

Book 68.

Edgar A. Waite.



1. OCT. 1920.

to

30 SEP 1921

[1]

October

1. Fri.

Sent Miss Taylor, who saw me after the accident to Whittington, the solicitor, also Otto Rau who heard the driver speak to me.

2 Sat.

Furbished up the $\frac{1}{2}$ Casks obtained from Hoskings as fish receptacles.

3. Sun.

Completed addition to the Shade-house.

4 Mon.

Rink made a small trough for Shade house basin / fountain

5 Tues.

Saw Solicitor who, in absence of witnesses thinks it unwise to go on with the accident claim. Completed short notes for fish-catalogue to end of Selachians.

6 Wed.

Museum Committee. I offered my "Remington" for £21. Agreed to buy, if expert examination satisfactory. Agreed to pay £18. 17. 6 for 750 copies of plate of the Heteroscarus. Prof. Watson will join me in trip to W. Australia.

7 Thurs.

Paid £7. 17². 6³ fare, food
& sleeper on train. one
way.

8. Fri.

Attended Wild Flower Show
Field Naturalists' Club.

10 ~~Sun~~

Sent for Watson as
Rose has intestinal
trouble.

11 Mon.

Rose better but self
very seedy. Watson has
an invitation to Argyll
W.A. and suggests that
I join him.

12 Tues.

My cold lowered my

vitality * a mild
attack of malaria su-
perseded. Did not go
to Museum.

13 - Wed.

Public holiday. Glad
of the day at home.

14 Thurs

at Museum but far
from well. White
handed me tickets
(Watson & self) for the
W.A. Rail. Paid
Water H. £1-18-4.
Withdrew £50 from bank

15 Fri

Took quinine Le Souëf
from Sydney came in
a day early. He told

me that our group
of Nat Hist were the
finest he had seen

16 Sat

Left at 10.45. Claude
seeing me off. Party
of about 32. Changed
at Terowie and at
Pt Augusta entered the
Trans Australian train
Wrote to Rose.

17 Sat un.

At dawn we were
among the Blue. bush
Quondong etc. Saw
Natives at Tarcoola
& Wynbring. also at
Ooldea. Beautiful
wild flowers.

18. Mon.

The quinine is keeping the fever down, but the cold and cough are very troublesome. Arrived at Kalgoorlie midday. With Watson drove round the district in a motor car visiting the mines, also at Boulder city, the waterworks, Victoria Park etc. Left at 3.25 in the narrow-gauge W.A. train.

19 Tues.

Arrived at Perth and thence to King Edwards Hostel. cr. Pier Hay St.

Wrote to Rose. Called
at Premier's Office &
left my official letter
thence to Fisheries Dpt.
The Chief Inspector is
Aldridge whom I knew
in N.I.W. He promised
to put a collection of
fishes together for me.
Had a stroll round
the city. Attended
meeting of the Union
at the Museum in
the afternoon. Proposed
Glaucot as a member.
He showed me some
fishes taken by the
trawler "Penguin" last
on her initial trip

in the service. At
Tourist Bureau arranged
to go with party to the
Yallingup caves on
Thursday.

20 wed.

Had a better night
Took return ticket to
Adelaide for Nov 1st
sleeper & part meals
£8. Same as coming.
paid £3. 15. 0 trip
to caves for 3 days.
Tram to Kings Park
with Watson walked
through it for about
3 miles and tram
back to city by the
Shore. In afternoon

joined official party to
the Zoo. a surprise!!
nowhere have I seen
the animals & birds
so well kept and in
such clean & excellent
condition. An artesian
at 103° is sprayed over
a small island in a
lake & tropical vegetation
flourishes. Night Heron
Ibis & storks may be
seen sitting on their
nests. In view of early
start tomorrow paid
hotel bill £1-11-0
which includes break-
fast in the morning
Watson wrote to Argyll

21 Thurs

Left Perth at 7.45 am.
At Boyanup Mrs Demp-
ster met the train &
personally invited Watson
& self to visit Arzyle. At
Bussellton changed to
motors and arrived at
Gallinup at 6. pm.
After dinner walked to
beach and raised my
hands in the Indian
Ocean.

22 Fri

Whole day motor trip
to Margaret River Caves
visited the 3 caves, the
mammoth, Kilcarnup and
the Lake cave: the latter

especially striking. The
bird men recorded 32
species of which I saw
Blk. Cockatoo, Butcher Bird
Bronze-winged Pigeon and
Kingfisher. I got Trachy-
saurus & saw a *Lysosoma*
Our car is registered
at Busselton the number
being B-N. 9. The driver
said it meant "B - near
10."

23. Sat.

Spent morning collecting
near the coast, and in
the afternoon joined a
party for the Wallingup
Caves, as fine as any
we have seen but lack

water and consequent
reflections. Watson, self
& others were turned out
of our rooms to make
room for others as we
had booked for 3 days
only. We had to camp
on the verandah. One
of the party (Barrett)
similarly treated cleared
back to Busselton. We
could not do this as
we arranged to go to
the Leuwin tomorrow.
Saw several skinks to-
day, we failed to catch
any. Got a gecko. The
car tomorrow will cost
£10 & we have raised

5 passengers, the complement.

24 Sun.

Left at 9 am. 2 cars loads, and took the inland road through Karriwale, (now deserted) to Augusta and the Lewin, took a photo. of the lighthouse. The cutting-out of Karri timber and refusal of the Government to renew the lease resulted in the desertion of the settlement, all the houses being empty. At Augusta I saw a joey of a small Wal-

-laby, and the skin of the mother. Everyone at the accommodation house is complaining of the management & Watson & I, and others, decided to leave tomorrow, we going to Busselton, thence to Mr. Dempsters at Argyle. Position of the Leuwin Lat. $34^{\circ} 22' 28''$ Long. $115^{\circ} 7' 59''$. Augusta is on the estuary of the Blackwood River & forms a fine lagoon (Hardy Inlet).

25. Mon.

A large party leaving for Busselton, the cars

had to make a double journey 20 miles back and out again. We got seats in the first cars leaving Yallnigup at 7.50. We had some time at Busselton. There is a pier here $1\frac{1}{4}$ miles long. an old church, with graves of the Bussells. At 2.0 we took train for Boyanup & changed for Arqyle, previously sending a telegram to Mr. Dempster. This had been delayed (Labour Day) so no one was at the station to meet us. An old man (Watson) was

going in the requisite direction so he took his namesake and the luggage on his buggy & I walked on the $1\frac{3}{4}$ miles. Mr. Dempster was absent in Perth & we were not expected till ~~the~~ tomorrow, the "wire" not having arrived. I strolled round the estate, planted with oranges & apples, and got a few insects.

26 Tues.

With Watson walked to the Railway station & the post-office. Sent a letter-card to Rose

we then looked over
the saw mill and saw
the huge jarrah logs
cut up into various
sized timbers the saws
going through them like
a knife through cheese.
Mr. Dempster came by the
afternoon train and we
had demonstrations on
apple grafting etc. In
the evening the old man
(Watson) & his wife came
to the house & we had
piano & "Sonora" music,
inspection of war relics
& an interesting account,
from the old couple,
of the "New Australia"

settlement, the old folk
having been participants
in the same project to
Paraguay; they returned
when individualism took
the place of Communism
declining to withdraw
their share and reaching
Australia to start life
anew at the age of 50
with £50 in debt. They
now have a nice orchard
entirely their own and
are doing well. The 'Prof'
amused the old folk by
constantly speaking of
the old chap as 'my
nephew'. In the 'Bulletin'
of Oct. 14th there is

mention of self and
Watson, in consecutive
paragraphs, though un-
connected. A notice
of White occurs on another
page.

E. R. Waite, director of the Adelaide



Museum, might have made a good diver if he hadn't gone in for dry bones and things. Years ago he did a fair amount of dress-diving at different times, going down 10 fathoms to get a shark's egg at Sydney. And surface collecting trips have taken him into Central Australia with a camel team, round New Britain and other tropical isles, and down to Macquarie Island, the Aucklands and other places near the Antarctic Circle.

*J. E. MACKEY,
Speaker of the Vic.
Legislative Assembly.*

Old Prof. Watson, who gave up his life-work of teaching surgery at Adelaide University last Christmas, always was a traveller, and sometimes used to need a polite reminder to come back to his job when vacation was over. His leisure is now well

occupied. This year he visited every island in the Gulf of Carpentaria, where he found natives unmixed with a white population, and yet showing strong signs of missionary influence. He is back in Adelaide now, but means to go north again as soon as he can.

again de meri.

ECLIPSE OF THE MOON.

Mr. H. B. Curlewis, the Government Astronomer, made the following statement in connection with the total eclipse of the moon which occurred last night:—"Up till 7 o'clock in the evening the chances of seeing the eclipse appeared very remote, owing to the dense clouds which covered the sky. These, however, began to break shortly after 7 o'clock, and about 8 o'clock the penumbra became distinctly visible. It is hard to fix the exact instant that the main shadow put in its appearance, but I made it quite one minute before the predicted time, namely, 8.26 p.m. The main shadow or umbra had completely covered the lunar disc by 9.30 p.m., and the moon remained in it until 10.54 p.m., when the first appearance of the bright edge was noticed. While totally eclipsed the moon appeared to be covered by a dark shadowy disc with a bright rim. That the moon was not passing centrally through the earth's shadow could be seen from the fact that this shadowy disc was not centrally placed on the moon at mid-eclipse. It was interesting to watch the shadow sweeping over and partially obscuring some of the well-known and prominent features of the lunar landscape, and several small stars became visible in the large telescope during totality close to the edge of the moon, but they became lost to sight shortly after the edge of the moon appeared out of the shadow."

27 Wed.

Had a look over the workshops, agricultural implements, packing sheds etc. & took photographs of Watson, Mr and Mrs Dempster. Dempster drove Watson to the station. I walked & we caught the 1.25 train for Perth changing at Picton Junction and arriving at 7.50 pm walked to King Edward Hostel. A total eclipse of the moon, clear sky.

A Lunar Eclipse.—There will be a total eclipse of the moon to-night. According to the Government Astronomer (Mr. Curlew), the moon will enter the penumbral shadow at 7.24 p.m. and the main shadow or umbra at 8.26 p.m. The total eclipse will commence at 9.29 p.m., and will be completed at 10.54 p.m., the moon leaving the main shadow at 11.57 p.m. The phenomenon will be visible throughout the Commonwealth.

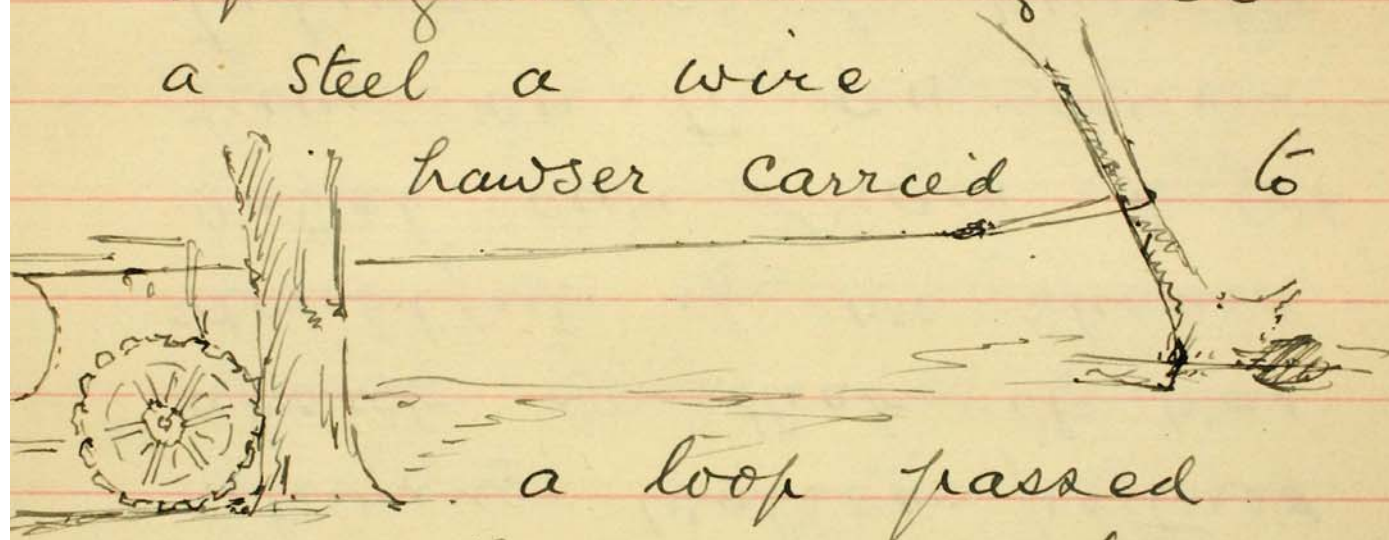
Elderly Man Injured.—At about 10

28 Thurs.

Spent the morning at the Museum with L. Glaucert, keeper of Biology. They are worse off here in the matter of General Secretarieship than we are in Adelaide. Identified the Wallaby seen at Augusta (see 24th) as M. brachyurus - I may be able to negotiate for exchanges. The rule of the footpath in Perth is 'Keep to the Left' but it is less observed than the usual rule elsewhere. tho' the paths are branded:—

avoid
accidents. ↑ Keep to
the left. — [23]

In the afternoon, with
Watson, took train to
Guildford and after a
20 minutes' walk came
to the tree pulling opera-
tions, our objective.
A traction engine is backed
up against a big tree &
a steel wire



a loop passed
round the doomed tree,
as soon as the clutch is
put in the tree is
dragged over, apparently
without the slightest
effort. We were told

that where the trees are close together, the wire is looped round several and they topple over successively as they feel the strain. I attempted 3 exposures. In returning Watson pattered about so that it was doubtful if we should catch our train. I got him on to an over-taking trap & myself running across paddocks & through fences, also arrived in time.

29 Fri.

Letter from Rose. Mr. Hellawell has been re-

tired, on an amalgamation
of Paper Cos. of Sydney
& Melbourne. - Bought
some presents, Hair
brush (£2.) for Rose &
pocket note book for
Claude. Called to see
Aldridge, Chief Insp. of
Fisheries - We had a
river trip in the after-
noon, an hour to Can-
nings bridge, a couple
of hours in the bush
and another hour on
the river. In evening
(Lady) Dr. Mildred. George
came to the hostel &
invited Prof. & me for a
motor drive on Sunday.

30 Sat.

Almost the whole party
left at 8.20 am for
Munwaring and walked
thence to the weir 5
miles, the Prof & some
of the ladies going in
conveyances. We had free
passes on the rail. Had
lunch and a ride on
the dam, the 15 footer
propelled by an Ernjurude.
The reservoir is 7 miles
long & supplies Koolgardie
300 miles away, but
not Perth. We reached
Perth on return at 7.2
& then learned that the
Government invited us

for an excursion to
Rottneest Is. tomorrow. The
Prof. thereupon telephoned
to Dr. George and invited
her in lieu of us going
a motor trip with her.

31 Sun.

Our party to Rottneest Is.
was augmented by friends
of several of the members
the Prof. taking Dr. George
& her niece. Boarded the
'Zepher' at 10 am. and
called at several landings
including Fremantle. A
number of the passengers
were sick both going &
coming, the sea being
a bit choppy. The passage

and lunch on the Is.
were provided for us
by the Government. We
reached the hostel at
6.45. the two ladies
having tea with us.
Exposed a few films.

November.

1. Mon.

Spent morning at the port, a distance of 12 miles and returned to the Mayoral reception.

Paid Hostel

Bill, 14/-

a day

and at

10 p.m.

left, in

company

with most of

the members of the Union.



2 Tues

Changed at Kalgoorlie to the Commonwealth

Rail (broad gauge) and entered the salt-bush areas.

3. Wed.

Across the Nullabor plains for mile after mile, no vegetation higher than 18 inches. The name is, by some supposed to be derived from Latin.

4 Thurs

Changed trains at Port Augusta and reached Adelaide at 7.50 pm, Met by Rose & Claude.

5 Fri.

To Museum to conduct thereover members of the Union breaking their

journey in Adelaide.
Letter from Speight. he
had gone to Fiji. Rec^d
"Beddard's Books of
Whales", ordered from
Edinburgh. Understand
that Tattersall, of
Manchester, has been
appointed to Sydney.

6. Sat.

At home. bought second
hand water-piping to
extend service to the
Aquariums. Received
from Fred Lumb. papers
& etc (receipted) for £10
from Scott. Engin^g. Co.
The firm ^{is sending} ~~has sent~~ nearly
all the parts ordered.

7 Sun

Developed some of the films exposed in W.A. Having resumed the "Douglas" went to see Watson at the Club, he being far from well.

8. Mon.

Developed balance of the films. mostly good. Paid Municipal Rates £4. 7. 6. wrote Allan arranged Cilento's plates.

9. Tues.

wrote to Hellowell. Wood-Jones told me that he had received a doleful letter from Medley in which he informed him

that Tattersall, of
Manchester had been
appointed to Sydney.
10. Wed.

Lunched with A. Le Souëf
who is returning to Sydney,
he obtained an *Askophas*
alive on Kullabor: he
is writing a book on
Australian Mammals.
Claude has obtained a
temporary position in the
Telegraph Dpt.

11 Thurs.

D. Le Souëf & Campbell
at the Museum. They
evinced much surprise
that Adelaide should
have such a Museum.

12 Fri.

Received a few of the parts for the 'Scott' 3/7 duty. wrote to Weber offering to exchange published papers. attended lecture on Birds by D. Le Sueur.

13. Sat.

Laying 1/2" water piping to Aquarium

15 Mon.

working at paper on Lophobranchs. Hale is making the descriptions

16 Tues.

Took home some Lebistes as a commencement for the Mason's Aquaria.

17. Wed.

Finished laying water pipes, underground.

19. Fri.

Bought picture of fishes at Canus and gave it to his man "Bill" who looks out things likely to interest me.

20 Sat.

Sent all my aquariums from Museum (where they have been stored since the Exhibition) to "Kirkstall" Commissioner Mitchell took Rose & self for motor drive to Brown Hill Creek. To bring attendants' wages

to the minimum award
the Board has issued
to all a percentage in-
crease. Some are getting
£35. "to meet increased
cost of living" I got
a surprise on receiving
notice of a bonus of
£30. for this year only.

22 Mon.

Screwing & cutting pipes
for Aquarium

23 Tues.

Presided at Annual
meeting of Aquarium
Soc., being again elected
President though I made
a strenuous effort to
induce Hoskins to

take office. Pullene
elected vice-president.

25 Thurs.

Watson left to join
"Montoro" for Singapore.

26. Fri. [gave me a wallet}

Put some of the Aqua-
ria in the tram car.
Wrote to Bather in reply
re zoological references.

27 Sat.

Fixed the "K. D. A" pump
in Aquarium house.

28 Sun.

Put up extra stand
for the "Sir Wm Towden"
tank in the Aquarium
House.

29. Mon.

Wrote Watson, now in Sydney re obtaining fishes in the Straits, e.g. Betta. Received balance of parts for the 'Scott' paying $7/6$ duty (see 12th).

30 Tues.

In addition to salary £50 I received £12.10.0 being 5% for 5 months.

Letter from Hellowell. He says I am wrong re Tattersall and that the position in Sydney has not been decided.

December.

1. Wed.

Sub-Committee of Brit. Sci. Guild held in my room present Cleland Wood - Jones Pullen & self (in Chair) discussed production of a series of booklets on S. A. Nat. Hist. Annual inspection of Museum at 3.0. and Committee at 4.0. Replied to Hellowell & said that the decision as to Dr. Tattersall merely awaited confirmation by the Board, this month. Sent photo's.

taken at Humberg Scrub
to Bellechambers.

2 Thurs.

Now typing clean copy
of joint paper on the
Lophobranchs.

3 Fri.

Rough roads broke one
of a Douglas' fork springs
fitted another pair. As
the low pressure stop
cock fitted to Aquarium
is not tight I put in
a high pressure tap,
cutting a pipe and
fitting a back-nut.

4 Sat

To the Semaphore to
hunt for apartments

for Xmas week. Visited
many places. Finally
fixed up at "Wondergraph
Residential Cafe". 50¢-
week for Rose & 2¢-
all round for Claude
& Self.

5 Sun.

Foster called in morning
on Indian & took me
to see Ned Limb, in
sidecar. So that I
might arrange for put-
ting new parts in the
"Scott". Found back
type of "Douglas" blown
out. Made temporary
repairs and had a
spin in the afternoon.

6 Mon.

The Rebistes both at home & at Museum bred for the first time this season.

7 Tues.

Disassembled gear of the "Scott" preparatory to putting in new hub & sprocket wheels.

8 Wed.

Received a fresh *Phyll. foliatus* ♂. with eggs, like little rubies. We photo'd it for the paper on the Lophobranchiates.

9 Thurs.

Limib brought me a quadrant motor stand

10. Fri.

went through the City
Markets at night, a
wonderful crowd."

11 Sat.

Finished joint paper on
the Lophobranchiataes,
with Hale. Bought 2
tins of petrol @ 30/-

12 Sun.

Put together (in part)
Scott gear, drilling out
putting in new rivets
refitting taking con-
siderable time

13 Mon.

Letter from Prof. Watson.
enclosing photographs
from C. a. Baker. CBE

Batu Gajah.

Kinta, Perak

to whom he asked me to
send my fish catalogue
when published. I wrote
to Baker -

14 Tues.

Took Rose + Claude to
Xmas meeting of the
Yorks' Society -

16 Thurs.

Claude made application
for wireless operator at
Rosewater, learning of
a vacancy. 5

17 Fri.

Sent in MS. of fish
paper. The Linotyper is
slow! With Rose, spent

evening at the Mitchells
Dr & Mrs Pulleine & Jo.
& Mrs & Mr Walker, also
being there -

18. Sat.

Took Scott engine out of
frame. prepared marine
tank for lifting into place.

19. Sun.

Rode over to Ned Twibs
on 'Connaught' (having
Douglas type vulcanized)
He came to 'Kirkstall'
later, took Scott engine
apart fitted the new
sprocket wheels & re-
assembled, remained to
dinner -

20 Mon.

Longest day, + 97.6°

Put chains on to the
"Scott", both chains +
sprockets. new.

21. Tues.

Wrote to Watson & Burns
Phelp Co. Temp. 102.2°

Visited Hocknipp who is
ill with gastritis.

22. Wed.

Received £21 from the
Board for my "Remington".

104.4° Letter from Fanny
Bowling.

23. Thurs.

Temp. 109.2. Removed
Cockatoo to Carpenter's
for the holidays.

24 Fri

Sent off cards, re-
printed from official
card for the purpose
to: -

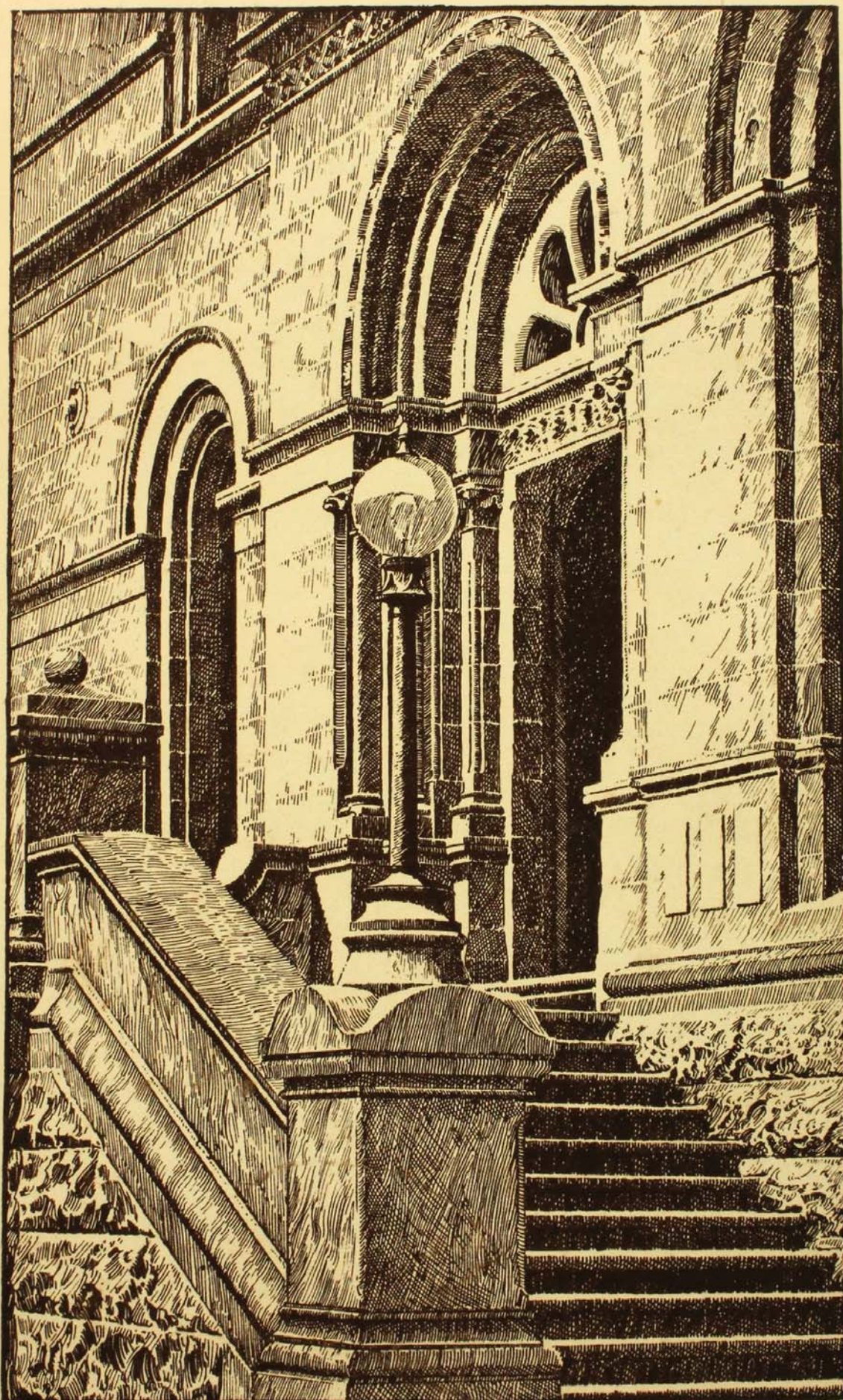
Mr. Kellawell	Mr. Down.
. Waite	. Kemp.
. Butterworth	. Barrett
. Carter	Walker
Miss Welch	Miss Clark

for Rose & Co: -

Wilfrid	Miss Bowling.
Belle	. Beale
Speight	Chilton
Cockayne	

Copy of card (Cut down)
over -

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OF SOUTH AUSTRALIA



MUSEUM ENTRANCE

Fred Linib collected my
4 Volt motor + transformer
to have it adapted to
driving the "Lennox blower".
Removed to Semaphore in
evening for holidays.
temp. 109° 6.

25 Sat.

Xmas day.

26 Sun.

Rained all day. Walked
to Rarp in evening +
visited the Mitchells

27 - Mon.

Went to town + to home
3 of the goldfishes died
during hot weather.
Rode back to Semaphore

on the 'Douglas'.

28 Tues.

Rode to Henley & had morning tea at the Whites. back by Alberton & the Port.

29. Wed.

Rose joined the Mitchells at Largs & took train to Outer Harbour. I went on Douglas. Wreched road broke the chain wheeled machine $\frac{1}{2}$ mile & took train to Port where I got another one. Back to Outer Harbour where I fitted it & rode to Semaphore.

30 Thurs

To Museum, read proofs
of fish paper took it
back to Harrells.

31. Fri.

Most of the boarders sat
up & watched the crowd
from the verandah of
the Cafe. 99.8.

1921.

January —

1. Sat.

Great storm wind &
rain canvas covering
of the wind-a-bouts
ripped off & tents &
booths wrecked.

2 Sun.

Rode to Kensington &
spent most of day at
home

3. Mon.

Walked with Rose to
Lares met the Mitchells
en visit to us. returned
with them & walked
with M. towards Outer
Harbour. They returned

the visit in the after-
noon.

4 Tues

To work again. Had
a puncture & left the
Douglas for repairs &
finished journey by
tram. Recovered the
motor at noon.

5 Wed.

Brought in some of the
holiday luggage & took
it to "Kirkstall" and
in evening shifted the
entire camp.

7. Fri.

Temperature again rising
103.9.

8. Sat.

Renewed motor cycle
license to 8/ii/22.

Too hot to work. Col-
lected the Cockatoos fr.
Carpenter at night &
reinstalled them. 105.3°

9. Sun.

Hot in morning - cool
change later. Fitted
~~by~~ silencer system to
the "Scott."

Jan. Deg.	
8 ..	105.3
7 ..	103.9
6 ..	96.8
5 ..	90.9
4 ..	72.2
3 ..	74.0
2 ..	72.8
1 ..	87.4
Dec. deg.	
31 ..	99.8
30 ..	89.8
29 ..	81.5
28 ..	78.0
27 ..	80.3
26 ..	72.3
25 ..	84.0
24 ..	103.6
23 ..	109.3

10. Mon.

In attempting to fix starting ratchet to the "Scott" got a finger caught, the nail split across & nearly torn off.

11. Tues.

Hockmeyer operated on for appendicitis & 7. Limb damaged again, riding a motor-cycle.

12. Wed.

Had another "go" at the "Scott" starting gear & succeeded.

13. Thurs

Paged proofs of Record i. pt. 4, now coming in.

14 Fri.

Received the following
Card. D. S. Jordan -
Called to see Hosking -
appendicitis. Received
proof of coloured plate
of Heteroscarus, from
Sands.

15 Sat.

Finally assembled the
"Scott" and got it to
fire just at dusk.

16 Sun.

For some months past
have had an idea that
my appendix is not
quite right. Had more
pain to day than
ever. Will get Watson

1851-1921

Lord, here am I! My threescore years and ten
All counted to the full: I've fought Thy fight,
Crossed Thy dark valleys, scaled Thy rocks' harsh height,
Borne all the burdens Thou dost lay on men
With hand unparing, threescore years and ten;
Before Thee now, I make my claim, O Lord.
What shall I pray Thee, as a meet reward?

I ask for nothing! Let the balance fall;
All that I am or know or may confess
But swells the weight of mine indebtedness!
Burdens and sorrows stand transfigured all,
Thy hand's rude buffet turns to a caress;
For Love, with all the rest, Thou gav'st me here,
And Love is Heaven's very atmosphere.

D. S. J.

to examine me on his
return. Tried the "Scott"
on the road, but in less
than 200 yards, starting
gear jammed with the
2-speed arrangement &
held all fast. Put it
into "free" & wheeled
it to Limb whom I
saw in bed. He tore
the femur-patella ten-
don before Lucas when
riding the "Indian".

18 Tues.

Received final paid-proof
of the "Records". Index
only to be set now.

19 Wed.

Spent evening with Rose
at the Bernstein's

20 Thurs

Called to see Hookings
still in hospital with
convalescent from opera-
tion for appendicitis.

21 Fri.

Sent reprints of recent
papers to Zool Record?

~~21~~ Bought a strong box
from Cann 2nd hand
157. The steel parts of
the lock badly rusted
no key.

22 Sat

Received proof of index
of records prepared by

Lea. many omissions.
Repaired lock of box
too hot to be pleasant
100.8:

23 Sun.

Still hotter 109.6. -
Taylor brought me the
transformer & had re-
duced the voltage from
50 to 12 so that I
can use house current
for driving the Lennox
blower. Charge 57-

24 Mon.

Sent in revision of the
"Records" Index. Bought
a key blank for the
strong box. Still over
the Century. 103.6.

Sent to printers, first
part (sharks etc.) of the
Catalogue of Fishes, S. A.

25. Tues.

Letter from Watson, arrived
in Sydney, and replied
Temp. 102.3. dropped to
87. in afternoon.

26. Wed

Filed key blank to fit
lever lock of the strong
box. a good job!

27. Thurs

Called on Fred Limb
The 'Scott' will be ready
tomorrow.

28. Fri.

Took the 'Scott' home.
chains want adjusting.

29. Sat.

After bottling home-made ginger ~~wine~~ beer went to Murray Bridge Aquarium Soc. Excursion, joining members who had gone by the early train.

30. Sun.

At Murray Bridge we got Carp, Cat fish, Gal-
-axias, Tench, Call of.
Dorosoma, Murray Cod,
(young) Mullet, Atherine.

31. Mon.

Hot to day, our party had 3 swims. Left by 4:30 train. Having

seen Cilento. He reserved
2 compartments for us.
Temp. -

'Records' dated Jan. 29
were, owing to the holi-
day, not delivered till
to-day. Letter from
Dr. Mildred George, of
Perth, also one from
Watson, sent the former
to the latter. 'Whitely'
Cross Vale.

February.

1st Tues.

The fishes I brought from the Murray are all well, despite the heat. Called to see Hoskins, now at home and doing well.

2nd Wed

Museum Committee,
Made minor alterations
in "Scott" shortened a
chain etc.

3rd Thurs

wrote to Maiden for
aquatic plants & asked
Bailey for literature,
in view of my address
on March 1st.

5 Sat.

lost from (loose on
Barrier) Douglas. Side
shield of "Scott" made
another one, including
separate piece for the
magneto chain-guard.

6. Sun.

Fitted up connections to
the electric transformer.
Shall have to gear the
Lennox pump to the
motor, the latter running
too slowly under load.
Carpenter & Hale came
& we sorted out the
Murray fish taken on
the holiday. I having
stored the lot.

7. Mon.

Received rent at Mosman
£8. 4. 8

8. Tues.

Received Federal Income
Tax demand £27-1-5
Reprints of Lophobranchs.
delivered.

9. Wed.

Received first galley
proofs of Fish Catalogue -
Sent Lophobranch paper
to Mr. Culloch & asked
him as to progress of
his own Catalogue -
99. to-day -

10. Thurs.

Called to see Barnes
who has not been

at work for a couple
of weeks. . 102° 8'

11. Fri.

Heat waves the one topic
of conversation 101° 6.

12 Sat.

Sent "Review" of "Records"
to "Register". Fitted new
front brake-shoes and
pads to "Scott" and got
it ready for the road
temp.

13 Sun.

Took out the "Scott", it
ran beautifully but I
discovered that I had
failed to clamp one
of the radiator connec-
tions & so lost the

water, filled up and
returned short of my
objective.

15. Tues.

The Australian Museum
provides some surprises.
here is the latest..

Our Sydney correspondent reports that
Dr Charles Anderson, Mineralogist and
Acting Curator, has been appointed Direc-
tor of the Australian Museum, in place of
the late Mr. Etheridge.

If Tattersall (see
was ever appointed he
had evidently declined.
The pregnant question
is "What will Hedley
do?"

16. Wed.

Attended meeting of
Yorkshire Society.

17 Thurs.

I wrote the following:—

MUSEUM RECORDS.

The board of governors of the Public Library Board has issued the concluding part of Vol. 1 of the Museum Records, edited by the Museum Director (Mr. Edgar R. Waite). The standard of this scientific work is well maintained, the present part containing five papers.

The first, by Messrs. Waite and Hale, is devoted to the results of study of the pipe fishes and sea horses of the State, most of which were dredged by Sir Joseph Verco years ago. All the 18 species recognised by the authors, including several new ones, are figured, some of them being extremely quaint. An interesting feature of these little fishes is the circumstance that it is the male fish that carries the eggs, attached to the belly or tail. Excellent pictures are supplied of those that carry the eggs in a pouch and those that bear them glued to the body.

The second paper is by Dr. R. W. Cilento and deals with the artificially distorted skulls of natives of New Britain. Some remarkable types are described and figured. Illustrations are given of a babe whose head is swathed in the compressing bandages, and of young men whose heads have been thus distorted. The latter were photographed by Mr. Waite during the Museum expedition to New Guinea, &c., a couple of years ago. The remaining papers, which are of more technical interest, deal with the squids, by Professor S. S. Berry, of California; the march flies, by Dr. E. W. Ferguson, and beetles, part 3, by Mr. A. M. Lea, the Museum Entomologist. This part completes Vol. 1 of the work and is supplied with index and title page.

THE MUSEUM.
S.M.H. Feb 15, 1921
NEW DIRECTOR APPOINTED.

The appointment of Dr. C. Anderson to the position of director of the Australian Museum was announced yesterday. He is a native of the Orkney Islands, and after a brilliant school record passed to the University of Edinburgh, where he graduated as Master of Arts, and later as Bachelor of Science. In his science course he was medallist in the subjects of physics, chemistry, zoology, geology (2), mineralogy, and crystallography; and in addition he was awarded the Hope Prize Scholarship as the most distinguished student in the chemical laboratory.



DR. C. ANDERSON.

Leaving the University, Dr. Anderson was selected to take charge of the Ben Nevis Observatory, and his next appointment was as mineralogist to the institution he now directs. For his sphere of research he took the subject of crystallography, and was awarded the degree of D.Sc. by his Alma Mater. In 1911, whilst on a visit to Europe, he was commissioned by the trustees of the Museum to study Continental museums and their methods, and his observations formed the subject of an interesting report published by that body.

During the absence of Professor Sir Edgeworth David at the Antarctic and at the front, Dr. Anderson lectured at the Sydney University. He is a member of the local scientific societies. Dr. Anderson is also an enthusiastic rifleman, and has been a member of the Edgecliff Rifle Club almost since its formation.

18 Fri.

Received a letter from
Max Weber, Amsterdam,
offering to exchange re-
prints & I sent him a
batch of my papers.

18 FEB 1921

THE REGISTER,

PIPE-FISHES AND SEA- HORSES.

—o—

Interesting Notes.

[By Edgar R. Waite, F.L.S.]

Should one chance to be at the seaside during or immediately following a good blow, some little diversion may be obtained by turning over and examining the fresh vegetation thrown on to the beaches. This will have been torn up from the floor of the sea from greater depths than can be reached by paddling or diving, and will contain forms of life seldom seen under ordinary conditions. Some animals live habitually among the seaweed; and, when this is uprooted and cast ashore, such creatures still cling to their home, and thus become available for our inspection. To attempt to describe all the forms of life that might be thus presented for study would need many columns of The Register, so it is my purpose to deal only with fishes, and a very restricted group at that.

very little a house
in the north. model new
in quarters of living
in the south of living
in the north of living

—Curious Creatures.—

Lying among the seaweed, or attached to it by means of their curly tails, we are almost certain to find some of those extremely quaint fishes known as pipe (or needle) fishes and sea-horses—both forms allied, although readily recognisable as distinct—the one from the other. If we should further have the good fortune of accompanying the annual dredging excursion of the Field Naturalists' Section of the Royal Society, we might obtain other forms habitually resident in still deeper water; but then again we might not—a not unknown experience in the excursions of the club. No one else in South Australia has dredged so many members of this group of fishes as our savant, Sir Joseph Verco, President of the Royal Society of South Australia; and, although he does not profess to a knowledge of fishes, he has garnered a rich collection, which for years has found storage in the repositories of the Museum. The writer recently examined the whole of this material, the collection of which extended over many years, together with specimens amassed by others; and, in company with Mr. H. M. Hale, has published the results in a recently issued number of "The Records of the South Australian Museum." This paper is too technical for the general reader, but the following account of a truly remarkable family of fishes may be of interest. An important character of the pipe-fishes and their allies is one that is not at all apparent, and is furnished by the arrangement of the gills. In most fishes these consist of a number of comblike structures, but in the Lophobranchs (a term that means tufted gills) they are arranged in clusters like minute mulberries. The mouth is a very small affair, placed at the end of a more or less long snout, and is toothless.

—Unfish-like Shape.—

The peculiar unfish-like shape at once attracts attention. The pipe fishes are long, slender creatures; they are sometimes called needle fishes; and in Japan, are known as toothpick fishes. At the other end of the scale stand the sea-horses, so named because the head is set at right angles to the body, like the knight of the chessmen. Sea-horses have prehensile tails—that is, they can use this member as a finger, and by twisting it round a frond of seaweed they can anchor themselves, remaining in an upright attitude. They actually swim in this position, the back fin undulating the while in a very pretty manner. Connecting the pipe-fishes and the sea-horses are a number of other quaint forms, most remarkable among which are the sea-dragons, confined to Australia.

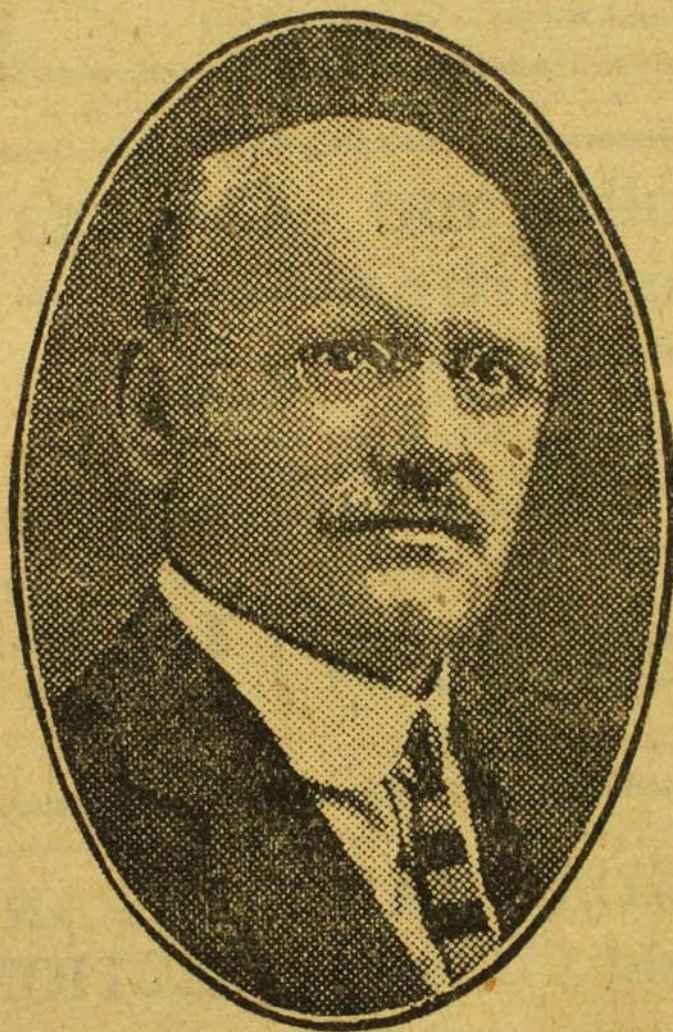
The common sea-dragon is frequently found on our beaches, and immediately attracts attention; the skinny fronds attached to spines in various parts of the head, body, and tail look like seaweed, as nature intended they should. In deeper water there is a much more leafy species, and we can easily understand how a predaceous fish passing over a patch of seaweed in which the dragon is concealed would be quite unaware that a dainty morsel was to be had for the taking. The fronds on the fish are free to be moved within certain limits. As a sitting bird faces the wind, an anchored fish will naturally face the current, so that when it sets the seaweed in a certain direction, it sets the appendages of the fish in the same way, so that detection must be well-nigh impossible.

—No Parental Care.—

The most remarkable feature of the pipe-fishes and sea-horses is yet to be mentioned. In the very great majority of fishes no parental care of the young is exercised; in the comparatively few instances in which such care is developed it is almost invariably the male fish that tends his progeny. Paternal oversight is carried to an extreme in the little fishes now under consideration; for not only does the father take charge of the young, but he actually nurses the eggs, attached to his own body, until they hatch. To this end he carries a special brood pouch, either on the under side of the body, or beneath the tail. In those cases in which a definite pouch is not developed, the eggs are glued to the skin, which at breeding time is soft, and into which the eggs are pressed, so that each lies in a little pit. Most of the pipe-fishes and their allies are protected by a hard coat of mail, but this is not always developed to an equal extent; one Australian species protects its defenceless form by living within the body of a sea-cucumber. A study of the material preserved in the Museum has revealed the presence in our waters of several new forms, one of which has been named in honour of Sir Joseph Verco, who formerly dredged most of the material examined. Another form new to Australia was previously known only from Japan and India, and among the novelties is a strange long-snouted pipe-fish, belonging to a genus not so far recognised outside Australia. The paper, in which every known South Australian species is figured, can be seen at the Public Library; and it is only by consulting this that any adequate idea can be derived of these strange forms that, unknown to the majority of us, people the waters within a few miles of our homes.

19 Sat.

Another portrait of
Anderson. Mawson says
David put him in.



Dr. Charles Anderson

20 Sun

Had a run on the
"Scott".

21. Mon.

Letter from Watson
he is still in Sydney.

22. Tues.

At Hookings in the
evening. Rose is having
a new set of teeth
made by him.

23. Wed.

Letter from C. Alma
Baker, whom Watson
met en route to
Singapore. Sent
first blocks of fish
Catalogue to the
printers.

24 Thurs

Sent Alma Bakers letter
to Watson. Received
letter from Maiden,
he is sending 33
aquatic plants for
which I had asked
for my address on
March 1st.

25 Fri

Received "Aquatic" plants
from Maiden. Few of
them were truly aquatics

26 Sat

Aquarium Soc. excursion
to Dulleines. Carpenter
& Hale & Self on motor
cycles.

27 Sun.

To Mitchell's in after-
noon took some grapes
found my friend in
bed & pretty bad.

28. Mon.

Rain at last. Paid
Federal Tax. £27. 1. 5.

March.

1. Tues.

Paid Motor taxes

5059. Douglas. Rep. 1251

15538 Scott. " 1250.

157. on each machine.

Opening meeting, 1921.
of the Aquarium Soc.

Presidential Address. I
gave "Aquatic Plants"
& exhibited, with others,
those received fr. Maiden.

2. Wed.

Museum Committee, the
longest at which I have
sat. 4 to 6. Demands
made of me by the
Gen. Sec. were largely
responsible & rather

warm discussion resulted
Committee recommends to
Board that no instruc-
tions to me, involving
changes of procedure
be issued by the G. S.
except by authorisation
of the Committee.

4 Fri.

wrote to Fanny Bowling.
wrote notice of meeting
of Aquar. Soc.

5 Sat

The following appears
in to-day's 'Journal':
Called on Barnes but
the house was closed
heard that he is
in hospital.

6 Sun.

worked at the Aquarium
heater. wrote to Dr

Vause " Hillview "

Honolulu.

Tasm.

Y PLANTS WHICH PREY

FISHES LURED TO DEATH.

At a meeting of the South Australian Aquarium Society on Tuesday last, the President (Mr. Edgar R. Waite, F.L.S.) delivered an instructive address on "Aquatic Plants." He remarked that if we submerge an ordinary land plant nothing very special happens, and if at the end of two or three days the water is drained off, the plant continues its functions, providing, of course, the experiment is not tried about flowering time, and matters proceed as before. If, however, conversely, we drain off the water from an aquatic plant, we immediately notice a change; the plant cannot stand up, and falls all of a heap: its stems and leaves are adapted for life in the denser medium of the water, and therefore do not require the firmness of tissue for support requisite in land or air living plants.

—Delicate Vegetation.—

As the tissues of water plants do not require to manufacture their own supports, it becomes possible for them to produce much finer and more delicate stems and leaves. It is perhaps the extreme delicacy of their construction that so forcibly appeals to lovers of truly aquatic vegetation. The leaves of land plants are constructed to prevent rapid evaporation of water from their tissues, but as the leaves of aquatic

plants are always bathed in water, such necessity does not exist, and not only does a water plant drained of its supporting medium, fall into an unlovely mass, it also loses its water so rapidly, that unless returned to its proper element, it speedily dries and dies. Having to build a firm support, the tissues of land plants are more or less closely compacted, and in the case of trees especially, the hardwoods are of remarkable density. The cells of aquatic plants, on the other hand, are large and open, and readily seen by the naked eye which, also unaided, can frequently discern the passage of the sap through them. Although so delicately formed, the stems are extremely flexible and bend with the motion of the water, so that they are not broken or uprooted. Not only are the cells large and composed of a minimum amount of tissue, but many of them are filled with air, so that they are lighter than the water, and consequently extend their length from their roots towards the surface, and those that have no roots consequently float.

—Above the Surface.—

Many of our aquatic plants send a flowering spike above the surface of the water, the stems of these spikes are of stronger texture than the submerged portions. Some of the plants have two or even more different kinds of leaves. The water crow-foot, for example, sends to the surface notched trilobed leaves which float upon the water, the submerged leaves are hair-like and always present, whereas the larger leaves are seldom produced in rapid streams. The finely divided leaves supply large surfaces, so that all the possible carbonic acid gas is extracted from the water. In other countries aquatic plants which were introduced years ago are now regarded as pests. The Canadian water weed (*Elodea canadensis*) has become established in the fresh-waters of England, where it grows at a prodigious rate. This necessitates the expenditure of hundreds of pounds annually for the purpose of keeping the growth in check, as otherwise the waterways would be blocked from all traffic. In Queensland the water hyacinth (*Pontederia crassipes*), a non-indigenous plant, seriously hinders the navigation of the northern river. The water hyacinth is a floating plant with pendulous roots, and it increases so rapidly that the surface of a slow-moving stream is completely covered.

—A Carnivorous Plant.—

The Bladderwort, or *Utricularia*, is curiously adapted to a carnivorous diet. The underwater leaves are modified to form long branching threads, equipped with small bladders which catch living prey. Should any tiny inhabitant of the pond or stream explore the open mouth of one of these bladders, an ingenious transparent valve closes the entrance and the intruder is trapped; a plant which is analogous in its method of obtaining nutriment is the Pitcher-plant of South America. Mr. Waite described how some years ago he was rearing some minute fishes in an aquarium; a plant of bladderwort was introduced, and the fishes at once began to disappear. A close observation showed that the plant was responsible for their destruction. Some waterplants have interesting breeding habits. The Ribbonweed (*Valisneria spiralis*), produces the female flower on a very long stem, so that the flower is opened at the surface. The flowers of the male plant, on the other hand, are situated at its base; they ultimately become detached and float to the surface, where fertilization takes place. The stem supporting the female flower then coils in a spiral and draws the seed-pod beneath the water; the spring-like shape of this stem is responsible for the specific name *spiralis*. Although the Ribbonweed is abundant in the River Murray, no male plants are recorded from Australia, and the weed is propagated solely by means of runners.

Other smaller aquatic vegetation is sometimes useful in that, when growing profusely, it prevents the breeding of mosquitoes in pools and ponds. The *Spiragya*, a thread-like weed, entangles the larvae and drowns them, while the floating Duckweeds cover the surface so that no space is left at which they may breathe.

A large series of aquatic plants was exhibited by the lecturer, these having been kindly supplied by Mr. J. H. Maiden, F.R.S., from the Botanical Gardens, Sydney, and by members of the society.

7. Mon.

Refitting gas pipes in Aquarium house, moving the heating apparatus.

8. Tues.

Received reptile papers from Werner - Vienna.

9. Wed.

Paid 7/6 privately for fish block to replace one lost!!

10 Thurs.

Capt. Gormley of Sydney called. invited him to tea on Sunday. Attended Council meeting Zool. Soc. Barnes is seriously ill. Gave "Advertiser" reporter some

information about him.
he was collecting news
in case the worst hap-
pened. Rec^d. Divided
warrant - £43. 15. 0.
N. Z. Refrig. Co. Man
working on garden this
week @ 12/- daily.

11. Fri.

Inquired about Barnes
at hospital. a slight
improvement, but not
yet out of danger.

13 Sun

Capt Gormley to tea.
an unpleasantly hot day

14 Mon.

Barnes died to-day
aged 43. Letters from

Wilfrid + Mrs Dempster.
Argyle, W.a.
15 Tues.
Wrote to Wilfrid

GISTER, ADELAIDE, THE

NATIONAL GALLERY
CURATOR.

Death of Mr. Gustave Barnes.

The death occurred at a private hospital on Monday afternoon of Mr. Gustave A. Barnes, who may confidently be said to have been one of the most versatile artists on the committee. About a month ago he was, on medical advice, freed from duty temporarily on account of nervous overstrain, caused partly by intense application; but about a week ago pneumonia supervened, and hope of recovery was abandoned. The admirable works from his versatile brush which adorn the National Art Gallery are a sufficient indication of his success as a painter; but his extraordinary modesty concealed from the knowledge of any but his most intimate friends the extent of his attainments in other branches of art. He was a musician of considerable skill and great taste, and had devoted a good deal of time to the study and practice of the violin. His zest for literature had extended his outlook far beyond either music or painting, and he was singularly well informed on many diverse subjects. Latterly, however, the greater part of his time had been devoted to painting and the

12 1907
11-08 to 11-08-09
11-08 to 11-08-09
11-08 to 11-08-09



LATE MR. GUSTAVE A. BARNES.

allied arts. Landscapes in oil were probably his forte; but he was also a designer and a modeller in plastic materials and an etcher, and was equally successful in all these branches of art. A relief model of Gallipoli made by him was presented by the Public Library Board to the Federal defence authorities, and it has been characterized as the finest production of its kind in the Commonwealth. Some months ago he undertook, on behalf of the board, to prepare a scale model of the Mount Lofty Ranges, which would have been a work of great public interest and value. Mr. Barnes was, besides, a notable authority in the wide range of processes embraced under the description of prints and etchings, and his knowledge of these matters served as his introduction to the Board of Governors of the Public Library, Museum, and Art Gallery, in whose service he spent six years marked by high achievements. In this direction alone, his death is a serious loss to the State, quite apart from the quiet but powerful influence which he exerted upon the development of local art in the more general sense, as indicated by his lectures on the subject.

—An Outline.—

Mr. Barnes was born in England in 1878, and came to Adelaide with his parents while still a child. His father was himself a skilled designer and modeller, and was for years associated with the firm of Barnes and Neate, plasterers and modellers, in Flinders street. In these works the son received his first artistic training; but even then his versatility began to manifest itself, and he was soon noted as one of the most promising of a number of young artists who rambled about the hills and the environs of Adelaide in search of subjects for watercolour sketches. Music also claimed his attention, and while still a very young man Mr. Barnes returned to England primarily with the object of continuing his study of the violin. It was not long, however, before he entered the celebrated Doulton works, where he was employed as designer, painter, and modeller of the famous ware. While thus engaged, he still found time to develop his artistic attainments by attendance at night classes at South Kensington. He devoted his attention to figure drawing, to design, and decorative work, and even to architecture, and with such success that he won distinction in all these branches of his favourite pursuit. Mr. Barnes had been absent from South Australia for about 10 years when the news of the death of his father influenced him to return; and he came back to Adelaide, bringing with him a Scottish wife. He at once took over the direction of his late father's business, but his leisure was employed mostly in landscape painting, in which he was becoming exceptionally proficient. He had already earned the distinction of having pictures accepted for exhibition at the Royal Academy in London, and before long he was represented in the South Australian National Gallery by two important works, a number which has since been increased to three—the maximum allowed to any artist. In 1915 the Board of Governors of the Public Library was in need of the services of an expert for the classification and cataloguing of its extensive collection of prints and black and whites, and members of the board were soon convinced of Mr. Barnes's excellent qualifications for this work. He was accordingly appointed; but, as his varied talents became better known, the scope of his work was considerably increased, and he was even employed with conspicuous success in the decoration and painting found necessary in the

Museum. The Fine Arts Committee of the board sought his aid in numerous directions, and found his advice invariably sound and helpful, particularly in the selection of works to be added to the collection in the Art Gallery. Ultimately Mr. Barnes was appointed Curator of the National Gallery, where he has made considerable improvements in the arrangement of the pictures and in other directions. He has left an enduring impression upon local art, and his place will be peculiarly difficult to fill. A widow and two children survive him.

—A Personal Tribute.—

The President of the Public Library Board (Sir William Sowden) referred last night to Mr. Barnes's death as "a real misfortune to the national institution in connection with which he has been during the last six years the board's chief adviser. "Personally and professionally he was a valuable member of the staff. He was always cheerful, courteous, and loyal to the board, every member of which was a friend not less appreciative because of Mr. Barnes's lack of self-assertion and engaging modesty. The extent of this aspect of his character in one direction was shown in relation to the winter lectures given in the Art Gallery. For some time he could not be induced to address the assemblies in the Gallery, because, he said, he felt that he lacked the requisite ability; but when he did at last appear he proved to be an impressive, a cultured, and a convincing speaker. Professionally, I have never known any other artist endowed with so much versatility. It is hardly an exaggeration to say that he could do everything in connection with art in its fullest sense, and do it well. Although he had been so comparatively short a time in the employ of the board, he had already made substantial advancement in his position, and his feet were firmly placed on the ladder of success and fame. A somewhat pathetic reflection to-day is that I have received an official letter from an important department, containing an offer of preferment for Mr. Barnes, which indicates the estimation in which his work is held by the community; and at the same time—one of the highest compliments which any artist could receive. The board mourns the loss of an unpretentious and unaffected gentleman, and a devoted officer equally talented and earnest in the performance of his duties."

Mr. Gustav Barnes, curator of the Arts Department and Keeper of Prints at the National Art Gallery, Adelaide, died on Monday afternoon, after a long illness. Born in England in 1878, he came to Adelaide with his parents. His father was the late Mr. Barnes, of Messrs. Barnes and Neate, who carried on a modelling business in Flinders-street for many years. Mr. Barnes also became a skilled designer and modeller, and when quite a young man returned to England and spent about ten years in completing his artistic and musical education. He made a hobby of seeking for old prints, etchings, and black-and-white work. In May, 1915, he was appointed to the staff of the Public Library Board, and shortly afterwards was made curator of the Arts Department and Keeper of Prints. He is represented in the National Gallery by three pictures. He has also exhibited at the Royal Academy, London. Among Mr. Barnes' later duties were included the making of a



The late Mr. Barnes.

The late Mr. Barnes.

relief model of the Gallipoli Peninsula in ten sections. He had just completed the last section when he was taken ill. It is destined to find a place in the Commonwealth War Museum. In addition, Mr. Barnes was actively engaged in the Natural History Museum in painting the casts of reptiles and fishes recently introduced by the director. He was also responsible for the painting of the backgrounds of the specimen cases in the Museum containing exhibits of aboriginal life and industry, which are in the Stirling Gallery of Australian Ethnology. He made the replica of Frenchman's Rock, which took the place of the original stone now in the Museum. He also was a capable musician, and had an intimate knowledge and understanding of ensemble playing. As a violinist he was a member of Mr. Heinecke's orchestra from the time of its inception. He was of a retiring and modest disposition, and was always willing to help those less fortunate than himself. He leaves a widow and two children.

16. Wed

Wrote to Mr Dempster,
"Hazelwood" Argyll, S.W.R.
W. Aust. with whom I stayed
when in W.A. Attended
funeral at Payneham
and, at night, meeting
of Yorks' Soc. Letter
from Mr W. with encl's
from A.S. Robinson and
Ethel Vause.

17 Thurs

Letter from Dr Vause,
now on his way from
Tasmania to Sydney.

18. Fri.

Received the following
letter. A university
man evidently wanted.

1881 JULY 1881

1881 JULY 1881

1881 JULY 1881

1881 JULY 1881



Telegraphic Address

"MUSEUM"

Telephone, CITY 7917.

The Australian Museum.
Sydney 9th March 1921.

COMMUNICATIONS ON OFFICIAL OR
SCIENTIFIC MATTERS
BE ADDRESSED TO THE CURATOR.

Edgar R. Waite, Esq., F.L.S.,
Director,
South Australian Museum,
ADELAIDE, S.A.

Dear Mr. Waite,

The Board have desired me to inform you that the position of Director has been filled by the appointment of Charles Anderson, M.A., D.Sc., for twenty years Mineralogist in the Institution. Dr. Anderson is a graduate of Edinburgh University and had a distinguished record there winning a medal in all his science subjects.

At the same time the members of the Board wish me to inform you that they were very much impressed by the qualifications for such a position which your testimonials indicated.

Yours faithfully,

Thomas Storer
W.B.C.

PRESIDENT.

20 Sun.

Set the Kick-starter
of the "Scott" in action
and had a run, but
lost part of the lever
arrangement en route.

21. Mon.

The printers are now
"off" the fish Catalogue
owing to election needs.

22 Tues.

Putting plants into the
newly done-up garden
Took Rose to pictures
Our first attendance
for months.

23 Wed.

Planted a passion vine.
purchased $\frac{1}{2}$

25. Good Fri.

Holiday to Mon (incl.).

26. Sat.

Bought 15.3/4" pump for
"Scott". 8/6. Put in some
flower seedlings.

27 Sun.

Fitted small motor, the
Lennox pump and the
transformer onto 1 base.
Refitted the K. Starter
of the "Scott" (see 20th)

28 Mon.

Had a run on the
"Scott". The starter works
well.

29 Tues.

The following informs
me of Allan's return.

A PLAGUE OF RATS.

Our Sydney correspondent telegraphed last night:—Messrs. Allan R. McCullough and E. G. Troughton, zoologists of the Australian Museum, returned to Sydney to-day from Lord Howe Island, after spending six weeks there preparing a report on the condition of the place. They state that the rat nuisance is very pronounced on the island, the rodents having overrun the place, and being found everywhere. They have destroyed all bird life, so that insects are increasing to an alarming extent and wiping out the fruit crops and garden produce. The rats are now attacking the seed of the kentia palm, which constitutes the main produce of the island for commercial purposes, and unless something is done to wipe the rodents out the trade of the island will be ruined.

Paid Land tax 10/11.
Assessment increased from
9/4. following details.
No of Reg. 82339.
No. ass. 5079 (late 4276).
No. allotment 7H.
Measurement. 105 x 210
tax $\frac{1}{2}$ in L. 10/11.
Township. N Kensington.
Assessed 1. Aug. 1920 -
(Valid to 1925.)

30. Wed.

Yorks' Soc Committee
asked me for a short
address on Apl. 20th

31. Thurs.

Rose (with Claude) talks
of going to the Semaphore
for a week to recuperate.
Letter (private) from Mrs
Daisy Balis, Goldea.

April.

1. Fri.

Accepted invitation of
Dodwell, afternoon. 5.0
to inspect the instruments
to be taken into the
Interior to determine
the 129th Meridian.

2 Sat.

Dr. Cooks wants to buy
a K. D. A air pump for
the Chemical Dept. Unit.
I asked Carpenter to
"ghost" the duplicate
I have for £5. the
price paid by Robertson.

3 Sun.

Telephoned to the Cafe
at Semaphore & arranged

to Rose and Claude
to stay there for, at
least a week, from
Tuesday next. Made a
copper coil heater for
aquariums. (a second)
and rearranged gas
service accordingly.
Filled in CENSUS papers

4 Mon.

Replied to letter from R.
Robinson, Durban, re
papers on fishes -

5 Tues.

Received paper by Sigurd
Johnsen (Bergen) on
Luwarus, as he has
missed my note in
Rec. Cant. Mus. I sent

him a reprint. Letter
from Hella well & replied
One from Allan who has
just returned from L.H.S.
he explains that pt 2
of his Catalogue has
been delayed in publi-
cation. In new Linnean
List of Fellows. Hedley
is entered as "Director"
Aust. Mus. so he must
have been quite confi-
dent. Went to Semaphore
after work had dinner
saw Rose & Claude in-
stalled at the Cafe &
returned home.

6. Wed.

Received reprints etc.

returned from Sydney.
Museum Committee. I
submitted first 112 pages
of the Fish Catalogue.

7 Thurs

Selected papers for covers
of "Records", vol II + reprints.

8. Fri.

Meeting of the Fauna
etc handbook committee.

9 Sat.

State Polling Day. Voted
for Liberal candidates

10 Sun.

Joined Rose & Claude
at the Semaphore going
+ returning on the "Scott".
Capt Formley + R. Sandor
also there to dinner.

11. Mon.

Jack Megson (Kosman)
& his mother have come
to Adelaide for 2 weeks
I arranged for them to
join Rose at Semaphore
at dinner to-morrow.

12 Tues.

Fish Cat. printed to
p. 176 and all except
index in page form:
it will make 200 p.
less index and Hassell's
suggest 27th as date of
publication. Afterwards
arranged for issue of
6 copies on the 23rd
the publication to carry
that date.

13. Wed.

Rose's birthday. telephoned
felicitations to Semaphore
wrote to Allan (see 5th)

14 Thurs.

Attended meeting Royal
Soc. exhibited Lophobranchs.

15 Fri.

Required to give a
Museum lecture on Oct.
13th. wrote ackⁿ. to Hel-
lawell for newspapers
containing notice of the
Macleay Museum &
Hetcher's strictures on
trusteeship. Attended
Council meeting. Zool Soc.
Bought sewing machine
table from Carr.

16 Sat.

Bought 1" rod turnwicks
& Sundries from Wills
who are relinquishing
the boat trade.

17 Sun.

To dinner at Semaphore
in returning the 'Scott'
failed timing slipped,
I think, getting dark
I stabled it in town.

18 Mon.

Arranged with Woodcock
to put down concrete
floor in Motor shed &
cement walls of W.C.
for £6. Received final
sheets of the Fish Cat.
Following refers to the

financial aspect.

The Museum Committee agreed with a suggestion by the Ministry of Industry, that the selling price for the catalogue of fishes should be fixed as low as possible to keep it within reach of those persons whom it is desired should purchase copies, and decided that the application to the Government for the £100 voted be supplemented by a request for a further £100 owing to the increased cost of publication and the necessity for making the catalogue available for popular use. The committee placed on record appreciation of the valuable expert services rendered to the Museum by the curator of the Art Department, the late Mr. G. A. Barnes.

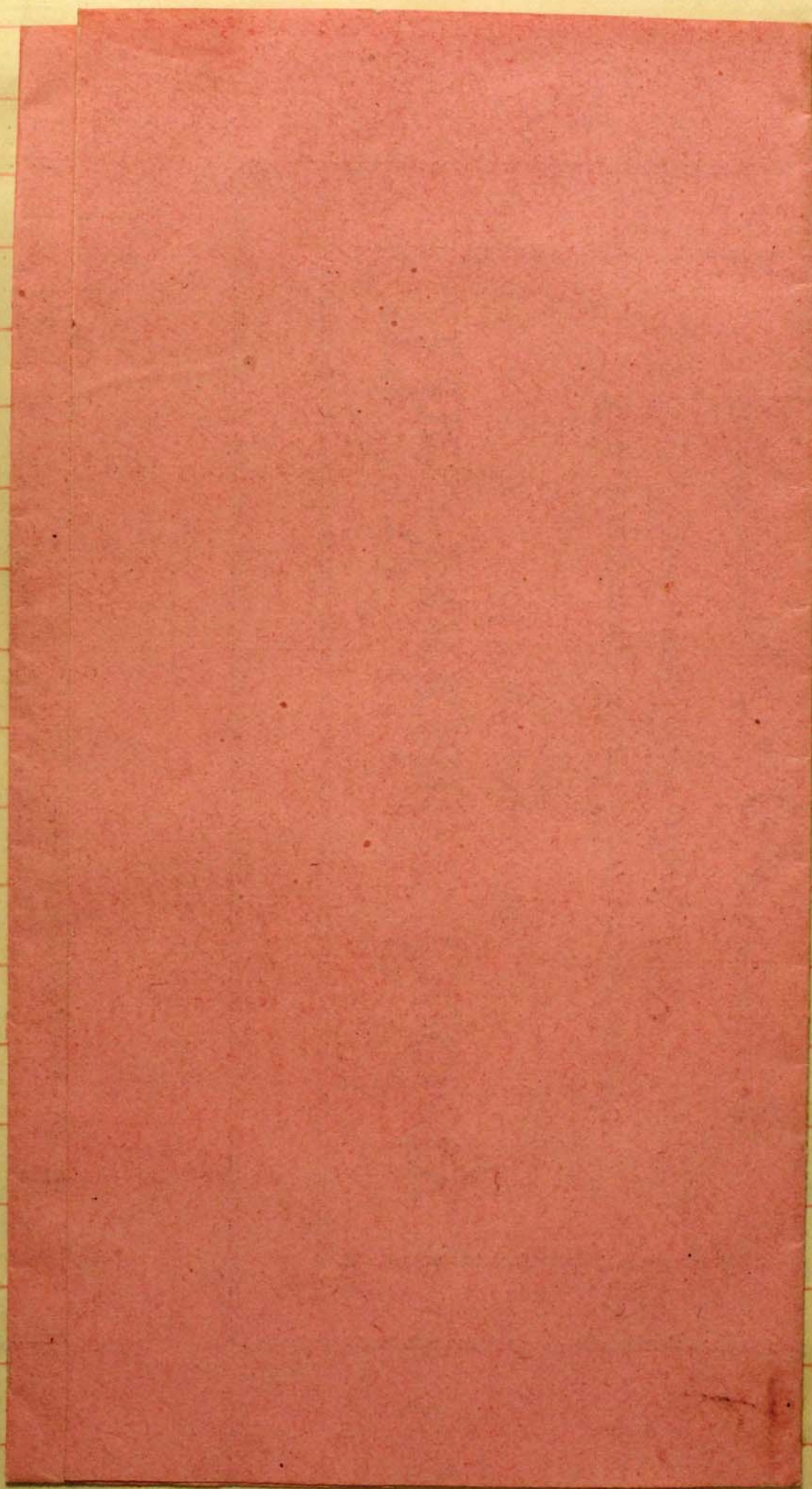
Bought set of Drummond
lathe tools.

19 Tues.

Retrieved the 'Scott' &
reset timing. Commenced
to paint background for
the Antarctic Case.

20. Wed.

Meeting Yorkshire Soc.
see programme. Case
(mental) of Mrs Farr
being tried in Sydney



The Yorkshire Society

of South Australia

The Grosvenor, North Terrace, Adelaide
Wednesday, 20th April, 1921

Programme

The Chairman's Address

Song—"If I Built a World for You"

MISS MARSHALL

Reading—"July 19th" MR. MARSHALL

Song—"No! No! No!"

MISS MYRTLE INGHAM

Address—"Experiences of a Diver"

MR. EDGAR R. WAITE, F.L.S.

Song - - - MR. BROADBENT

Song—"When You Come Home"

MISS MARSHALL

Recitation—"T' Barrel o' Butter"

MR. MARSHALL

Song - - - MR. G. BROADBENT

Song—"The Owl"

MISS MYRTLE INGHAM

National Anthem

ACCOMPANIST

MISS LOLA PENALURICK

21. Thurs

Woodcock at work. concreting floor of motor shed + walls of W.C. Received from Allan his paper R. A. M. XIII. No. 4 and Check list, fishes N. S. W. pt 1. (reprinted, and ii. (to be continued))

22 Fri.

C. E. Owen Smyth, late S.P.B., who has just landed on a visit, came to sympathise with me on the treatment I am receiving from the Administration Dept. The condition of affairs is becoming known!

23 Sat.

6 copies of the 'Records'
received for registration
disposed of as below.

Library, President
Gen. Sec. Mr. Culloch
Museum (2). wrote to
Allan. Paid State
Income Tax. £13. 12. 6

24 Sun.

Rode "Douglas" to Semaphore
37 mins. where I had
midday dinner and
afternoon tea. Put in
a few fixtures in the
Motor shed - newly
cemented floor.

25. Mon.

Holiday. Auzae Day

Having fed up and
warmed Aquaria, the
Lebistes produced 13
young. Completed the
second heater. Having
paid 14/- for the Bro.
book last bound, again
had "a-go" at binding.

26 Tues.

Notice of death of
Johnson ex president of
Lorks' Soc. Paid Woodcock
£6. for concreting floor
of motor shed, repairing
walls of. W. C. inside &
out. Watson returned. Letter
from Wilfrid also one fr.
Mr. W. Enelosing letter fr.
Ethel Vause. She & her

mother are to leave
Liverpool in the "Ceramic"

27. Wed.

Bought letter-press at
Cann's 25/- Will pay for
itself in book-binding
at which I am making
a decent job.

28 Thurs.

In consequence of informa-
tion reaching the President
directly or otherwise in
respect to my associations
with the Gen. Sec. he
invited me to an infor-
mal discussion. I laid
the facts before him &
he gave me a sympa-
thetic hearing.

29. Fri

Letter from Archey.
Cant. Mus. asking for
a ruling on use of Brama
and Lepodus which I
gave him. Finished the
binding of the trial no.
of the Catalogue, said by
Waddy to be satisfactory

30. Sat.

Letter from Dr. Vause, again
at Tempe. Replied and
enclosed Ethel's letter (see
26th). Wrote to Mrs. Bates
at Coldea. Letter from
Bessie Welch offering to
spend the rest of her life
as a companion to Rose
(when writing to her I

Said that Rose required
female companionship
Bought 4 "Singer" hangers
& trunnions and sundries
for 7/-.

May -

1. Sun.

Watson & Fred Linné came in the morning. & the former went with me to the Semaphore on the "Connaught" I riding the "Scott". When attempting to start the engine of the "Connaught" was fast. looked like a seizure. I came on alone leaving Watson to journey by train. I ran out of petrol riding through town & had to garage the bike. The "Scott" drinks fuel but runs very sweetly.

2. Mon.

Discovered that, in the Fish Cat., I had put a note on Parapercis colias under Scomber colias.

Mr. Meeson returned to Sydney Rose still being at the Semaphore. Letter from Allan reaffirming (Gobius) mucosus as a Callogobius.

3. Tues

Sent a slip of notes & corrections to printers for insertion in the Cat of which 6 copies only have been delivered.

Presided at meeting of Aquarium Soc.

4. Wed.

Museum Committee.

By "Nature" March 10th -

I see that Regan has been appointed keeper in Zoology at the B.M. & Calluige keeper of the York Museum. Paid Hosking's &c for Rose's teeth £5. 9. 0.

5. v. 55 my age to-day.

The Committee yesterday decided to recommend the price of the Fish Catalogue at 12/6.

6. Fri.

Commenced to interleave a copy of Fish Cat. for binding. Saw Government

Printer & Handbooks on
Fauna & Flora of S. Aust
& left with him some
"copy" & fish blocks -

7. Sat.

Cut a double Card Cat.
~~book~~^{box}, I had obtained
second-hand, & made
2 separate boxes of it.

8. Sun

Rode "Scott" to Semaphore
& found Watson already
there, unexpectedly.

9. Mon.

Rode to city and joined
Witchell who drove me
to Semaphore with Mrs
Witchell & Mrs Burns -
this being a holiday -

Arranged to visit the
Mitchells on Fri. evening.

10 Tues.

Sent £5 to agents in
Sydney as, owing to
payments of rates, new
W.C. cistern, the account
is on the Dr. side. The
President telephoned to
ask me to participate in
the opening lecture of
the Art gallery series,
it to be conducted by
himself, the Librarian
& Mus. Director, May 26.

11. Wed.

Attended Council meeting
Zoological Soc. Letters
from Speight and Wilfrid.

Mrs Dempster with whom
Watson & I stayed in
W. Aust. called to see
me. The cutting is
from to-day's "Register"
and the "Review" is
practically as I wrote
it.

12 Thurs.

Attended opening of the
Exhibition of Sch of Art
at 2.30. Sent copy of
Fish Cat. to Prof Smithells.
Leeds, for placing in a
Library * following a let-
ter I wrote. Attended
meeting Royal Soc. S.A.
Rose stated her intention
of coming home on 17th

"Register"

11 MAY 1921

A FISH CATALOGUE.

FINE PUBLICATION.

The Board of Governors of the Public Library, Museum, and Art Gallery has just issued a most welcome publication, entitled "Illustrated Catalogue of the Fishes of South Australia." The author is Mr. Edgar R. Waite, F.L.S., the able and versatile Director of the Museum, and a world-wide recognised authority on fishes. The catalogue is fundamentally a scientific production, and will be of great value to those to whom it especially appeals. Mr. Waite has, however, done wisely in widening the scope of the work, so that it may be useful to a much larger section—the general public. The want of a key to the literature of our fishes is a deterrent to would-be students, who might otherwise feel inclined to take up the study; to such the list will be useful and an incentive. The angler desires to know more than the fisherman's names of his spoils; to him the illustrations, and through them references to literature, will be appreciated, and may lead to a wider view of the subject. The Government has assisted the publication of the catalogue financially; and at the instance of the Department of Fisheries and Game asked for an extension of the work as originally planned; hence the introduction of an increased number of illustrations and useful explanatory notes, especially regarding the food fishes.

—Interesting Points.—

The book, which consists of 208 pages, includes the names of 332 kinds of fishes—the present known total of our freshwater and marine fish fauna, of which no fewer than 293 are illustrated. These illustrations are printed just where they are wanted, so that the user does not have to turn elsewhere in the book for a picture of any particular fish. Fishermen, both amateur and professional, will consult the pages in search of the fishes with which they are familiar, and marvel at the number they have never seen or heard of. A coloured illustration of one of our most gorgeously coloured fishes pro-

lines marked X are editorial.

vides a striking frontispiece. Readable little notes accompany many of the entries. Thus we learn that lampreys are parasitic, and attach themselves to fishes, rasping off the flesh by means of their horny teeth; that a shark may produce as many as 50 living young, which accompany the mother for some time after birth; that another species attains a length of 40 ft.; and that, in one which has spiny fins, the spines are before birth tipped with little knobs to protect the membranes of the mother shark. Mr. Waite says that the famous turtle soup of aldermanic fame is really conger eel, to which the turtle furnishes only the garnish and the name! Although it is essentially a scientific production, a surprising amount of general information is conveyed in the all-too-short notes scattered through the pages of the book. Separate indexes are supplied for scientific and common names.

—Acclimatized Fish.—

The catalogue shows that the following exotic fishes have been acclimatized successfully in our fresh waters:—Gold carp, tench, perch, and brown trout from Europe, and the rainbow trout from California. All of these, excepting the carp, were intentionally introduced into South Australia. The trout were placed in the various reservoirs, and have thriven immensely—a brown trout was recently caught measuring 2 ft. 10½ in. in length. The carp were originally introduced into Victoria, and entered our waters by way of the River Murray. The author states that he has seen hundreds of thousands of them taken from the irrigation drains and loaded into carts; but Adelaide did not receive a single fish, most of them being railed to Melbourne, where selling prices are higher than even in Adelaide. In consequence of this the majority of our inland fishes are sent to the Victorian capital, and large numbers of sea fish also; the only exceptions are from places within easy of our city. Mr. Waite and the printers (Messrs. Hassell and Son) of this really splendid book may well be congratulated on a most valuable production. The author in particular has plainly taken infinite pains with his work.

X

13 Fri.

Letter from Dr Vause, he is now at Narrabeen.. Spent evening at the Mitchell's. Two fluted. President approved my suggestion that I speak on "Casting as a method of illustrating natural objects". (see 10th). on May 26th.

14 Sat.

The "Ceramic" with Ethel Vause & her mother on board is scheduled to arrive here on 31st. It occurred to me to join the vessel for a voyage to Sydney, as I

have to take my annual
leave before June 30th:

15 Sun.

Ran the 'Scott' to Semaphore
- no rain yet. In evening
prepared 3 vols of 'Aquatic
Life' for binding.

16 Mon.

wrote Dr. Vause & outlined
scheme for visiting Syd-
ney. wrote Ethel Vause
S. S. 'Ceramic' Fremantle.

17 Tues.

Rose & Claude returned
from the Semaphore. wrote
to Bessie Welch.

18 Wed.

Applied to White Star
Line for passage by

"Ceramic" to Sydney.
was told that owing
to some uncertainty as
regards the Navigation
Act, it was uncertain
if overseas boats would
be allowed to take
Interstate passengers. I
wrote to Director of Navi-
gation (Capt. J. K. Davis)
Melbourne for permit.

19. Thurs.

Borrowed a "gas" ther-
mostat from Prof. Robert-
son.

20 Fri

Board meeting. As the
new Navigation Act is
advertised not to be

operative until June 30th
I applied for passage to
Sydney in the "Ceramic".

21 Sat.

Fixed up the thermostat
to aquarium in which the
Sebastes are breeding. Had
a man digging: planted
potatoes.

22 Sun

Splendid rain. Experimen-
ted in regulating the
thermostat.

23 Mon.

Johannes Andersen having
written to me (fr. Wellington)
for meaning of fish for
formulae I sent him the
required information.

24 Tues.

Received notification that my Life Insurance for £100 had matured & is now worth £118. 5. 0. the bonuses being equal to about $5\frac{1}{2}$ years' premiums.

25. Wed.

Sent to Insurance Co. (British Dominions Ins. Co.) Policy, receipt for £118. 5. 0 and application for birth search. Received from R. D. Barker, (late of the Canterbury Museum) letter & photographs from East Africa. Dar-es-Salam. he has changed his name to de la Ber, owing to a

"legal requirement" following upon an escapade in the ~~beginning~~ beginning of the war." He asks for a certificate that he was employed in the Canterbury Museum.

26. Thurs.

Art Gallery lecture.

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ethnological exhibit in the world was in our Museum. As a preface to Mr. Waite's remarks he would inform the audience, with an expression of gratitude from the Board, that that gentleman, on behalf of the board, had produced a splendid book dealing with South Australian fishes. It was illustrated by the author by some really wonderful pictures. Mr. Rowe, also, had before the publishers in England, on

have a chance to explain them. The property placed in the charge of the board was of great value intrinsically. The land, buildings, and fittings, exclusive of the land recently ceded to the board from the Destitute Block, was worth £184,000; and the books, Museum specimens, art works, and archives, £153,000; making a total of £337,000. Each year the value of the art treasures and exhibits became enhanced.

above are from President's
Remarks

of the ...
---Casting of Natural Objects.---

Mr. Edgar R. Waite, F.L.S., gave an address on "Casting as a method of representing natural objects." He pointed out that certain groups such as fishes, snakes, and lizards, made unsatisfactory objects when stuffed in the usual way, for, however well the specimens might be dealt with, they were distorted in the drying. By means of the casts the contour and detail were reproduced absolutely, and the facsimile represented exactly the original except in material and colouration. The work of casting, except as applied to bones, had only recently been elaborated in the Museum. Casting was very much older than taxidermy, and of this an exhibit of a fossil shell was an example. That, of course, was natural casting.

Mr. Waite then exhibited specimens illustrating the process of casting, some of the moulds being in as many as twenty pieces. Casts both in plaster and gelatine were

shown. Of those in the latter material, one was of a frog, together with the live creature which had been subjected to the process, without harm, several times. Among the most effective of the casts were those of fishes which were coloured to the life. Some of this work had been done by the late Mr. G. A. Barnes, whom the lecturer described as a most valued and lamented colleague. Mr. Waite explained that the artistic work put into one of those casts could be gauged by comparing the finished with the unfinished article, and, in illustration, he exhibited a cast both before and after colouration. Among the interesting exhibits were casts of a small shark, an Indian cobra, and a cuttlefish. Mr. Waite described the process of casting, and each stage of the work was illustrated by an exhibit. One of the completed exhibits was most interesting, being that of a fish of a kind unknown in Australia, which had attached itself to a ship in the Indian Ocean, and had been dragged to Port Adelaide. He concluded by saying that he had just received a letter from the Director of the New York Museum, who said he was sending Professor Gregory to Australia to inspect their museums, enquire into the fauna, and generally, to see what was being done. It would be well if it were possible to send someone from here to see the methods adopted in the American museums. (Applause.)

---Archeological Exhibits.---

27 Fri
Understand that "Ceramic"
may leave on Wednesday
June 1. my committee
day." To Fulham (W. White-).

28 Sat.
Visited Hosking & had a
tooth attended to.

29 Sun.
Rain all day.

30 Mon.
Selected photographs for
lantern slides for lecture
in Oct. Informed that
it is doubtful if the
"Ceramic" will be here
before Thursday & no
certainty of obtaining
a berth is expressed.

31. Tues.

Obtained berth on the
"Ceramic" and paid £7
for passage to Sydney.

June.

1921.

1. Wed.

Museum Committee. The Fisheries Dpt has not replied to communication re fish Catalogue so the sale is hung up until question of price is settled -

2. Thurs

with Rose & Claude, met the "Ceramic" at Outer Harbour with Mr & Ethel Vause on board, took them to the city, thence to the Museum & "Kirkstall". Returned to town had dinner. 6. pm at the

'Southern Cross'. Slept
in the 'Ceramic' having
Cabin 1. berth 1. as-
signed to me & this
with . . . cabins on board

3. Fri

Took my relatives for
a walk in vicinity of
O. Harb. Saw wheat -
cleaning machine in
operation, telephoned to
Rose & Munchin, the
latter having come a-
board the 'Ceramic' to
see me yesterday. Left
at 3.30 for Melbourne
In the evening there
was a debate as to
equality of women with

men + right to equal
pay. I spoke on the
subject of anatomical
differences of the sexes
taking opposition side.
Afterwards the ships' Dr
+ others introduced them
selves,

4 Sat.

At sea.

5 Sun

Arrived at Pt Melbourne
early and had a stroll
around the wharves in
the morning. In after-
noon we took electric train
to the city thence by
tram (cable + horse)
to the Zoo. Saw the

parents of our Adelaide
Hippo; also a later baby.

6. Mon.

Public holiday all shops
closed, I went to City
in the morning & called
at Carlyon's Hotel to
see Davis who had
written to me, but he
was away. left note.
Met Wheadon of Adel.
Elec. Supply in town.
Returned to 'Ceramic'
& in afternoon took
the ladies to St. Kilda.

7. Tues

Wanted to leave at noon
we left the boat after
breakfast and did

Some shopping I bought
for 1/3 in Eastern market
an old book on den-
tistry with illustrations
as to use of the 'key'
as an extractor. When
we rejoined the vessel
found sailing postponed
to daylight tomorrow
a heavy fog over the
harbour. Returning to
town after lunch took
the ladies to the Aqua-
rium. Met Linacre
with whom I had
travelled from Sydney
to ~~Kaew~~ Rabaul.

8. Wed.

Sailed ~~in~~ in morning.

rain all day. One of
the busy ladies on board
congratulated Cousin Ethel
on having so speedily
attracted the favourable
attention of the "Professor"
she was sure I must
be a professor!!

9. Thurs.

wrote to Rose at 6. am.
At sea.

10 Fri.

As we expected to be
in early I got up at
6.0 and taking on
the pilot we entered
the heads about 8.0
+ saw the harbour
enveloped in fog. [153]

in early I got up at
6.0 and taking on
the pilot we entered
the heads about 8.0
& saw the harbour
enveloped in fog. [153]

BLANKETED BY FOG.

COLLISION IN SYDNEY COVE.

Sydney Harbor was again blanketed by a dense fog yesterday morning.

It came down about 7 o'clock, and lasted for two hours. Meanwhile ferry traffic was disorganised, and incoming shipping delayed.

While the fog was thickest some excitement was occasioned in Sydney Cove by a collision between the Sydney Ferries' steamers Kulgoa and Kosciusko. The Kulgoa was apparently undamaged, but the Kosciusko had her bulwarks and steering gear damaged. She brought up alongside the P. and O. wharf, where she remained until the fog lifted. She then proceeded to the company's works at Milson's Point. The Kulgoa also proceeded to the works.

The Watson's Bay ferry Lady Carrington went ashore at Shark Island, at 7.25 a.m., and was floated off about 9 a.m., undamaged.

The Karingal grounded at Long Nose, but was floated off without assistance, also undamaged.

it was not until
after we landed that
I learned of its in-
tensity and results.
The fog was so low
and our huge vessel,
18,700 tons, so light
and consequently high
out of the water that
we looked over the fog
& could see the masts
of ships & the higher land.
Passing the doctor was
a long affair. There was
smallpox in Melbourne
& we were required to
expose our arms and
brows, some of the
women folk with tight-

~~blot~~ sleeves had to
remove their blouses.
As we drew up to the
Wharf, (Darling Harbour)
we spotted Dr Vause who
later came on board
while talking to him
D. G. Stead came to me
he had in his pocket
a stamped letter he
was going to post to
me, & had come to
meet friends aboard.
it proved to be an
ack^t for the Fish Cat.
Passed the Customs &
while the Vauses went
to Bay View I put up
at the "Grand Central"

After lunch I went
to Petersham & spent
evening with Bessie
Welch. Arranged to
meet her in town re
literary matter. on
Tuesday. I received 7
letters at G. P. O.

11. Sat.

Telephoned to Bay View
as arranged. Met Dr
Mrs & Ethel Vause and
motored to Narrabeen,
"Kersaint" being 2 miles
inland. Wrote to Wilfrid
this being his birthday.

12 Sun.

at Narrabeen,

13 Mon

was driven from "Kersaint"
to Narrabeen said to be
2½ miles, then took tram
to Manly & boat to City.
Tram to Hotel Sydney, but
Davies to whom I had
to pay £10.10.0 was out.
Train to Ashfield & walked
to 32 Robert St. but found
that Turner had moved
his aquarium requisites
to town. Thence walked
back through the Station
& saw Mr Down with
whom I spent but 5
minutes. Train to town
& saw Turner at 94
George St West, but he

has relinquished the
aquarium business and
now deals in birds only.
Bought pair pygamas 26/6
lunched at Hotel Sydney
& afterwards met Davies
& paid him £10.10.0. find-
ing however only £10.
in the amount given me
in Adelaide. Tram to
Quay & ferry to Mosman
(now 4^d). Had tea and
evening at the Hellowell's
& put up at the Hotel
Buena Vista, Military
Rd. a very nice house.
Posted Davies' receipt to
Adelaide.

14. Tues.

Before breakfast called
in Muston St and had
early tea with Mrs and
Eva Kemp. Returned to
hotel for a meal & at
9.0 was at Cousins the
Estate agents, waited till
10.0. Office not open &
then to town to meet
Bessie Welch at 11.0.
Introduced to Schwabe,
editor of "Worlds News".
Took Bessie to Antiquari-
an Shops and Tyrrell
had some ethnological
stuff from German New
Guinea etc which I
arranged to see after [159]

lunch. Left my card
for Capt. Linaere at
Hsher's Hotel. Had lunch
with Bessie, returned to
Tyrrell's & with one of
his men went to Darling-
hurst & in a cellar, un-
packed a box. Took note
of the contents & left
the man to repack for
Adelaide. Took tram to
Paddington & called at
10 Queen St off Underwood
St, (which I had some
difficulty in locating) &
saw Mrs Phillips. Learned
that P. has not now
axolotls or newts etc for
sale. Tram to Quay &

got the 4.20 boat for
Maunly. Arrived I had
to wait for 5.21 train
so had tea & bought
some fish for the house.
reached Narrabeen at
6.7 and walked in
the half moonlight to
Kersaint arriving 6.47
all uphill sandy and
stone road and dark
under the trees. found
on arrival that Mrs
Wilson's younger son was
staying.

15 Wed.

As I have no aquarium
beasts to take back I
may return by train &

so have a longer time here. We all walked to Tarrabeen, lunched on the sands & walked to the lagoon entrance. Saw gannets diving, dolphins gambolling etc. We were caught in rain returning in the late afternoon -

17 Fri.

Went to town executed some commissions for the house, called at P.O. & got letters and telegrams. Wrote necessary replied at the "Daily Telegraph" office and sent a wire to Herbert authorising him to have

the "Douglas" cylinders
rebored. He reported that
the steering head was
cracked & needed renew-
ing. Wrote to Rose &
announced my return
for Wednesday. Took
rail tickets for Monday
£6. 5. 0 and sleepers
£1. 17. 6. Called at Tyrrell's
left my kit bag there
with spare shoes and
other bulky things to
be sent with the Eth-
nological package. Pd.
Tyrrell 6/- for English
Greek lexicon. Telephoned
to Agents at Mosman
& after lunch went

over & had a chat
with them. Thence to
Reading by which seems
to be cared for & called
at Mrs Moulden's next
door. She told me that
the wards were excellent
tenants. I then walked
to the Spit Rd & to
Maulby by train, thence
to Harrabeen and the
final walk to Kirsaint.

20 Mon.

Left by the 7.25 express
meeting Edgar Savage on
the platform, he had
just returned fr. Fiji.

21 Tues.

Arrived Melbourne 12.50.
Went to Eastern Markets
bought a strong leather
case, suitable for the
flute & music. Second-
hand for 7/6 Jomers,
Under Sec. Minister of
Agriculture travelled
with me, also Seppelt.
to Adelaide 4.30 express.

22 Wed.

Claude met me 10-am.
and we went home -

23 Thurs.

Resumed work attended
to correspondence etc -
the 10% short paid (see
13th) The thermostat

fixed to the Aquarium
worked well during my
absence and the fishes
(Lebistes) have greatly
multiplied.

24 - Fri.

Took this day "off"
in lieu of June 6th -
a public holiday Rode
the "Scott" (with Watson)
to Keswick & bought a
"soldiers' suit" for 50/-
we were held up on
the road for presumed
exceeding speed limit
but when the "first
man" came up, it was
stated that he had
no horn on his motor

he had however, an
almost invisible bell,
so we were passed on.
We then called on the
Bernsteins whom I had
advised by telephone &
examined the, from birth-
crippled, daughter, the
Prof. gave some advice.
Returning home sowed
seeds of Passion vine, I
brought from Narrabeen
Developed negatives taken
on holiday.

25 Sat.

Received copy of new
regulations issued by the
Board also schedule of
reclassification of the

Officers. I come under
Professional Class 1. &
have salary £630 next
year & next year £650
the maximum. Had
2 teeth treated by Hopkins
Took Rose to Observatory
in afternoon where Mr
Dodwell was giving a
tea party to meet the
Misses Farr.

26 Sun.

By arrangement, . . .
Wigg came to Kirkstall
& had a run on the
"Scott" he expressed his
intention of buying at
£80, as soon as he sells
his present mount.

Watson took me in the
sidecar to Pullen's who
gave me some more
desert plants for the
garden. Mitchell asked
us for a car drive on
Tuesday. Claude brought
home for the night,
a wireless youth named
Benn, his people are
from Leeds & he is very
probably related to the
Benns of Ikley.

27. Mon.

Public holiday. With
Mitchells to Waterfall
gully, the "Wanderer"
being present in thou-
sands & thousands.

28 Tues

Sent letter of intro.
to Miss Mitchell, who
is visiting New Zealand.
Sent photos of "Kersaint"
to Dr. Vause. Committee
meeting of "Handbooks"
in my room.

29 Wed.

Letter from Longman.
Agilby is "still about"
but his "scientific work
is absolutely finished."

30 Thurs.

Obtained more Zoological
Stamps (Liberia etc.)
The collection is now
quite extensive.

July. 1921.

1. Fri

Taking my weekly stroll
down the parade bought
2 old clocks for 1/- each.

2. Sat

While making cockery
for Pullen's plants I
got a sudden seizure
of lumbago wh. has
threatened for a week
past.

3 ~~Mon.~~ Sun

In bed. lumbago -
Watson called & prescribed

4 Mon.

Likewise in bed.

5 Tues

Having Committee

meeting tomorrow went
to City in afternoon
& prepared report. ✓
presided at meeting of
Aquarium Soc. when
Ashby gave address
on Chitons.

6. Wed.

Museum Committee.

My purchase of Ethno.
collection from Tyrrell
for £39 ratified also
£10 for Lepidoptera.

7 Thurs

Bought a set of 68
pigeon holes from Cunn
for 45/- Letter from
R. Robinson Durban for
my paper No 79.

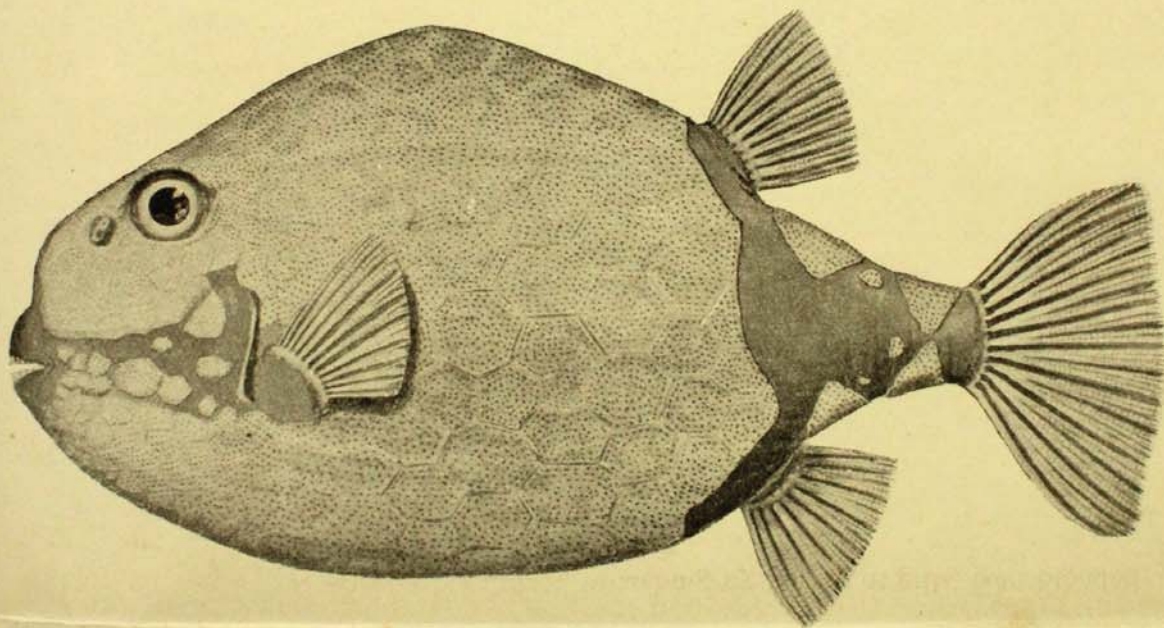
NOTES

INTRODUCTION.

The word "fish" is usually very loosely applied, and popularly embraces many different kinds of animals living in the sea. Thus we have shell-fish, applied indiscriminately to the Mollusca and the Crustacea, with specific examples, in the former of cuttle-fish (*Sepia*), razor-fish (*Solen* or *Pinna*), and mutton-fish (*Halibut*), and of crayfish in the latter. Star-fish, with its variant cross-fish, is commonly applied to the members of the Asteroidea, while jelly-fish, signifying animals which might more appropriately have been called sea-jellies, is a term used almost universally for certain of the Medusae. The word "fish" is not generally applied to land animals, but we may note the exception of silver-fish for insects of the *Thysanura*.

With the progress of education, it should scarcely be necessary to mention that a whale is not a fish, yet it is safe to say that the bulk of the people still believes otherwise. The popular name of a whale in German is wallfish.

It becomes clear, therefore, that at the very outset we must define what is really meant by the word "fish." A fish is a vertebrate animal, by which is meant that, like ourselves, it possesses a vertebral column or backbone; and this single character excludes all the animals above mentioned with the exception of the whale, which is a true mammal, suckling its young with its own milk; no fish does this. It will, however, be well to define a fish in the brief and exact language of science.



Fishes are aquatic, vertebrate animals, breathing by means of gills, cold blooded, the skeleton furnished with limb-girdles and usually with two pairs of limbs developed as fins, and a series of non-paired fins also, their number and position very varied, sometimes ill-developed or absent.

There are, in addition, certain lower animals generally classed with the fishes which do not, however, conform to all these characters. The lampreys have neither limbs nor limb-girdles, and no lower jaw, while the nostril is single and placed in the mid-line of the head. The lancelets, the first animals to be noticed in the body of the book, have no localised brain, no protective skull, and no heart; they are therefore in the lowest grade of the animals conveniently termed "fishlike vertebrates."

8 Fri

The foregoing is a specimen page of the Fauna & Flora Handbooks. Letter from Max Weber also some papers on Fishes. Date of Museum lecture changed fr. Oct to Sep 29.

9 Sat.

Rose down with influenza. At Museum in afternoon demonstrating to Nat's Club, dealt mainly with Antarctica.

10 Sun.

Watson came & ordered Rose to remain in bed he stayed to dinner &

tea. Discovered that both
my motors may be
associated with Culārchie
(Capt.) "Scott" "Douglas" (Maudson)

11. Paid Gard £11. 7. 6 for
overhauling 'Douglas' the
cylinders rebored etc.
Received papers from
Max Weber, in exchange.

12. Tues.

Sent in Federal Taxation
return The receipts from
the Norman house are

Gross Rent		104
Commission	5. 4. 0	10
Repairs	6. 17. 6	
Rates	20. 0. 11	32. 2. 5
		<hr/>
Net,		71. 17. 7
Exchange		9. 0
		<hr/>
		£ 71. 8. 7

13 Wed.

Received from Max Weber
his "fishes of the Siboga
Exped." Additional to
the papers received on
the 8th. Supplemented
my packet to him with
Cat fish. S. A.

14 Thurs.

Appointed President & Sec.
of Aquar. Soc. as delegates
to a fauna protection
meeting. Attended Roy
Soc. meeting.

15 Fri.

Bought copy of Sid Lous
"Magpies" fr. Tyrrell
Sydney. 1/3. Meeting
of the Fauna Handbooks

Committee in my room
16 Sat.

USEFUL HANDBOOKS.

Flora and Fauna of South Australia.

Considerable progress has been made in the preparation of the handbooks dealing with the flora and fauna of South Australia. The work is being carried out under the auspices of the British Science Guild, and the publication of the series has been undertaken by the Government. Professor Howchin is engaged on the introductory volume for this important series. Professor Wood-Jones is dealing with the mammals. Our native South Australian mammals are of great interest and much scientific importance, and those who live in country districts may help this work by supplying information as to the prevalence of various forms found in their neighbourhood. Already many species are rare, our indigenous mammals being replaced by the foxes, rabbits, and so on. Mr. Edgar R. Waite is compiling the useful and important handbook of the South Australian fishes. Dr. R. H. Pullett is writing the volume on spiders, a much neglected, but important group. The difficult subject of the beetles has fortunately been undertaken by Mr. A. M. Lea. A long-felt want has been an up-to-date flora of South Australia, which Mr. J. M. Black has undertaken to produce. The orchids are to receive separate treatment from Dr. Rogers. Professor Cleland, Professor and Mrs. Osborn, Mr. Millar, and Mr. Samuel are working at other subjects for this series of handbooks. The honorary work thus undertaken in the public interest will be much appreciated by Nature lovers throughout the State, and welcomed by children whose pursuit of Nature is at present hampered by the lack of suitable books.

Built another rockery
with Claude's help.

17 Sun.

Fitted up a second gas
heater for Aquarium.
Watson came to dinner
& afterwards we had a
ride ('Scott') to Medindie
calling on 'the Countess'
the Prof's friend. Looked
over the large house
"Willyama" the German
everywhere apparent. No
expense has been spared.
Averies, fish pond, Pigeon
house, glass Aquarium
with fountain u.s.w.

19 Tues

Attended lecture by Wood-

Jones on Coral - Reefs
Seconded vote of thanks.
At a committee of the
Fauna & Flora handbooks
we constituted ourselves
the ~~publication~~ editorial
committee.

Prof's Cleland and
Wood - Jones
Dr. Puffine &
Self -

20. wed.

Attended evening
of Yorkshire Soc.
in association with
the Lancashire Soc.
a very pleasant enter-
tainment.

21. Thurs

Saw Govt. Printer re
Publication of handbooks
reported to subsequent
meeting of Committee.

22. Fri.

(see over.)

Attended meeting re
Protection of fauna &
flora of S. A. Lea's
birthday is Aug 10. (1868)

23 Sat.

Fitted up two drawers
in kitchen for Rose.
Exchanging (them) for
a set I had made,
now transferred to
the workshop. Bought
damaged Stereo Camera
at Cairns for £2.

NATIONAL PARKS.

FAUNA AND FLORA RESERVES.

In response to a circular-letter from the field naturalists' section of the Royal Society, and the fauna and flora committee, stating that much public interest is at present being taken in the protection of native fauna and flora in national parks, reserves, and forests, but it is believed that a more sensitive public conscience and outspoken expression of opinion is necessary to cause steps to be taken to preserve our wonderful heritage of animal and plant life, a large meeting of delegates from the Royal Society, the British Science Guild, Zoological and Acclimatisation Society, National Park Board, Fauna and Flora Board, Wattle League, Aquarium Society, Forestry League, Ornithological Association, Women's Non-Party Association, Society for the Prevention of Cruelty to Animals, Fauna and Flora Protection Committee, and Field Naturalists' Section, was held at the Royal Society's rooms on Friday evening. Mr. W. Herbert Phillipps occupied the chair.

The following resolution was carried unanimously:—"That this meeting resolve itself into a committee to organise a public meeting for the purpose of demonstrating the strong public opinion that exists in favor of more active and sympathetic steps being taken to set aside further areas of national reserves, and to support those reserves at present proclaimed for the preservation of the native fauna and flora." His Excellency the Governor will preside.

Professor Wood-Jones said there was no real reservation and no substantial protection in South Australia.

Messrs. Hugh Corbin, W. H. Selway, and others endorsed the opinion that there should be proper reserves, and that the laws with reference to the native fauna and flora should be effectively carried out. The delegates were asked to bring the matter prominently before their societies, so that there should be a large, representative, and interested audience at the public meeting, when it is to be hoped that the hearty support of the public will be obtained.

A committee was formed of the following (with power to add to their number):—Mr. W. Herbert Phillipps, Professor J. B. Cleland, Dr. Charles Fenner, Captain S. A. White, Messrs. Edgar R. Waite, H. Hugh Corbin, and Harold J. Finmiss, to make the necessary arrangements. Mr. W. Champion Hackett was appointed secretary.

25. Mon.

Gardener working.

26 Tues.

wrote Annual Report
of Museum. Raised the
Lebistes Aquarium, so
that the water - level
of all the tanks may
be the same. A system
of syphons will main-
tain the level in all.

27 Wed.

Meeting of Handbooks
Committee in my room.
It being intimated that
I shall be asked to
address the public meet-
ing on Fauna & Flora
protection. I jotted down

some notes on Australian
mammals.

28 Thurs

Took Rose to Art Gallery
lecture by Streeton, to
whom I reintroduced
myself.

29 Fri.

Meeting of Fauna pro-
tection Committee was
selected to speak on
Aug. 18. at Town Hall.

30 Sat.

Cut & threaded brass
piping of heater of
Aquarium.

31. Sun.

Fitted piping, much more
radiation than with glass.

August.

1. Mon.

Had to buy a sketch
by Barnes at £3.3.0.
Letter from Sydney,
mentions that Allan is
in hospital after a
slight operation. Wrote
to him.

2 Tues.

Wrote to David G. Stead
(see June 10.) Amandus
Heinrich Christian Feltz,
father of "Robert" died
to-day aged 81.

3. Wed.

Museum Committee,
No quorum. Claude
emptied the 1000 gal. tank

for cleaning purposes.

4 Thurs

The Stereo camera (see July 23) has a pair of Ross single lenses & a Thornton-Pickard shutter working behind the lenses. took the base-board runner to "Kodak" for repairs. Attended Art Gallery lecture.

5 Fri

Received £3. from the Canterbury Museum for Publications of Linnean Society. Ordered from G. E. Stekert to 151-155 West 25th St. New York the following.

Mess. Süsswasser-aquarium	\$.60
Langer. Meeres im Zimmer	.20
Samuel. Amateur Aquarist	.40
Zacharias Thier- u. Pflanz'welt	2.00
Pizette L' Aquarium	.40
Carbonnier L' Macropode. etc	.30

6 Sat.

Letter from Fanny Bowling

7. Sun.

To Bellchambers place
at Kumbung Scrub. I
rode the "Scott" Watson
& Fred Lumb the "B.S.A."
and sidecar. Roads very
rough & district hilly.
Watson examined the
foot of one of the
daughters also a little
grandson aged $2\frac{1}{2}$ in

whom the testes had
not descended.

8. Mon.

Booked for address to
Boys' Reformatory, Aug.
25th "Trawling".

9 Tues

Letter from Allan McC.
in reply.

10 Wed.

Preparing lantern slides
for "lecturette" as below.

11 Thurs.

Attended meeting. Royal
Society, S.A. Fenner on
Geology of Mt. Gambier.

12 Fri

Fresh water tank having
sprung a leak, had

it emptied and repaired
by Dean. plumber.

13 Sat.

wrote to Administrator.
Rabaul re the 410 gun
in hands of Les Moulton
last heard of going to
Duka.

National Parks and Fauna and Flora Reserves.

TOWN HALL, ADELAIDE.

PUBLIC MEETING

THURSDAY, 18th AUGUST, 8 p.m.

Speakers—

His Excellency the Governor, Sir Archibald Weigall.
The Right Hon. the Lord Mayor (Frank Moulden, Esq.)
Hon. G. R. Laffer, Commissioner of Crown Lands.
J. Gunn, Esq., M.P.
Sir William Sowden.

Illustrated Lecturettes—

"South Australian Flora and Fauna Reserves,"
Captain S. A. White
"Australian Mammals" Mr. Edgar R. Waite, F.L.S.
"Preservation and Protection in other Lands,"
Mr. Edwin Ashby, F.L.S.

A FULL ATTENDANCE OF SYMPATHISERS IS DESIRED.
ADMIT TWO. W. CHAMPION HACKETT, Hon. Sec

Went with Watson to
Austey's Hill but he
failed to get his new
two-stroke (Lewis)
more than half-way
up. We walked to the
top. Returned by way
of Payneham, calling
on R. Lemib who has
injured his knee.

14 Sun.

Watson came to dinner
together we again called
on Lemib.

15 Mon.

Made lantern slides,
(final) for Thurs. evening

16 Tues.

wrote notes for the

"lecturette". Received
£35 from N. Z. Refrig.
Co.

17. Wed

Received draft Insurance
Money from London,
£118. 1. 5 (for £100.
insured.) also birth
Certif. and Certif. of
death of my mother.
Attended Council of
Zool. Soc. Sent Sub.
to Linnean Soc £4.

18. Thurs. Took Rose to
Theatre. Annette Kel-
lermann + Company
diving + swimming
in a tank - etc.

18. Thurs.
Meeting in Town Hall
Fauna & Flora protection

—Our Mammals.—

Mr. Edgar R. Waite (director of the South Australian Museum) gave a lecture on "Australian mammals." He said that those who came to Australia from older countries were struck by the fact that this country possessed none of those objects of architectural historic interest which characterized the places from which they came. In this country, however, they were able to shake hands, in a sense, with those prehistoric men depicted by Lawson Wood. Mr. Waite described the characteristics of the stone age in Europe and its divisions, together with the stone implements which were typical of them. He showed portraits of two South Australian natives, "the highest type of Australian mammal." Next, the lecturer dealt in interesting fashion with the marsupials. He said the toolatch kangaroo had been supposed to be extinct, but recently Professor Wood Jones had made enquiries, and had found that a number of toolatch skins had been sent to Melbourne to be made into boot uppers. Some delightful pictures of Australian mammals were shown, many of them from photographs of extremely natural groups set up in the Museum. In conclusion, Mr. Waite said that in Australia, as they had primitive man with them, so had they the lowest order of mammals, and it behoved them to preserve this wonderful heritage. Several of the most wonderful types were threatened with extermination.

Though the slides had
been thoroughly warmed

They fogged badly &
owing to the great heat,
(a very long projection)
some of the slides
were cracked, both
film & cover glasses.

19 Fri.

Wrote K.A. Barnard
S. Af. Mus. re papers
on fishes (exchange).

20 Sat.

Overhauled the "Douglas"
& attended to several
points slummed over
by Gards.

21 Sun.

Made table for the
letter-press-

Australian Mammals.

Mr. Edgar R. Waite, F.Z.S., Director of the South Australian Museum, who had as his subject, "Australian mammals," said the periods of man since he had become recognisable as such on the earth were popularly divided into three—the stone age, the bronze age, and the iron age. He thought they had now arrived at a fourth period. He did not quite know how to designate it. Perhaps the oil age would do. (Laughter.) Some admirable views were given of tools made, ground and smoothed by the men of the stone age, and their uses in cutting wood and performing other tasks, were explained. Referring to the Australian aboriginals, the lecturer spoke of the interesting place they occupied in nature, and showed portraits of some living specimens. Kangaroos were shown and specimens of a variety of wallabies which, until lately, were supposed to be extinct. Nearly all the animals of Australia belonged to the marsupials, which at one time in the world's history were common on various parts of the earth's surface. In some respects the native porcupines were more interesting than the marsupials. They occurred in no other country, and they should be preserved for scientific purposes. Several groups of marsupials were referred to, their characteristics explained, and pictures of them in their native surroundings were shown. The lecturer said they had primitive man and the lowest order of mammals still with them. They were fast disappearing, however. They needed to control the extermination of these types. Scientific men the world over were looking to Australia to preserve for all time those types which existed in Australia alone. (Applause.)

Protection in Other Lands.

The following is as I wrote it with editorial additions.

, AUGUST 20, 1921.

S. ANTARTICA IN ADELAIDE.

A Museum Addition.

A unique and valuable addition has been made to the archives of the Adelaide Museum, through the efforts mainly of the energetic Director (Mr. Edgar R. Waite, F.L.S.). This is a realistic portrayal of an Antarctic scene, and the case in which it is contained is now the largest in that institution. The installation (which has been erected on the ground floor of the general court) has entailed much work, and considerable time has been occupied in attending to the more minute details connected with such a representation. All the features of the scene—the snow ice, and animals—are characteristically depicted, and the work reflects credit upon the director and his officers. On Friday afternoon a representative of The Register was afforded an opportunity to inspect the replica. The main scene is set in the neighbourhood of Cape Royds, and the features of that country are portrayed on a painted background, which represents Mount Erebus in eruption, partly obscured by a snowstorm. An ice fissure is seen at the foot of the hills on the left, and below this is the ice floe, on which seals and penguins are shown. A killer whale is ploughing through the water—so sheltered by the floe that pancake ice is forming. A tongue of the floe passes out of the case to the left, but a realistic representation of water appears in the front work of the case. To the right, where the human element is apparent, the scene changes to the area explored by members of the Australasian Antarctic Expedition, with tent, dogs, sleigh and a half-snowed up box, marked "A. A. E."

—Careful Presentation.—

The setting of the case represents an ice-field, in which a portion of the floe is seen. A rocky islet rises towards the centre. All the animals and birds, with two exceptions, were received from the expedition by the kind offices of Sir Douglas Mawson, the organizer and leader. The four species of antarctic seals are presented. A fine sea leopard occupies a prominent position, and has been mounted to reveal the formidable array of tricuspid teeth. Careful attention has been paid to the modelling of the tongue and throat. Similar teeth are also exhibited by the white or crab-eating seal. The rarer Ross seal appears to be contemplating a dive into the icy water beyond. A beautiful Weddell seal is lying asleep near its blowhole, oblivious of the loss of a companion whose remains lie near by. This animal was killed by the explorers for food, and the portion left forms a dominant object of the grouping, having attracted many birds to the vicinity. A party of Skua gulls or sea robbers arrived, as usual, on the scene first, and the birds are contesting for the flesh. Near at hand there is a skulking nelly or giant petrel, apparently intent on securing some of the spoil. On the highest point of the rocks another nelly has just alighted; but its vantage is about to be challenged by a third bird flying towards the rock. These three birds represent the different phases of colour met with—the white bird on the rock shows the antarctic plumage, the flying bird the black form, and the specimen on the ground represents the intermediate phase. Two antarctic petrels have also been attracted to the scene. One is flying round the corner of the rock; the other has already alighted, and is considering its chances of obtaining a titbit. A silver-grey petrel is resting on a ledge of rock, and a pair of white ice or snow petrels is close at hand. Two little black birds—Wilson petrels, which are allied to the still smaller storm petrel—are shown skimming over the water. The penguins are represented by the stately Emperor and a group of Adalias, one of which is on its nest. A group of birds around the remains of a dead seal attracts the attention of two dogs harnessed to a sleigh. The sitting dog, named Ross, was used on the Australasian Antarctic Expedition, and the standing animal is Serai, a Siberian dog of the illfated expedition of Capt. Robert Scott. At his direction it was given to Mr. Waite, and kept alive by the latter for several years in New Zealand and Adelaide.

—An Expert Opinion.—

A few other birds and animals may be added to the selection, but apart from that, the work, which has occupied Mr. Wait's attention for some time, is complete. It had been arranged that the late Mr. Gustave A. Barnes should paint the background but, at his decease that portion of the work was left in the hands of the director. Mr. Waite has been give admirable support by the staff of the museum, particularly Messrs. O. and J. Rau, the taxidermists, who were responsible for the excellent mounting of the animals and birds, and Mr. R. Limb, the formator, who prepared the rock work and snow scenes. Sir Douglas Mawson, who has seen the case, has expressed pleasure at the general association and mounting of the groups, and considers that the work of the director and his assistants faithfully portrays the conditions in Antarctica. Mr. Waite says that any success attained in the general plan of the case results from the fact that he was associated with the expedition in the first sub-antarctic cruise of the Aurora. He thus became acquainted with the habits of animals and birds in the southern lands.

THE CHILDHOOD OF ART.

Long ago Marcus Clarke found in the curious fauna of Australia "strange scribblings of nature learning how to write"; and to-day, on every hand, scientists from youthful Europe are impressing upon us the fascinating truth that in Australia, among the aborigines, is presented an open picture-book of the life which existed through countless centuries before the dawn of history. In the striking phase used by Mr. Waite in his lecture this week—"We may see and shake the hands of men who are still of the Stone Age." The Australian black has often been despised as little better than an animal, and to combat this popular contempt Dr. Basedow, always a friend to aborigines, arranged this week for

etc.

22 Mon.

Prof. W. K. Gregory of New York spent the morning with me. I attended Conservatorium concert, at night,

23 Tues.

Bought new Dunlop tyre for hind wheel of the 'Douglas' £3. and sent old one to be repaired.

24 Wed.

Gregory left, saying he wanted me to spend 12 months in N. York, 2 years hence to superintend the fitting of an Australian Court !!

AN AMERICAN SCIENTIST.

PROFESSOR GREGORY'S MISSION.

Professor W. K. Gregory, of the United States, spent Tuesday morning in an investigation of the contents of the big glass cases in the main hall of the Adelaide Museum. Professor Gregory is Associate Professor of Vertebrate Paleontology at the Columbia University, which is situated in New York. He adds to his other duties that of curator of comparative anatomy at the American Museum of Natural History. The latter institution has a scheme for creating "world halls." It wants to range the exhibits from a particular country in a particular hall. The mission of Professor Gregory to Australia is to give a push to the creation of an Australian hall at the American museum. He has been to the eastern States. He came to Adelaide a few days ago, and made straight for the Museum on North terrace to make the acquaintance not only of the director (Mr. E. R. Waite, F.L.S.) but of the paleontological treasures of which he has charge. Professor Gregory, in answer to questions, said that he was particularly interested in the steps which were being taken, and which were being urged to protect the marsupials of Australia. In Sydney and Brisbane he had spoken and lectured on the subject. He was glad to find that in each of the States provision had been made for the preservation of beasts and birds by the setting apart of reserves and the adoption of preventive laws. All that was good, and as a solid backing to it, the Museum was invaluable. "In this connection," he said, "I consider the Adelaide Museum a most inspiring place. The beautifully mounted groups of mammals and birds constitute a most effective appeal for the protection of your animals and birds so that they may be preserved for posterity. I was gratified to learn of your progress in the direction of the creation of a national reserve on Kangaroo Island. Paleontologists all over the world know of your great diprotodon skeleton, which is in your Museum, and they have all read the description of it given by the late Sir Edward Stirling. This diprotodon of yours is a gigantic relative of your wombat, and reminds one of some of the huge herbivorous animals of ancient

times in other parts of the world; such as the coryphodon of America and Europe, and the huge ground sloths of later times in South America." The professor went on to say that there were many ways to aid co-operation between museums, and one of the chief reasons of his visit to Australia was to endeavour to arrange reciprocity between the institutions in the Commonwealth and the American Museum of Natural History. A scientific conference will be held probably in New Zealand in 1923 of representatives of all the countries which fringe on the Pacific Ocean. Professor Gregory has a commission from the National Research Council of America to confer with societies in Australia with a view to furthering the interests of the conference. He has been well received.

25 Thurs.

Took photographs of the Antarctic case & at night, lectured on "trawling" to the boys of the Reformatory at Magill.

26 Fri.

Aquarium Soc. asked to assist with Flower Show. Sep. 23 + 24.

27. Sat.

Aquarium Society at
the Museum in after-
noon.

28. Sun.

Wet miserable day

29 Mon

wrote to Ethel Vause,
Huronville, re Electric
thermostat. Out of
sorts to day.

30 Tues.

At home a slight at-
tack (apparently) of
Malaria. wrote to Mrs
Waite to Wilfrid & to
Fanny Bowling.

31 Wed. "Aquatic Life" Jan.
contains my article on
"Pipe Frogs & Sea horses"

AUSTRALIAN MAMMALS

INTERESTING FACTS.

By Edgar R. Waite, Director of the Adelaide Museum. An address given at a recent meeting.

Those of us who are from the Homeland here miss those historical associations that lend such a charm to older countries. We have no abbeys and castles, no Roman roads, no arches built by the Normans, no Elizabethan mansions, and, fortunately, no battlefields, though even New Zealand can boast such. We are, however, living in a land but recently owned by a race whose period was contemporaneous with men who lived in Europe ages and ages ago, and it is wonderful to realize that we may here shake the hands of men who are still of the Stone Age, and whose Old World prototypes are depicted, in caricature, it is true, but still delightfully depicted in a blending of the ancient and modern by Lawson Wood. The period of man on the earth since he became recognisable as such is popularly separated into three ages, known as the Stone Age, Bronze Age, and the Iron Age. We are to-day surely entitled to add a fourth; we might perhaps call it the Oil Age. Two periods are recognised in the Stone Age, namely the Palaeolithic or older, and the Neolithic or newer Stone Age. Men of the older age chipped stones for use as tools, but they left them quite rough. There can be little doubt that the first tool was a hammer, a stone hammer, not hafted as we use it or withied as

our natives make it, but a stone held in the hand, with which the owner cracked nuts and bruised seeds. Is not a stone the first plaything or tool that our own children naturally make use of? To these early men there succeeded races who greatly developed the art of making tools; they ground and smoothed their stones and were then able to use them for chiselling wood for spearheads, for fashioning food bowls, hollowing canoes, and a variety of useful purposes. It is men of the Stone Age who are to-day living with us in this ancient land of Australia, a land of which few of us fully realize its wonders.

—Milk-giving Animals.—

I have been asked to speak about our mammals, and have therefore said these few words about the highest living native mammal in the land. The Australian aborigine. Long may he live as a representative of an age little known elsewhere excepting from the evidences of his handiwork. I show you portraits of two South Australian natives still living at Port Lincoln, "Dicky" and "Fanny." The latter lives in a tent by herself, and is allowed to keep three dogs for her protection. At the time of my last visit I counted 11 dogs. At intervals the police pay her a visit, and say, "Now, Fanny, which three do you wish to keep?" Coming now to the lower orders of mammals, otherwise milk-giving animals, we have an equally wonderful picture presented to us, one almost exactly comparable with that of the Australian native. You all know that the characteristic animals of Australia are the Marsupials, animals that produce their young in a very imperfect condition, and afterwards nurture them in an external abdominal pouch. The writer of a popular play introduces this characteristic in an amusing manner:—A man in England, named Jones, finds himself mistaken for an Australian bishop, who is expected to arrive at the house of his sister-in-law's. After being fervently kissed by all the nieces of the bishop, he is asked to say something about the manner in which the kangaroo carries its young. Now Jones has never been in Australia, and is not a very widely read individual, but he rises to the occasion by informing the bevy of girls that it is indeed a pretty sight to see the kangaroos hopping along, with their young ones on their backs! In past geological ages, marsupials were widely distributed over the world, but owing to changes they have entirely disappeared from the greater part of the earth, leaving a few

types in America, but retaining Australia as the stronghold of the order. I now show you an Americal opossum, which is the animal really entitled to the name, and was responsible for the phrase, "playing possum" probably before the time of Capt. Cook.

—Australia's Wonderland.—

Nearly all, but not quite all, the mammals of Australia belong to the great order of marsupials. Man, the whales of the high seas, the seals, and Dugong of the coasts are placentals, and so are the bats, the rats and mice, and the dingo of the land. Two other Australian mammals also are not marsupials, neither are they placentals, but they are even more interesting than the pouched animals proper, for they stand at the very bottom of the scale of mammals. I refer to the platypus and native porcupine, which in certain anatomical features resemble birds and reptiles. As you are aware, they lay eggs, and if for no other than scientific reasons they should be preserved for all time. Neither they nor any representative of the order of monotremes are found outside the Australian region, and once an animal has gone, it can never be recalled. When at the Chatham Islands, on one occasion, I photographed "Tommy Solomons," he was the last fullblooded survivor of the Moriories, who preceded the Maories of New Zealand, and consequently the last of his race. As we have primitive man still with us, so also we have the most primitive of the lower mammals, and it surely behoves us to do what we can to preserve this wonderful heritage. I have not, nor need I enumerate the many kinds of Australian animals that are fast disappearing as the result of the occupation of white man, either directly, or by the introduction of cats, foxes, and other vermin, the disappearance is everywhere admitted. It is the threatened danger of extermination of several of our most wonderful types that needs to be combatted and the knowledge of possibility of such disaster widely circulated. Scientific men the world over, who look to our primitive fauna for the explanation of many obscure biological problems, in the development of even man himself, expect us, the Zoologists of Australia, to preserve for all time, the Monotremes and those marsupials that Australia alone can supply.

September. 1921.

1. Thurs.

Bought new spindle,
cones & balls for back
wheels of "Douglas" to
replace worn parts. 17/-
Following from a N.Z.
paper sent by Mrs
Barnett.

A small fish, about six inches long, with silvery scales, was caught by fishermen in Lyttelton Harbour and was sent to the Canterbury Museum to-day. It has been identified by Mr G. Archey, assistant curator, as a silver Dory. It is related to the famous John Dory, but has not been recorded outside New Zealand waters. Mr Archey states that it is not common, but was reported by Mr E. R. Waite during the Government trawling expedition on the eastern coast of the Dominion in 1907, at Otago, Hawke's Bay, Poverty Bay, Bay of Islands and the Chatham Islands. Mr Waite expressed an opinion that the species lived in moderately deep water. This is the first time it has been reported from Lyttelton Harbour.

2. Fri.

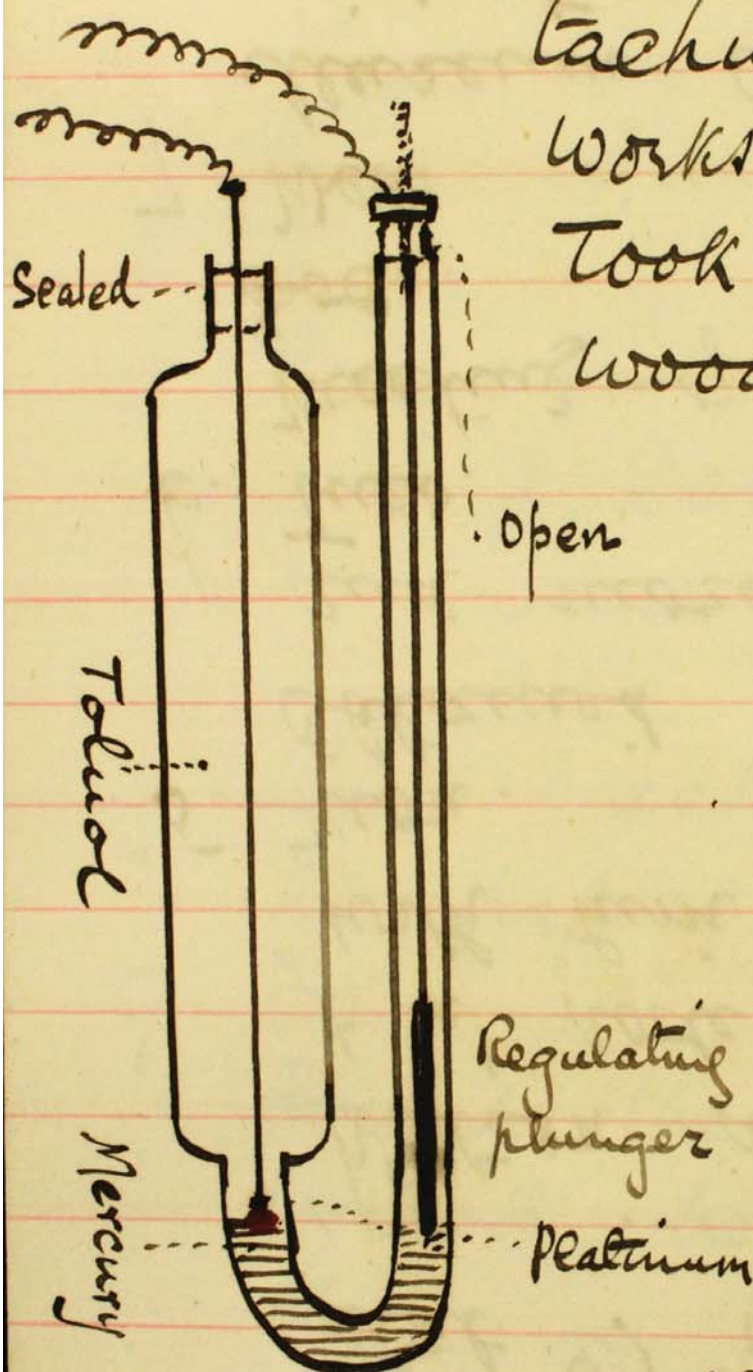
Rogers lengthened & bent
for me, a pipette for
an electric thermostat.

Meeting of Fauna & Flora
Committee at night.

3. Sat

Made thermostat for electric heating & tried it with temporary attachments. it

works splendidly. Took Rose to Norwood pictures



When heated to desired height, the expanding of the Toluol drives down

the mercury & breaks the contact

4 Sun.

Making permanent fittings for the Thermo stat! broke the glass

! !! !!! !!!!
Watson dined with us
& I rode the "Scott"
with him to Limb's.

5. Mon.

Obtained another pipette
and more Toluene.

6. Tues.

Meeting of Aquarium
Soc.

7 Wed.

Museum Committee
inspected the "Antarctic"
I exhibited photos of
it. One member was

under the impression
that they were really
of Antarctica & compli-
mented me on the
close way in which I
had copied nature!

8 Thurs

Sent Fish Catalogue to
G. J. Devincenzi
Museo Nacional
Uruguay,

wrote & asked him for
his papers on fishes. x.

9 Fri.

Found the thermostat
worked better in air
than in toluene (see
3rd).

.x. meeting, Royal Soc.

Obtained new tube for
Douglas and brought
from Pappui a $\frac{1}{32}$ hp.
motor for £1. it runs
on either D.C. or A.C.
and is more powerful
than the one I have:
it is an Edison.

10. Sat.

Cann has bought 40
theodolites discarded by
the Survey Dept. They
are very incomplete &
broken. I invested 15/-
getting one of the best.

11 Sun.

Fitted the motor into
an old electric meter
frame which just suits

it and adapted a pulley in lieu of the gearing.

12. Mon.

Paid Dean 7/6. altering tap in rain water tank

13 Tues.

Paid Norwich Union Ins. Co. premiums 14/10 + Sub. Nat Club. (2 years) 7/6. Attended demonstration assembling a 'Ford' Motor Car. 2 h. 20 m.

14 Wed.

Letter from Nellie Beale & replied. following sent by Annie Hall, Sydney. Cut from "Smiths Weekly" rather old news..

Snakes and a Handler of Them

Edgar Waite had some awkward experiences with snakes whilst he was curator of the Australian Museum. The specimens which used to arrive were not always true to label. One morning a case arrived which allegedly contained "green tree-snakes." The variety is harmless. Whilst Waite was extracting the three-snakes a black snake suddenly popped its head out. The skilled poisoner was secured before it had an opportunity to use its fangs. Waite, who is now Curator of the Adelaide Museum, is responsible for the latest work on Australian snakes. The work supersedes Krefft's. Since the publication of Krefft's many new species have been discovered both venomous and otherwise.

The varieties which are now known total about one hundred and twenty-four. About half of these are venomous. —"Vero."

Letter from Dr Vause.

Knowlton Tas. & replied

Bought motor jacket &
pants 33/6.

15. Thurs.

With Rose & Claude to
Agricultural Show in
the afternoon.

16 Fri

Wilfrid sent separate
photos of his children -
Monica and Mark.
Walson left for Melb.
subpoened for the Mate
Will case.

17. Sat.

Went to the Show in
afternoon, wet.

18 Sun.

Rain, and stormy all
day, Barometer, lowest
reading on record. viz.
29.73.

19. Mon.

Fitted up appliances
for the Show on 23rd
& 24th

20 Tues.

attended Ann. Meeting
Nat. Club & declined
nominations to Council
& Fauna & Flora Protection
Committee.

21. Wed.

Meeting of Yorks' Soc.
Read diary of my 50
miles walk with W.D.
Roebuck; 1898. Feb 5.

22 Thurs

attended meeting, Zool.
Soc. and intimated
intention to resign fr.
the Council (owing to
recent enactment of
the Museum Board)
The Council decided

The Board of Governors of the Public Library, Museum, and
Art Gallery of South Australia

requests the honour of the company of

.....
and friends at the Public Library Lecture Room, Institute
Building, on Thursday, September 29th, 1921, at 8 p.m.

when an illustrated address on

"The South Australian Museum Expedition to New Guinea and
New Ireland, 1918"

will be delivered by

Mr. Edgar R. Waite, F.L.S.

(DIRECTOR, SOUTH AUSTRALIAN MUSEUM)

ORDINARY DRESS

to write me a letter
so that I could lay
it before the Museum
Committee.

23 Fri.

Attended opening of
Wild-flower show and
demonstrated on the
aquarium apparatus.

24 Sat

Again attended and
demonstrated.

25 Sun.

Spent morning at my
own aquaria, cleaning
out, refilling etc. To
the Mitchells, South
Terrace, in afternoon

Jackman. Among the supplementary exhibits is a most interesting and instructive display provided by the South Australian Aquarium Society. The six aquaria shown constitute veritable water gardens, the delicate aquatic plants, with their graceful contours or ribbon-like foliage, vying in beauty with any land plant. The animal life is provided by the following individual members of the society:—Paradise fish, Mr. B. B. Beck; goldfish, Mr. J. W. Goodale, rainbow and rice fish, Mr. H. H. Hale; tree frogs, Mr. Gilbert Dutton; and Japanese newts, Mr. Edgar R. Waite (President of the society), who also shows a table of aquarium apparatus. Mr. Waite gave a demonstration with the exhibit of the Aquarium Society, which he will repeat this evening. Miss Ivy Roberts showed a collection of mineral specimens.

The show will be open from 10 a.m. to 10 p.m. to-day.

26 Mon.

A reminder of my
engagement for 29th!

PUBLIC LIBRARY, MUSEUM, AND ART
GALLERY OF SOUTH AUSTRALIA.

ILLUSTRATED LECTURE

on THURSDAY, September 29, 1921, at 8 p.m.

in the
PUBLIC LIBRARY LECTURE-ROOM, INSTITUTE
BUILDING,

Mr. Edgar R. Waite, F.L.S.,

on
"The South Australian
Museum Expedition to New
Guinea and New Ireland,
1918"

The Art Gallery will not be open.

HATELY W. MARSHALL, General Secretary.

N

[224]

Rats.

In 1916 Mr. Edgar R. Waite, Director of the South Australian Museum, directed attention in the column of The Journal to the presence in and around Adelaide of what is commonly known as the black rat. He pointed out that there are two different kinds of rats to be met with in the neighbourhood of habitations. The one is the black, and the other the brown or sewer rat. They have very different habits. It was the brown rat that was mainly responsible for the first spread of bubonic plague in Australia, and in view of the reintroduction of the disease to Queensland, incessant warfare should be waged against it. The fight, of course, will be an unequal one, for the "cunning of the rat" is a proverb, and its great numbers and its extraordinary reproductive powers create it a most formidable enemy. The brown rat is a great scavenger, and nothing in the way of food comes amiss to it. It lives in filth, and revels in it, which characteristics make it a horror, and it is a refuge for fleas, through which the virus of the plague is communicated to humans. We all know the brown rat, but his cousin the "black" fellow is, fortunately, not nearly so widely spread. The black rat is a much cleaner feeder than the brown rat, being more partial to fruit and grain. The two species are not on friendly terms, and the bigger brown chap is apt to attack and devour the smaller black one when he comes across him. Wherever both rats occur in the same building, the black occupies the upper portions, while the ground floor, cellars, and sewers harbour the brown. The black is partial to trees, and is very destructive to fruit and flowers. He will also consume such things as beetles and snails. He is a nest builder, and will make himself a residence with leaves and twigs like that of a bird's nest. The nests are usually larger than a football, and are used not only as nurseries but as permanent habitations,

Mr. Waite wrote:—"The brown rat is seldom troublesome in modern dwellings, where the covering and removal of garbage is regularly attended to, and where proper sanitary arrangements exist. The black rat is a cleaner animal in respect to its food and surroundings, and it may therefore be asked why we should make a special fuss about it when the less desirable brown rat is so firmly established in our midst. The answer is that the black rat is more of a house rat, and is therefore brought into closer personal connection with our food and ourselves, and, equally with the brown rat, has fleas quite as capable of transmitting disease as those of its larger relative."

27 Tues.

Bought for Bellchambers a $\frac{1}{2}$ pl. triple expansion camera. Thornton Pickard Special Ruby. 2nd hand for £5. 17. 6. and for self the 4 missing vols of my set of Roy. Nat. Hist @ 2/6 per vol.

28 Wed.

Throughton (Sydney) looked in on his way to Coldea.

arranged slides for
lecture tomorrow.

Harvey Johnston the
newly appointed Prof.
of Biology called to
see me.

29. Thurs.

Art Gallery series lec-
ture. // The report in the
30. "Advertiser" is so in-
fr-accurate that I wrote
a note of correction.
Sent letter of apprecia-
tion to Kelsey who was
responsible for the no-
tice in the "Register".
Sent prints from negs.
taken with Thornton -
Pickard to Bellchambers

Dore received a second
love letter sent by an
unknown admirer.

“Register”

TER, ADELAIDE, FRIDAY

OUR PACIFIC POSSESSIONS.

THE NATIVES AND THEIR HABITS DESCRIBED.

11 In the year 1918 some of the soldiers who had returned from the successful expedition to the German possessions in the Pacific brought back with them a large number of exhibits of native work and many mementoes of life in those interesting places, and these so fired the enthusiasm and raised the covetousness of the authorities of the Museum that the director (Mr. Edgar R. Waite, F.L.S.) and an assistant were commissioned to make a trip there and get together a collection of native specimens of all kinds. The visit was all important, and full of interest, but nothing much has as yet been said about it, as Mr. Deane is a diffident explorer, while the accommodation at the Museum is so taxed that the results of his mission have not yet been able to be exhibited. Thus all this time has passed without the people getting to know very much about the life on those islands, and the information that was revealed by Mr. Waite in the course of a lecture he delivered at the Public Library lecture room on Thursday evening was just sufficient to whet the appetite and make the large number of people present wish that it was only the first of a series. The title given to it was "The South Australian Museum Expedition to New Guinea and New Ireland, 1918." Professor Howchin presided.

The proceedings took the form more of an explanatory chat of a large number of splendid slides than a lecture, and provided a great addition to the anthropology of what used to be known as the Bismarck Archipelago. The places principally dealt with by the lecturer were the islands that, under German rule, were known as New Pomerania and New Mecklenburg, but which are now named New Britain and New Ireland. Mr. Waite explained how he got there, and what he did in the pursuance of his researches, and it was evident that, although the pictures showed the most lovely looking tropical country, the conditions were hard, for the weather often was as hot as 120 deg. in the shade, there were plenty of swamp land and morasses and their accompanying mosquitoes, crocodiles filled the streams, many of the islanders were cannibals, and treacherous holes in caves provided danger and excitement. A great majority of the pictures were of the natives, who are evidently a fine, big race, trouble but little about clothing, live in a primitive form, and peculiarly enough, seeing that they had been under German rule, speak a "pidgin" English with considerable facility. They are well fed, for yams, sago from the sago palms, fish, birds, the flying fox, snails, lizards, and fruit provide them with plenty of nourishment. Incidental to the catching of fish, Mr. Waite mentioned that the natives were able to catch enormous quantities of anchovies in the easiest manner and with most primitive appliances, and he considered that there was a very fine opening for the trade of anchovy fishing there. One means by which the explorer obtained specimens of fish was by getting a native to poison a pool, which was done with the beaten-up fibre of a certain poisonous tree that grows in the scrub. The result was a collection of a great variety of fish. All sorts of handnets were used by the natives, and it was explained that the streams and pools simply teemed with edible life. The natives there are capable and brainy, as was shown by the manner in which the residents of the high lands where there were no pools, obtain their water supplies. There is an enormous rainfall, and the natives by ingenious contrivances collect water as it runs off the trees. Speaking of the rainfall gave Mr. Waite the opportunity to explain that he was there in the dry season, and it rained every day. This, combined with a very hot sun, made the conditions somewhat difficult to bear.

—Peculiar Native Customs.—

It was a common habit with the natives, said the lecturer, to tattoo and cut themselves about. Many of these operations were performed soon after birth, when the bones were pliable, and, by means of bandaging and cutting with sharp stones, some most peculiar results were achieved—so far as he could see from those who had survived the process. The women were very fond of cutting themselves about the body in strange patterns thought to be beautiful, and their clothing was not of a nature which concealed any of these meretricious aids to attractiveness. It was the women who did most of the work, and all of it when the family parties were on the march, for the head of the party contented himself with the burden of his spear and allowed his wife to carry every other possession, including children, food, and water. The women were also utilized for keeping the roads in order. On New Ireland Island there was one magnificent road 130 miles long, and this was kept swept and in order by thousands of women from the various villages along the route. It was only in the high lands and the wilder portion of the islands that the natives were cannibals, and they made no secret to Mr. Waite of their liking for human food. The fact that they were all in very good condition seemed to show the traveller that the diet agreed with them. Many pictures were shown of the work of collecting coconuts, and the ease and rapidity with which the natives climb the 90-ft. trees were shown in some very fine photographs. It was explained that the major portion of the products of the islands were secured by Lever Brothers for soapmaking. As is the case in most countries where black men reside, music is a great form of enjoyment to them and horror to the white men. Pictures of the musical instruments were shown, and most of them were of the sort which create the greatest amount of ear-splitting noise. The only instrument akin to an— we use was a sort of flute, from which, Mr. Waite said, something approaching a musical noise emanated. Although streams of various sizes are numerous, the native is content with rafts of a very precarious type. Mr. Waite travelled on one of these for some 20 miles along a river, and both the dampness and the danger of the trip was realized when it was seen by the picture that the boat consisted merely of five bamboos laced together with a sculler at each end. It

served, however, its purpose, although it was attended by risk and excitement. One of the reasons that enabled Mr. Waite to get a fine collection of photographs was that the natives loved nothing more than to have their pictures taken. Not that they ever saw one developed, but the fact that they were able to pose before the white men was sufficient to give them great importance in the eyes of those who had not been so fortunate. Another strange thing was that the women disliked being taken in any but studio attire.

Mr. Waite made a charming narrator, and was able to convey to his hearers a most vivid picture of the conditions existing in the new Australian mandates in the Pacific. At the conclusion he was accorded a very hearty vote of thanks on the proposition of the Treasurer and Minister of Education (Hon. G. Ritchie), who expressed his great appreciation of the lecture.

"Advertiser"

R, ADELAIDE, FRIDAY,

E. NEW IRELAND.

A SOUTH AUSTRALIAN'S
IMPRESSIONS.

Under the auspices of the Public Library Board, a lecture was delivered at the Public Library on Thursday evening by Mr. Edgar R. Waite (Director of the Museum). His subject, illustrated with a comprehensive collection of lantern views, was "The South Australian Museum Expedition to New Guinea and New Ireland, 1918." Professor Howchin (chairman) presided.

The lecturer said he proposed to speak principally of New Ireland, formerly known as the Bismarck Archipelago, as in a previous address he had dealt considerably with New Guinea. The members of the South Australian forces who served in the islands he was to describe had brought many valuable specimens back to Adelaide, which had been presented to the Museum. The climate of New Ireland was not pleasant; it rained nearly every day, sometimes with a fall of $3\frac{1}{2}$ inches, and everything the expedition possessed was in a state of continual dampness. Though the natives had their distinctive language, the principal dialect used in Polynesia was "pidgin English." The natives were much addicted to gambling and theft; for the latter offence a large number were in gaol. They were delightful people to live with, but had no sense of values, being remarkably childish in their habits. Extremely fond of flowers, they loved to decorate themselves with the scarlet hibiscus and other native blooms. Cock-fighting was a favorite sport and the bird that got home first usually killed the other. There was seldom necessity for a second stroke. Cocoanut palms formed a striking feature of the landscape, and the tropical vegetation was rich and luxuriant. The cocoanuts on the trees were very different from the articles they were so familiar with in the shops, and in getting the nuts the natives displayed remarkable skill and daring. The production of copra was the principal industry, large plantations being owned by Messrs. Lever Bros. The island roads were excellent, and were kept in perfect order by women labor. Modern progress was evident, for motor bicycles were not unknown in New Ireland, where he had used one under difficult conditions. Swamps and morasses abounded; all of them full of mosquitoes. He had found the Germans in the island very hospitable, and from all of whom he had met much kindness had been experienced. One notable feature in connection with the natives was the prevalence of tropical sores which seldom seemed to heal, though the men and women were of fine physique. Cannibalism still existed, and in this connection the influence of the missionaries had effected a great improvement. The

people were adopting less scant garments than they formerly used, but sometimes a lady was completely clothed if she wore only a hat. (Laughter.) The natives, who in the majority of cases were well nourished, lived principally on fish, sago, yams, flying foxes, lizards, and snakes. Some wore unique armlets, made of clam shells, wonderfully fashioned, that took generations to make, and in hunting the dogs of the island were extremely clever in catching the ferocious wild pigs, but were often terribly lacerated in the process. Superstition was as rife as it was here. (Laughter.) If there was one thing more than another a native hated it was a crocodile, which they regarded as the inveterate enemy of their pigs.

The lecturer displayed a large number of interesting and original lantern slides depicting phases of native life, scenery, customs, and habits. The Minister of Education (Hon. G. Ritchie), in thanking Mr. Waite for an address of absorbing interest that all had enjoyed, expressed a hope that the management of the islands described by the lecturer would be carried out with better results by the Federal Government than their management of the Northern Territory. (Applause.)

NEW IRELAND.

From EDGAR R. WAITE, S.A. Museum:—I shall be obliged if you will be so kind as to publish the following notes on your report, appearing on September 30, of my lecture on the Museum expedition to New Ireland, &c. The only gambling I saw was on the boat travelling between Port Moresby and Rabaul, and the natives concerned were not from New Ireland. The New Ireland natives should certainly not be characterised as childish, but they exhibit some primitive or childish traits, which were described. As far as I am aware, the only person in the group who knows anything of cock-fighting is a Belgian planter, whose portrait I exhibited to emphasise a different allusion. Messrs. Lever Brothers do not own plantations in New Ireland, but, I believe, buy copra produced there. The adoption of clothing in the more settled districts is due to the example of the planters, and of its more generous proportions to missionary influence. The detestation of the crocodile is a personal factor, though pigs are occasionally taken.

Sent marked "Register"
to :-

Wilfrid

Kellie Beale.

Mrs Waite

Fanny Bowling

Rupert Denny

Mrs Barrett.

Bessie Welch.

Kellawell.

Vause.

} Eng

} Chch.

Syd

Hobart.

In that month there were 14 days over 100, and the average of the seven consecutive worst days was 103.9. It was the hottest January on record, with an average maximum shade temperature of 94.7. The hottest month on record, however, was February, 1857, when on 25 days out of the 28, the shade reading was over 90 degrees, and on twelve days of the month over 100. The longest spell of heat over 90 deg. was a fortnight in 1880 from January 27 to February 9. On nine of these days the reading was over 100 (seven consecutive days) and the maximum 106.

The reporter asked Mr. Bromley whether on the law of averages he expected February to be as hot as January. He replied, "Just about the same. In January we have reason to expect 11 days over 90, and five over 100 and in February 10 over 90 and 3½ over 100. The average number of times we have had spells of two days over 100 in a summer during 64 years is four, of three days 1.5, of four days 0.7 of five days 0.3, of six days 0.2, and of seven days 0.1. In other words we expect a succession of seven centuries only once in 10 years, but we have not had one since 1908."

The next one should be about due.

Another Century.

The Government Meteorologist said last night:—"Further fine and hot weather was experienced in South Australia today, and maximum temperatures ranged from 82 deg. at Eucla to 88 deg. at Fowler's Bay, to 107 deg. at Port Augusta. In the city the highest reading was 101.6 deg. This morning's chart still shows the persistence of the high-pressure system

Low Priced:

se, Clean,

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SOME MEMORABLE HEAT WAVES

THIS YEAR GOING STRONG

On the law of averages, a succession of seven consecutive days with the maximum shade thermometer reading over 100 deg. is about due.

Fortunately, however, the law of averages is a flexible one, and may not come into operation this summer.

Another hot day is expected to-day by the Government Meteorologist, but a cool southerly change is "gradually approaching."

Mr. Bromley is now prepared to admit that the present summer is a hot one. It would indeed have been futile to deny it yesterday, when a reporter threw out the challenge, because it seemed to have been hot so long that the previous cool spell was like a story of months past. "We have had quite a fair share of hot weather this summer," said the weather officer, and he had his cherished records to support him.

There have been already two heat waves when the mercury reached or passed the century mark on four consecutive days. The average of such spells per summer is 0.7—that is about two in every three years. This time we have had two in one summer, and at the present time we seem to be in a fair way to put up a third. It is necessary to go back to 1908 to beat this performance, but 1908 is a year of painful memory, when a postcard was published bearing a picture of a water-bag and the words, "Lest we forget" printed with a great string of "centuries" put up by the weather in January of that year. The present torrid summer is perhaps more trying, because we have had such a succession of comparatively cool summers. Not since 1912 had we had even four successive very hot days.

We have, however, still a long way to go to make a record in respect to long heat waves. Most people will be thankful to leave the questionable honor to the year 1858, when in January the shade heat exceeded 100 degrees on nine conse-

over eastern Australia; but an appreciable change in pressure distribution is noted over the western end of the continent. A southern depression is to the south of Eyre, and the monsoon still exists over inland Western Australia, but off the south-west corner another anti-cyclone has made its appearance, and according to this afternoon's reports appears to be maintaining its energy. Barometers in South Australia to-day have fallen slightly, indicating the eastward extension of the low pressure area. This latter will produce more hot weather in South Australia to-morrow, with east to north winds; but with the further approach of the western high, the cool southerlies on its advancing side should later extend over the far-western districts."

Progressive Readings.

The progressive shade readings at the Adelaide Observatory on Friday were:—

	Deg.
9 a.m.	89.0
10 a.m.	93.3
11 a.m.	93.5
12 (noon)	99.5
12.15 p.m.	99.0
1 p.m.	96.1
2 p.m.	99
3 p.m.	101.6

heat waves. Most people will be thankful to leave the questionable honor to the year 1858, when in January the shade heat exceeded 100 degrees on nine consecutive days. Look at this appalling list:—

January 22	103.0
January 23	110.7
January 24	109.0
January 25	113.0
January 26	116.3
January 27	112.2
January 28	107.8
January 29	109.4
January 30	107.1
Average for nine days	109.8

The 116.3 deg. stands unchallenged as the record maximum shade temperature. There was, however, another spell of nine days over 100, and the disturbing feature about that is that it was in February and March. It will upset the confidence of people who think that with the end of February there is certain relief from bad heat waves. The trying period referred to was in 1872, and this is the story of the sufferings of people during that terrible time:—

February 28	103.8
February 29	101.2
March 1	103.6
March 2	102.2
March 3	100.8
March 4	100.8
March 5	104.8
March 6	103.3
March 7	102.1

It was not so severe as the heat wave of 1858, but bad enough.

The month of January, 1903, too, has an unenviable record, for in that month there were five consecutive days over 110 deg., an absolute record of itself. The maximum thermometer readings during two heat waves in that month were as follow:—

January 1	97.7
January 2	105.0
January 3	110.9
January 4	107.9
January 5	108.3
January 6	108.8
January 7	108.4
January 8	90.3

Then there were three cool days followed by:—

January 12	93.6
January 13	102.2
January 14	107.3
January 15	111.5
January 16	110.4
January 17	110.3
January 18	110.5
January 19	110.9
January 20	92.4

In that month there were 14 days over 100, and the average of the seven consecutive worst days was 103.9. It was the hottest January on record, with an average maximum shade temperature of 94.7. The hottest month on record, however, was February, 1857, when on 25 days out of the 28, the shade reading was over 90 degrees, and on twelve days of

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The reporter asked Mr. Bromley whether on the law of averages he expected February to be as hot an January. He replied, "Just about the same. In January we have reason to expect 11 days over 90, and five over 100 and in February 10 over 90 and 3½ over 100. The average number of times we have had spells of two days over 100 in a summer during 64 years is four, of three days 1.5, of four days 0.7 of five days 0.3, of six days 0.2, and of seven days 0.1. In other words we expect a succession of seven centuries only once in 10 years, but we have not had one since 1906."

The next one should be about due.

Another Century.

The Government Meteorologist said last night:—"Further fine and hot weather was experienced in South Australia today, and maximum temperatures ranged from 32 deg. at Eucla to 88 deg. at Fowler's Bay, to 107 deg. at Port Augusta. In the city the highest reading was 101.6 deg. This morning's chart still shows the persistence of the high-pressure system