No. 51.

1906. May. 1.

to

1907. ~~May~~ 7.

June 6

[1]

1906.

MAY.

1. Tues.
Obtained 100 cards for Rose. 5/-

Mrs. Edgar R. Waite.

"LONGWOOD,"
HAWTHORNE AND PAPANUI ROADS.

1st Wednesday.

2 Wed.
Signed order for Gas. per 1000 ft & stove hire 2/6 p. month. We went to meeting of Phil. Inst. when I

was proposed for membership. Dr. Farr on Electric waves.

3. Thurs

Received B/L from Suttons 38 packages only sent balance to be shipped next boat. Mrs. Waite sent her photograph

4. Fri.

Engaged Heywood & Co to obtain + deliver the goods, signed Customs declaration

5 Sat.

Goods delivered, spent most of day unpacking some breakages among crockery etc. Gas Stove fixed.

6. ~~Mon~~. Sun

Spent morning at the house further unpacking & in the afternoon we returned a call from Misses Hall from Mosman.

7. Mon.
Learned that Nairn & Co had fetched the Newts late Saturday (see Apl 30th). Took Rose & Claude to the Pantomime "Sinbad".

8. Tues.
Letter from Benham & replied.

9. Wed.
Received reply to my letter demurring to demand for Income Tax 1906, The Comm.rs

claim the sum as the assessment is made on the basis of income for 1905. I. again wrote pointing out that they claim in advance.

10. Thurs.
Received advice that the second lot of goods had been sent by "Wimmera". Went to Chrysanthemum show with De Lisa

11. Fri.
Passed Customs form for goods. Carrying Co delivered six of the seven packages balance of last consignement, one box

missing, Unpacked them at night. 3 Picture glasses broken.

12. Sat.

The goods which I expected had not reached Ch Ch. this morning & consequently will not be delivered until Monday. Wrote to Mr. Meyson who has a prospective tenant & to Paterson

13. Sun.

Had a stroll in the morning & in the afternoon we called on the Misses Hall & together went through the Park & visited the Fish hatcheries

14. Mon.
More worry. Found that the goods had been retained at Lyttelton. The Shipping Co. said, because they were consigned there - Extra charges will be incurred to which I demur.
De Lissa took me to first meeting of new Session of Savage Club
15. Tues.
Wrote to Whitelegge. Received goods, very much damaged & another case missing
Spent afternoon unpacking.

16. Wed.
Went with Rose to see Holman Hunt's picture, The Light of the world. Further unpacking. 5 Aquarium glasses. Dining room mirror, table etc smashed.
17 Thurs.
Commenced to put things in order. Linoleums etc. Letters from Wilfrid - Cherry Accepted Whites estimate to recover the dining room suite at £ 10. 15 - 0.
18. Fri.
Ordered Carpets and Linoleums. Letter

from Horning & Co
They have let the
house to E. L. Cooper
Commercial Bank S. A.
for 6 months @ £60.
Enclosed draft for
"Burley" Rent. £4-0-0
" less Adbt. 7.6
" Comm. 4-0

£3. 8.6

Acct for "Headingley"
Letter from Hedley
& Rainbow. wrote
to Horning.

19. Sat.
Had a sudden and
violent attack of
Rheumatism which
rendered me useless
during removal which

was effected to-day
An Artist from the
"Spectator" made a
sketch of me.

20 Sun.
I awoke rheumatism
free, only a little
stiffness left. Hard
at work at Longwood.
Pipe & the Misses Hall
came in afternoon.

21. Mon.
Letter from Jordan
congratulations and
mention of earthquake
I am to give one of
the College lecture
series, in August,
handed in title :—
"Defences of Animals."

22 Tues.

Ordered type etc for Museum. Repaired dining room table dressing table etc.

23 Wed.

Received type from Heywood & Co. Charges for removal

(38 Pkgs)

"Monowai"	~~£14~~	~~5~~	~~9~~
to Ch Ch.	8	2	0
Rly carriage	4	5	9
Cartage	1	7	6
Commission		10	6
	14	5	9

(35 Pkgs.)

Per "Wimmera			
	10	16	0
Rly Carriage	5	11	6
Cartage	1	15	0
Commission		10	6
Carting luggage		3	6

18 . 19 6
£ 33 . 2 . 3 .

Attended Museum Committee meeting & Phil. Soc. Council meeting.

24 Thur.
The "Spectator" contains my portrait, sketch. Scarcely excellent.

25. Fri.
All spare time spent in putting house in order. - Every day.

~~26. Sat~~
Received M/c Additional Railway charges re furniture £1 . 1 . 7.

27 Sun.
Pipe called.

28. Mon.
Letter from Edmonds Mosman, re florist at Exhibition. I replied. Got together sub-committee re Guide Book.

30. Wed.
Letters from Wilfrid & Mrs Waite re the appointment, also Woodward (W. Aust) & Wermann (N.S.W.)
On receiving Cheque
£ 33. 6. 8.
Paid Heywood & Co
£ 33. 2. 3.

31. Thurs.
Wrote Hedley & Allan.
Nature (Ap) contains notice of appointment.

June.

1. Fri
Made arrangements to Exchange my Bike (Triumph) for newer patter (Kent) and to give £6. My cyclometer now reads:- 725. m.

2. Sat.
Got Bike, but had a Brooke's Saddle fitted @ 15/-.

3. Sun
The house is now in fair order, put down carpet in Hall etc.

4. Mon
Prince of Wales birthday took afternoon off.

5. Tues.
Arranged for insurance of belonging for £400.
6. Wed.
Wrote to Allan.
7 Thurs
Received letters from Whitelegge & Paterson.
Went to a local entertainment.
8. Fri.
Wrote to Hellawell.
9. Sat
Put up mouldings on bookcase & commenced arrangement of library
10. Sun.
Heavy frost. The only Aquarium jar which

I had charged with water to accommodate the plants, cracked.

11. Mon.

News of the death of Seddon, on board, leaving Sydney. Called in Wm Hutton, and enquired about the books re Museum. Received 15/- from the Union Co. allowed for luggage. Frost again

12. Tues.

Frost. this is rather a novelty to me after deprivation for so long.

13. Wed.

Letter from Wm Waite acknowledging photos

Museum Committee meeting
I attended. At night
took Rose & Claude
to opening of Popular
Lectures Dr Evans on
Liquefaction of Gases.
14 Thurs
Cut broken mirror.
Letter from Etheridge.
J. E. Fraser's tender for
New Guide book accepted.
15 Fri
Frost broken up - Rain
wrote to Wilfrid & Mrs
Waite.
16. Sat.
Sent slides of Drosera
& Utricularia to Chilton.
17 Sun
Looking thro' stock

of my own papers.
Will send copies to
various societies.
18. Mon
Took Rose & Claude to
"Veronique" Wallace
playing
19 Tues
Wallace called at the
Museum, I asked him
for Sunday. Arranged
to go with Hülsen to
rock pools on Sunday.
20. Wed.
Attended Exhibition
Committee, put in
for Aquariums. "Attack
& Defence" Case and
drawings of Ducks.
Wrote to Crane of
Sydney for Estimate

for Marine tank.
Took Rose and Claude
to Chilton's lecture on
"Senses of Plants."
21. Thurs
Closed Museum in
afternoon. Funeral
of Premier. I went
for Bike ride to
Harewood & beyond.
Took Rose & Claude to
"Utopia."
22 Fri.
Roth surprised me
by a call. he is
on his way home
& had just time to
come from Lyttelton
to see me. I took
him to see facade

of Exhibition & saw him into tram at the Square. *

23 Sat

Wallace called to say he will be unable to see us on Sunday.

24 Sun.

Went with Hülsen to Summer thence across to Taylor's mistake for low tide. I got some small fishes etc in the rock pools. The Misses Hall & Snadden in the evening

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* attended practice of Pied Piper at Vicar's House -

25. Mon.
Wrote Sec. Acclimatisation Soc. asking permission to be present when the Victoria Lake is drained
Received draft £6-9-11
Rent houses.
26. Tues.
Wrote to Damon, Berlin & Georg Basel, books on Aquaria.
27. Took illustrations to Beasley for lantern-slides.
28. Fixed up insurances
Thurs Paid £10.15.0 for recovering furniture.
29 Fri
Attended practice of 'Pied Piper'.
30. Sat.
Revising Hutton's Fishes in Index Faunae, N.Z.

July.

1. Sun.
Went for walk with Pipe and examined water courses for aquatic plants.

2. Mon
Suter sent me some fishes fr. Auckland.

Mr E. R. Waite, director of Canterbury Museum, has received an interesting letter from Professor David Starr Jordan, president of the Leland Stanford University, in reference to the University's loss by the San Francisco disaster. The president says:—"Dear Mr Waite,—Please accept my thanks for your kind words and sympathy. We have almost forgotten our troubles in the face of the huge wreck of San Francisco, the like of which has never been known in the history of conflagrations. Our working buildings, low and massive, are practically intact. A few bottles only were broken, and no books or apparatus of importance destroyed. We shall go on with our work as usual in the autumn. At the same time, we have lost a good deal of money in the complete wreck of the unfinished library and gymnasium, and in the fall of the tower of the beautiful church, by which a great deal of damage was done."

3. Tues.
Took Rose Claude to the Musies Hall to the "World's Pictures" which included scenes of the San Francisco disaster.
4 Wed
Letter from Howarth asking me to become Hutton's successor as assistant Editor of the Museums Journal. Accepted. Wrote Roebuck.
5. Wrote to Paterson.
6. Fri.
Attended practice of "Pied Piper".
7. Sat.
Hamilton to tea.
I arranged to give him a set of my papers.

he will assist me in completing my set of T.N.Z.I. He wants a series of Gouldian Finches. I wrote Grant on this matter.

8. Sun.
All went to tea to Herdman's Smith's both he & his wife are from Leeds.

9 Mon
Wrote at Cat. N.H. Fishes.

10. Tues.
Attended practise of Orchestra. "Pied Piper"

11. Wed
Attended meeting of Phil. Soc.

12. Thurs.
Wrote to Curator of

N. Z. Museums inviting cooperation & assistance with Museums Journal.

13. Fri

Made frame for the pier glass now very much reduced in size by the breakage.

14. Sat.

Dr. Mrs Chilton called in the afternoon & the Misses Hall came to tea.

15. Sun.

Visited Speight in the afternoon, the Chiltons & Slomans also there All left before tea. (New Brighton.).

16. Mon.

Writing Cat of NZ.

Fishes. The Guide book is now going through the press.

18. Wed.

Appointed Paterson my proxy re 'Colton Bromer' The Museums Committee sit to day and will have my minute suggesting omission of list of donors from Guide Book also my draft preface. Attended Exhibition Nat. Hist. Committee, Chilton & I were appointed sub committee to chose site of Exhibits.

19 Thurs

Chilton & I went to the Exhibition building.

and selected a site - subject to commissioners' approval. De Lissa paid me a visit at night.

20. Fri

Letter from Suter. Gave notes to Lyttelton Times re Nat. Hist. Exhibit at Exhibition Took Rose & Claude to "Edison's Living Pictures, the Misses Hall & Mr. Herdman Smith accompanying us.

21. Sat.

Article on Nat. Hist at the Exhibition in the Times:

22 Sun

The Misses Hall & Mr Snaddon to tea.

23. Mon.

Hamilton send me 16 Vols T. N Z I. thus completing my set. Sent note to Etheridge for publication, name Crepidogaster preoccupied proposed Aspasmogaster. Learned that £500 has been voted for Nat. Hist. Court. Wrote to Cherry & Nishikawa for fishes. Also to Whitelegge.

24. Tues.

Went to hatchery and saw trout stripping. Wrote to De Lissa who goes to Sydney on Friday. He will take charge of any

fish which Cherry may have for me. Selected a set of my papers for Hamilton.

25. Wed.

Received draft from Hornung Co £8. 9. 11.
Attended Nat Hist (Exhib.) Committee & Chilton Cockayne & Self were appointed a Sub. Committee to arrange matters.

26. Thurs

I went to Exhibition & measured ground.

papper man bald
please leave 4/ on vrander
to morrow morning
D Dann

"Paper man called."
note "vrander"

27. Fri.
Made plans of Nat
Hist Court.
28. Sat.
Jensen (Macleay Fellow)
called to see me
he has just returned

from Samoa.

29. Sun.

Built an additional bookcase in dining room. Went for a walk with Misses Hall Pope & Snaddon, the ladies returning with us to tea.

30. Mon.

The Exhib. Commissioners will order the Marine tanks, Saw Secretary.

31. Tues

Wrote to Cranes and informed them that their estimate had been approved. Hilsen

Received reprints of my 2 'Record' papers.

August.

1. Wed.

Letter from Mrs Waite She mentions coming out for a trip!! Hamilton called. Attended Scolts lecture on "Rapid Transit."

2. Thurs.

Took Rose & Claude to Bullen's Lecture on "Whales."

3. Fri.

Wrote to Evermann in reply asked him to send me fishes reptiles & newts alive for the Exhibition. Also to Suter asking him to take charge on arrival at Auckland

The trout eggs I got from the hatchery, hatched to day. Letter from Anderson asking me re exhibit of the Aquaria in N. S. W. Court.

4. Sat.

Visited hatchery & got eggs of Brown & Rainbow Trout & in afternoon made a hatching tray & used overflow from the Artesian supply.

5. Sun.

The Misses Hall for walk & to tea.

6. Mon.

Wrote to Benham, he had asked me

if I would write
an account of the
fishes for Exhibition
Guide book.
7. Tues
Wrote Wermann, asked
him if he could send
fishes & newts for Aquaria.
Attended soiré of the
Yorkshire Soc.
8. Wed.
Letter from Benham
re cases for Nat.
Hist. Objects. Attended
meeting Phil. Soc.
9. Thurs
Am note having slides
made for my lecture.
Received Vol. XXIII
pts 1. + 2. Fishes of
Hawaiia Jack? to

Evermann.

10. Fri.

Spent evening with Mr & Mrs Minty. Miss G Hall left for Sydney. I gave her letter to Cherry. Sent review of Bull. Colonial Mus. to Museums Association Journal.

11. Sat

Wrote to Priora re Jap. Gold Fish.

12. Sun.

Went exploring the water-holes.

13. Mon.

Spent evening with "Hulsen."

14 Tues

Preparing lecture for

the 29th.

15. Wed.
Museum Committee meeting. Suggested sale of Alluvial Gold - no data. Attended Blunts lecture in evening.

16. Thurs.
Gave Chilton 21/- for Hutton Memorial Fund. Saw Hamilton.

17. Fri.
Made drawing of Stoats for lantern slide. Wrote to Paterson, his birthday -

18. Sat.
Went to Water holes in search of fishes.

19 Sun.
Went for stroll with Hülsen in morning: found Galaxias in ditches - took Rose & Miss Hall to meet Mrs Hülsen in the afternoon H. and I explored streams and saw Gobies.

20. Mon.
The two gold fishes having hitherto been kept in a billy & warmed on the stove I transferred to one of the aquarium glasses mounted in a sunny window the worst of the frost being probably over.

21. Tues.
Found that our 2 bay windows at the Exhibition had been struttted across and spoilt. Chilton made representation to building Committee & we met when it was agreed to make an alteration.

22. Wed.
Letters from Wilfred & Fanny Bowling. I wrote to Hedley & to Crane Son re Marine Aquaria. Read last gallery of Guide Book for which I am glad.

23 Thurs.
Wrote to Allan for aquatic plants.
24 Fri.
Received notice that I had been elected to Council of Philoph. Institute.
25 Sat.
Commenced supplying young trout with food.
26. Sun.
Examined streams for plants etc. caught a small crawfish
27. Mon.
Received last slides for lecture of which there are 65 in all.

28. Tues.
Ayson. Fish's Inspector called I went with him to Apawa to Johnson's Aquaria & Gardens. He has a lot of nice things breeds Carp, Tench Perch Catfish Trout & Salmon. Plants in plenty

29. Wed.
Invited tenders for Cases for Exhibition Gave lecture "Defences of Animals". Rowe in the Chair.

The seventh popular lecture of the series in connection with Canterbury College will be given to-morrow evening in the College Hall by Mr E. R. Waite, Curator of the Museum. The subject will be "Defences of Animals," and the lecture will be illustrated by lantern slides. The date of the concluding lecture of the series by Dr. Bradshaw has been altered to Wednesday, September 12th.

The military band concert by the Gar-

LECTURES.

CANTERBURY COLLEGE.

POPULAR LECTURES.

THE SEVENTH LECTURE of the Series will be delivered in the College Hall on WEDNESDAY, the 29th inst., at 8 p.m., by

EDGAR R. WAITE, ESQ.,
Curator Canterbury Museum,
Subject: "DEFENCES OF ANIMALS."
Fully Illustrated by Lantern Slides.

Admission 1s, School Children 3d.

The date of the concluding lecture of the series, by DR. BRADSHAW, on Counterpoint, has been altered to WEDNESDAY, 12th September.

A. CRACROFT WILSON,
Registrar.

28th August, 1906. 7239

30. Thus Chilton reintroduced Sam. Thomson. (Dunedin) I having met him in Sydney. Following are notices of the lecture together with scattered paragraphs of silly extracts.

"The ~~Prod~~ Times"

POPULAR LECTURES.

"DEFENCES OF ANIMALS."

Mr E. R. Waite, curator of the Museum, made his contribution on Wednesday to the series of popular lectures organised by the Board of Governors of Canterbury College, the subject of the lecture being "Defences of Animals." There was a large audience, and Mr T. W. Rowe, a member of the Board of Governors, presided and introduced the lecturer.

Mr Waite said that the expression "the struggle for existence" was no idle catchword, but a stern reality. A constant struggle was going on between animals which devoured others and those which tried to escape being devoured. There was a class of defences designed to meet the pressure of climatic conditions, which alone had been sufficient to modify animals. The same conditions which impelled the Eskimo to cover his body with thick skins and enabled the Australian to live in a naked state, regulated the climatic defences of quadrupeds and other animals. Tropical sheep were not so valuable for their wool as those produced in colder regions. Swine living in warm countries had thin and scanty bristles, all of the same structure, but those in colder parts of the world had, in addition to their bristles, fine wool next the skin. There was need for defence against the active attacks of predatory animals, for the warfare between the destroyers and the victims of Nature was not unlike modern warfare between human beings, though immeasurably more complex and complete. The successive stages of development in the defences of animals were not very readily apparent. When Nature provided an animal with a stronger jaw or larger teeth, it also gave that animal's prospective victim a thicker de-

fensive coat, but the increased resistant was never much in excess of what was reasonably required. In New Zealand, where there were no really powerful enemies, it would be useless to look for striking evidences of defence. The mere existence of such primitive or degenerate animals as the kiwi, the kakapo and the weka would indicate an absence of powerful enemies. Where destroyers and victims had grown up together they balanced one another in great measure, and it was only when man or some physical agency disturbed the balance that the constituents of animal life became seriously altered. The introduction by man of dogs, cats and weasels and a host of other animals was driving many native forms out of existence. When defences were no longer required they were reduced by a sure but slow process. The spines of the hedgehog resulted from development through thousands and thousands of generations, and if all the enemies of the hedgehog were destroyed, innumerable generations of hedgehogs would have to be born before any diminution of its defences could be seen. When man took a hand in the transmutation of animals, changes were effected comparatively quickly, but under the process of atavism, or reversion, rapidly acquired characteristics were quickly lost. In Nature it was seldom the case that the same weapons were used for attack and defence. An indirect usage was sometimes the rule. Teeth and talons were used directly for attack, and indirectly for defence, while antlers and tusks were direct weapons for both attack and defence. It was for defence that the most elaborate contrivances were developed. The defences of animals might be classified as bodily, mimetic and mental defences. The bodily defences included those structures which were normally regarded as an integral part of the animal,

and whose signification was apparent. The mimetic defences were the peculiarities of form or colour, whose signification was not readily obvious. Mental defences were those actions which were directly the outcome of volition. Mr Waite described numerous bodily defences, illustrating his remarks by some excellent lantern slides. Mimetic defences, he continued, were the object of much research, and contained the elements of romance. Mimicry might be divided into protective resemblance and mimicry proper, animals possessing protective resemblance being those which were difficult to detect through being made like their surroundings. True mimicry was the attribute of those animals which imitated others, in order to be mistaken for them. After quoting examples of mimicry, Mr Waite said that there were many direct forms of defence adopted by animals. There were animals which fed by night instead of by day, in order to escape attention, but it was questionable whether they had gained much, for their enemies had also changed to nocturnal habits. Man was said to differ from the animals by his power to reason, as opposed to the possession of instinct; but the distinction was a fine one.

Numerous defences of animals appeared to be explicable only on the assumption that some power of reason was exercised. Mr Waite quoted several examples before concluding his lecture.

Mr Waite was frequently applauded, and after he had finished he was accorded a vote of thanks, on the motion of Mr J. C. Adams, seconded by Mr M'Gregor Wright.

"The protective defence of the skunk," said Mr E. R. Waite last evening, "is his power to emit an odour that neither man nor any other animal can suffer. The skunk, therefore, boldly proclaims the fact that he is a skunk by wearing a most conspicuous coat."

The stoat was mentioned by Mr Waite last evening as an animal provided with the defensive power of changing its coat, being brown in the summer and white in the winter. "In the summer," said Mr Waite, "the stoat is vermin, but in the winter it is ermine, and is used for the decoration of ladies and civic functionaries."

One of the lantern slides shown in connection with Mr Waite's lecture on animals last evening was stated by him to be probably unique. It was made, he said, from a photograph of a living tiger taken as it appeared in its native jungle. The tiger was discovered asleep by one of the shikaris employed by an English clergyman, who was able to photograph the splendid animal where it lay.

The Bombardier or Artillery Beetle was quoted last evening by Mr E. R. Waite as an animal endowed with excellent means of defence. "I once picked up a Bombardier in New South Wales," said the lecturer, "and soon dropped it. As soon as I took hold of it, it fired off its miniature cannon, making a sharp report and a smoke-like cloud. Involuntarily I dropped it into the grass, and I never saw it or its like again."

In the course of his lecture on "The Defences of Animals" last evening, Mr E. R. Waite had a good deal to say about the ability of the hedgehog to contract its skin through the use of certain muscles. "I have known boys," he said, "who were able to move their whole scalp backwards and forwards by means of a remnant of the same muscle." "Most monkeys are able to do it," added the lecturer naively.

"The Press."

THE DEFENCES OF ANIMALS

LECTURE BY MR E. R. WAITE.

A further popular science lecture was delivered on Wednesday night at Canterbury College in the presence of a large audience by Mr E. R. Waite, Curator of the Museum, who dealt with the defences of animals. Mr T. W. Rowe, a member of the Board of Governors, was in the chair.

The lecturer said that a constant struggle was going on between animals which devoured others and those which endeavoured to escape being devoured. The same conditions which impelled the Eskimo to cover his body with thick skins, and enabled the Australian to live in a naked state, operated in regulating the climatic defences of quadrupeds and other animals. The differences between tropical sheep and breeds originally produced in colder regions, and differences found in swine, were quoted as instances. Coming to defences against the active attacks of predatory enemies, Mr Waite said that the rivalry which existed between the

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destroyers and the victims of Nature was not unlike that which took place in modern warfare, though it was immeasurably more complex and complete. In New Zealand, where there were no really powerful enemies, it would be vain to look for striking evidences of defence. The mere existence of such primitive or degenerate animals as the kiwi, the kakapo, and the weka, would at once point to an absence of powerful enemies. Where destroyers and victims had grown up together, they in great measure balanced one another, and it was only when this balance was destroyed by man, or physical agency, that the constituents of animal life became seriously altered. The elaborations evolved by animals, or adopted for their protection, might be classified under the three headings of bodily, mimetic and mental defences. The lecturer described these kinds of defences by reference to all sorts of animals, explaining in each case how and why they were used. Mimetic defence, he said, might be sub-divided into two sections, namely, protective resemblance and mimicry proper. True mimicry was the term applied to those animals which imitated others, and were mistaken for them. These were usually conspicuous, and so traded upon the evil reputation of the animals mimicked. The lecturer illustrated these principles by quoting a great many cases of both kinds. There were numerous defences of animals which appeared to be only explicable on the assumption that there was some exercise of reason. Mr Waite concluded his lecture by quoting the example of the bombardier or artillery beetle, a sample of which he picked up in New South Wales—but at once dropped again. "As soon as I took hold of it," said the lecturer, "it fired off its miniature cannon, producing a sharp report and a smoke-like cloud. I involuntarily dropped it into the

grass, and though I spent fully ten minutes searching for it I never saw either it or its like again." At the beginning of his lecture, Mr Waite added, he had referred to the resemblance between the destroyer and the victims of Nature, and that which existed in modern warfare. He thought that there was no exaggeration in this comparison, when one realised that the bombardier beetle fired blank cartridges ages before the invention of gunpowder.

At the conclusion of the lecture a vote of thanks, moved by Mr J. C. Adams and seconded by Mr McGregor Wright, was carried by acclamation.

Armour-plated fishes used to be much more common than they are to-day, and are now becoming extinct, Mr E. R. Waite informed his audience last night.

"The stoat changes its hue with the seasons in order to resemble its surroundings," said Mr Waite last night. In summer it is of a brown hue, like the ground around. In winter it is white, to resemble the snow around. It changes its name with its colour. When brown it is called vermin; when white it is called ermine and is used to decorate ladies and civic functionaries." (Laughter.)

In the course of his leture last night Mr E. R. Waite showed a photograph of a tiger. The picture, he stated, was probably unique, as it was the picture of a living tiger photographed in its native jungle. The picture was taken by a clergyman in Bengal. The animal was discovered sleeping. The camera was quietly set up, and the picture was obtained. The tiger was subsequently shot.

"One of the most formidable-looking animals," said Mr Waite last night, "is the thorny devil of Western Australia. He is only six or seven inches in length, it is true, but he appears to have been invented with a view to seeing how many spines can be got into a given space. Not only has he spines everywhere, from the tip of his snout to the tip of his tail, but on the back of his neck are two bosses with extra large spines." The picture of the beast shown on the screen was that of a most hideous monstrosity.

"When I was a boy," said Mr E. R. Waite last night, "I remember some boys were able to move their scalp backwards and forwards. This was done by means of the remnants of an obsolete set of muscles. Most monkeys can do it now." (Laughter.)

31. Fri.
De Lissa brought some Pseudomuegils from Cherry but all were dead except 3. I wrote to Cherry. Letter from Paterson Card from Scott.

September.

1 Sat.
Made stand for 3 aquaria jars for dining room.

2. Sun.
with Hilsen rode through Belfast to the Styx and the Waimakariri. Got Apus & Water plants after riding 20 miles my tire blew out when within 15 yards of home. Got Lysozoma on grassy flats near the coast. Spent evening at Hilsens including Rose & Miss Hall.

3. Mon.
Put in length of 1/4" piping & tap for trout supply. The fry are growing. Guide Book issued. Got estimate for cases Exhibition £315. & for stands for the Aquaria (17). £3.18.0

4 Tues.
Another tender, £195.

5. Wed.
Attended Exhibition Committee when we met the Commissioners. Attended Phil. Soc. meeting at night.

7 Fri
Wrote to Etheridge, am sending Insects and

Stone implements.

8. Sat.

Am fitting up room at the Museum where I can work at the fishes apart from the Official routine.

9. Sun.

Caught some Sobiomorphus sobiordes and another crawfish.

10. Mon.

Letter from Wilfrid announcing birth of his first born - a daughter - on July 25th "Mary Barbara" & one from Mrs. Waite with same news.

11 Tues.

Wrote Museum Report

Commencing work on fishes sent by Suter.

12. Wed

Went to trial "Popular lecture". Dr Bradshaw on Counterpoint."

13. Thurs.

Hamilton who has now taken residence in Ch. Ch. spent the evening with us & we discussed question of fish-hook.

14. Fri.

Went to Lyttelton by early (7.55) train & met Sertie Hall who brought Pseudomugil & Carassiops from Cherry. The former

all affected with fungus. Fitted up room at Museum for my fish work. The other room to serve as my Office. Letter from Crane & Co. The tanks were sent by the "Mamuka".

15. Sat.
Attended to Aquariums intended for Exhibition

16 Sun.
Caught a number of Gobiomorphus & placed in ram overflow tank which I had made.

17. Mon.
Interviewed Exhibition Commissioners re the proposed aviary. Had

a sample of the
"Munro doctrine."
18. Tues. Discovered more
errors in Numbered figures
19 Wed. of last Record. paper
Attended my first
Council meeting of
Phil. Soc. was elected
Hon. Librarian.
20. Thurs
Working at Tripterygion
collected by Suter at
Auckland & self at
Sumner.
21. Fri
The Hülsens. Misses
Hall & Miss Gruar came
in the evening. We
arranged for picnic
to Sumner on Sunday
if fine.

22. Sat.
Marine tanks were delivered & I unpacked them at Exhibition wrote to Cherry re Fishes. Letter from Allan.

23. Sun.
Picnic at Taylor's Mistake: present Hülsen & I searched the rock-pools got some Tripterygions & many examples of Borichthys poreo-pictus, Hutton desc^d. from a single beach-dried specimen. Asked Hamilton about Clarke's types of former genus. // wrote to Jordan, about

24 Mon

illustrations asking how his are produced and reproduced. Also if such could be made in U.S.A. and cost. Also wrote to Gilbert re Myctophids.

25. Tues.

Had a Heine abend at Hülsens

26. Wed.

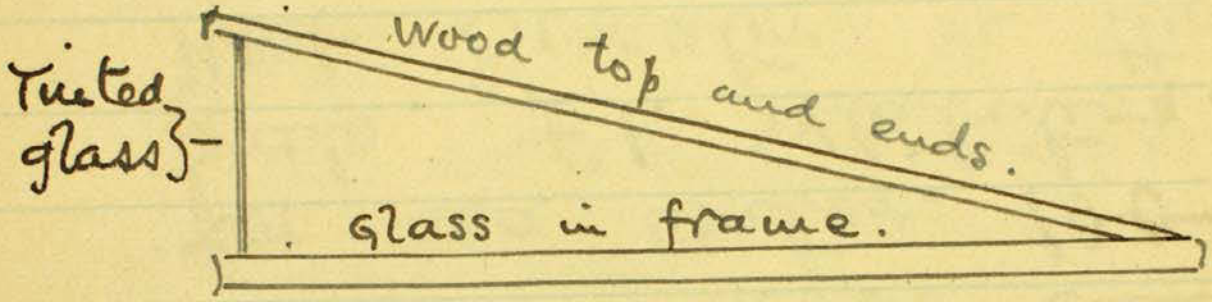
Letter from Cherry & replied. Wrote to Allan. Attended Com-mittee meeting at Exhibition

27. Thurs.

Had my aquaria sent to Exhibition - Hülsen & I spent the afternoon there and

fitted marine tanks together. Another letter from Cherry he had ordered £1. worth. Fighting Fish per the "Airlie".
Letter from Income Tax Commissioners, saying that they have abandoned the claim for Tax. (N.S.W).
Bought a wood tank for sea water. 100 gals. £1. Exhibition.
Met Director of the exhibits and selected site for Aviary wh. I am asked to design.
28 Handed design of Aviary to Chilton for

submission to the Commissioners. All the aquarium stands are now in the Court. Made drawing of cover for Marine tanks



Ordered sack of grit for aquaria.

> The spelling of the word "museum" appears to present almost insuperable difficulties to many individuals. Mr Edgar R. Waite, curator of the Christchurch Museum, remarked to a reporter yesterday that during a long connection with such institutions he had encountered at least a round dozen of different renderings, but for really strenuous effort he awards the palm to a Christchurch resident, who recently addressed a letter to Mr Waite, in care of the "Mueaxeame."

I gave the word as Sent = MUEAXSEAME."

29. Sat
Wrote to Mrs Waite.
Got more Galaxias
in the afternoon.

30. Sun.
Wrote account of the
Aquaria for Exhibition
Handbook. All had tea
with the Hülsens. H.
& I went out & got
some aquatic animal
life for the fishes.

October.

1. Mon.
Wrote specimen pages of Fishes for Hamilton.

2. Tues
Letter from Hedley: Ordered covers for the Marine aquaria and fresh water 200 - gal. tank.

3. Wed.
Attended meeting of Phil. Inst. Called on Hülsen in evening

4 Thurs
Went with Hülsen to the Waimakariri before breakfast & got some Gobioides. In a pool I caught an Anguilla with my hand net.

Letter from Wilfrid announcing the death of his baby girl.
From Evermann saying that he will assist me with Salamanders Frogs etc. for the Exhibition. I wrote to apprise Suter & sent request to Hamil-ton to obtain permit for the beasts to land.
Letter from "Old Croft."
My stamp album containing collection of 24 years was stolen from my room at the Museum during my temporary absence.
5. Fri
Evermann sent me

papers on Fishes.
Mrs Waite, asked me
to call !! on Henry D
Bedford, Ngaramarhia (?)
nr. Auckland. wrote
to her & explained that
Auckland is 674 miles
from Lyttelton. I wrote
to address given.
6. Sat.
Preparing list of
duplicate etc. pamphlets
for exchange purposes.
~~6~~ 7 Sun
Caught some large
Gobiomorphus, with
hook & line.
8. Mon.
Allan sent me some
Aquatic plants.
Arranged for living

Nat. Hist. Court. The cases are now being put up in Gallery.

8. Tues

Wrote Huddard Parker & Co Head Off. Melbourne re Missing Case.

Ordered 2 signs for "Nat. Hist. Court."

Promised Rev Julius to give talk on Nat. Hist. next Tuesday.

19. Wed.

Labor Day. Intended to take day off but received notice that Rev. H. Johnstone of L.M.S from Central Africa wanted to negotiate an Exchange. Went to Museum

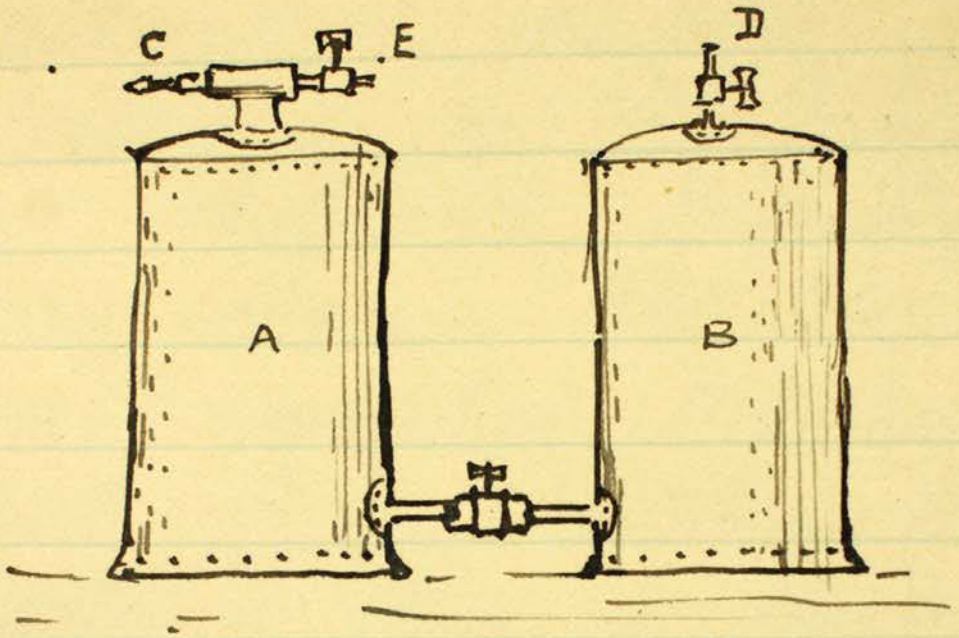
& fixed him up.
Took Rose to the gardens in afternoon.
~~10~~. Thurs.
11 Attended meeting of Executive of Exhibition as Chilton's Deputy. My design for Aviary was accepted & passed cost £130. Letter from Cherry he is sending Jap. Goldfish by "Moeraki" on 13th.
12. Fri.
Ordered blinds for our Court £.5.7.6. and cupboard to be made.
13 Sat
Worked through postage stamps and packed duplicates for Gerald.

14 Sun.
with the Missies Hall
Rose & went to see
the "Pa" & took photos
of the 3 ladies on our
return

Photos

15. Mon.

Ordered 2 tanks for Aerating as below:-



The tank A is filled with water & all driven into B with bicycle pump attached at C the air escaping at D After adjusting the taps compressed air is available from E. Each tank holds 20 gals. & cost 25/- Exclusive

of fittings

16 Tues

Answered Bvermann's letter Bought Scythe gave an address on Fishes for Rev Julius at Papanui School Room.

17. Wed.

Spent evening with Hülsew.

18 Thurs

Am now putting in some time at the Exhibition. Benham's things having arrived.

19. Fri

Met Moeraki in the early morning and obtained 2 Japanese gold fishes, sent by

Cherry. Following from Evening paper "Truth".

OCTOBER 19, 1906.

This morning Mr Edgar R. Waite, curator of the Canterbury Museum, who has charge of the aquaria in the natural history section of the Exhibition, received by the Moeraki two Japanese goldfish of a variety which will be new to almost every visitor. They have particularly long double tails, and as compared with the more ordinary varieties of goldfish, their fins are much lengthened, and their bodies deepened and shortened. These changes were produced artificially, but the variety now breeds true. The Moeraki also brought Mr Waite some specimens of the Madagascar lace-leaf plant (ouvirandra fenestralis), the leaves of which are like skeletons, or mere frameworks. Unfortunately, these specimens were somewhat damaged in transit, but they will doubtless recover, and form an interesting feature in the aquaria. The whole section will be a most interesting one, comprising as it will Mr Waite's private aquatic collections.

A fine polished obelisk of Coromandel

—

Letter from Rainbow. He sent me "Bird-dropping Spider + egg (

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20. Sat.
Put pond water thro' syphon and sieve & got Entomostracans & gnat larvae, food for fishes.
21. Sun
Took more photos of the 3 ladies. - all good negatives. Hilsens came in the evening.
22. Mon.
Great fire in Wel-
-lington. Sent News-
paper to Cherry.
Arranged with Express
Co to deliver any
live animals from
Frisco immediately.
Am now taking
illustration for the

"Attack & Defence" series to Exhibition.

23 Tues.

Let some fresh-water into marine tanks for testing purposes. They seem to be tight. Ordered new visiting cards from ~~Blades East & Blades, London~~ Whitcombe & Tombs.

24 Wed.

Received invitation for self "and lady" to opening of the Exhibition. Also prom Mayoress at home Nov 2nd.

25. Thurs.

Received casts of 3 snakes & acknowledged

to Etheridge. Received Geotria from Chilton

26 Fri.

Editor of Press wrote & asked me for a "Sketch of Nat. Hist. of N. Zealand" to be in his hands by Sunday. Rose went to Lyttelton & got 4 more Jap Gold-fish from Cherry. Colored casts of snakes accepted invitation to Mayoress' 'At Home'.

27. Sat

Miss Hall retouched negatives taken 21st. Spent morning at the Exhibition where I have been, more

or less during the week. I had no time to write article on N. Z. Nat. Hist. Put together something on Marine fishes & sent it in. Hilsen came in to tea.

28 Sun.

Went to the Waimak with Hilsen & found it in flood. Got Myriophyllum 2 sp. Water Cress etc. We intended to return at midday but my bike blew-out and detained us, we got home at 2-30.

29. Mon.

Put plants into the

Aquaria at Exhibition
Telegram that Seals
Penguins etc were
being sent. Cockayne
proposes to leave on
Friday for Vegetable
Sheep so the "At
Home" will lose us.
Printed Post Card from
Rose's portrait.

30. Tues.
At Exhibition. Received
my complimentary
ticket. With Ayson
met the "Menagerie"
at 8.30. 5 Seals.
80 Penguins, Albatross
Parrots etc. We
had a time & I got
home at 11.0.

31. Wed.

Last day prior to Opening. Spent all day at Exhibition. put frokes in tank got sea water. Letter from Cherry. he had paid £2. 9. 0 to say nothing of Expenses at this end. Letter from Mr Waite. also one from Press (see 27th) Editor asks for art. N. Hist of N. Z. Lunched with Mr Rich.

November.

1. Thurs.

N.Z.I.E. Opening Day. Rose & I attended the ceremonies.

2. Fri.

Obtained ten small Jap. Goldfishes, sent by Cherry & placed 4 in Exhib. Received the newts. 3 only out of the six left with Nairns. put these also in Exhib. Saw Ayson & promised to assist him tomorrow in designing ponds for the Seals Etc. At noon. received notice from Cockayne that he could not

leave for mount Torlesse this afternoon. I therefore took Rose to the Majoress' at home. Obtained new cover for back wheel of bike. 22/6. Paper from Seale. 'Fishes of S. Pacific.' He has my Symnothorax chalazius. Describes ~~of~~ a after me & records a Corythoichthys. MS J. S. also named after me

fish.

Mr Edgar R. Waite, F.L.S., curator of the Canterbury Museum, has two interesting cases in this section. One of these contains a varied collection of animals illustrating the methods adopted by different creatures for purposes of attack and defence. In another case are shown a number of beautiful casts of Australian snakes, together with descriptive letterpress, detailing some of their more marked habits and peculiarities. Mr Waite also exhibits the implements for catching snakes and extracting the poison, to be subsequently used for purposes of scientific research.

With regard to the aquaria, which also forms an important portion of this section, Mr Waite mentions that the Natural History Committee understood that the south-east gallery was assigned for its purposes, and it was therefore arranged to exhibit his private aquaria, supplemented by special exhibits. Afterwards the Committee was informed that a change had been made and the north-east gallery allotted to its requirements. Mr Waite is not sanguine that under the hot conditions which will prevail in such a sunny situation, that the aquaria can be successfully maintained. Two tanks will be devoted to marine life and several others to the accommodation of fresh-water fish. Among the latter may be mentioned paradise fishes from China, fighting fishes from Penang, gold fishes from Japan, carp gudgeon from Australia, and some fishes of New Zealand. Red-bellied newts from Japan are also shown.

In none of the aquaria will the water be changed, they being conducted on scientific principles, the animal and plant life maintaining a balance. The aquatic plants should in themselves be of great interest. They include the Madagascar lace-leaf plant, ribbon grass, Canadian pond weed, water millfoil, water fern, the Australian nardoo, bladder wort, star wort, thread weed, duck weed, and others.

—

3. Sat.
with Rose Claude &
the ladies at the
Exhibition.

4. Sun.
Collected fish food
found nests of Black
birds & one of Yellow
ammer. like old
times.

5. Mon.
Chilton told me that
Benham would go
dredging again next
week. Took Rose &
Claude to Exhibition

6. Tues.
Visited seals & birds
at gardens, they
are doing pretty well
The Penguins do not

use the feet in swimming. Saw Palmer Editor of "Progress" & gave him article on "Marine fishes." The newt tank is leaking badly & a liberal supply of pitch failed to stop it. Went to Exhibition at night and made notes on Government Aquarium for article for the "Press."

"Times."

plant life of this colony.

Another striking feature of the court is the display made by Mr E. R. Waite, F.L.S., curator of Canterbury Museum. He has several fresh water aquaria, which contain plant and animal life. There are specimens of the Madagascar lace-leaf plant, Canadian pond-weed, ribbon-grass, bladder-wort, and other plants; and amongst the fishes are New Zealand whitebait and "bullies," red-bellied newts from Japan, carp from Australia, goldfishes from Japan, and paradise fishes from China. Mr Waite has also exhibited, in cases, a collection of articles for catching snakes and extracting their posion, casts of Australian snakes, and specimens of other animals belonging to different orders, including the echnida of Australia.

7. Wed.
Rose & self at the Exhibition in evening.
Letters from Wilfred & Nellie Beale.

8. Thurs.
Substituted glass jar for newt tank.

9. Fri.
Left with Cockayne at 5. & arrived at Springfield at 8.0 Put up at the hotel.
10. Sat.
Got up early, walked up a small creek & obtained aquatic plants. Found nest of Lark with 3 eggs. Left with C. at 8.45. & cycled to Porter's Pass. passing through grand river beds. showing well marked levels. Had a stiff climb up Mt. Torlesse to 4000 ft where we encountered vegetable sheep on the shingle

Selected specimens for removal & considered methods of transport. We did not reach the summer snow line but met patches in the hollows. The plants on the shingle are most interesting & I got lizards and jumping spiders. Having lunch a Weka came close to us several times and picked up crumbs, just as at L. H. Is. Came down shingle slips but found the back of my shoes out by the process. Reached Springfield 8.0

11. Sun.
Up at 4.30 again
very chilly. We went
to foot of mountain
in company with
5 men in a cart.
repeated yesterday's
proceedings, & the
men removed the
sheep with pick &
crowbar & then had
a tremendously hard
~~da~~ carry down the
steep rocky sides.
Saw keas. C. took
photos of operations
& we were thankful
when the sheep were
aboard the cart in
which we drove the
9 miles to Springfield

12. Mon.
Collected water plants before breakfast & left by 7.30 train. Eucalyptus globulus lines the railway for miles. Reaching Ch.Ch. at 10.0 I took sheep to Exhibition Saw Hilsen arranged to get marine life on Thursday. Rose had got Blue Eyes from Cherry by Saturday's boat.

13 Tues.
Following account appears in the "Press"

"SHEEP" MUSTERING EXTRAORDINARY.

A NOVEL EXPEDITION.

SCIENTISTS ON MOUNT TORLESSE.

Some Christchurch scientists started on a novel expedition early in the present week, when they ascended the steep sides of Mount Torlesse to a height of about 4000 feet, to secure the two splendid specimens of "vegetable sheep," which now repose in the Natural History section of the Exhibition. To carry a "vegetable sheep" down a mountain side is not a simple undertaking, especially when the plant weighs a hundredweight and a half, as does the larger of the two which this energetic party brought back. It is doubtful, indeed, if any body of men have ever carried a "sheep" of that size down a hill before, for no "sheep" nearly as large as this one rests in any museum in the world.

The party, which comprised Dr. L. Cockayne, Mr E. R. Waite, F.L.S., Curator of the Canterbury Museum, Mr W. Cloudesley, and four others, left Springfield at 5 a.m., and drove to the foot of Porter's Pass where they left their conveyance and started on the ascent of the mountain. A great deal of time was saved through Dr. Cockayne and Mr Waite having made the journey by themselves the previous day and chosen the best specimens of "sheep" they could find growing at a reasonable altitude. But in spite of this, the expedition proved to be of a very arduous nature. The recognised mode of carrying "vegetable sheep" is on a litter formed of two beech poles, with a sack nailed across them, after the manner of an ambulance stretcher. One man supports the litter at each end, while another holds the plant in place, to prevent it slipping down a precipice. The first thing to do, therefore, was to cut four strong beech poles for the two "sheep," and these had to be carried up the steep ascent, together with the crowbar and pickaxe needed to raise them from where they lay embedded in the solid rock.

The journey down the hill with the two plants was a very toilsome one. Mr Cloudesley, who had had previous experience in securing one of these remarkable plants for the Munich museum, virtually directed the operations, and but for his assistance the two magnificent specimens now resting in the Exhibition would never have been secured. Usually, when a "vegetable sheep" is carried down a hill, the men are exhausted when a little more than a chain has been traversed, and in this instance, with much labour, it took five hours to get the plants to the foot of the mountain. The party reached Springfield, and had their trophies packed in the train, by 7.30 p.m.

Several of the party were recent arrivals from the Old Country, stalwart coal-miners, in fact, from Wigan, in Lancashire. They had never been on a mountain of the same magnitude before, or, as they expressed it, "so near heaven."

While the procession down the slopes of the hill was in progress, the Chief Inspector of Police for Westland (Mr Wilson) and Mr J. O'Malley, of the Bealey Hotel, were driving down Porter's Pass. They saw the cavalcade across a valley, and from the appearance of the litters at a distance, jumped immediately to the conclusion that there had been a bad accident on the mountain, and that the injured men were being carried down by their friends. They were greatly re-assured to learn the true employment of the party.

The two "sheep" are at present in a temporary position, but a proper place will be prepared for them in the Natural History Section, with shingle and other natural surroundings to give a realistic effect. Photographs which Dr. Cockayne took will also be placed alongside showing the "sheep" as they were before they were shifted, and the men carrying them down the mountain.

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14. Wed.
Attended Committee meeting of Museum took Rose & Claude to Exhib. instead of going to Phil. Soc.
15. Thurs.
Went with Hilson in afternoon & got seaweeds & anemones for Exhib. aquaria. at Taylor's Mistake
16. Fri.
with Chilton by 7.55 am train to Lyttelton & got more stuff for Marine Aquaria Took Rose & Claude to Exhibition in the evening.

THE NATURAL HISTORY SECTION.

OUR FLIGHTLESS BIRDS.

SOME DEFENCES OF ANIMALS.

An exhibition of New Zealand's products and objects of interest which did not represent in a special manner its wonderful flora and fauna, would be more incomplete than Sharon without its roses. A Natural History Section was, therefore, indispensable, and notwithstanding the numbers of natural history exhibits that are included in the Departmental displays, a very worthy collection has been made.

The Otago University Museum, under the leadership of its excellent director, Dr. W. B. Benham, assisted by his able lieutenant, Mr E. Jennings, has erected in the north-east corner of the gallery three cases illustrating most admirably the taxidermist's art, and at the same time a section of the natural history of New Zealand so far as its animals are concerned. One case contains a representative collection of our native birds. Amongst the most interesting specimens are a number of species of those quaint creatures, the penguins, which are so distinctively Antarctic in character. The Great Albatross, so well known to those who travel on the deep seas, is there, and not it alone, but its beautiful offspring, clad in its garment of snowy down. The albatross is one of the noblest birds that flies. Its sailing flight is one of the marvels of the animal world. The bird has been seen to float in the air with outspread, motionless wings for at least half an hour. Many attempts have been made to explain this wonderful power of flight, but none have been completely satisfactory. It has its home in New Zealand's lonely lands—those interesting little islands that lie to the south of Stewart Island. There it breeds, usually laying only one egg each year. The rest of its time it spends in roaming the southern seas, following in the wake of a steamer for hundreds or thousands of miles. How it finds its way back to its lone breeding place in the sub-Antarctic sea is another mystery connected with this remarkable bird.

The penguins are scarcely less wonderful than the albatross. They belong to the large group of flightless birds that are so remarkable a portion of the New Zealand avifauna. Thus with their flipper-like wings they form a striking contrast to the albatross, with its wing-spread of ten feet or more. They are the only birds that can eat under water, and they also fly under water, using their wings to help them along. On snow-ridges they form slides, down which they go at considerable speed.

There are also in this case several other splendid examples of the flightless birds of New Zealand. Here are the kiwis, such a veritable race. The kiwi differs from all other birds in the world in having his nostrils placed at the tip, on the under side, of his long beak, instead of near the base. He has also the distinction of being the nearest relation of the moa. New Zealand had three or four different species of kiwi, but one of these, the South Island variety, is now either extinct or approaching extinction, and the others are becoming rarer every year owing to the destruction of the forest, the depredations of the weasel, stoat, and ferret, and the raids of collectors.

There are also in the Natural History Section examples of the kakapo, the pukeko, several species of weka, and many other interesting birds.

In the second case, containing fishes, can be seen all sorts of strange and uncouth monsters of the deep, and many more familiar kinds which serve for food. The third, and smallest case, contains skeletons of various kinds, especially prepared for teaching purposes.

Standing in the centre of the Court is an idealistic representation of what a moa is supposed to have been like in pre-historic days. The most remarkable fact in connection with the moa is that it shows no traces of wings. New Zealand has a remarkable number of flightless birds, such as the weka, kiwi, kakapo, and others, but it has had only one truly wingless bird, and that is the moa. There were many different kinds of moa at one time living in the land. They flourished especially on the Canterbury plains, where there were at least a dozen kinds, ranging from the short, skinny Dinornis elephantopus to the lean gray-feathered Dinornis maximus; but all are alike in not showing a trace of wing-bones—nor even, of a keel on the breast bone. This, of course, proves that the muscles of flight were absent as well as the wings. There is no other animal, amongst birds or mammals, which has only two extremities; all the others have two wings and two legs, rudimentary or normally developed, or four legs of some kind or other. The moa, therefore, stands in this respect by itself, and, when some people argue that they wings, yet there is every reason to believe that they are all descended from birds well provided with organs of flight.

The court also contains an oil painting by Mr Barker of that rascal of birds, the notornis, while another large picture shows the great ribbon-fish.

A splendid case of animals, beautifully stuffed by Mr E. Jennings, of the Otago University Museum, and by him exhibited above on such diverse structures as the Arctic fox, the muskrat of North America, the great ant-eater of South America, the wood grey kangaroo of Australia, and other animals, lying down or at least standing up together. A handsome specimen of the New Zealand fur seal has, and deserves, a glass case of his own.

On the walls, and on the backs of the show cases, is a wonderful collection of photographs of New Zealand vegetation, taken in all parts of the colony, from the North Cape to the Bluff and away to the distant Chatham, Auckland, Campbell, and Antipodes Islands. They are the work of Dr. L. Cockayne, and have been taken by him during his pioneer investigations of New Zealand life, according to modern historical methods. They show how powerful a weapon the camera is in the hands of the plant geographer. The photographic annual of these series, illustrating the vegetation of the mountains, the forest, and the seashore. Besides these are two one or two illustrating Dr. Cockayne's special investigations in experimental morphology.

In addition to the plant photographs, New Zealand botany is illustrated by a fine specimen of that curious plant, the 'vegetable sheep'

[illegible] to the discovery of [illegible]

[illegible] series of aquaria Mr Waite [illegible] specimens of marine life, and [illegible] of fresh water fish. Gold fishes [illegible] carp-pudgeon from Australia; red-bellied newts from Japan, [illegible] fishes of New Zealand are [illegible] the latter exhibits. The newts [illegible] particularly interesting to us, as [illegible] have no representatives in this [illegible]. Indeed, the only amphibian New Zealand possesses is a rare frog [illegible] lives in the Thames district, and [illegible] has been seen only by a few New [illegible] naturalists. Newts, however, [illegible] and in almost every clear pool in [illegible] Britain, and are to be found [illegible] most parts of the world. Perhaps [illegible] most interesting in the Mexican [illegible], which was long supposed to [illegible] only a water-breathing animal. At [illegible], however, a French lady obtained [illegible] and when they were full grown [illegible] them on wet moss, and at length [illegible] succeeding in producing the land form [illegible] the animal, breathing with lungs in [illegible] of gills. The newts have now [illegible] to them only a remnant of their former glory, for it is many an age [illegible]—

[illegible] wonderous oft was of old the Lord and [illegible] Master of Earth,
[illegible] how did his high sea flame, and his river [illegible] blowing rage,
[illegible] he left himself in his force to be [illegible] Nature's crowning race."

Some climbing frogs, of Australia, [illegible] seem to spend all their time climbing [illegible] slippery walls of their glass house [illegible] peering at the outer world. An [illegible] interesting series of aquatic plants includes the Madagascar lace-leaf plant, [illegible] bean grass, Canadian pond weed, [illegible] water milfoil, water fern, the Australian [illegible] nardoo, bladder wort, star wort, [illegible] reed weed, duck weed, and others. [illegible] Paradise fishes from China, fighting [illegible] from Penang, salamanders, [illegible] and other creatures are now on [illegible] way from America, and it is [illegible] that a fair proportion will survive the voyage.

17. Sat.
With Rose to the Exhibition - Saw Crabtree, who was singing, & asked him to tea. Sunday

18. Sun.
Had a large party to tea. Misses Hall Crabtree and the Hülsens. Crabtree left early & soon after Claude was badly bitten in the face by Hülsen's dog whom the children had been teasing - At first we thought Claude had lost an eye but on washing

away the blood found that the upper eyelid was torn, the teeth had also entered above the eyebrow on the cheek & chin. We took him to the Dr. & had his wounds dressed. This threw a gloom over the remainder of the evening.

19. Mon.

Hilsen had the dog destroyed. Wrote to Allan & sent him Crawfish. Exhibition Aquary now ready. Am arranging for an attendant.

20 Tues.

Had Stand made for vegetable sheep which I placed in position in the Court.

21. Wed

Letter from Howarth (Museums Assocn) He has printed my review of Wellington Museum Memoir No. 1.

Letter from Jordan in reply to mine re cost of producing drawings of fishes Nishikawa advises me that he sends 500 or 600 goldfishes Asked Ayson if he would take these over for Aquarium

EXHIBITION GOSSIP.

Some time ago Mr E. R. Waite, curator of the Christchurch Museum, communicated with Dr Nishikawa, head of the Fisheries Bureau at Tokio, asking him to procure a few Japanese goldfish for the Exhibition. Word has now been received that some 400 goldfish of different varieties have been sent. The shipment arrived at Sydney to-day, and should reach the hands of the Exhibition authorities probably some time next week. Great interest attaches to the consignment, as Japanese goldfish are famed all over the world for their peculiarities of conformation and the beauty of their colourings.

22. Thurs.
a Second letter from Nishikawa, Total cost, buying, all the Goldfishes freight to Sydney only £6. 2. 0. Sent £2. 15. 0. to Cherry for Fish & Expenses Horning & Co Sent

draft for Cooper's rent. Carroll away. Sent note to Howarth (Museums Assoc.) on Museum at the Exhibition. Jordan sent pamphlet -

THE SAN FRANCISCO EARTHQUAKE.

Mr Edgar R. Waite, of the Canterbury Museum, has received from his correspondent, President David Starr Jordan, of the Leland Stanford Junior University, a pamphlet in which President Jordan details the results of some of his investigations in connection with the late San Francisco earthquake. After tracing the course of the rift across the map of California, the writer arrives at the conclusion that the chief centre of the disturbance was in the sea, because where the fault enters the land near Point Arena, the displacement is greater than anywhere else. As the land fault is traceable for nearly 200 miles to the southward it is reasonable to suppose that the sea bottom is broken for at least an equal distance to the northward. The President, therefore, thinks it likely that the centre of the trouble is located in a great submarine valley off Cape Mendocino. He also suggests, as a remote possibility, that the rift may have some connection with the arising, simultaneously with the earthquake, of a new island in the Bogoslof Group, in the Behring Sea.

23. Fri.

Ayson left on his way to California wrote to Stedley re deep-sea dredging apparatus. Attended Concert Orpheus Soc. with the Hülsens.

24. Sat.

Removed birds from Gardens to Exhibition aviary. Miss Bush from Sydney had tea with us. In the afternoon went to Sydenham and got 9 large goldfishes & turned them into my new pond, fed with water from the ram overflow. Took

Miss G Hall. (Mrs H. having left yesterday for Sydney) Miss Bush Rose & Claude to Exhibition wrote to Wilfrid and Mrs Waite.

25. Sun

Spent morning in levelling mound formed round the pond. With Rose & Gertie Hall to the gardens in afternoon.

26. Mon.

Wrote Roebuck and Nellie Beale. Rec.- 2 "Wies" fr. Ayson re Japanese Gold Fishes. Replied to Wellington.

27. Tues.
Wrote Sands, Sydney for supplies of Card Catalogue systems for use of Museum and Phil. Inst. Libraries. Letters appointing me judge in 4 sections under "Home Industries". Took Claude to Exhib. at night.

28. Wed.
Wrote Hamilton for Lacépède & Rafinesque's Index Ittiol. Siciliano. To Exhib. in evening with Rose Claude Miss Hall & Miss Bush.

29 Thurs
Wrote to Hellawell.

Attended special meeting Phil. Inst. Larcombe on Mineral Resources of N.S.Wales.

30. Fri.

Went with Charlie Ayson to Lyttelton by 7.55 train. I obtained the residue of the Goldfishes & newts sent by Nishikawa also 18 Poecilia latipes, all saved out of 200. The Goldfishes were taken to the Exhibition, the others to the Museum "Old Johnson" of Opawa called to see me & will give me Sticklebacks. Arranged

to go on Sunday
morning & asked
Hülsen for company.

THE AQUARIUM.

(By Edgar R. Waite, F.L.S., Curator Canterbury Museum.)

Apart from salt or fresh water, aquaria may be regarded as of two kinds, that in which the water is constantly running through, and that in which it is never changed.

Most people, I am afraid, are more familiar with a third method which, however, does not merit the name of aquaria, and which is unnatural, unnecessary, troublesome and unscientific. I refer to the practice of keeping goldfishes in glass globes, in which the water is changed every few days as it becomes deprived of its air. This naturally leads us to the consideration as to how fishes breathe.

It is popularly believed that fishes breathe the oxygen which forms a constituent of water, as land animals breathe oxygen of the air. Air is formed of a mixture of nitrogen and oxygen, but water is formed by a combination of hydrogen and oxygen. Land animals can extract the oxygen from the air, but fishes and other aquatic animals cannot extract oxygen from the combination with hydrogen forming water.

Water is capable of dissolving air. This is again driven off when the water is heated. The amount of air which water can contain is not very great; five hundred pints of water can dissolve only about nine pints of air. The fish, however, only requires the oxygen, and this is more soluble in water than nitrogen, the nine pints of air in water being equal to fifteen pints of ordinary air. As the temperature of the bodies of fishes is only very slightly higher than that of the water in which they live, they require but little oxygen to maintain it. It has been calculated that a man consumes 50,000 times as much oxygen as a tench.

When goldfishes are kept in a small bowl, they soon exhaust the little oxygen dissolved in the water, and then crowd to the top where the surface water is dissolving the air. Unless the water is renewed the fishes soon die, and, indeed, allowing matters to progress as far as to necessitate surface breathing borders almost on cruelty. In most public aquaria, the water is constantly passing through the tanks. This usually necessitates pumping plant, and its installation and maintenance is costly. When derived from a suitable source the water brings with it much food for the occupants of the tanks, and as far as is possible conserves the natural conditions. I say as far as possible, for there are myriads of small animals forming food for fishes, which attach themselves to the plants along the margin of the stream and are not carried into the tanks.

In Canterbury, where the water supply is artesian, the cost of installing and maintaining a pumping plant is saved, but on the other hand, the artesian water is very deficient in food. If artificially supplied with natural food, a proportion is carried away by the overflow, so that a tank conducted on this plan is not an ideal one. As, however, the fishes usually shown can readily be replaced, the condition can be maintained.

We may next consider the question of aquaria in which the water is never changed, and the principle may be applied alike to the largest tanks and the household fish bowl. The secret of maintaining animal life in unchanged water, lies in the introduction of suitable plants. These give off oxygen, which the water absorbs, and it is thus available for respiration of fishes and other animals. People who see my aquaria usually exclaim at the wonderful "balance" maintained between the requirements of the animals and of the plants. It is not a question of "balance" at all. Success is simply attained by plenty of plant life. If the plants be insufficient in quantity or the species badly selected, they fail to adequately renew the oxygen extracted by the animals, and troubles ensue. If the plants are more active than is necessary, the excess of oxygen beyond the absorptive power of the water simply passes into the air, and saturation point is maintained but not surpassed. It is necessary to study the limits of light and temperature, but the margins in these respects are tolerably wide.

If the conditions mentioned are properly attended to, an aquarium is a delight to all beholders, and its maintenance is without cost or trouble.

At the time of leaving New South Wales I had several tanks in full working order, in which the same water had been employed continuously for seven years, and was always as clear as crystal. On one occasion my house was closed for two months, and though

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I had about thirty aquaria established, at the end of that period in one only was there any loss. This short article is not, however, intended as a treatise on the management of aquaria, and novices attempting to establish such on the strength of the few notes here given would probably soon be in difficulties. It is written merely as an introduction to the subject, so that visitors to the Exhibition may know something of the principles upon which aquaria are constructed and maintained. Both the methods previously referred to may be studied within the Exhibition grounds.

The Exhibition aquarium is situated near Victoria Lake, and is under the charge of Mr L. F. Ayson, chief inspector and expert to the Government. It has long been the fashion in respect to public aquaria to construct them so as to give visitors the feeling that they are actually beneath the surface of the water. They are generally cold, dripping, dark and uncomfortable; they are built in imitation of traditional caverns and grottos which are supposed to exist beneath the waves. Mr Ayson has broken away from this conventional method of construction, and we enter a really beautiful room with many windows. Instead of viewing the surrounding landscape, we look into the water of the sixteen tanks. Three tanks appear to be narrow from back to front, but this is an illusion due to refraction; as a matter of fact the tanks are of considerable size. Water is constantly passing through them, the supply being from an artesian bore 122 feet in depth. More complete aeration is effected by forcing a jet of air into the ton of each tank, this swing in bubbles produces a sparkling, pleasing effect. Passing to the left on entering, we note in the first two examples of the tank (Nos. 1 and 2) an American cat fish (Ameiurus natus). The tench is an inhabitant of deep sluggish, muddy water, and may be recognised from other members of the carp family by its very small scales. The American cat fishes, called bullheads, swarm in every pond and sluggish stream in the Eastern United States and the valley of the Mississippi. The species shown is known as the white cat or Potomac cat, and is remarkable for its wide head and large mouth.

The true carp is not exhibited, and indeed, unless specially imported, it could not be shown as, contrary to popular belief, it has not been acclimatised in New Zealand. It belongs to the genus Cyprinus, characterised by the presence of barbels at the corners of the mouth. The specimens in the second tank are Crucian carp of the genus Carassius (in which barbels are absent). Common gold fishes, shown in the next tank, are brown when young, and some examples never change colour, when they almost exactly resemble the Crucian carp.

Tanks 4, 6, and 8 are devoted to the Chinook or Quinnat salmon, in various stages of growth, but at best only relatively small examples can be shown, as the species attains the enormous weight of 100lbs. It is found on both coasts of the Pacific, and is abundant in all the large streams, up which it travels during the spawning season, a thousand miles, or more. It breeds but once in its lifetime, and dies soon after spawning, which circumstance is common to all kinds of Pacific coast salmon. Mr Ayson tells me that this year, for the first time, Quinnat have been observed ascending the New Zealand rivers.

Tank 5 contains examples of the true Atlantic salmon, a much smaller fish than the Quinnat. After hatching in the rivers, it makes its way to the sea, where it may spend two years, before entering a river for spawning. This operation completed, the salmon again returns to the sea. Though it is many years since salmon were first introduced into New Zealand waters, none has been known to ascend the rivers from the sea. As the occupants of the tanks are not arranged in any special order, we will next look at the thirteenth, which contains nice examples of trout from Loch Leven. These will generally be seen crowded together on the bottom of the tank. In tanks 11 and 12 we have specimens of the American brook trout, one of the most beautiful of the many trout produced by America. Returning to tank No. 7, we have hybrids between this and the Loch Leven trout, and on account of their remarkably beautiful sunset markings, they are generally called Zebra trout.

Sebago Lake salmon are shown in tank 9. They are commonly called land-locked salmon, from the circumstance that they cannot get to the sea. At the spawning season, they ascend the streams flowing into the lake, and after breeding, return to their sea, which, in this case, is a land-locked lake.

Tanks 10 and 14, contain American Rainbow trout, and it needs but a glance to appreciate the felicitous application of the name. Of this fish a well-known American writer says:—"In beauty of colour, gracefulness of form and movement, sprightliness when in the water, reckless dash with which it springs from the water to meet the descending fly ere it strikes the surface, and the mad and incessant leaps from the water when hooked, the Rainbow trout must ever hold a very high rank."

The beautiful banded fishes in tank 15 are English perch. When free to choose, unlike trout, they frequent rather sluggish streams, and do well in ponds. At the risk of overcrowding Mr Ayson's beautiful aquarium with members of the fair sex, I will quote a message written by the late Frank Buckland:—"No lady's dress was ever made so beautiful as that of the perch's when he is in full season." Should our lady visitors feel disappointed with their inspection we must urge, in vindication of the views of the late naturalist, that the perches are not "in full season."

The last, or sixteenth tank, contains some local eels. The happy idea of introducing a drain-pipe into the tank enables the fishes to conceal their heads, and doubtless satisfies them that they are quite hidden from view, a train of thought analogous to the ancient belief that when an ostrich buries its head in the sand it imagines its hulky body is likewise invisible.

The large concrete tank in the centre of the room contains some fine examples of Rainbow and Brown trout too large to be shown in the wall tanks. On various tables dispersed about the room will be found several interesting exhibits, connected with the fishing industry rather than with aquaria proper. Attention may be drawn to a small model of an otter trawl, used for obtaining fishes from the sea bottom, and the various appliances connected with fish hatching. Of these perhaps the most interesting is the automatic tidal box used for hatching floating eggs. By means of an ingenious syphon the water periodically rises and falls in the tank, its action being that of certain so-called "ebbing and flowing wells" the most familiar of which is the Pool of Bathsheba.

December.

1. Sat.
To Exhibition, with party as on Wednesday. Hamilton sent me the books asked for

2. Sun.
Nilsen & I rode to Opawa but though we dragged the pond where the Sticklebacks were said to be, not one did we find.

3. Mon
Exhibition again. Saw Cockayne who asks me to go with him to Bealey, shortly.

4. Tues.
Some eggs of Limnea stagnalis which I got

on Sunday are hatching

5. Wed.

Ordered 100 bricks & bag of cement for gold-fish pond. Letter from Palmer asking me for photo. for reproduction in "Progress". Attended Annual meeting of Phil. Lust and was elected to Council (by ballot). Letter from Huddart P. To refusing to allow claim in respect to missing box. Letter from Woodward (W.A) re classification of fishes. One from Cherry re Japanese

Goldfishes + newts.
6. Thur.
Sent photo. (taken by Newman) to Palmer - "Progress."
Took afternoon off and put in concrete foundation for pond.
Paid 16/- for bricks and materials.
7. Fri.
Letter from Bedford in reply. Wrote to Nishikawa and Yanagisawa ack. 8. fishes. Cockayne invited me to accompany him to Waimak. glacier, Speight also to go.
Laid some rounds

of bricks for pond.
8. Sat.
wrote Cherry. + 7
Finished laying the bricks and cemented pond within.
9. Sun.
Japanese Goldfish eggs obtained last Sunday hatched to-day. Rode over to Opawa and gave 6 newts to Johnson got some Limnaea and few weeds from Goldfish pond. T. O. W. Croft of Nosman had tea with us Mrs Bush and Mrs Hall also. In the afternoon I

rode with Hulsen
near to Weimak.
Got azolla & few
weeds.

10. Mon.
Painted new brick
pond within as it
is leaking a little.

11. Tues.
Went to Maori Pa
with Hamilton &
saw a Haka & Poi
dance.

12. Wed.
with Speight, judging
in the Home Industries
Court.

13 Thurs.
All went to the
Exhibition, Chute,
Performing dogs, etc.

14. Fri.
Bought supplies for Tuesdays outing.
15. Sat.
Put Japanese goldfish in new pond. Fixed telephones at Museum A number of members of Phil. Inst. attended at Papanui. funeral of Brown, but we learned that at the last moment another cemetery had been selected for the burial Attended Exhibition at night.
16. Sun.
Rode with Hulsen to the Styx in the morning Sat Kitella

* Anacharis. Hülsen came to afternoon tea and we all adjourned to his house in the evening.

17. Mon
Wrote to Jordan. I attended ceremony of Fire Walking by Fijians at Exhibition.

18. Tues.
Left by 7. am train with Cockayne and Speight, for Broken River arrived 9. 20. Thence started on bikes for the Bealey in strong N. W. Wind. When the coaches overtook us we got aboard put up at

the Glacier Hotel
Bealey.

19. Wed.
left at 3. am, started for the Glacier as day broke. When two miles on we decided, that as the weather seemed to be threatening rain, to leave our swags push on and return in one day. contrary to our plans. We were in grand country crossed the Waimakiriri several times knee deep had about 6 miles of broken shingle in the river beds to

negotiate, crossed spurs of the Mounts through thick growths of Nothofagus, through bogs and altogether had varied experiences as we got nearer to the head of the river rain & wind came on & by the time we entered the White River with its blue water from glaciers we were considerably beaten about. We reached opposite to the great falls, the water dropping into a large fan of snow, & were then within a mile of

the glacier, but as already rills of water were trickling down the sides of the mountains & threatened to cut off our return by raising the water level in the rivers we had to retreat & we thought of Mak. & Moscow. The wind tore down the valley, ripped Speights Mackintosh to ribbons once lifted me off my feet and laid me on my back & the driving rain soon wet us to the skin. In order

to save time we kept as straight a line as possible but kept to the bed of the river rather than detour to avoid it, consequently we had some rough crossings. Picked up our swags at the first camp and got to the hotel at 9.0 played out. The landlord O'Malley gave us change of clothing, so that we might feed in comfort & we then went to bed. Our tally for the day estimated at 32 miles

20. Thurs.
Had breakfast before we started then made up the Bealey river, taking our cycles, this day. We made for the dividing range & crossed into Westland turning at the head of the Otira gorge. Well within sight of the glaciers. I got Hygriophyllum which grows most luxuriantly in the rapid streams. & while Cockayne & Speight were collecting plants & examining rocks respectively!

made my way
back to our camp
of the morning and
boiled the billy.
At the highest point
we reached I saw
flocks of Linnets
while in the scrub
but little below me
saw Chaffinches &
lower still Blkbirds
& Thrushes. A weka
walked about me
as I made the fire.
We were able to
ride much of the
distance home &
had fine weather
throughout. 22 miles
to day.

21. Fri.

Started for Broken River, having sent swags by parcels post to Christchurch. × I had a swim in Lake Sarah & got Isoetes & in deeper water Pillaria wh. plant Cockayne had never before seen growing. I examined the cutting where moa bones had been found but few were to be seen now. All covered up with soil by the railway men a large pelvis was on the ground. We reached the station

× also mussels.

about 6.30 & when the coach came at 7. 0. I saw Phillips our next door neighbour at Mosman on the box. We travelled to Ch. Ch together, arriving at 10. 0. Put up my cycle & took tram home.

22. Sat.

Recovered bicycle bought Claude an Ansonia Watch 5/6 & Rose a Jardiniere 6/6. Went to the Exhibition at night & found all the frolics etc. well

23. Sun.
Collected pond-life for young Japanese goldfishes which are growing and now show characteristic tail. Developed some of the negatives, all good.
24. Mon.
To Exhibition in the evening with family.
25. Xmas.
Spent holiday at home - Developed the rest of negatives.
26. Wed.
Commenced to type-write list of N. Z. Fishes.
27. Thurs
Exhibition at night.

with usual party, ie
Miss Hall + Miss Bush
28. Fri.
Spent evening with
Hulsen.
29. Sat
Exhibition at night
with usual party.
30. Sun.
The "usual party"
together with Hülsens
in afternoon to
Opawa, Miss Hall,
~~Hülsen~~ & 2 going on
bicycles. I bought
2 lilies from Johnson
@ 1/- each. All at
"Longwood" to tea
31. Mon.
wrote to Chairman
(Lewis) asking for

imprest of £15 for collecting apparatus for fishes and cost of freight etc. as I have idea of going to Stewart Island for trawling experience.

1907.

January.

1. Tues.

Having only Sparkes at the Museum I put in the day there. While Rose went with Mrs Hall to theatre I took Claude to the Exhibition and we attended Buck jumping performance. Of the amateurs aspirants all were thrown.

2. Wed.

Letters from Chadwick + Mrs Waite. We all went with the Hülsens to Wainoni Park & spent a pleasant day. Returned with them

to tea.

3. Thurs.

Sent £40. 6. 6. to Debb & Co. being repayment of £30 and interest. leaving £265 principal due. Replied to letter from Mrs Waite. To Exhibition at night.

The following appears in to-days Press & I wrote a reply, also as a literary contribution an article on the Platypus & Native Porcupine, mainly a copy of mine in the Sydney Handbook of A. A. A. Sci.

FRIENDS IN FUR AND FEATHER.

IN NEW SOUTH WALES COURT.

To supply his manifold needs man reaches out his hands to the ends of the earth, and whatever he desires he takes, be it food, be it covering, or be it ornament. He needs it—that is the eternal law, that "he shall take who has the power, and he shall keep who can," and our friends in feather and fur provide for man a great deal of his luxuries. Australia, land of contradictions and home of paradox, has amongst her exports a large trade in furs, and in the court of New South Wales in the Exhibition, there is on view a large assortment of splendid specimens in this line. Australia has such a collection of animal oddities—a land where the birds are songless, and the flowers scentless—that it is scarcely strange to find Nature making a special effort and capping her many queer studies by combining all, or nearly all, the features of the animal world in one specimen. It is a small specimen, stuffed, shown amongst the fur display, but of overpowering interest to the Nature lover. A little brown animal, with a silvery sheen on its close fur that is shared by no other animal in the world of fur. The platypus is one of the most interesting animals known. This creature is a reptile; it is also a bird (although it does not look like it), for it lays eggs; it is a beast, for it suckles its young; it is a fish, for it is cold-blooded in habits, and can breathe under water; it has the webbed foot of a duck, and it digs a burrow, after the manner of a rabbit. When it is added that no scientist has ever yet kept one in captivity or found out what they eat, the claim of this queer combination to fame will be acknowledged by all. Its appearance in the commercial world is in the form of caps, muffs and stoles, a splendid example of each article being shown just above where the stuffed animal appears as it was in live.

Australia, so hot in climate, is also very rich in fur bearing animals, and one of the most beautiful is the native cat. A large rug of black cat skins dotted with white, shows to what beautiful uses these skins can be applied. This animal is indigenous to the island continent, but is usually found in grey colours. Therefore to collect the eighty black skins and match them so perfectly has been a difficult task and accounts for the cost of some of these native cat skin rugs. As Australia owns a native cat, and a native bear, so there is also a native fox, very little different to Reynard of farmyard fame in the older lands. Shyer in his habits, he loves solitude more and although hunted with dogs, more often falls a victim to gun and traps. Here is a splendid rug made from his reddish yellow fur, edged with his one time proudly waving brush, dream of every hunter's heart if won in fair fight, but here the commercial edging to a commercial and beautiful article, namely a large carriage rug. The fox is a very close cousin to the native dog, only differing in the sharpness of the nose and the length of the head, and being slightly smaller in build. The foxes are becoming scarce, as they are shot so freely for rugs. Forty of these handsome animals laid down their lives to provide a rug to make some dainty limbs more easy in life.

The black opossum is well represented by motor caps, muffs, rugs, and other beautiful articles. This little fellow spends most of his life in the trees. During the day he sleeps the sleep of the innocent, and at night, when he sallies forth, body pressed against bough, to look on the world and its ways, he meets his fate at the hands of a man, who takes pot shots at his merry little face, with no thought but for the pence his skin will bring. Only at certain times in the year, has his skin a commercial value; at others it is liable to moult rapidly. The best opossum furs come from Manawa highlands, the cold table land of the colony. Here men shoot the creatures by moonlight, to eke out their other means of livelihood. They are skinned, tanned, and come before the New Zealand public as muffs, rugs, stoles, etc.

From the same district come the rock and swamp wallabies. These belong to the kangaroo species, and are Australia's most distinctive feature, providing the finest type of sport known to the horse-loving young colonial. When chased they bolt by leaps and bounds for the nearest timber, and when brought to bay turn and fight to the death with the pursuing dogs till either shot or pulled to earth and throttled, a merciful ending to a wild chase and a wild life. The skin of one of them appears here as a big brown kangaroo rug, fit wrapping for the feet of a Sultan.

Another most characteristic Australian fur-bearing animal is the dingo, or native dog, called by the natives "warrigal," dingo being only the aboriginal name for the domestic dog introduced by the European. This type of wild dog is found in all parts of the mainland, and will inbreed with the domestic dog, crosses being common throughout the settlements. The dingo runs silent when hunting. Though it does not bark, its temper is intractable, and it does an immense amount of damage amongst the lambs in the flocks, being a great deal too clever to take up any poisoned meat, or to meet its fate in ordinary traps. For its sins it appears in public in the form of a beautiful mat, with head attached.

A queer mat hangs on the wall. It has the appearance of a Maori mat, and as such is examined by the visiting Maoris. It is an emu's skin. It is one whole skin, in which the former owner roamed the plains "out back" in the desert country. It is a close connection to the ostrich, but, as has happened so often in Australian fauna, Nature seemed to tire of her task before adding the hall-mark of beauty to her handiwork.

4. Fri.
Reply to article is printed as below, but the "Contribution" has not appeared.

CORRESPONDENCE.

FRIENDS IN FUR AND FEATHER.

TO THE EDITOR OF "THE PRESS."

Sir,—At a time when Nature-study is occupying the attention of those connected with the educational administration of the colony, it is somewhat discouraging to find prominence given to an article which appears in to-day's issue of "The Press."

Under the above heading you publish many statements relative to the fauna of New South Wales which, to write mildly, are incorrect, and which, appearing in your widely-read paper, unfortunately go forth with the impress of accuracy.

Passing by the oft-stated, though erroneous, belief that the birds in Australia are songless and the flowers scentless, I pass to the following:—"As Australia owns a native cat, and a native bear, so there is also a native fox, very little different (from) Reynard of farmyard fame in the older lands."

There is no fox native to Australia, nor, indeed, any native animal known by such name, and it is evident that, having seen the skin of a common fox in the New South Wales Court, your contributor has drawn an erroneous conclusion. The common fox was long ago introduced into Australia, but, contrary to the statement that "foxes are becoming scarce," my experience teaches that they are still regarded as a pest.

In common with most other people, your contributor is unaware of the meaning of the word "species"—probably not one in twenty could define it, but I often wonder why?

It would be difficult to find more misstatements in any six lines of print than are contained in the following extract from the article in question.

Of the Platypus we read:—"This creature is a reptile; it is also a bird (although it does not look like it), for it lays eggs; it is a beast, for it suckles its young; it is a fish, for it is cold-blooded in habits, and can breathe under water."

In reply let me say, the Platypus is not a reptile, it is not a bird, it is not a fish, it is not cold-blooded, and, lastly, it cannot breathe under water. The Platypus is sufficiently interesting in truth, but any adequate account of it and its habits would be out of place in this communication, already too long.—Yours, etc.,

EDGAR R. WAITE.

Canterbury Museum,
Christchurch, January 3rd.

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5. Sat

Haswell called on me having arrived yesterday. Capt. Bollans (Hermenia) called & I learned that no trawling is done off Stewart Island, Dunedin being the best southern port. Ordered box for housing the young goldfishes. To the Exhibition at night.

6. Sun

Had a ride with Hülsen in morning but it was too hot to be pleasant, filled up form for "Who's Who" a German publication, (Gotha.)

My Japanese Goldfishes placed in the brick pond spawned. Miss Bush & Miss G. Hall to tea.

7. Mon.

Wrote to Junk, Berlin sent list of duplicate & not required papers & asked him to value & allow. Ordered the following books.

Linnaeus $\overline{\overline{X}}$. (Reprint)
$\overline{XII}$ } Editions
" XII.

Cuvier 1st Ed. 1817.

Bashford Dean's Fishes.

8. Tues.
wrote to Sullivan,
Fish Merchant. at
Dunedin re trawling.
Now writing Annual
Report. Museum -
Took Sparkes to the
Exhibition when we
had a try to photo.
the Seals. Called
on Larcombe N.S.W.
Court & Durie, who
gave me Year Book
of N.S.W. 1904-5. Con-
taining my contribu-
tion of Mammals
Reptiles & Fishes p. 763
(Paper No 92.)

9. Wed
It seems that our photo proceedings were not unobserved.

ADVENTURES WITH A CAMERA.

The camera is ever in evidence at the Exhibition, and the educational side shows have a large patronage, but it was left to two local scientific gentlemen to try and pose the seals with a smile on their faces. Coming to the fray armed with a large camera and a small snapshot, they braved the odour in search of the seals as models. But, before entering the enclosure, a consultation was held, and discretion being voted the better part of valour, one set out to fin dthe keeper. He was successful in the quest, and the photographing progressed.

The seals were called up to the fence by their attendant, and fed with scraps of fish, while a naturalist pranced about in the background of the seal pond, trying to hand down to posterity the exact number of wrinkles in a seal's smile. "Nelly," being both sweet tempered, and of the feminine persuasion, consented with tearful grace, but the large black seal, "Bully," began to take somewhat of an interest in the scientific enthusiast's legs, and the scientist seemed to find it a little trying to his nerves. After a good deal of fish had been swallowed from the hand, and the "right" expression caught, it was thought advisable to pose the seals in a group. To accomplish this a fish was put on the end of a rake, and elevated above their heads, whereupon the seals all stood up on their flippers to try for the dainty morsel. After repeated jumps, the

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8

largest caught hold of the tail of the fish, and with a pull cracked the handle of the rake in two, and that sitting ceased.

Next an attack was made on the mollyhawks, but having keen recollections of their last encounter with a naturalist, they flapped their wings, and fled promptly. Fate and a man with a big stick, however, were against them, and they were forced once again to face the scientific snapshotist.

The fish eggs which I discovered on Sun. are now hatching. The weather of the past 3 days has been very warm. Miss Bush left for Auckland. Sent Entrance fee + Sub. to Malacological Soc. Took Rose (only) to Exhibition. Placed top Minnow Poecilus in jars and brought away the two large Jap. Goldfishes to be used as spawners. Wrote Sullivan Fish Merchant, Dunedin re Trawling.

10 Thurs.

Letter from Allan, he has been appointed to succeed me at £150 to start with. Replied, congratulations, Hülsen gave me some seeds of aquatic plants obtained from Germany. Printed from some of the Waimak negatives.

11. Fri.

> Mr E. R. Waite, curator of the Canterbury Museum, has augmented the small aquarium in the natural history court of the Exhibition by the inclusion of a collection of "top" minnow—little fishes about an inch in length which are found in the water-courses used for irrigating the rice fields in Japan.

Went to Port with Miss E. Hall & Mrs Shaddon to meet Miss Ethel Hall. Letter from

Sullivan in reply, (9th) he will not grant the facilities I sought. Hearing that the Governor will shortly make a trip to the Islands I asked Lewis, our Chairman to seek permission for me to go also for fishes. He promised to write to Wellington. Got trough for baby gold-fishes. Took Rose (only) to Exhibition to hear Bessies of th' Barn Band. A very fine combination. the effect resembling an organ-

12. Sat.
Bought 12 plant pots
& sowed aquatic seeds.
To Exhibition at night
3. Misses Hall & 3 Selwyns
13. Sun.
The 3 ladies to tea. Wet
remained indoors, the
Hilsens came in evening.
14. Mon.
The Chairman Lewis
handed me a tele-
gram he had received
from the Minister
(J. A. Millar) to the
effect that his Ex
cellency had been
pleased to include
me in his party
visiting the Islands
in the Tutanekai.

She leaves the Bluff on the 23rd. Placed an order for 3 wood collecting tanks @ £1. each. Wrote to Millar re arrangements for trip.

15 Tues

The following appears in the Press. I wrote a correction.

> One of the seals in the enclosure at the south-west end of Victoria Lake died yesterday morning, and the body was sent to the Museum. The skin will be preserved and stuffed, and the skeleton will be set up and either retained in the Museum or used for exchange purposes.
>
> At a meeting of the Ashburton Fu

Wrote Museum Report + asked for funds for Island trip.

Received letter from landlady complaining of disgraceful state of the garden and threatening to put on a man at my expence I sent a suitable reply.

16. Wed.

Wrote Whitelegge & Cherry. Roebuck, - Hamilton tells me that Benham is also going to the Islands. Ogilby sent me a paper (Pub. 2 Jan. 07) To the Exhibition at night.

17. Thurs

Telegram from the Governors private Secy. The "Tutanekai" has

to repair a broken
cable and the trip
may be postponed
for a day or two.
Yesterday Museum
Committee granted me
leave of absence &
voted £15 for expenses.
I have ordered five
wood tanks @ £1 each
Bought gal. Formalnie
16/6. 2 gals Spirit 8/-
Fishing nets etc 14/6
Chl. Lime 28 lb 9/4.
Butter cloth 4/-
~~18~~ Took Claude to the
Exhibition at night.
Rose going with the
Misses Hall. Arranged
for Hülsen to attend
Exhibition Aquaria

18. Fri.
My letter (see 15th) below.

THE SEALS AT THE EXHIBITION.

TO THE EDITOR OF "THE PRESS."

Sir,—In to-day's issue you publish a note as follows:—"One of the seals in the enclosure at the south-west end of Victoria Lake died yesterday morning, and the body was sent to the Museum."

When the seals arrived in Christchurch on October 30th last, one was so badly injured that Mr Ayson and I discussed the advisability of destroying it at once. It was decided, however, to give it a chance, but when the animals were removed from the gardens of the Acclimatisation Society (where they had been temporarily accommodated), the sick one was left behind, and died there yesterday. It was therefore never seen at the Exhibition.

The seals at Victoria Lake are in splendid health, and are proving very docile and tractable in the hands of their keeper.—Yours, etc.,

EDGAR R. WAITE.

Canterbury Museum,
January 15th, 1907.

19. Sat.
Took Rose & Claude to Exhib at night Met Mr & Mrs West & heard some Pianola playing a pianist simultaneously playing the same piece without music & keeping absolutely with the mechanical playing.
20. Sun.
Gave Hulsen a small aquarium which I also fitted for him The Misses Hall, and Hamilton to tea
21. Mon.
Ordered water telescope to be made

22. Tues.
The Governor having come to Ch Ch. I paid a visit to his Secretary (Waterfield) who introduced me to his Excellency & we had a chat about the trip. Leaves the Bluff & returns to Lyttelton - date !!
Hülsen called and I gave him some baby goldfishes.
23. Wed.
Turned all the young goldfishes into brick pond. Bought overcoat 45/-

Letter from Wilfrid announcing death of Uncle Paul, and one from Etheridge to which I replied. Telegram from Pres. Secretary. Tutanekai may sail on 25th. Went to Exhibition with Rose and Claude.

24 Thurs.

Packed goods, Called on Sec'y. no further news. Decided to leave 8 am tomorrow Wired Benham to meet train Dunedin Wrote Private Sec. asked him to wire any information to me c/o Postmaster

Dunedin. Sent goods to Station, paid 16/- excess. Learned from Hamilton that permit to shoot protected birds has been refused. I had previously written that this Ex. had a permit direct. Took out accident policy Jan 24 to Mch 24. £500, downward. £1. premium. Enter in policy No 49280. Sent a comic card to Fred Reynolds in return. Wrote Chadwick & Mrs Waite. All went to Exhibition, "Wests' Pictures" in concert Hall.

25. Fri

The following appears in the paper. The date of sailing is therefore very uncertain. As however I made my arrangement I am off at 8.0 am and shall thus be able to carry out my original plan of spending a day, at least in Dunedin.

THE GOVERNOR.

His Excellency the Governor paid a short visit to the Exhibition yesterday, being accompanied through the British Court by Captain Atkin, British Commissioner, and through the Art Gallery by Mr Longden. The Governor has intimated his intention of being present

at the Caledonian Society's meeting to-night. Owing to a break in the Cook Strait cable the Tutanekai, which is to convey Lord Plunket to the Chathams and the Southern Islands, has been detained repairing the cable, and operations have been delayed owing to rough weather—the steamer having to take shelter in one of the Sounds. As soon as the cable is repaired, the Tutanekai will proceed to the Bluff, at which port his Excellency will embark. Accompanying the Governor on this official visit there will be Mr H. C. Waterfield (private secretary), Captain A. M. R. Bingham (aide-de-camp), Mr Justice Chapman, who has written a most interesting account of a previous visit he made to the Islands; Professor Benham, biologist, of Otago University, and Mr E. R. Waite, curator of Canterbury Museum. The Islands will be visited in the following order:—Snares, Auckland, Campbell, Antipodes, Bounty, and Chatham. The residents on Chatham Islands will give the Governor a welcome on this his first call at that distant part of the British possessions. It has been arranged that the Tutanekai will return to Lyttelton about the 11th of February. The Governor will preside at a meeting of the Rhodes Scholarship Trustees at Wellington on the 15th prox. He will subsequently go over the North Island Main Trunk Line, and hopes to get a few days' fishing in the interior of the North Island. Subsequently he intends to go to the north of Auckland, and will unveil the Marsden Cross at Russell on March 12th.

Arrived at Dunedin at 5.13 punctually was met by Benham

who told me that he had everything packed in consequence of information received but only 1/2 hour before I arrived received a telegram to say that the "Tutanekai" would not leave before Wed. night. He drove me to his house insisting that I shall be his guest. After dinner we called on the Chultons thence to see Judge Chapman. He had gone out to buy special clothing & stores for the trip & returning home found the telegram of post-

pouncement awaiting him
This means that he
will be unable to go.
Instead of being landed
at Lyttelton we shall
be taken to Wellington.
Following from Dunedin
paper.

THE GOVERNOR.

(PER UNITED PRESS ASSOCIATION.)

CHRISTCHURCH, January 24.

His Excellency the Governor paid a short visit to the Exhibition to-day. Owing to a break in the Cook Strait cable the Tutanekai, which is to convey Lord Plunket to the Chatham and other outlying islands, has been detained repairing the cable, and operations have been delayed owing to rough weather, the steamer having to take shelter in one of the sounds. As soon as the cable is repaired the Tutanekai will proceed to the Bluff, where his Excellency will embark. Accompanying the Governor on his official trip will be Mr H. C. Waterfield (private secretary), Captain Bingham (aide-de-camp), Mr Justice Chapman, Professor Benham (Otago University), and Mr E. R. Waite (curator of the Canterbury Museum). The Tutanekai will return to Lyttelton about February 11, and the Governor will preside at a meeting of the Rhodes Scholarship Trustees at Wellington on February 15. He will afterwards go over the North Island Main Trunk line, and on March 12 will unveil the Marsden Cross at Russell. His Excellency has been advised that Admiral Fawkes, with the Australian fleet, will visit New Zealand about the middle of April.

train.

26. Sat.
Spent morning at the Museum. Wrote to Rose. Benham took
5 me for a walk in the afternoon.
27. Sun
Had walks both in morning & afternoon obtaining fine views from Signal Hill.
28 Mon
Took early train to Port Chalmers, thence Steamer to Porto Bella. Saw Fish Hatchery, but there was little in progress. Got Hippocampus & Tripterygion among the seaweed.

29 Tues
Called on Mr Bathgate & Thompson in the morning and had some talk with Sullivan in afternoon.

30. Wed.
Benham and I left Dunedin at 8.25 am & reached Invercargill at 2.20 pm. We had a walk round the gardens and to the top of the water tower whence we had a good view Posted letter to Rose & Post card to Claude, Sent cutting to Miss Lynne Mills reporting that she was lying in hospital at

New Plymouth with a broken leg. I wrote her a letter of sympathy. Had afternoon tea & left at 5.10 arriving at the Bluff 6 pm. After getting our goods on board, we walked up the signal Hill and saw Stewart Island. Had tea on board the Tutanekai and B & I went for another stroll Returned to await the arrival of the Governor whose train came in at 11.30. We then sailed, the sea a bit lumpy outside.

For particulars of Cruise see Book No ...
The following is an epitome.

31. Thurs.
At the Snares, left at 4.0 for Aucklands.

February

1. Fri.
Auckland Is.
Port Ross.
Enderby Is.
Adams Island

2. Sat. Norman's Inlet.
Left at 6 pm.

3. Sun.
Campbell Is.
Perseverance Inlet. 7 am

4 Mon
Campbell Is.

5 Tues.
at Sea.
6. Wed.
Antipodes arrived 5 am
left 5 pm.
7 Thurs.
At Sea. Passed through
Bounty Is at 6 am.
8 - Fri.
Chatham Is 8.30 am.
9. Sat
Chatham Is.
10 Sun
Chatham Is.
11. Mon
Chatham Is.
12 Tues
Chatham Is. left 5.30 pm
13 Wed ~~Thurs~~.
At Sea.

14 Thurs.
Arr. Wellington 8. am.
Booked passage to
Lyttelton 8. pm £1.
Spent morning at the
Museum with Hamilton
& Benham & in afternoon
went to Island Bay.
Called on Hoben of
the 'Times' and on
Palmer of "Progress"
the latter being away.
Lunched & dined at
'The Grand' & left by
Rotomahana at night.
15 Fri.
Arrived at Lyttelton
at 8. am & thence
to Christchurch. An
alarming pile of
correspondence awaited

me, + letters from Fanny Bowling, Wilfrid + Hutchinson of Headingley. Half my luggage lost. 'Press' reporter came for an interview and the editor wrote for an article on the cruise, commenced to write in reply to correspondence.

16. Sat.

Wrote part account of trip to islands, recovered luggage. + had it delivered at Museum.

17. Sun.

Spent morning on the newspaper article.

Wellington Post

ON TOUR.

THE GOVERNOR'S TRAVELS.

RETURN FROM THE SOUTHERN ISLANDS.

Lord Plunket returned to Wellington this morning on the Tutanekai from his voyage amongst the islands of the South, a voyage which began at the Bluff on the 30th ult. His Excellency was accompanied by Mr. W. C. Waterfield (private secretary), Captain Bingham, A.D.C., and Messrs Waite and Jennings, curators of the museums at Christchurch and Dunedin respectively. During the voyage Lord Plunket and party visited the Snares, Auckland, Campbell, Antipodes, and Chatham Islands. Whilst at Enderby Island (the Aucklands) the party walked across the island to visit the scene of the wreck of the Derry Castle. At Perseverance Harbour (Campbell Islands) the Hon. Captain Tucker's men were in the midst of their shearing operations, some 7000 sheep being on the island. In this region the temperature was cold. Everywhere amongst the islands sealions were in great force, and the first reception his Excellency received during the voyage was from a deputation of thirty lions, who received him with a mighty roaring when he landed at the Snares. Albatrosses were seen nesting everywhere in myriads, and young penguins were present in countless numbers.

The anchor was dropped in Waitangi Harbour, Chatham Islands, on the morning of the 8th inst., and Lord Plunket stayed amongst the Chathams until last Tuesday, meeting the inhabitants in several places. On the 9th inst. an address of welcome was presented to his Excellency by Dr. Gibson (the magistrate), on behalf of the people. On the following day (Sunday) the Governor and party attended church service on the island. Monday was spent in a shooting expedition; early on the following morning some splendid fishing was done in Whangaroa harbour, and in the afternoon the Tutanekai started from the Chathams, reaching Wellington early this morning. Good weather was experienced throughout the voyage. Lord Plunket, during his visit, secured some specimens of island birds for the Dublin Museum. Mr. Benham was in search of new specimens of earth worms and spiders, and Mr. Waite conducted investigations amongst the lower forms of fishes. Both gentlemen secured a number of specimens.

Lord Plunket is to leave Wellington again next Monday on a trip over the route of the North Island Main Trunk Railway, doing some fishing on the trip. Auckland will be reached on the 5th prox., and then his Excellency is to embark on the Hinemoa for a voyage round Cape Maria van Diemen, the most northern point of the colony, and some of the townships in that region will be visited. The Governor is to return to Wellington on the 16th March, and two days later he will leave for the West Coast, visiting Ross and the glacier region of the Southern Alps.

[150]

16.2.07.

THE GOVERNOR'S TRIP TO THE ISLANDS.

AN INTERESTING CRUISE.

(SPECIAL TO "THE PRESS.")

WELLINGTON, February 14.

His Excellency the Governor returned to the capital this morning from his Island cruise in the Tutanekai. He was accompanied on the voyage by Mr H. C. Waterfield (private secretary), Captain Bingham, A.D.C., Mr Waite, curator of the Christchurch Museum, and Dr. Benham, curator of the Dunedin Museum. The voyage was a pleasant one throughout, a feature of the trip being the unusually fine weather experienced.

In a chat with Captain Bingham and Mr Waterfield at Government House this evening, I was able to gather some particulars of the cruise. During the voyage Lord Plunket and party visited the Snares, Auckland, Campbell, Antipodes, and Chatham Islands. Whilst at Enderby Island (the Auchlands), the party walked across the island to visit the scene of the wreck of the Deray Castle. Very little of the wreck remains to be seen, the figurehead, which marks the graves of some of those who lost their lives, being the most conspicuous object. At the Snares, where there is no harbour, and the steamer was rolling heavily, there was some difficulty in getting in and out of the boats, but otherwise the party met with no difficulty in landing or re-embarking. At Perseverance Harbour (Campbell Island) the Hon. Captain Tucker's men were in the midst of shearing operations, some 7000 sheep being on the island. The weather here was cold.

Everywhere amongst the islands seals were found in great numbers. Indeed, the first reception his Excellency received during the voyage was from a deputation of thirty lions, which received him with a great roaring when he landed at the Snares. Albatrosses were seen nesting, and young penguins were present in countless numbers on some of the islands visited.

The anchor was dropped in Waitangi Harbour, Chatham Islands, on the 8th inst., and Lord Plunket stayed amongst the Chathams until last Tuesday, meeting the inhabitants in several places. On the 9th inst. an address of welcome was presented to his Excellency by Dr. Gibson (the Magistrate), on behalf of the people. On the following day (Sunday) the Governor and party attended Church service on the island. Monday was spent in a shooting expedition. Early on the following morning some excellent fishing was obtained in Whangaroa Harbour, over 100 cod being caught in two hours, as well as some kapuka.

Amongst a collection of birds secured for the Dublin Museum by his Excellency, were specimens of the giant petrel, snipe, fernbird, Skua gull, Cape pigeon, Royal Albatross, the Antipodes parrot, and the Antipodes parakeet. Some of the rarer birds were seen, but not touched by the party. Captain Bingham says that the Skua gull, which is protected, is really a destructive fellow. He smashes the eggs of the other birds, and is not deserving of protection.

Later in the evening I met Dr. Benham, who is staying in Wellington until the selection of the Rhodes scholar for 1907 is made. Dr. Benham is too careful and too modest a scientist to go into much detail about his researches, at all events until he has thoroughly examined and classified his collection. He collected some plants for a number of Dunedin people who wish to grow them in their gardens, but his chief interest lay in making a zoological collection, especially of the invertebrates. He was very much interested in the seals (the so-called sea lions). They are, however, he says, becoming very much reduced in numbers, and he fears they are being slaughtered for their blubber. Although they are supposed to be protected by our legislation, there is no one there to protect them. Some interesting photographs of these seals were obtained. No fur seals were seen, and Dr. Benham thinks they do not go to these islands now. On the cliffs at Enderby Island the party saw the nesting place of large numbers of the shag that is peculiar to the Auckland Islands. At Carnley Harbour they visited what is known as "Fair Child's Garden," but they were too late in the season to see the flowering plants in bloom. Higher up on the hillside, however, some of them were in bloom. The wandering albatrosses were very interesting. They were nesting in large numbers all over the islands, billing and cooing and dancing in a most entertaining fashion. Photographs of quite a number were secured.

Dr. Benham made a visit to the top of Mount Honey, on the Campbell Islands, where he gathered a number of sub-alpine plants, amongst them the small purple-flowered celmisia. On one of his expeditions inland he saw one of the flightless ducks peculiar to these islands. It was half way up the hill, about a quarter of a mile from the sea.

INTERVIEW WITH MR WAITE.

Mr Edgar R. Waite, curator of the Canterbury Museum, who accompanied the Governor's party on the trip by the Tutanekai to the Southern islands, returned to Christchurch from Wellington yesterday. Interviewed by a "Press" reporter, Mr Waite stated that at the Auckland Islands, which were explored by the party, a number of interesting specimens of plants and bird and insect life were secured. At the Campbell Islands, they found four shepherds in charge of the flock of sheep, and also four shearers who had been engaged to do the shearing and pack the wool. The shepherds and shearers were supplied with bundles of magazines, and the men were given an opportunity of writing to their friends, the letters being brought back to the colony by the captain of the Tutanekai. At Campbell Island the Royal albatross was found to be breeding, and on the next group of islands—the Antipodes—that singular and solitary inhabitant of the vast stretch of ocean between New Zealand and South Africa on the one hand, and South America on the other (the wandering albatross), was found in considerable numbers—this being also the breeding season for this bird. The Tutanekai passed between the western and eastern groups of the Bounty Islands, but no landing was made. The steamer's course was then directed to the Chatham Islands, where a number of notable and rare plants were secured by Professor Benham. Collections of specimens of scientific interest were made by Mr Waite and Professor Benham. These collections have been brought back to the colony, and will be carefully examined and described. The various depots established for shipwrecked sailors were examined, and in every instance the depot was found to be intact.

Dr. Farr, of Christchurch, at the meeting of the New Zealand Institute on Friday night, read a letter he had received from the Department of Terrestrial Magnetism, Carnegie Institution, Washington. It was stated that the German Government had already responded to the demands of the department, as far as the magnetic survey of the Pacific Ocean was concerned, and had assisted in equipping Heimbrod, one of the department's magnetic observers, who is making observations in the Pacific Islands. Dr. Farr urged that a combined effort should be made to send an expedition, representing all branches of science, to the Pacific Islands in the Hinemoa or the Tutanekai next summer. The trip could embrace visits to the Antipodes, Auckland, Chatham, and other islands. After some discussion Dr. Thomas moved:—"That this Institute desires to express its complete sympathy with the projected scientific survey of the southern islands, and that it be an instruction to the Standing Committee to wait upon the Minister for Marine and impress on him the importance of such survey." This was carried.

The Museum and Library Committee recommended that Mr H. L. White be appointed to the position of lecturer in architecture and instructor in building construction at the School of Art, at a salary at the rate of £100 per annum. Duties to commence at the beginning of the first term. The Committee reported having granted the Curator of the Museum leave of absence, to enable him to take advantage of the kind invitation of his Excellency the Governor and of the Hon. the Minister of Marine to visit the islands in the Tutanekai; having consented, on the recommendation of the Curator, to an expenditure of £15 for providing the necessary apparatus and collecting material for the trip, and having accepted the tender of Mr T. H. Davies for distempering, decorating, and other work at the Public Library.

18. Mon.

Took my negatives to Press Office Editor of Weekly Press having offered to develop & them & use such as might be suitable. Handed in to "Daily" Editor pt portion of account of Governor's trip. Went to Exhibition at night & changed water in 3 of Aquaria, the Red Crawfish being dead.

19. Tues.

Editor of Weekly Press asked me to step down at 10. am & to my astonishment found that the whole five dozen plates had been

developed & prints made!!
He was greatly pleased & selected sufficient to fill 3 pages of the paper. He asked for MS of 2nd part of Article so that he might "lift" the whole for one issue of the illustrated paper.

The first part appears in to-days "Press." Wrote concluding part and took it to Editor. I developed negatives which Walround had exposed on Benham & self and found them to be good.

Received £2. 2. 0 for article on aquaria.
(Dec 1st).

THE SOUTHERN ISLANDS

NOTES ON THE GOVERNOR'S TRIP.

(By EDGAR R. WAITE, F.L.S., Curator, Canterbury Museum.)

Part I.

The southern islands of New Zealand are visited twice yearly by Government steamer, the object being to remove ship-castaways upon these remote shores and to inspect the depots and stores provided for such undertakings. The time spent at each depot is usually short, and little opportunity exists for a systematic encompassing the land, to do more than touch the fringe of the subject as offered by these islands.

When, therefore, I received the kind invitation of his Excellency the Governor to accompany him on his tour in the islands I perceived to myself a much longer stay than is usually possible. The bookkeeper of a cable in Cook Strait demanded that the Government steamer "Tutanekai," in which his Excellency would voyage, should be detained, and in consequence the duration of our visit was reduced to the normal period. The hasty survey I was able to make at the different points of call convinced me that much valuable information would be obtained by a properly-equipped expedition.

My investigations were directed, though I had little opportunity of furthering my object, I obtained small collections at some of the groups. Large patches of blue cod, hapuku, and terakihi were taken at the Chatham Islands, which would indicate that a profitable industry could be maintained by the operations of a suitable trawler. Fishes were also obtained at the Campbell and Antipodes islands, and it is to be hoped that when the magnetic survey of the southern islands is undertaken, opportunity will be given to make a detailed examination of the zoology and botany of the several areas visited, and that such may be extended to the Macquarie Islands.

In addition to his Excellency and staff (Mr H. C. Waterfield, private secretary, and Captain Bingham, A.D.C.), the party comprised Professor Benham, curator of the Otago Museum, and myself. Judge Chapman was also to have been present, but owing to the postponement of the date of sailing he was unable to accompany us, a circumstance much regretted by all, as his experience gained in previous visits to the islands would have been of the greatest service to us. The Tutanekai drew away from the Bluff towards midnight of January 30th, and at daybreak many sea birds were seen to be accompanying us. Of these the most fearless were the Cape pigeons—beautiful plump little birds, with conspicuous white markings on the upper surface of their wings. When we anchored off the Snares, about one o'clock in the afternoon, these birds settled quite close to the boat, and specimens were easily caught by means of a length of linen thread, in which the birds' wings became entangled as they flew by.

Though a considerable distance from the rookery, the birds were very numerous, the surface of the water being literally dotted from horizon to horizon with white specks, which we were informed were penguins. When we put off in the boats the intensely rank odour which had greeted us on our arrival, and the odour becoming more and more unpleasantly evident, our attention was soon directed to a large party of bull-seals, of which we was discovered on the beach. These shuffled about uneasily as we approached, and as we neared them they intimated more forcibly their objection to our presence by grunting and barking at us. The sailors, with spirit for fun and adventure, drove them about with spears and boat hooks, and I had difficulty in obtaining photographs. They were nearly all driven in the sea, but some of the larger ones, refusing to be thus coerced, retreated beneath the Nasella trees, where the ground was too soft and the undergrowth generally too dangerous. A diversion was caused by the discovery of another batch of seals, and while the sailors ran off for an novel sport, those endowed with a desire for research sought the penguin rookeries. The crested penguin was the only species observed at the Snares, and the breeding season was over, and the parent birds were tending their young ones. The bodies of the latter were brown when they were black in the adults, and patches of down appeared here and there through the feathers, gave them a grotesque appearance. The egg is more full, the parents taking charge in turns, the drowsy young is similarly treated, and should both parents be destroyed, the orphan is fed by other members of the rookery.

Passing down to the beach we saw thousands of penguins leading from the sea, across a broad belt of kelp, which they avoided by diving. As they appeared to scramble ashore, they looked all beautifully clean in contrast to those on the rocks stained and bedabbled with sand from the shady parts. Their movements, though awkward, were very rapid. Rapid progress is effected, the method of locomotion is curiously changed. The appearance presented is exactly that of a shoal of dolphins or porpoises, each bird appearing above the water for a moment with arched back, and vanishing again with a peculiar rolling action. I could not ascertain how the motion was obtained, but it is probable that both pectoral and legs are used.

The numbers of gulls of several species are very tame, allowing one to approach within a few yards, when they take a short flight, and perhaps alight on the top of a shrub a few yards further off. The fern birds run along the ground and remind one of a quail. They will pass close by one's feet, and if startled fly heavily for a short distance and settle, either on the ground or upon a low bush. The wrens appear to be seldom tame, and are, perhaps, in the course of time, being driven original Fantails. The only other land bird I saw at this place was the beautiful little black tit, or Wren Robin.

After inspecting the depot, established for the benefit of castaways, the walls of which bear notices prohibiting the destruction of seals, we returned to the boat and noticed that the seals were reconnoitring with a view to returning to their haunts on land. As the steamer was rolling heavily in a choppy sea, transference from the boat was not without danger, and while some negotiated the passage in safety others were drenched or received damaged shins. Among the less fortunate ones I also beheld my camera, including the plates I had exposed on the island, singing in the water with the boat hook taken on board. Sinclair, at the stern, paddled near us, and we succeeded in a few moments in recovering the camera, while the sea was alive with little diving petrels, which by repeated dives failed to recover their dinner from the receding steamer, and that they took to wing. On diving from the water they used their legs with the

[illegible] for a short distance, with [illegible] rapidity, the wings being used only [illegible] of their depth. Albatrosses were [illegible] and mollymawks were wheeling [illegible] in their great or none [illegible] and the water as the [illegible] Kelp [illegible] the sea [illegible] three [illegible] periods of sunshine [illegible] black [illegible] in closing up the [illegible] was [illegible] [illegible] [illegible] of February [illegible] [illegible] the principal harbour of the [illegible] Island. The sides were [illegible] the water's edge with [illegible] and beautiful crimson flowers [illegible] a marvellous effect. The beach, [illegible] is rocky, is covered with a great [illegible] of seaweed, washed up [illegible] Here we saw the sea birds, both [illegible] and gigantic, generally called [illegible] The Tui [illegible] a steel [illegible] whence [illegible] The [illegible] flight after an insect [illegible] and returns to the same stream [illegible] the performance. The wings [illegible] a long, harsh noise in flight. [illegible] seemed to Tinderby Island, [illegible] and found the seals to be again numerous.

Here we saw females also, and as such conjecture exists as to the [illegible] I may mention that these are [illegible] the same kind as those living at [illegible] Exhibition. All are of the same species, the sea lions being the bulls, [illegible] the seals (as we called the cows) [illegible] are smaller, and quite light [illegible] while some of the males are [illegible] shaggy brutes, strongly disposed [illegible] dispute our right to land. [illegible] Most of the females had foundered [illegible] the slopes long distances from the [illegible] for seclusion in calving, but we [illegible] on the beach with no young [illegible] apparently dead, but [illegible] ultimately drowned, as the young [illegible] After inspecting the little one we saw [illegible] (bear), and it tried to hide itself [illegible] under a cliff, and as soon as we moved [illegible] away, the mother, who had been watching us, came ashore in search of her little one. These sea robbers, the skua gulls, were greatly in evidence, but I will reserve further mention of them for the present.

The party now struck across the island to view the scene of the wreck of the Dacy Castle, the figureheads marking the graves of those who perished. On the cliffs near by, a colony of Auckland Island shags was discovered. [illegible] the site was, in the absence of climbing cycle, quite inaccessible. On Saturday, February 2nd, we ran along the coast, sailed in at Norman's Cove to inspect the depot, and entered Carsley's harbour dividing the island in two. The western inlet, however, is too rocky for navigation. Both bull and cow seals were numerous, and we found many asleep on the beach, and enjoyed their conversation when they were awakened by a smart slap with the hand. Scrambling through the long, thick herbage for inland, we were frequently pulled up short by the appearance of a large burn suddenly lifted in front of us, an experience which induced caution. A few albatrosses were nesting on the slopes of the mountain, but I will reserve further mention of these birds where the birds were extremely plentiful. Nelly petrels were common here, and we found many young ones, and though quite able to fly, we proved by throwing them into the air, they made no attempt to escape by flying of their own accord. All seemed in boxes of mutton birds, remains of the birds' depredations. The latter birds were greatly in evidence, and their young attempted to hide themselves by crouching, but when handled, the parent birds became most vicious, and escaped so near to me that I struck one with the rim of my hat. In crossing swampy ground we [illegible] many snipe, which rose quickly [illegible] They could easily be caught with the hand-net, while I secured one by hand [illegible]

On Sunday morning we anchored in Perseverance Inlet, at Campbell Island, and found four Orkney shepherds in charge of the sheep, to the number of about 700, placed there by the H.M. Captain Tucker. Four New Zealand sheepskins were saw there for the wool season, and a goodly pile of hides were seen in the shed.

Ascending the mountain sides we saw a few royal albatrosses sitting on their nests. These birds are distinguishable from the wandering albatrosses by their pure white heads, the latter having black or brown caps. Information was obtained, but a supply of egg-taken from time previously was obtained from the shepherds. We were shown boxes full of eggs of the royal albatrosses, the number being stated to be 500 or 700.

While very loth the interfere with the freedom of the shepherds, whom we want to good purpose, I do think that some restriction should be placed upon the destruction of the eggs of these noble birds. On enumerating the number of living birds with those at the Antipodes Islands, where they are undisturbed, the difference was striking. The mollymawk's nest is an object of difficult of access, and few of their eggs are collected. They are smaller and do not realise as many pounds as those of the albatrosses, which are taken to Australia and New Zealand for sale. The sheep are very indifferent to the presence of man and during had my camera dried I succeeded in taking a photograph of one at ten feet distance, while I was told that one of the sailors caught one by the hum. Black-backed gulls were very numerous, and of the shag both blackbirds and thrushes were plentiful. I was told that flocks of sparrows, greenfinches and goldfinches were also numerous, but I did not succeed in obtaining them, but understood that a rail, a [illegible], and a swamp fell were not [illegible]

20. Wed.

Made some prints from negatives. P. C from Wm Waite, wrote to Acc. Ins. Co. re my damaged shin -

21. Thurs.

The second & concluding article on the Islands trip appears to-day & is pasted below. I sent P. card to Benham, his own photograph I took at Chatham with words "Who said worms?"

Exhib. allan

THE SOUTHERN ISLANDS

NOTES ON THE GOVERNOR'S TRIP.

(By EDGAR R. WAITE, F.L.S., Curator, Canterbury Museum.)

PART II.

On the morning of February 5th, after a 36 hours' run, we arrived at the Antipodes, and caught many "black cod" with hand lines from the steamer. Some of these had Sabe-like parasites on their snoes, and also internal worms, and none of the party was anxious to sample their eddible qualities. Though I thought we had seen large numbers of penguins at the Snares, they were but a handful compared with those present at the Antipodes. The birds on the two islands appear to be similar, but they are, in reality, distinct species, those on the Antipodes being designated big-crested penguins, found also at the Bounty Islands. As we landed from the ship's boats, the birds hopped about the rocks, and either scuttled off or stayed defiantly, chuckled at us, and bit our leggings. Here and there we saw a smaller bird, the tufted or Victoria penguin, making its way upwards, and as we reached the higher rocks we found it alone there, as that the two species appear to live in zones, and while the tufted penguin has never early to traverse the lower area in its passage to and from the sea, the crested penguin possibly never attains

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[illegible] of the tufted bird is pure [illegible] much higher. A difference was also observed in the colour of the iris. The eye of the crested penguin is hazel, that of the tufted penguin of hazel sienna hue, and when young, grey. In all the penguins I have seen the pupil is ridiculously small, scarcely larger than the head of a pin. The golden feathers on the head of the crested penguin lie tolerably close to the head, but in the tufted species they stand out at right angles, and give the bird a wild or scared appearance. The young birds are a mass of brown down, while those somewhat older look very quaint indeed, some parts being quite sleek with shining feathers, and others fluffy with thick down. In both species the crests are pale yellow in yearling birds.

The rocks among which we found the penguins at the Antipodes, consist of rounded boulders of varying sizes, some large enough to accommodate one bird only, others capable of seating half-a-dozen. There is consequently an incessant jostling for places, the upper surface of the boulders is quite smooth, polished by the feet of countless generations of birds, and individuals are constantly slipping or being driven off, falling between the boulders, whence they emerge by aid of flippers and claws, sorry sights, bedaubed with slush from the fetid pools lying between the boulders. This, the only time in a dry season, but one to imagine how matters would be in wet weather. Though heavily-nailed boots are admirable for ordinary rough travelling, they were not altogether suited for traversing polished boulders, and few of the party reached the grassy slopes above without bearing some trace of the pungent compost. The nests appear to be constructed in drier situations and now out of use, look like shallow [illegible] With the nests we left the penguins behind and below us, and on the seaside scrub above fell in with the parrakeets. The most striking of the two species seen is confined to the Antipodes, and is entirely green in colour; the smaller bird, which is said to occur on Macquarie Island also, has the top of the head crimson, and we found them feeding on heads of club-rushes. Both birds are reticent of the presence of man, and may be caught with a noose at the end of a stick.

Professor Benham and I decided to scale for the top of Mount Galloway, but we had not counted on the rough nature of the ground to be traversed. The tussocks of grass seem to grow upon an earthy base, to which each succeeding crop adds the quota, so that the head of the tussock is often six feet from its base. The tussocks also are so close together that at a distance the whole appears like a waving meadow. If choice was made to walk on the tussock heads, but a few steps would be taken when one would be precipitated into the channel between them, and if it was elected to walk in these channels, the closeness of the tussocks presented the difficulties of a thick hedge. Occasionally we would encounter a waterway, at this season little more than damp, but supporting some a luxuriance of tall, herbs, fern, with great thick masses of stems, that they were even more difficult to traverse than the tussocks. At length, after struggling, floundering, and falling, we gained the plain, and found the slopes of the mountain less encumbered. We had set our course by means of a sketch map and compass, but whether the map was at fault or our surveying perception inadequate, we discovered that we were not, at any rate, on Mount Galloway. We were, however, in some measure repaid for our climb by sight of a magnificent panorama, comprising the rugged coast and adjacent islands. We had to face around the island and stand at the summit of sheer cliffs, against the foot of which the sea broke. I know not how many feet below us. Away to the south and eastward Mount Galloway, separated by another valley redolent with tussock and fern. Declining to be beaten, and fortified with lunch, we did eventually reach the summit, but twice were on the brink of extinction. Mutton birds had everywhere riddled the ground with their burrows; a fall into these usually meant a close acquaintance with exclamatory mud. But in fact a penny is not a penny, and such experiences owned to trouble us. However, after a pitch head foremost I found myself on the brink of a large hole, five feet across, and at least ten feet in depth, the floor a soft mud carpeted with bones of birds. A smaller hole "discovered" by my companion contained a dead albatross, and these unpleasant experiences served to moderate our enthusiasm and progress.

In parts we had better walking, and skeletons of mutton birds were lying everywhere, some bleached by the sun, others recently picked, and again several birds from which the feathers had not yet been stripped. At times were doubtless the work of the skua gulls, several of which we espied at their meals. The entrance to many of the burrows of the mutton birds were enlarged, and it seems probable that the skuas actually enter the holes and drag the birds out. These parasites are ever on the watch; they chase other birds for the sake of their dinners, which the unfortunate victims, disgorge; they hover around the penguins on the chance of picking up a young or disabled bird, and they direct their attention on the sitting albatrosses. If one of these birds leaves its egg, or but two yards, the skuas pounce upon it. Such a case happened while we held an albatross, the egg being pierced by an impudent marauder on a moment. We also reversed the albatrosses sitting upon eggs thus destroyed, the resulting [illegible] when one was greeted with a loud snapping of the beak, which produced a hollow sound. By pressing the handle of my nut against their throats and then merely touching the chest with my foot, they would be overbalanced, tumble backwards off the nest, and present a helpless appearance, with their legs in the air. It would seem that the pure white plumage of the head and back is not attained until the third year, as many dark-coloured birds, which I took to be two years old, were sitting. When the bird is walking the head is carried low below the level of the back, the neck outstretched, producing an appearance of cantankerous, though possibly merely to balance the body. Occasionally one would walk with wings extended. Many birds were discovered asleep on their nests, and it was quite easy to approach close and waken them with a tap on the beak, when they looked much surprised.

We were witness of many curious antics apparently connected with courtship. Two birds, after rubbing their beaks together, would first lower them almost to between the feet and then raised them vertically in the air; many times, the wings would be extended to their fullest extent, and the clapping of the beaks would be succeeded by a vibratory motion, and sound, which seemed involuntary. The performance would be terminated by a shriek from both birds similar to that made by the young when alarmed. The commotion would attract other birds from the vicinity, these sometimes moving off and performing duets. The community would then be joined by others which had been flying past, and they alighted among the group on a dozen yards from us and wholly unmindful of our presence. In alighting the legs and wings are spread. These birds walk laboriously up hill and often sit down, though tired, they cannot relax wing except in the face of a strong wind, when they can almost vertically. Going down hill they run for some distance to gain impetus, and use the wing to beat the air even when actually afloat. We were very loth to leave these most interesting birds, but we had much hard scrambling before us. We saw a few sooty albatrosses before finally rejoining the penguins, and among the rocks observed several pipits feeding on the minute shell fish exposed at low water.

The following day we spent at sea, passed between the western and eastern group of the Bounty Islands without landing, but near enough to notice the rocky slopes peopled with wildlife.

On the 9th inst. we made our final port of call, the Chatham Islands, and once more were in the latitude of Christchurch. The Tutanekai anchored in Peter Bay, and we stepped ashore at Waitangi. Here the Governor was presented with an address by the good people of the island. A stroll along the beach showed that an enormous number of black fish (a small whale) had been cast ashore, indeed bones and complete skeletons lying in all directions. A visit was made to the Maori Pa, where a tangi or funeral ceremony, was being held. Lake Huro was also visited, and a hurry instructed Lake Te Whanga where fresh scrub were said to be extremely numerous. As the period of our stay at the Chathams was uncertain we were unable to explore the interior, consequently did not obtain much information from a naturalist point of view; moreover, the islands are within easy access of Lyttelton, and of all those visited are the best known.

Magnificent catches of fish were obtained from the Tutanekai, and we desire to evince good examples of all the species taken, and so to request permission to take sundry specimens caught by other members of the party, or at the crew, a proceeding which led to a very practical joke at my expense. After I had been put ashore, on one occasion, alone, in order to explore the [illegible] for line fishing. They returned laden with fish, but I discovered that all examples of which I had not obtained representatives, had been stolen, so that I might not be my examples hands upon them. The joke was a good one and provocative of amusement, but considering that I had been at the trouble and expense of providing special gear and accompanying my opportunities was perhaps not quite as keen as it might otherwise have been. It was arranged that we should spend Tuesday at Port Hutt, but after four hours steaming with that intent the Tutanekai encountered a dense fog, returned to Peter Bay, and anchored off Port Hutt, where the rest of the day was spent. While we were lying at anchor, I was called to see a "sea-serpent," and behold quite close to the boat, a chain of Salps, fully eight feet in length, progressing with a serpent motion not unlike that of a snake. Very many others were observed during the course of half-an-hour's watching, and some were caught in a fine net and hauled aboard. When placed in a bucket of water their beautiful rhythmic actions were readily observed. At 5.30 p.m. we headed for Wellington, and during the night the course, with very little sale, was illuminated with the phosphorescence of marine animals of many kinds including possibly, the whales we had seen by daylight. Our voyage was made in 83 hours, which I understood Captain Peal to say was record time.

In conclusion, I should like to extend the appreciation of Professor Benham and myself of the great kindness of his Excellency Lord Plunket in furthering our special objects, and of the sympathetic interest he took in our work.

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22 Fri
Spent evening with Hilsen.
23. Sat.
To New Brighton in afternoon. while Rose & Annie Hall took tram, Gerty and I cycled.
24 Sun.
The Misses Hall, as usual.
25. Mon
Visited House Agents & left particulars of "house to rent".
Benham asks for some prints of his photo.
26 Tues
am now working at

my list of N. Zealand fishes. Hamilton wants it for his "Bulletin" but why should I not publish it for benefit of Canterbury Museum, the first of a running publi-
-cation?

27. Wed
'Weekly Press' issued containing my article & photos (3 pages) on Southern Islands. I sent copies to
Welch, Cherry Hedley Hellawell. Paterson & Wilfrid Mrs Waite Fanny Bowling. Belle & Dr Vause. To Exhib. at night.

28 Thurs
Wrote Walrond "N.Z. Graphic" & Beatie "Auckland Weekly News" re publication of the photos they took on the Governor's trip.

Recent additions to the Museum include eggs of the royal albatross, wandering albatross and mollymawk (from the Antipodes Island), and the skull of a Moriori child (from the Chatham Islands), collected by the Curator, Mr E. R. Waite, during his recent cruise. A re-arrangement of the insects in the foreign bird gallery has been commenced by Mr Waite, in the direction of setting this out from an educational point of view, each variety having a short, interesting description printed beneath it. The native birds in the New Zealand room are being set up anew on more handsome stands, and also with an eye to correctness of attitude.

March

1. Fri
Spent evening with Hilsen - getting a bit tired of the Catalogue.

2. Sat
Go Exhibition. West showed good cinemat's of London Zoo.

3. Sun.
Hilsen & I rode to Horseshoe lake in the morning and as there seemed to be some "pictures" we again went afternoon.

4. Mon.
Letter from Jordan he proposes to spend a month in N. Z. May - June.

Letter from Gilbert re Myelophids. Fowler sent me reprints.

5. Tues

Mentioned to Russell my idea of publishing a Museum brochure, he asks me to make a report to Committee. Speight talks of going to Kaikora for a few days in May and asks me to join.

6. Wed.

Obtained estimate fr. Whitcombe & Tombs for printing my list of N.Z. Fishes, viz £9-15-0. 37 pages and cover. Letter from Miss Lynn Mills

fr. New Plymouth Hospital. (Jan 30th).
Wrote to Jordan, & sent letter to Honolulu. I have received 15 plates of Fishes of Samoa, but the work has not arrived.

7. Thurs
Received copy of NZ graphic, containing splendid pictures of Islands trip taken by Walrond. Attended at Fiji Court and bought some articles.

8. Fri
Corolé Report for Museum Committee included suggested publication.

appointed judge of
class 29. at Exhibition
9. Sat
at Exhibition in the
evening. House hunting
in afternoon.
10. Sun.
Indexed my list of
N.Z. Fishes.
11. Mon.
Scott, in charge of
S. Aust Court. gave
me Reche-de-Mere
but we have yet
to learn how to
make it into soup.
12. Tues.
Judged Stags' heads
& other Exhibits in
class 29. Wrote

to Allan for dates etc. for fish list.

13. Wed.

Attended Committee Museum, and advanced claims for publication. After hunting over the town for the past fortnight decided to take a house at Lincwood £60.

14 Thurs.

The Museum Committee decided to yesterday to recommend my publication proposal to the Board.

15. Fri

Wrote "Introduction" to my Basic list of N.Z. Fishes. Ordered

books from Dames
(Berlin) list.
Gronovius. Zool. Gron.
Cuvier's Reg Anim. 1829.
Engelmann's. Bib. Zool
Carus & Eng. "

16. Sat.
Nelson Illingworth is
making a bust of
Sir Jno Hall, at
the Museum. Did
further packing.
17. Sun
Had a walk with
Hülsen in morning
& gave him a large
Gold Carp & some
Vallisneria & other
plants.

18. Mon.
Palmer "Progress" having asked me for a contribution I saw Farre re Magnetic Survey & wrote a column thereon, but did not post it to Wellington. Beale damaged his only eye and will be absent from the Museum some time.

19. Tues.
Signed memorandum to take house 23 Hereford St. Linwood ~~subject~~ a sub-tenant subject to consent of landlord (Storey). To Exhibition in the evening. Pasted up my book of plates.

20 Wed.
Gave Sparkes balance of large Gold Carp.
To Exhibition at night.
21. Thurs.
Now casting fishes under tuition of Illingworth
22. Fri.
The following is from "Canterbury Times".

THE WORLD'S INSECTS.

Represented at Christchurch Museum.

There have been displayed in the Foreign Birds and Insects Gallery of the Christchurch Museum four cabinets containing specimens of the most notable insects the world has produced.

The collection is a very representative one, and it is attracting a great deal of attention from visitors, some of whom linger for a long time over the cases, admiring the brilliant and almost dazzling colours of some of the insects, and gazing at the hideously forbidding appearance of others. Two of the cabinets have been in the gallery for some time, but they have been brought from underneath a case, where they were half-hidden away, and now stand out conspicuously, side by side with the two recently prepared.

The specimens are distributed in the cases in accordance with the orders to which they belong, and also in accordance with the zoographical regions into which zoologists divide the world. In this way, for the most part, the giants are separated from the pigmies, and the handsome ones from the ugly ones.

Amongst the beetles, the first to catch the eye of the casual visitor is the gigantic specimen from the Ethiopian Region, appropriately named Goliathis. Close beside him there is a specimen of the scarabæas, the beetle found preserved in Egyptian tombs. Amongst the specimens from the Oriental Region there are peculiar leaf-like forms, and the Neotropical Region has contributed to the collection some very brilliant beetles, whose dead bodies are used for ladies' dainty brooches and other ornaments.

The butterflies and moths, of course, make a brave show of many colours. Notable amongst these are the bird-winged insects from New Guinea and North Queensland, the silk moth from North America, the leaf-butterfly from India, the great owl moth, the largest in the world, and the morpho, remarkable for its iridescent hues when the light plays upon its handsome coat. There are gigantic stick-insects, beside which the New Zealand "walking-sticks" are small and insignificant. One of these monsters has a stretch of eighteen inches, with a body as thick as a man's finger. Another lying alongside of him is as thin as a knitting-needle. Amongst the specimens of the mantis, there are "leaf-insects" that show a surprisingly close resemblance to green or dead leaves. The principle of mimicry amongst animals, in fact, has many excellent illustrations in the collection, and no one who sees these insects, with wings representing leaves with the utmost perfection in all respects, can doubt that protective mimicry plays an important part in the lives of many members of the insect class.

There are cockroaches, dragon-flies, ants, bees, wasps, ichneumon flies, bugs, spiders and scorpions. There is an excellent specimen of the famous large spider that catches and kills birds. The cicadas are represented by some Australian specimens nearly as large as a mouse, and "lantern flies," with eyes depicted on their wings and their lanterns carried in front of them, make a specially attractive display.

There are large numbers of insects that Mr E. R. Waite, the curator, has not arranged yet. They will be placed in cases in the same gallery. The collection, which was secured in England by the late Captain Hutton, is an important addition to the Museum, and will be useful to naturalists and very interesting to the general public.

23 Sat.
Miss Hall came up on horseback & I went on the bike with her to Belfast and saw the work of the recent fire. To Orchestral concert at Exhib

24. Sun.
Packing pamphlets Miss Hall & Miss Swan to tea.

25. Mon.
Left the Museum at noon. Lumbago. The Board meets.

26 Tues.
In bed all day - The following relate to yesterdays meeting

MUSEUM AND LIBRARY COMMITTEE'S REPORT.

The Museum and Library Committee recommended as follows:—(1) That the appointment of Mr R. B. Cotton, as student-assistant in electrical engineering at the School of Engineering at a remuneration of £40 for the session be approved. (2) That the resignation of Mr G. Penlington, as instructor in carpentry and joinery at the School of Art be accepted as from the end of the present term. (3) That the various pieces of silver plate bequeathed to the Canterbury Museum by the late Mr H. Allwright, of Lyttelton, be handed over to the public trustee, executor in the estate, for the benefit of the other beneficiaries named in the will. (4) That the suggestion of the curator of the Canterbury Museum to issue a small occasional publication be adopted. (A scientific list of New Zealand fishes is submitted as a first part, at an estimated cost of £11.) (5) That the director of the School of Art be empowered to obtain a suitable badge for the students of the school. The badge to be designed and executed by the students, and submitted to the chairman for approval. (6) That the salary of Mr C. F. Kelly, assistant teacher at the School of Art, be increased by £10 as from the commencement of the term, for extra time given to the classes for junior free scholars, making his salary £40 instead of £30 per annum.

The Chairman of the Canterbury Board of Governors stated at yesterday's meeting of the Board that the cases of insects (including butterflies) which had been arranged for by Captain Hutton had now arrived. From a few minutes' inspection he felt convinced that it was a most wonderful collection. Members of the Board could spend a delightful hour looking at the exhibit.

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At the meeting of the Canterbury College Board of Governors yesterday, a letter was read from the Controller and Auditor-General, who reported that he had examined the Board's statement of receipts and expenditure for the year, and found them correct, except that—"(1) The purchase of the Hereford street sections is not a transaction authorised by law, and that the investment of £2000 of trust funds in the purchase of such property is not an investment in one of the modes approved by the Governor under the authority of section 25 of the Act; and (2) the payment of a sum of £66 13s 4d to the widow of Captain Hutton, late curator, is without authority of law." The chairman said they had seen such "tags" before. No action was taken.

The Chairman of the Canterbury College Board of Governors (Mr G. W. Russell), at yesterday's meeting of the Board, said he had much pleasure in stating that Miss Stoddart had presented a number of very beautiful pictures relating to New Zealand flora to the Museum. These pictures were now being framed, and they would shortly be hung in the Museum. The letter announcing the gift was referred to the Museum and Library Committee.

VISIT OF A DISTINGUISHED SCIENTIST.

We are shortly to have a visit from a distinguished scientist from the United States. The Chairman of the Board of Governors of Canterbury College stated at the meeting of the Board yesterday, that he had received a letter from Mr Edgar R. Waite, curator of the Museum, forwarding the following letter from Mr David S. Jordan, a distinguished scientist of the United States:—

"Stanford University, California, January 24th, 1907. "I have about decided to spend the month of May in Australia, and from the middle of June to the middle of July in New Zealand. I shall want to see as much as I can of the natural history of the country, and to visit all its universities and to give a number of addresses. The programme in that regard I have left with my friend, Sir Robert Stout, of Wellington. I may perhaps bring with me a student as assistant and collector. If I can be of any service to you, it would be a very great pleasure. Naturally, the museum at Christchurch will be one of the centres of my thoughts and more or less of my activities.—Very truly yours, David S. Jordan."

The Chairman said that suitable arrangements for the reception of Professor Jordan would be subsequently made.

27. Wed.
Back much better
To Museum, Letter

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from Cherry - 7.

28 Thurs.

Sent £6. to Linnean Soc. 2 years Sub's & £3. 5.0 (£3. 7. 6) to Star Ass. Soc.-

Took Rose to opening of Girls High School Extension. Russell announced presentation of Medals now in Exhib to the Museum

29. Good Friday

Museum closed. I packed Crockery & glass-ware. Though not very warm, and sunless the Japanese Goldfishes bred in the morning & I collected a good many eggs-

30. Sat.

To Museum in the morning, MacKay ~~Prof~~ & Marshall & Profs Park & Bell held council in my room. Gave goldfish eggs to Hülsens & went to Exhib. at night.

31. Sun.

Packed 16 cases of books which with the crockery makes 30 so far. went to the Hülsens to tea

(Easter.)

April

1. Mon.
All went to New Brighton with the Hülsens, H. and I. walked from Mrs Sargisson's house S. going with us.

2. Tues.
Dibb to ack. receipt of draft £40. 6. 6. sent Jan. 3rd. Letter from Mrs Waite she sends £2 for Claude. Letter from Wilfrid.

3. Wed.
Wrote Mrs Waite took Claude to Chilton to have his eye seen to. On Friday a boy hit it with an acorn & bruise, the pupil

has refused to contract. The oculist put drops into it and later it contracted to the size of a pin's head — remained so. All to Exhibition at night. The great film, "A trip to the Sun" was burnt in the afternoon.

4. Thurs.

Arranged with chairman to offer £50 for cases in Nat. Hist. Court. I offered £2.5.0 for the marine tank & stand + £2 for various appliances. I claimed 30/- for 2 broken glass jars. The Japanese goldfish eggs hatched

during the afternoon.
Received invitation
from British Commr
to dinner on Friday

An interesting new exhibit was placed in the Natural History Court yesterday, this consisting of a jar of baby Japanese goldfish. These were spawned at Mr E. R. Waite's private aquarium on Good Friday, and the eggs hatched on Wednesday last. The interesting little creatures, which are somewhat difficult of detection by the naked eye, owing to their semi-transparency, are about a quarter of an inch long.

5. Fri.
Had dinner at the United Service Hotel.
Capt Atkin placed a toast in everyone's hands, or mouths.
6. Sat.
Letter from Benham.
I received specimen proof of "Records"

F. Spent afternoon in tidying the garden

7. Sun.
Wrote article on Japanese Goldfish & sent to the "Press". Had tea with the Hilsens.

8. Mon.

Took Claude to Chilton & had drops put in eye. Go Exhibition at night, possibly our last visit to the Biograph, we having attended regularly at each change - twice weekly ("Wests Pictures.").

9. Tues.
Passed style of type for "Records." Attended Nat. Hist Committee meeting at 2.30 and Council Phil. Inst. at 5.0. R.T. Baker called to see me. Arranged for Hamilton to take some packing cases in exchange for false flooring used by Mc Donald & engaged for removal to Museum

10 Wed.
My article on Japanese Goldfishes printed to day. The Editor must consider it of interest heading it "specially written for the Press."

JAPANESE GOLDFISHES.

BY EDGAR R. WAITE.
(Curator, Canterbury Museum.)

(SPECIALLY WRITTEN FOR "THE PRESS.")

The Japanese goldfishes shown at the Exhibition, both in the Aquarium and in the Natural History Court, have proved of great interest to the numerous visitors, and your readers will no doubt be glad to know something more about these beautiful and quaint fishes.

Goldfishes were probably introduced into Japan, from China, at a very remote period, as the varieties to-day produced in the two countries differ very greatly. The fishes are bred in the warmer parts of the country, thence sent all over the Empire, where they are in great demand as pets or ornaments. There is fashion in goldfishes as in most other things, so that in different places and at different periods the "points" or characters considered as essential to perfection vary considerably. Certain features, however, good fishes must possess in common, and these are stated by Mr K. Kishincuye, of Tokyo, to be as follows:—

The lips, nostils, the space round the eyes, the gill covers, and fins should possess colour; other parts may be coloured or not at discretion of the fancier. The fins ought to be large, delicate, but rather stiff, not falling into folds, like a withered flower. They should not prevent the free locomotion of the fish.

The tail should be triangular, having three points, and not divided along the middle. It should be well expanded and rather erect. The anal fin ought to be divided laterally into two equal portions. The movements must be graceful; a fish which cannot keep its body horizontal is considered inferior. The body should be plump and have an outline of beautiful curves, and the fish must be healthy.

The choicest varieties, or those which depart farthest from the original stock, whence the artificial varieties were derived, are very delicate, and do not stand transporting, hence such are not seen outside of Japan.

In point of size the goldfishes shown at the Exhibition are mere pigmies, for ordinary gold carp are reared to a length of three feet in Japan. The most prized variety is known as Maruko or chosen, and is but six inches in length. It has no fin on the back, and its body is oval or almost round, with large scales. It is very weak, and the greatest care is required for its propagation and preservation.

A variety in which the fins are much developed and the head covered with warts is produced under the name of Onaga or Shishigashira. The tail is longer than the body, and the fish attains one foot in length; unless special pains are taken—and painstaking is a characteristic of the Japanese—the warts do not appear. In another fancy a specially large wart is produced on each side of the snout. The ordinary variety of goldfish as produced in Japan has the tail very large, the anal fin split in two, and the other fins normal. This is known as Rukin, and is the form most numerous at the Exhibition. The others, which are not so highly specialised, are called Wakin. I am not aware what percentage of fishes are bred true to parentage in Japan, but I find that in Australia and New Zealand my fishes revert to a large extent, and probably not more than twelve per cent. show all the characters of the parents. I am not, however, acquainted with the various "dodges" practised. I have been told that goldfishes are reared in polished copper vessels to heighten the colour, while it is well known that the gold colour is removed in parts by some bleaching, and various white letters and signs are thus produced on a golden ground.

When in Sydney I bred telescope fishes. These have the eyes set on protuberances, and though I obtained them from Japan, they were not known in that country until after the war with China, where the variety was originally produced.

Goldfishes will not breed in small aquaria, in running water, nor in still water if very cold. The Rukin being hardy, breeds in cooler water than the choicer varieties, and I was surprised to find my examples breeding in Christchurch on Good Friday last. The eggs hatched in five days, but a sudden cool change may be fatal to the young fry. Though not goldfishes, I may mention that the little Top Minnows shown in the Natural History Court are kept in aquaria in Japan chiefly as children's pets. They are found in the water in the rice fields, and are fully adult at one inch in length.

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Received chq.
from Editor of Press.
for article on the
Governors' trip. Took
Rose to afternoon tea
at the Pa, invitation.
Colored the cast of
Cephaloscyllium, our
first fish. Packing
cases removed to the
Museum.

11. Thurs.
Nat. Hist. Committee
photographed at noon.
Wrote Wilfrid. Chilton
placed more drops in
Claude's eye. He had
had a consultation
with Dr Stevenson &

SCIENCE AND INDUSTRY.

THE SYDNEY TECHNOLOGICAL MUSEUM.

Mr Richard T. Baker, F.L.S., Curator of the Sydney Technological Museum, is visiting Christchurch and the Exhibition. In the course of a conversation with a representative of this journal, Mr Baker touched upon a few of the aspects of the work done by the institution of which he is the head.

"The Sydney Technological Museum is the most complete commercial and industrial museum this side of the line," said Mr Baker. "Its special object is to aid in developing the natural resources of the State by original scientific research, as well as by furnishing commercial information on productions other than those of Australia. For this work, there is a staff of experts in various branches of industry. The wool expert, for instance, besides collecting samples from all parts of the world, gives information to woolgrowers and reports on specimens submitted to him. He is the judge of all wool competitions at the country shows, as it has been found that the only quite satisfactory method of deciding the relative merits of the samples entered is that of microscopical measurement of the individual wool-fibres, in conjunction with a full scientific test. He also gives advice on the introduction of new breeds and strains for the improvement of the flocks. The museum has the largest collection of wool in Australasia.

"The wool section," continued Mr Baker, "is only one portion of the large department devoted to the animal kingdom. We also investigate animal and vegetable pests, and advise the settlers how to cope with them. But, to pass on, we have, under the classification of the botanical kingdom, the largest collection outside of Kew Gardens, London, of timber specimens from all parts of the world, besides exhibits showing the industrial uses of different woods. We also exhibit samples that have been tested by a 100-ton testing machine to show their strength, and the data thus obtained are shown on each sample. I have recently completed, in conjunction with Mr H. G. Smith, our assistant curator and chemist, a piece of research work on the eucalypti, especially with regard to their essential oils. As this genus of plants comprises three-fourths of the vegetation of Australia, the work is important. One of its results is that already the eucalyptus oil industry of New South Wales has quadrupled. The oils have been shown to be not only of medicinal, but also of commercial value, and settlers have come from neighbouring States to work the oils of New South Wales. I should have said that New South Wales has been found to possess eucalypti that yield oils superior to those obtainable in the other States. Several of the chemical constituents of these oils have been shown to be new to science."

Mr Baker is now extending his investigations to the oils of the ti-tree, and he has collected some specimens of the New Zealand manuka from Wellington, which he thinks may yield important commercial oils.

Mr Baker has visited the Canterbury Museum, and thinks Christchurch is to be congratulated on having in its midst so fine a building with such a splendid and well arranged collection of exhibits. As a general museum, he considers it has no compeer in Australasia. He also speaks highly of the curator, Mr Edgar R. Waite, saying that the scientists of Australia still regret his departure from their shores.

In conclusion, Mr Baker informed our representative that he would be pleased to place the services of his scientific staff at the disposal of the commercial community of New Zealand for any investigations within the sphere of the work of the Sydney Technological Museum.

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is not sanguine that the eye will ever be quite right. All to Exhibition. Scott of S. A Court gave us the balance of his Beche de Mer.

12. Fri.
Colored the first cast of the fishes Cephalo-scyllium laticeps

13. Sat.
Disinanthing in the afternoon. Have arranged that floor coverings wood coal etc shall be removed on Wed. ← that the "flit" shall be on Sat.
Deputation at 6. (see cutting). Ross' birthday.

THE SOUTHERN ISLANDS.

MAGNETIC SURVEY.

A deputation from the Canterbury Philosophical Institute waited upon the Hon. W. Hall-Jones, Acting Premier, on Saturday with the view of urging upon the Government that some assistance should be given towards the completion of the magnetic survey of the Southern Islands. The deputation consisted of Dr. C. Coleridge Farr, Dr. Chilton, Dr. Cockayne, Messrs R. Speight, Edgar R. Waite, and H. F. Skey.

Dr. Farr read a letter he had received some time ago from Professor L. A. Bauer, director of the Carnegie Institution, Washington, asking if the Government of New Zealand would extend the magnetic survey of the colony to the Southern Islands. Professor Bauer said an attempt was being made to complete the magnetic survey of the globe within a period of about fifteen years. Dr. Farr pointed out the importance of the work, and urged the Government to arrange during the next summer that one of the Government steamers should visit the Southern Islands, and, if necessary, stay an extra week or ten days, in order to enable the scientific men to complete their work. In addition to the magnetic survey, several scientific men desired to spend some time on the islands in making biological investigations.

The Hon. Mr Hall-Jones: What would be the cost?

Dr. Farr said they hoped to get a Government steamer to go to the islands. One of these steamers visited the islands every year. To charter a steamer would probably mean £400 or £500.

Dr. Chilton pointed out that the Southern Islands were of importance to the zoologist and botanist, and the investigations made under these heads would be valuable.

Dr. Farr said the scientific men were prepared to give their services gratis.

The Hon. Mr Hall-Jones said the Hinemoa would be engaged for several years in surveying work on the coast, and the Tutanekai would do the lighthouse work. He had been considering whether they could not get the services of one of the surveying sloops in the East. He had heard that some of these sloops, which had been fitted up for this work, were laid up at Hong Kong, and might be available. He recognised the importance of getting the magnetic survey work completed. Seeing that those present, and others, were prepared to give their time gratis, and acknowledging the value of the work, the application of the deputation (which he would submit to the Cabinet) would have his favourable consideration.

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went to Exhibition
& bought a table drill
35/-
14. Sun.
Claude's birthday. (11).
Took up Linoleums &
Carpets, Sacked wood
& Coal.
15. Mon.

Mr Nelson Illingworth, the Australian sculptor, is at present modelling a bust of the Hon. Sir John Hall, to the order of the family of the veteran statesman and Mayor of Christchurch. The sculptor's studio, for the time being, is at the Canterbury Museum, and having some spare time on his hands as a consequence of the intermittent health of his subject, he kindly offered to make some casts of New Zealand fishes for the Museum. Several of these casts have already been prepared, and will in course of time be coloured by the Curator (Mr Edgar R. Waite). The first is already finished, and has been placed on view in the "recent acquisitions" case. It represents a fine specimen of one of the ground sharks which are common off the New Zealand coasts. The shagreen and all the marking, with its grey, brown and black spots and rings, are copied in a clear and lifelike manner. Ever since he came to the colony, Mr Waite has had it in his mind to obtain a series of models of the native fishes, and it will be admitted that an excellent beginning has been made.

Bought plank for bench-top, and at night attended closing ceremony of Exhibition

16. Tues.

Rose & I attended at Hereford St to measure for floor coverings. We found "Madam" the owner's wife in possession, drunk & abusively talkative. Called on the owner cancelled negotiations & am left with 2 weeks to find another house & 2 weeks rent wasted, payable to the late tenant. Our house upset & comfortless.

17 Wed.
House hunting again
One we had before
looked at in Rugby
St has rent reduced
from 27/6 to 25/-. Ob-
tained my drill 35/-
Museum Committee
meeting.
18. Thurs.
Took Rose over house
in Rugby St. will
take it if further
gas connections are
made. interview owner
on Sat. Received &
corrected paged proofs
of "Records".
19. Fri
Heavy rain, all day

20 Sat
Saw owner of house Rugby St. he will 'consider' cost of extra gas connections by Monday. Spent the afternoon cycling round house hunting.
21 Sun
Hülsen came in the morning and we made a tour of roads on cycles. ~~Had~~ Went to Hülsen's after tea.
22 Mon
Landlord refusing to complete gas connections the Rugby St house is off. "San Romolo" the next enquiry.

23. Tues.

"Signed-on" for "San Romolo for 1 year @ £.65. Letters from Benham re award & replied. Passed in final proof of "Records" to be published on 25th.

Received notification of election to Committee for "Biol. & Hydrogr. study of N.Z. coast & A.U.A.S" in succession to Hutton.

24. Wed.

Received from Junk Linn. Syst. Nat. Ed X. & Gmel. XIII. pt III. (fishes.). Chilton is writing to Sec. of Exhibition announcing recommendation

of Nat. Hist. Committee that awards be made to Benham, Cockayne & self for our exhibits. Portrait group of the Committee appears in "Weekly Press".

25. Thurs.

"Records" published posted 12 copies to carry the date.

26. Fri.

Saw Aspon who told me that the trawling expedition would commence end of May & that he had told the Minister that it would add to the ~~[illegible]~~ value if a scientific man was

The first of a series of publications in connection with the Canterbury Museum will be issued by the curator, Mr E. R. Waite, F.L.S., to-day. The publication, which is in the form of a pamphlet, gives a list of the fish of New Zealand. The catalogue of fishes supplied by the late Captain Hutton in the "Index Faunæ Novæ Zealandiæ" forms the foundation of Mr Waite's list. That work, however, does not give references to the original descriptions, nor to any list where they are indicated. Mr Waite has entitled his pamplet a "basic list" of the fishes. Care has been taken in the compilation, and accurate reference to the original descriptions of the fishes has been the chief aim in view. As Mr Waite states in a brief preface, every worker in systematic zoology appreciates the value—almost the necessity—for having at hand a list that supplies exact references to the original descriptions of the constituents of the fauna he is studying, and the pamphlet will be very useful to students in other countries as well as in New Zealand. There are 252 species of New Zealand fish mentioned in the pamphlet, which is the first of the "Records of Canterbury Museum." It is intended that the series should deal exclusively with subjects represented in the Museum. Copies will be sent to other countries, in exchange for publications received at the Museum.

The ... to ... P. C. ... 25. 9 2 ... R. C. ... 26. ... mittee ... ade ... ne ... bits. ... the ... in ... ed ... to ... old me that the trawling Expedition would commence end of May & that he had told the Minister that it would add to the ~~been~~ value if a scientific man was

taken. He asked that I be selected & the Minister replied that he would "offer no objection to my going" No recognition of any kind. I told Aypon that something of the kind should be made & he wrd Secretary asking him to approach me as to terms etc. Aypon gave me some length of "2" water piping fitted with taps.

27 Sat.

Hamilton suggested that the funds in hand £39. a.a.a.s.

Biol. Committee might be applied to the trawling. Sent Claude to Chilton to have his eye again treated.

28. Sun.
Packing.

29. Mon.
Gave 4 Newts to Rev Bates, Wellington. The Beales came to the house, lifted brick tank on to trolley & took two loads of boxes of books & crockery to "San Romolo". The following appeared in the morning paper & I sent letter to Board stating that announcement was unauthorized

trawling.

30. Tues.

All day removing. The pond broke on the trolley when quite near to new house Beales removed my aquaria from Exhib to "San Romolo" and Whites took most of household furniture.

May

1. Wed.
Met agent of the house at 'San Romolo' & he took note of various requirements to be placed before the owner - Roberts of Ashburton.

2. Thurs.
Letter from Jordan - he asks me to put together market fishes for him.

3. Fri
Gave 4 newts to Sparkes wrote Agon re the trawling Expedition. Mr. Shadden & Annie Hall gave us a hand "fitting up" in the

A few weeks ago we described a peculiar specimen which had been found in Temuka, and had been left at our office by Mr G. Levens. Mr Levens subsequently sent the find to Mr E. R. Waite, the curator at the Canterbury museum, with a letter, and to his he received the following reply:—'I have received your letter, together with the specimen sent for identification. It is not a fossil as you suppose, but a calcerous concretion. These concretions are variously shaped, and are formed by the deposition of mineral matter around a centre. They are most abundant in earthy limestones and clays, but are also found in sandstones."

Dear Sir
Thanks for letter
Yours
Jorge Levens,
Veterinary Surgeon,
Temuka.

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could be done in an informal manner.

5. Sun.
Another birthday. The Hülsens lent us a helping hand in the afternoon + evening.

6. Mon.
Bought tools for Claude

evening.

4. Sat.

Telegram from Ayson & in response I met him at 5.0. pm on his way from Dunedin to Wellington Told him that if the Govt applied to the Board for my services the matter would be considered but nothing could be done in an informal manner.

5. Sun.

Another birthday. The Hülsens lent us a helping hand in the afternoon + evening.

6. Mon.

Bought tools for Claude

7. Tues
The Governor paid me a visit and I showed him round the Museum
8. Wed
Letter from Wilfrid. Men are now in the house attending to doors, windows, blinds & drains etc. Following appears in the "Times" Saw Drummond & gave him some account of my experiences. Replied to telegram fr. Ayson re Marine Thermometer. Am running artesian water through gold fish tub it being at 59°.

PREVENTION OF CRUELTY.

THE HANDLING OF CATTLE.

PIGEON-SHOOTING IN CANTERBURY.

MEMBERS OF PARLIAMENT TO BE APPROACHED.

The General Committee of the Society for the Prevention of Cruelty to Animals met last evening. Mr W. Prudhoe, president, presided, and seven members attended.

A letter was received from the Chatham Islands, stating that ropes were used for slinging cattle on board a steamer at the islands. The rope caught them in the region of the heart and lungs. It was suggested that canvas should be used instead of rope slings.

The Inspector said that the agents stated that canvas was always used. He had heard that cattle were subjected to cruelty at the islands, and he would make further inquiries into the matter.

9. Thurs.
Drummond has expanded his notes into the following

TREATMENT OF ANIMALS.

METHODS AT THE CHATHAMS.

THE CHARGES OF CRUELTY.

Further inquiries are being made in regard to the report that cattle and sheep are treated cruelly when taken on board steamers at the Chatham Islands. The subject was brought before the Society for the Prevention of Cruelty to Animals on Tuesday night, and Mr Zouch, the Society's Inspector, well make close investigation into the statements.

A Christchurch resident, who was one of the party that went to the Chathams when his Excellency the Governor visited the islands recently, states that he saw sheep, three at a time, hoisted out of a whaleboat on to the steamer by rope slings. He believes that the use of ropes must have a bad effect on the animals. He drew attention at the time to the methods used, and, moreover, he has a photograph showing how the sheep are treated. He also states that he saw on the jetty at the Chathams the carcases of four or five sheep, which had been smothered in the whaleboat while it was going between the jetty and the steamer. The passage occupies about fifteen minutes, and suffocation, it was stated, was caused by the manner in which the boat was overloaded with sheep. The dead sheep were skinned on the jetty, and the carcases were thrown into the water and drifted away. He asked why the meat was not consumed, and was told that nobody would eat it. He then suggested that it should be given to the pa, which could be seen in the distance, but was told that the occupants of the pa were wealthier than the white settlers, and was led to believe that they also would decline to eat the meat.

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A gentleman who has taken part in the handling of animals at the Chathams reiterates the statement made by the agents of the vessel to Mr Zouch, that canvas slings are used for cattle. He says that if any cruelty is perpetrated, the settlers, not the shipping people, are responsible. The method seems to be to drive the cattle down to a spot on the beach which is available when the tide is low. They are sometimes kept there for hours. Short ropes, six or eight feet long, are tied round their horns. The boat is sent in, and a longer rope is attached, and by it they are guided through the water to the steamer's side. The rope is kept on the horns, and a belt, specially made for the purpose, is placed under the animal's stomach, and it is hoisted on board. This gentleman denies that the cattle are hauled up by their horns. As for the sheep, he states that they are not hoisted up in slings, but are always hoisted up in crates, each of which holds ten or a dozen sheep.

The evidence is of a very conflicting character, and it seems that the Society's Inspector will have some difficulty in getting the real facts. One of the

Chatham Island steamers will arrive in Lyttelton on Saturday, however, and it is expected that the captain will be able to give some definite information.

The Chairman received a letter from Marine Dept suggesting that I accompany the trawling expedition. He interviewed

Chilton & self & said that he would be prepared to grant me leave of absence if the Govt. paid my salary. The Board met in the afternoon & Chilton & I sent in a joint letter pointing out that as Museum would desire all specimens the College might well send me on Service.

10. Fri.

Our recommendation passed. Wrote to inform Agpon. that I should go with him. Received letter from Clark. N.Z.S.E. saying that

as marine tanks cost £11. We should pay half ie £2. 15. 0 each, Chilton & self. Chilton agreed to do so. Plumbers now fitting up gas in 2 rooms. Received Cur. Hist Nat Pr Ed (1817) fr. Junk. Also for the Museum "Index Animalium".

It has been finally arranged that Mr Edgar R. Waite, Curator of the Canterbury Museum, is to accompany the trawling expedition arranged by the Government. It is estimated that the trawling operations will extend over two months.

11 Sat.

Had a carpenter at work in afternoon We put together frame and roof of Aquarium house.

12 Sun
Worked all daylight at Aq. house and in evening attended to inside house fittings as usual.
13 Mon.
Paid £2. 15. 0 Exhib for slate tanks and Aq. stands. Accepted 2 drums in lieu of broken Aquar. jars.
14 Tues.
Telegram from Palmer for "Progress" contribution & letter from "Press" ditto re travling. Telegram from Ayson re gear etc. Rose bought linoleums for rooms. £6-13-0

I got orlekui 19/-
" S. wester 4/-

15 Wed.

Telegram from Ayson
Trawler will not sail
until "week after next".
Laid Linoleum in part
also did a little to
Aquar. house, the frost
of last few days has
killed off my baby
Goldfishes.

16. Thurs.

Letter from Allan to
which I replied. I
ordered Gal. piping for
Aq. Ho. & paid £1. 12. 0
for timber & iron -
wrote to Jordan who
is expected in Sydney
on 23rd.

wrote note on close of Exhib & Mus Journ sent notice of the trawling Exped. also to 'Nature' & American Naturalist?

17 Fri
Obtained more timber & fillets 6/8.

18 Sat
Attended Committee (Library) Phil. Inst. at noon. & worked at Aquar. house in the afternoon

19 Sun.
All day at Aq. house commenced to put in glass - extended

Water Service & put in Waste connection.

20 Mon

Wrote Aypon, Finished cutting glass to go round Aquar. house.

~~20~~ Tues.

21

CANTERBURY MUSEUM.

THE ETHNOLOGICAL ROOM.

The casual visitor to the Canterbury Museum sees perhaps but little change in the very extensive collections, probably because of their extensiveness, but the regular habitue notes alterations and improvements every time an inspection is made. For years a number of chalk figures have reclined in one of the cases in the Ethnological room, almost hidden by other objects and scarcely noticed by the visitor. These have now been brought to light, displayed in a separate case, and provided with a descriptive label, from which it appears they are of the greatest interest. The label reads:—

"On the death of any member of a well-to-do family, one of the men of that family goes to the bush tribe that lives in the Rossel Mountains, and obtains from these people a carved chalk figure of either a man or a woman, according to the sex of the deceased. With this he returns to his village, and with great secrecy gives it to a chief whose particular business it is to receive it. It is then placed in a small 'mortuary chapel,' built inside a larger house, and is decorated with variegated plants, in company with other figures. This curious practice arises out of a superstition with regard to the spirit of the deceased; the people believe that the ghost must have some habitation on the earth, or it will haunt the survivors of the family. They therefore place the figure for the spirit to go to. Women are never allowed to go near or to look upon these figures. The chalk of which the figures are made occurs at the top of the Rossel Mountains."

A print, also placed in the case, shows the chapel or temple, situated within a house, and the little figures standing inside as above described.

A conversation with the curator (Mr E. R. Waite) reveals the fact that the Museum is very much overcrowded, and that liberal extension is greatly needed, especially in the Ethnological room. Mr Waite says that, if a gallery was provided in this room, the objects could be well displayed and made of distinctive educational value, and he hopes that funds may be soon found for extensions in the direction indicated.

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wrote to Wilfrid - & to Hülsen who has been holiday making at Timaru - Letter from Ayson. The boat may start middle of next week.

22. Wed.

Attended Council meeting of Phil. Inst. Received £15 from Chilton on behalf of Biological Committee a.a.a Sci towards expenses of travling

23 Thurs

Letter from Jordan, he is now in Sydney but writes from Palo Alto. Letter from Haswell re Geotria & Callorhynchus -

24 Fri
Empire Day. Holiday
Put in all day at
the Aquar. house &
practically finished it
transferred fishes and
newts at night.
25. Sat
Bought 4 yds grit cloth
@ 10/6 for tow nets.
Letter from Ayson. the
trawler will not be
docked until June 3rd
Spent evening with
Chilton to again meet
Mr Shand from the
Chatham Is.
26. Sun
Discovered that nearly
all the goldfishes had
died during the night

without apparent cause. The temp. of the well water in which they had been kept was the same and the water pipes with the exception of a short length had been in use before. Stilson called in morning. The weather has turned very cold.

27. Mon.
Wrote to Mrs Waite
Weather very cold & boisterous.

28 Tues
Wrote Jordan Haswell.
Replied to letter from Benham Wrote Ayson.

29. Wed
Telegram from Ayson the Trawler may start from Wellington. Monday - Made arrangements for Claude to go to School at Christ's College - and Rose to Sydney.

30 Thurs
Paid Chilton £2. 2. 0 in respect to Claude's eye sent Claude to dentist then to College.

31. Fri
Paid £18. 2. 0 for fees & Board for Claude. Took return ticket Rose to Sydney £12. Telegraphed to Benham to send the Bucket dredge & rope & wrote to him, also

to Jordan in reply.
Letter from Whitelegge.
Telegram from Ayson.
Trawler leaves Wellington
on Monday. Evening
at Hilsens. Accepted
invitation Rose & Self
Empire celebration at
the College on Monday

June:

1. Sat.
Commenced to write &c of travel for "Press".

2 Sun.
Received telegram from Atson, the boat will not leave Wellington till Tues or Wed. wrote further on travel.

3. Mon
Took Rose to "Empire celebration" at College. Cut grit gauze for the tow nets.

4 Tues
Received "Chimeroid fishes their development" from Bashford Dean. Hülsen came at night

And we made tow nets

5 Wed.

Telegram from Ayson Nora Nevin sails at noon - Another later "delayed until 3 pm. Arrive noon tomorrow."

Teleg? to Ayson L'ton.

scheme, so far as applications for letting are concerned.

MAGNETIC SURVEY OF THE SOUTHERN ISLANDS.

The Minister has carefully considered the request of the Canterbury Philosophical Society regarding the completion of the magnetic survey of the Southern Islands, also their wish to collect botanical and other specimens from the Islands for scientific purposes. "The position is this," said Mr Millar, "I am quite prepared on the next trip of the Government steamer to the Southern Islands to have the scientific gentlemen landed on one of the islands. The vessel would then proceed to the other islands and return for them. This would give them ten days if they landed on the first island that the steamer touched at, six days if they landed on the second island, and two days if they went on to the third island. This is all I can do in the way of assisting them in their work, and if they agree to this, arrangements will be made accordingly."

[illegible] to do any work. He has been advised to take a prolonged holiday and complete rest.

TRAWLING EXPERIMENTS.

Interviewed by a "Press" reporter, the Minister for Marine stated that the trawler Norah Niven starts on Monday for Stewart Island, and from there zig-zags along the coast, going out a distance of 50 or 60 miles; then steams to the Chatham Islands, and if she is not a full boat then will take aboard a load of blue-cod, which will be disposed of in either Christchurch or Wellington. "I do not expect," said the Minister, "if they have any luck at all, that the experiment will cost us much over £1000 for the whole thing; and for that sum we will be able to have an experimental trawling trial of the East Coast of both islands. Of course it is impossible in that time to make an exhaustive test over that extent of water, but we expect the result will be such as to give us an idea of where the best fishing grounds are. We are also going to test the southern waters, to see if there are any oyster-beds in the South Island other than those in Foveaux Strait. For this purpose an oyster trawl will be taken on the steamer. Mr Ayson, inspector of fisheries, will be in charge of the experiment, and Mr Waite, curator of the Canterbury Museum, is going as scientist, to classify any new species of fish that may be secured."

STATE WORKERS' DWELLINGS.

7. Thurs
Paid rent in advance to July 1st £5. 8. 4
Have received £22 from Biol Comm & have expended to date £20. 12. 4. Sent to Jordan "Weekly Press" containing his portrait from my photograph.


5