy beaches above high-water mark; they generally select desert islands or keys, and a still moonlight night; they dig a trench in the sand with their hind feet about 1½ ft. deep, and deposit therein about 100 eggs at each of three layings, with an interval of two or three weeks between them; the eggs are lightly covered with sand, and left to be hatched by the heat of the sun; if undisturbed, they return to the same shore year after year.

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Amphibia

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The Cheloniidae, or marine turtles, contain but few species which are referred to three genera, - *Cacuana*, *Chelone*, and *Carette*. Their limbs are wholly modified into paddles, by means of which they can propel themselves with extraordinary rapidity through the water, but which are entirely unfit for locomotion on land, where the progress of these animals is as awkward as that of a seal. The toes are enclosed in a common skin, out of which only one or two claws project.