

1889.

NEW SOUTH WALES.

AUSTRALIAN MUSEUM.

(REPORT OF TRUSTEES FOR THE YEAR 1888.)

Presented to Parliament pursuant to Act 17 Vic. No. 2, sec. 9.

TO HIS EXCELLENCY THE GOVERNOR AND EXECUTIVE COUNCIL,—

The Trustees of the Australian Museum, incorporated by the Act 17 Victoria No. 2, have the honor to submit to your Excellency in Council, in accordance with the 9th section of that Act, this their thirty-fifth Annual Report.

1. The hours during which the Museum is open to the public have continued to be, as in previous years, from 10 o'clock until 5 o'clock (or in summer till 6 o'clock) daily, except on Sundays, when the hours are from 2 o'clock only till 5, and on Mondays, when it is closed for the necessary purposes of cleaning. The record of the number of visitors in 1888 shows an increase over the previous year, the total number being 128,365, as against 122,799 in 1887. The largest attendance on one day was 2,160, namely, on Thursday, 26th January; and the largest Sunday attendance was 1,058, on 8th January. The average daily number throughout the year was 332 on week-days and 756 on Sundays. The orderly conduct of the visitors on all these occasions, and the more than ordinary interest taken by a large portion of them in the exhibits, afford gratifying evidence of their value as affording not merely amusement, but also useful instruction.

2. The collections are still being increased, by Purchases, Exchanges, and Donations, and also by our Collectors. A list of these additions, under their respective heads, with a report by the Curator, will be found in the Appendices. An expedition, under the charge of Messrs. Cairn and Grant, to the Western Districts of the Colony was not very successful on account of the drought, but it resulted in obtaining for the Museum many specimens of Mammals and Birds, and other desiderata required for replacement of exhibits sent to the Adelaide and Melbourne Exhibitions and for exchanges with other Museums and kindred societies. A list of the most important of these will be found among the Appendices. Mr. Etheridge, our Palæontologist, visited the Limestone Caves at Cave Flat, junction of the Murrumbidgee and Goodradigbee Rivers, on behalf of the Museum, and obtained much interesting information. His report is published as an appendix. At the request of the New South Wales Commissioners for the Melbourne International Exhibition, we supplied to them a collection of natural history exhibits illustrative of the fauna of this Colony, and we also sent to them some relics of Captain Cook and implements of the Aborigines.

3. The Ethnological Hall has been opened to the public during the greater part of the year, and has proved, as anticipated, to be not the least interesting portion of the Museum.

4. The officers of the Institution are still suffering much inconvenience, and their work is in no small degree retarded, by the want of the additional accommodation which has been so long promised. We are glad to report, however, Parliament having voted to a considerable extent the necessary funds, that plans for the authorized works are in preparation; and we hope that considerable progress will be made with these alterations and additions during the current year. In the meantime the Curator has in anticipation vacated the rooms hitherto occupied by him; Parliament having made provision for his accommodation elsewhere.

5.

5. The following publications have been issued during the year :—

Catalogue of Fishes. Part I. Recent Palæichthian Fishes ; by J. Douglas Ogilby.  
Catalogue of Sponges ; by R. Von Lendenfeld.

The following works are in the Press, and will shortly be issued, while others are in preparation :—

Catalogue of Australian Birds' Nests and Eggs ; by A. J. North.  
Catalogue of Shells ; by J. Brazier.

Report on Lord Howe Island ; edited by the Curator and Mr. R. Etheridge, with special papers by the Scientific staff.

Guide to the Museum.

6. Annexed to this Report are the following Appendices .—

- I.—Annual Balance-sheet.
- II.—Attendance of Visitors.
- III.—Attendance of the Trustees.
- IV.—Acquisitions by Collection and Purchase.
- V.—Donations.
- VI.—Exchanges.
- VII.—Reports of Assistants.
- VIII.—Additions to the Library.
- IX.—Report on the Limestone Caves.
- X.—Publications of the Australian Museum.

The Common Seal of the Museum is affixed by order of the Board, this  
11th day of February, 1889.

S. SINCLAIR,  
Secretary.

ALFRED STEPHEN, (l.s.)  
Crown Trustee and Chairman.

APPENDIX I.  
BALANCE-SHEET for the year 1888.

	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.	
Balance from last year.....				1,890	8	4	Purchase of specimens .....				452	17	5	
From the Colonial Treasurer—							"    ethnological specimens .....				133	15	2	
Statutory endowment .....	1,000	0	0				"    books .....				463	9	11	
Parliamentary appropriation—							"    show-cases .....				327	9	4	
Salaries .....	£2,070						"    bottles .....				41	7	3	
Opening on Sundays .....	250						Furniture and repairs to buildings .....				42	6	6	
Collecting specimens .....	400						Collection of specimens .....				519	5	4	
Purchase of specimens .....	350						Travelling, freight, and carriage .....				81	0	2	
"    books .....	350						Preparation of Catalogues .....				186	6	8	
Catalogues .....	100						Salaries—							
Additional endowment ...	1,000						Curator .....	600	0	0				
Show-cases .....							Secretary .....	300	0	0				
Travelling expenses.....	100						Scientific assistants .....	1,170	0	0				
Specimen bottles .....	50						Ticket-writer and Registrar .....	200	0	0				
Ethnological collection ...	100						Taxidermists, attendants, &c.....	1,360	3	4				
Additional attendants.....	300						Attendants in new hall .....	300	0	0				
Quarters for Curator .....	200						Night watchman .....	100	0	0				
	5,270	0	0				Sunday services .....	243	8	4				
				6,270	0	0	Miscellaneous expenses—				4,273	11	8	
For Guides and Catalogues sold.....				4	5	3	Insurance .....	46	7	6				
From Fisheries Commission on account							Taxidermists' materials, stationery,							
of exhibits at Melbourne .....				11	1	3	ironmongery, &c.....	52	2	10				
							Sundries .....	84	12	8				
							Repaid to Colonial Treasurer.....				183	3	0	
							Exhibition expenses.....				80	6	2	
											153	1	9	
											£	6,938	0	4
							Balance .....				1,237	14	6	
	£			8,175	14	10					£	8,175	14	10

Examined and found correct, 16th January, 1889.

JAMES NORTON.  
J. BELISARIO.

APPENDIX II.

ATTENDANCE OF VISITORS DURING 1888.

	Week-days.	Sundays.	Totals.
January ... ..	14,594	4,806	19,400
February ... ..	6,844	2,840	9,684
March ... ..	5,731	2,866	8,597
April ... ..	6,925	3,840	10,765
May ... ..	8,627	2,333	10,960
June ... ..	7,214	3,400	10,614
July ... ..	5,855	4,055	9,910
August ... ..	5,782	3,458	9,240
September ... ..	5,421	3,364	8,785
October ... ..	7,235	2,332	9,567
November ... ..	6,759	2,651	9,410
December ... ..	8,041	3,392	11,433
Total for the year 1888...	89,028	39,337	128,365
Total for 1887 ... ..	85,931	36,868	122,799

## APPENDIX III.

## ATTENDANCE OF THE TRUSTEES DURING 1837.

*Crown Trustee.*

The Honorable Sir Alfred Stephen, G.C.M.G., C.B., M.L.C. 4

*Official Trustees.*

His Honor the Chief Justice	...	...	...	...	0
The Honorable the Colonial Secretary	...	...	...	...	0
The Honorable the Attorney-General	...	...	...	...	0
The Honorable the Colonial Treasurer	...	...	...	...	0
The Auditor-General	...	...	...	...	7
The Collector of Customs	...	...	...	...	0
The Surveyor-General	...	...	...	...	8
The Colonial Architect	...	...	...	...	0
The President of the Medical Board	...	...	...	...	11

*Elective Trustees.*

J. C. Cox, Esq., M.D., F.L.S.	...	...	...	...	12
J. Belisario, Esq., D.D.S.	...	...	...	...	3
A. Liversidge, Esq., F.R.S.	...	...	...	...	4
The Honorable Jas. Norton, M.L.C.	...	...	...	...	9
Sir Alfred Roberts, M.R.C.S., Knt.	...	...	...	...	6
H. H. B. Bradley, Esq.	...	...	...	...	9
Robert Hunt, Esq., C.M.G.	...	...	...	...	14
Charles Moore, Esq., F.L.S.	...	...	...	...	8
C. S. Wilkinson, Esq., F.G.S.	...	...	...	...	3
The Honorable P. G. King, M.L.C.	...	...	...	...	5
W. J. Stephens, Esq., M.A.	...	...	...	...	3
W. D. Campbell Williams, Esq., L.R.C.P., London, &c.	...	...	...	...	12
Number of Board Meetings during the year	...	...	...	...	17

## APPENDIX IV.

## ACQUISITIONS BY PURCHASE AND COLLECTION.

Mammalia:—17 species; 66 specimens collected. 35 species; 69 specimens purchased.  
 Aves:—158 species; 603 specimens collected. 91 species; 201 specimens purchased. 9 species;  
 77 specimens nests and eggs purchased.  
 Reptilia:—20 species; 53 specimens collected. 29 species; 29 specimens purchased.  
 Pisces:—129 species; 301 specimens collected. 89 species; 140 specimens purchased.  
 Mollusca:—10 species; 35 specimens purchased.  
 Insecta.—338 specimens purchased. One or two small collections collected.  
 Fossils:—111 species; 459 specimens collected. 56 species; 227 specimens purchased.  
 Minerals:—494 specimens purchased.  
 Ethnological specimens purchased:—

	Specimens.		Specimens
Queensland ...	152	Savage Island ...	1
German New Guinea ...	123	Mortlock Island ...	15
British New Guinea ...	30	Stewart Island ...	7
New Guinea ...	6	Greenwich Island ...	8
New Britain ...	11	French Island ...	7
Viti or Fiji Islands ...	5	Sir Chas. Hardy Island ...	2
Solomon Islands ...	21	Mortlock Island, Carolines ...	10
New Ireland ...	9	O'Brien Island ...	8
New Hebrides ...	21		
New Zealand ...	149		632
New South Wales ...	47		

## APPENDIX V.

## DONATIONS.

Donations.	Presented by—
<i>Mammalia.</i>	
1 Hydromys chrysogaster ... ..	Mr. R. W. Cox.
2 Hapalotis thompsoni ... ..	Mr. James Ramsay.
1 Hydromys chrysogaster ... ..	Mr. R. H. Garen.
1 Dasyurus maculatus ... ..	Mr. J. G. Greville.
1 Rat—Mus sordidus juv. ... ..	Mr. R. Grant.
1 Bactrian Camel—Camelus bactrianus ... ..	} Zoological Society of N.S.W.
1 Swinhoe's Deer—Cervus swinhoei ... ..	
2 Flying mice—Acrobates pygmaea ... ..	Mr. H. Bowditch.
1 Native Cat—Dasyurus viverrinus ... ..	Mr. Georgsen.
2 Wallaby—Halmaturus thetidis ... ..	} Mr. J. A. Thorpe.
1 Mouse—Antechinus unicolor ... ..	
2 Mice (Mus, sp.) ... ..	Mr. H. Newcombe.
1 Water Rat—Hydromys leucogaster ... ..	Mr. F. Noakes.
1 Acrobates pygmaea ... ..	Messrs. Felton and Noch.
1 Domestic Cat—Felis domesticus ... ..	Mr. Robert Lator.
1 Flying Mouse—Acrobates pygmaea ... ..	Dr. Faithfull.
1 Native Cat—Dasyurus (with young on teats) ... ..	Mr. J. J. Piper.
1 Flying Mouse—Acrobates pygmaea ... ..	Mr. A. W. E. Tom.
1 Antechinomys lanigera ... ..	} Mr. H. Newcombe.
1 Perameles nasuta ... ..	
1 Antechinus sp. ... ..	Mr. A. Clarke.
1 Antechinus, with young on pouch (Antechinus, sp.) ... ..	Mr. W. H. Oram.
1 Echidna—Trachyglossus aculeatus ... ..	Messrs. Etable & Co.
1 Fox-terrier pup ... ..	Mr. H. Alec.
1 Monkey—Cercopithecus, sp. ... ..	Mr. H. Nowlan.
1 Kitten ... ..	Mr. F. Royston.
2 Rats—Hydromys leucogaster ... ..	} Dr. Hurst.
1 Belideus breviceps ... ..	
1 Rabbit's skull ... ..	Mr. F. Veness.
1 Native Cat—Dasyurus viverrinus ... ..	Mr. R. M. Pearson.
1 Phalangista vulpina (albino) ... ..	Mr. H. G. Warde.
<i>Aves.</i>	
1 Australian Crane—Grus australasianus ... ..	Mrs. Bagnell.
1 White Crane, Herodias garzetta ... ..	Mr. John Lees.
1 Hawk, 1 Tern, 1 Pigeon, 1 Myzomela, 1 Flycatcher ... ..	Revd. — Gray.
1 Cuculus inornatus ... ..	Mr. James Coward.
1 Podargus strigoides ... ..	Mr. W. J. J. Baker.
2 Talegallus lathamii ... ..	Mr. M. Masters.
1 Elanus axillaris ... ..	Mr. Leslie Dyce.
2 Estrilda castanotis ... ..	Mr. R. Etheridge.
1 Polytelis barrabandi ... ..	Dr. Ramsay.
1 Eclectus polychlorus ... ..	Mr. Woodford.
1 Strix delicatula ... ..	} Miss Ramsay.
1 Melopsittacus undulatus ... ..	
1 Nycticorax caledonicus (young) ... ..	Mr. Hugh St. George.
1 Numenius minutus ... ..	Mr. Alfred Rose.
1 Indian Finch—Estrilda, sp. ... ..	Mrs. Belisario.
1 White Heron—Herodias symmatophorus ... ..	Mr. Randell Carell.
1 Swallow—Dicæum hirundinaceum ... ..	Mr. James Yardley.
1 Timunculus cenchroides ♂ ... ..	Mr. Jas. Coward.
1 Coot—Fulica australis ... ..	} Mr. T. Cadell.
1 Coot— " " ♀ ... ..	
5 Trichoglossus multicolor ... ..	} Mr. J. A. Thorpe
10 " chlorolepidotus ... ..	
3 Ailuroedus viridis ... ..	
1 Chibia bracteata ... ..	
1 Geocichla lunulata ... ..	
1 Mimeta viridis ... ..	
1 Pitta strepitans ... ..	
3 Ptilorhis paradisea ... ..	
2 Chalcophaps chrysochlora ... ..	
5 Orthonyx (temminckii) spinicauda ... ..	
9 Halcyon macleayi ... ..	
1 Corvus coronoides ... ..	
1 Dacelo gigas ... ..	
3 Macropygia phasianella ... ..	
1 Artamus leucogaster ... ..	
1 Pachycephala rufiventris ... ..	





Donations.						Presented by—
<i>Fishes.</i>						
1	Trichiurus	coxii	(upper jaw)	...	...	Mr. M. Bell.
1	Ophichthys	serpens	...	...	...	Bondi Aquarium Company.
2	Scyllium	anale	...	...	...	
1	Dactylopterus	orientalis	...	...	...	Mr. A. S. Bowman.
1	Eleotris	australis	...	...	...	Mr. R. Brannon.
1	Girella	cyanea	...	...	...	Mr. J. Brazier.
1	Parma	squamipinnis	...	...	...	Mr. M. C. Brown.
1	Therapon	richardsonii	...	...	...	Mr. R. Cameron.
1	Syngnathus	margaritifer	...	...	...	Mr. J. Cooper.
1	Hypeneus	signatus	...	...	...	Dr. J. Cox.
1	Plectropoma	annulatum	...	...	...	
1	Hypeneichthys	porosus	...	...	...	
1	Percis	coxii	...	...	...	
1	Glyphidodon	antjerius	...	...	...	
1	Cossyphus	unimaculatus	...	...	...	Mr. R. W. Cox.
1	Synaptura	nigra	(var.)	...	...	
2	Ctenolates	ambiguus	...	...	...	Mr. G. Emmanuel.
1	Therapon	richardsonii	...	...	...	
5	Gadopsis	marmoratus	...	...	...	Mr. M. Fleming.
1	Dicotylichthys	punctulatus	...	...	...	Mr. F. C. Fox.
1	Trigla	kumu	...	...	...	Mr. G. L. Goodman.
1	Acanthias	megalops	...	...	...	Rev. — Gray.
1	Priacanthus	macracanthus	...	...	...	
1	Trygon	kuhlii	...	...	...	Mr. F. Hatfield.
1	Gobius	leucostictus	...	...	...	
1	Belone	choram	...	...	...	Mr. F. C. Hogg.
1	Ophichthys	serpens	...	...	...	Mr. J. Hughes.
2	Chatoessus	richardsonii	...	...	...	Mr. J. Langley.
1	Rhinobatus	bougainvillii	...	...	...	
2	Acanthoclinus	littoreus	...	...	...	Mr. Leonard.
1	Hypeneus	signatus	...	...	...	
1	Cristiceps	aurantiacus	...	...	...	Mr. J. Lipman.
1	Gonorhynchus	greyi	...	...	...	Manly Aquarium Company.
1	Sillago	maculata	(deformed)	...	...	Mr. A. Marden.
1	Fistularia	serrata	...	...	...	Mr. O. Meyer.
1	Glyptauchen	panduratus	...	...	...	
3	Macquaria	australasica	...	...	...	Mr. G. W. Mortimer.
1	Paraseyllium	collare	TYPE	...	...	
1	Anema	inermis	...	...	...	Mr. R. Oatley.
1	Ophichthys	serpens	...	...	...	Mr. W. H. Paul.
1	Trigla	kumu	...	...	...	Messrs. Payten and Brown.
1	Trachypterus	jacksoniensis	...	...	...	
1	Serranus	dæmeli	...	...	...	
1	Trachypoma	macracanthus	...	...	...	
1	Plectropoma	cinctum	...	...	...	
1	Atypichthys	strigatus	...	...	...	
2	Girella	cyanea	...	...	...	
1	Glyphidodon	polyacanthus	...	...	...	
2	Labrichthys	inscriptus	...	...	...	
1	"	luculentus	...	...	...	
1	Coris	aygula	...	...	...	Mr. S. Pepper.
1	Ostracion	lenticularis	...	...	...	Mr. R. W. Robertson.
2	Chrysophrys	australis	...	...	...	Mr. A. M. N. Rose.
2	Percalates	montanus	...	...	...	
2	Gadopsis	marmoratus	...	...	...	Mr. Roderick.
3	Carassius	vulgaris	...	...	...	
1	Caranx	ciliaris	...	...	...	Mr. F. Sommers.
1	Achirus	pavoninus	...	...	...	Mr. T. Southwell.
1	Trichiurus	coxii	...	...	...	
1	Trigla	kumu	...	...	...	Hon. R. H. D. White.
1	"	"	...	...	...	
1	Dactylopterus	orientalis	...	...	...	Mr. Williams.
9	Oligorus	macquariensis	...	...	...	Mr. O. Wilshire.
7	Ctenolates	ambiguus	...	...	...	
23	Macquaria	australasica	...	...	...	
2	Therapon	macleayanus	...	...	...	
2	Aristeus	fluviatilis	...	...	...	
15	Gadopsis	marmoratus	...	...	...	Mr. J. Brazier.
2	Copidoglanis	tandanus	...	...	...	
<i>Tunicata.</i>						
2	Compound ascidians	...	...	...	...	Mr. J. Brazier.

Donations.						Presented by—
<i>Mollusca.</i>						
12	<i>Ostrea mordax</i> , Gld.	...	...	...	...	Mr. H. S. Hyam, M.L.A.
2	<i>Helix grayi</i> ...	...	...	...	...	Mr. Bell.
26	" <i>falconari</i> ...	...	...	...	...	} Mr. J. A. Thorpe.
12	" <i>richmondiana</i> ...	...	...	...	...	
6	" <i>muehlfeldtiana</i> ...	...	...	...	...	
71	" <i>fraseri</i> ...	...	...	...	...	
59	<i>Unio</i> , sp. ...	...	...	...	...	
29	<i>Donax deltoides</i> ...	...	...	...	...	} Mr. T. Whitelegge, Mrs. J. Parkinson.
274	Marine shells ...	...	...	...	...	
2	<i>Ovula birostris</i> ...	...	...	...	...	} Captain Braithwaite.
2	<i>Conus marmoreus</i> , 1 <i>Conus litteratus</i> ...	...	...	...	...	
	<i>Cypræa microdon</i> ...	...	...	...	...	} Mr. Jas. Clarke.
	<i>Columbella marquesa</i> ...	...	...	...	...	
2	<i>Cypræa decipiens</i> ...	...	...	...	...	} Mr. J. Mitchell.
2	<i>Succinea eucalypti</i> ...	...	...	...	...	
1	<i>Vitrina mastersi</i> ...	...	...	...	...	} Rev. F. E. Lawes.
2	Shells- <i>Cypræa talpa</i> and <i>C. lynx</i> ...	...	...	...	...	
<i>Polyzoa.</i>						
	<i>Bugula neritina</i> ...	...	...	...	...	Mr. Langley.
<i>Crustacea.</i>						
	<i>Parthenope horrida</i> ...	...	...	...	...	Rev. F. E. Lawes.
	<i>Alpheus edwardsii</i> ...	...	...	...	...	Mr. Dunshea.
	<i>Planes minutus</i> ...	...	...	...	...	} Mr. Langley.
	Several specimens of a species of <i>Caprella</i> ...	...	...	...	...	
1	<i>Alpheus edwardsii</i> ...	...	...	...	...	} Mr. L. Porcello.
2	<i>Cardiosoma hirtipes</i> ...	...	...	...	...	
2	<i>Pagurus</i> , sp. ...	...	...	...	...	} Rev. — Gray.
1	<i>Remipes testudinarius</i> ...	...	...	...	...	
1	<i>Astacopsis serrata</i> ...	...	...	...	...	} Dr. J. C. Cox.
1	<i>Palinurus hugelii</i> ...	...	...	...	...	
3	<i>Penæus monodon</i> ...	...	...	...	...	
1	<i>Thalamita crucifera</i> ...	...	...	...	...	} Mr. H. L. Carter. Dr. Ward.
	Tiger Prawn— <i>Penæus monodon</i> ...	...	...	...	...	
1	<i>Ibacus peronii</i> ...	...	...	...	...	} Dr. J. C. Cox.
2	<i>Alpheus edwardsii</i> ...	...	...	...	...	
1	<i>Halimus spinosus</i> ...	...	...	...	...	} Messrs. Payten & Brown Prof. R. Tate. Mrs J. Pratt.
	<i>Menaëthius monoceras</i> ...	...	...	...	...	
1	<i>Axius plectrorhynchus</i> ...	...	...	...	...	} Mr. J. A. Thorpe.
	<i>Ibacus peronii</i> ...	...	...	...	...	
2	Crabs ...	...	...	...	...	} Mr. J. A. Thorpe.
6	Barnacles— <i>Lepas</i> , sp. ...	...	...	...	...	
2	<i>Phymodius unguatus</i> ...	...	...	...	...	} Mr. Langley.
	<i>Goniodactylus chiragro</i> ...	...	...	...	...	
<i>Arachnida.</i>						
1	<i>Stephanopis</i> , sp. ...	...	...	...	...	Mr. J. F. Fitzhardinge.
	<i>Cermatia maculata</i> ...	...	...	...	...	Mrs. Podmore.
<i>Myriopoda.</i>						
1	<i>Heterostoma</i> , sp. ...	...	...	...	...	Mr. Geneolf.
	<i>Heterostoma sulcidens</i> ...	...	...	...	...	Mr. H. G. Greville.
1	<i>Heterostoma sulcidens</i> ...	...	...	...	...	Mr. H. J. Acland.
	<i>Heterostoma</i> , sp. ...	...	...	...	...	Mr. W. Murphy.
6	<i>Zephronia</i> , sp. ...	...	...	...	...	} Mr. J. A. Thorpe.
4	<i>Julus</i> , sp. ...	...	...	...	...	
8	Myriopoda ...	...	...	...	...	
<i>Insecta.</i>						
	Walking-stick Insect ( <i>Phasma</i> , sp., immature) ...	...	...	...	...	Mr. A. C. Jacob.
	Wood Moth ( <i>Cossus</i> , sp.) ...	...	...	...	...	Mr. Archibald Smita
	Ailanthus Moth— <i>Saturnia cynthia</i> ...	...	...	...	...	Mr. W. A. Gilder.
	Melolonthid larvæ (2 species), from roots of sugar-cane ...	...	...	...	...	Mr. A. J. Boyd.
6	<i>Schizorrhina australasie</i> , & larvæ ...	...	...	...	...	Mr. H. Belnare.
	Gigantic Spider ( <i>Mygale</i> , sp.) ...	...	...	...	...	Mrs. E. Mackay.
	Bronze-bodied Fly ( <i>Pangonia</i> , sp.) ...	...	...	...	...	Master A. Farr.
	Larva of <i>Cherocampa</i> sp. ...	...	...	...	...	Miss King.
	Australian Silk Moth— <i>Antheræa eucalypti</i> ...	...	...	...	...	Mr. C. E. Jones.
	Larva of <i>Chelepteryx collesii</i> ...	...	...	...	...	Mr. James Wall.
	Cocoon and Larva of <i>Chelepteryx collesii</i> ...	...	...	...	...	Mr. H. Smithurst.
	Walking-stick Insect ( <i>Phasma</i> , sp.) ...	...	...	...	...	Mr. Martin Green.

Donations.	Presented by—
<i>Insecta—continued.</i>	
Coccus, sp. ♀ ...	Mr. H. A. Burrows.
Larva of <i>Chærocampa scrofa</i> ...	Mr. W. G. Cole.
Larva of <i>Cæquosa triangularis</i>	Mr. W. A. Nicholas.
<i>Acripeza reticulata</i> ♀	Mr. M. Brown.
<i>Musca</i> , sp. ....	Mr. Steers.
<i>Protoparce</i> ( <i>Sphinx</i> ) <i>convolvuli</i>	Mr. J. M. Stephens.
1 <i>Libellula</i> , sp. ....	Mr. B. Lucas.
1 <i>Lamprima latreillei</i>	Mr. R. Cox.
1 <i>Chærocampa erotus</i>	Mrs. Hall.
1 <i>Scolia violacea</i> ...	
1 <i>Aerophylla titan</i> ...	Mr. J. Jacobs.
1 <i>Anoplognathus porosus</i>	Madame Friederich.
1 <i>Darala</i> , sp. ....	
1 <i>Doratiophora</i> (Cocoon)	
1 <i>Metamimas australasiae</i>	
12 Coleoptera ( <i>Buprestidæ</i> , <i>Lampyridæ</i> , &c.)	Mr. D. Hazlewood.
A small collection of Coleoptera, chiefly Longicorns and Phytophaga	Rev. I. Gray.
1 <i>Spilosoma fulvo-hirta</i> ...	Mr. L. F. Woolrych.
1 <i>Schizorrhina bakewelli</i>	Mr. J. Moore.
1 <i>Aerophylla typhon</i> ...	Mr. Young.
<i>Chærocampa scrofa</i> ...	Mr. Jos. Power.
<i>Lamprima latreillei</i> ...	Madame Friederich.
18 Lepidoptera, from N. America, including— <i>Vanessa antiopa</i> , Linn;	
<i>Pyrameis cardui</i> , Linn; <i>Pyrameis carye</i> , Hübn; <i>Pyrameis huntera</i> ,	Right Rev. Bishop of Sydney.
Fabr; <i>Pieris protodice</i> , Bois; <i>Samia cecropia</i> ; <i>Telea polyphemus</i> ;	
<i>Smerinthus occidentalis</i> , &c. ....	
2 <i>Doratiophora casta</i> ...	Mr. F. G. Lender.
Processionary Caterpillars and nest...	Mr. E. G. Dyce.
<i>Chelepteryx collesii</i> , ♀	Mr. C. Beverley.
14 <i>Carabidæ</i> ...	Mr. J. A. Thorpe.
20 <i>Passalidæ</i> ...	
3 <i>Tenebrionidæ</i> ...	
1 <i>Anostostoma australasiae</i> ♂	
<i>Podacantha typhon</i> ...	Mr. C. A. Keram.
6 <i>Haltica</i> , sp. ....	Mr. H. Smithurst.
A Cricket— <i>Anostostoma australasiae</i>	Mr. H. G. Gornale.
Pupa of <i>Chærocampa</i> , sp. ....	Madame Friederich.
<i>Hyperion schroetteri</i> ...	Mr. Geo. Bridle.
Parasitic dipteran ( <i>Nyctemera</i> , sp.)...	Mr. J. P. Creed.
1 <i>Lestes bombylans</i> ...	Mr. A. H. Belfield.
1 <i>Doratiophora lewini</i> (Larva)	Miss King.
1 <i>Lestes bombylans</i> ...	Right Rev. Bishop of Grafton.
1 <i>Myrmeleon</i> , sp. ....	Mrs. H. A. Podmore.
1 <i>Trygonalys fasciapennis</i> ♀	Mr. J. Burrows.
1 <i>Cæquosa triangularis</i> ...	Mr. J. Simpson.

*Echinodermata.*

3 <i>Ophiocoma brevipes</i> ...	Mr. Langley.
<i>Centrostephanus rogersii</i>	Mr. W. Steers.
100 <i>Asterina calcar</i> ...	Mr. J. A. Thorpe.
Star fish— <i>Ophidiaster germanii</i>	Messrs. Payten and Brown.
<i>Ophiomyxa australis</i> (Sand star)	Mr. A. M. Lea.
<i>Holothuria</i> , sp. ....	Mr. W. H. Rowsale.
2 <i>Colobocentrotus atratus</i>	Mr. Ralph Hargrave.

*Vermes.*

6 Marine worms	Mr. Langley.
17 Marine worms	Mr. J. A. Thorpe.
Intestinal worm (from a sea snake)...	Capt. G. Drevar.
<i>Platurus scutatus</i> ; from the stomach of the Tiger shark, <i>Galeocerdo rayneri</i>	

*Cœlenterata.*

4 Aleyonarian Corals— <i>Spongodes</i> , sp.	Capt. Braithwaite.
6 Hydrocorallines— <i>Distichopora nitida</i>	
1 <i>Lytocarpus</i> , sp. ....	Revd. — Gray.
<i>Antipathes</i> , sp. ....	Dr. W. A. Haswell.
1 <i>Antipathes spiralis</i> ...	Dr. McGregor.
<i>Distichopora coccinea</i> ...	Miss M. M. Rowsell.

Donations.		Presented by—
<i>Palæontological Specimens.</i>		
1 Spirifera tasmaniensis ... ..		Dr. J. C. Cox.
1 " convoluta ... ..		
1 " duodecemcostata ... ..		
1 Platyschisma oculus... ..		
1 Productus brachythærus ... ..		
1 Stenopora crinita .. ..		Mr. Fitzgerald.
1 Meiolania platyceps, portion of head and fragments of bones		
Pelvis, teeth, and other bones of Diprotodon		Mr. J. McMaster.
Ramus of large Wombat		
Jaws, teeth, and bones of extinct sp. of Macropus...		
Ramus of Nototherium mitchelli. Adult. ... ..		
5 pieces of shell Agglutinate (Post-Tertiary) ... ..		
3 Sanguinolites from the Permo-Carboniferous beds, near Maitland		Mr. Jas. Smith.
Dietyophyton ... ..		Mr. Achd. Smith.
2 Spirifera stokesii ... ..		Messrs. Ward and Howell.
1 " tasmaniensis ... ..		
1 " " ... ..		Mr. T. Illidge.

*Minerals, Rocks, &c.*

Specimens of pyrites on wood, &c. ... ..	Mr. John Henry.
Orthoclase felspar with mica... ..	Mr. John Lovett.
Auriferous quartz with free gold and pyrites	Mr. W. Lovegrove.
Tin ore, mispikel, and gem sand, containing quartz, topaz, tourmaline, zircon, sapphire, &c. ... ..	Mr. Chas. Wooller.
Decomposed clay rock ... ..	Mr. Chas. Wooller.
Dyke rock containing pyrites ... ..	Mr. E. Lawless
Stalactites of limonite ... ..	Mrs. E. Selkirk.
Red clay and red sand probably baked by lava stream ... ..	Mr. H. G. Gornalle.
Pyrolusite (manganese ore)—basalt ... ..	Mr. Véseey.
Crystals of augite ... ..	
Hollowed prisms of ferruginous clay ... ..	Mr. Cocks.
Galena and copper pyrites with silver and gold ... ..	Mr. J. Begelhole.
Galena, zincblende, &c. ... ..	Mr. B. Bryant.
Galena and copper pyrites, &c.; quartz and felsite breccia, with pyrites, copper pyrites, and blende; quartz with galena and light yellow blende; crystalline marble; hematite; idocrase or vesuvianite; the same decomposed; epidote; granite; pegmatite; diorite; arkose; jasper; chalcedony in diabase; black slate with glossopteris; coal; chalcopyrites; zincblende; barytes and buratite, &c. ... ..	Mr. H. G. Gornalle.
Auriferous quartz showing gold from Gympie ... ..	Dr. E. P. Ramsay.
Copper glance and malachite in diabase ... ..	Mr. A. Chrystal.
Gray copper in quartz ... ..	
Red oxide of copper with azurite and malachite ... ..	
Chalcopyrites ... ..	Mr. J. T. Fischer.
Basalt, hornblende granite, sandstone, white topaz, skeleton of quartz infiltrated in fissures of a mineral (probably pyrites) subsequently removed ... ..	
Quartz with encrinite stems ... ..	Mr. A. F. Macdonnell.
Galena from White Rock—gem sand including sapphires, green sapphires, zircons, &c. ... ..	Mr. H. G. Gornalle.
Granite containing small garnets ... ..	Mr. W. Lovegrove.
Chalcedony, stream tin and quartz pyrites ... ..	Mr. J. G. Lodwidge.
Crystallised calcite ... ..	Mr. R. Hargraves.
Silver gossan, galena and carbonate of lead ... ..	Mr. A. Duboisé.
Pyrites and gossan, with quartz ... ..	Mr. Nathan.
Porphyritic rock ... ..	Mr. G. Gander.
Auriferous quartz ... ..	Mr. P. Davies.
" specimens... ..	Mr. W. Tanner.
Quartz with magnetic pyrites, pyrites and gold ... ..	Mr. J. Traverton.
Mispikel and gold in quartz—auriferous mispikel with calcite	Mr. J. Charlton.
Auriferous quartz, gold in honeycombed opaline quartz—and quartz with mispikel ... ..	Mr. T. Poile.
Magnetic pyrites and quartz—pitchstone ... ..	Mr. W. E. Mitchell.
Specimens of argentiferous galena, mispikel, and oxide of lead, black slate with fenestella,—specimens of graphite... ..	Mr. C. Wooller.
Specimens of calcite; quartz with specks of pyrites and copper pyrites; chlorite, &c. ... ..	Mr. T. R. Hancock.
Gray shale with specks of mica ... ..	Mr. H. Lord.
Limonite showing gold (silicious) ... ..	Mr. Jas. Smith.
Coralloidal chloride of silver with moss gold; crystallised chloride of silver, &c. ... ..	Mr. R. Hellyer.



Donations.	Presented by—
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*Ethnological and Historical Specimens—continued.*

5 Stone tomahawks ... ..	} Mr. C. W. T. Brown.
1 Flat sharpening stone ... ..	
Mummied skin of the head of a child, from Quito, Peru, South America	} Mr. W. L. Fenwick.
1 Wicker basket from Marshall Islands ... ..	
1 Basket from Gilbert Islands ... ..	} Dr. J. C. Cox.
Fork for eating human flesh from Fiji ... ..	
Corfu race card—Autumn, 1883—on pink satin	} Miss Stephen.
Indenture of the time of Queen Elizabeth, 1602 ... ..	
Colonial land grant by Governor Hunter, 1796 ... ..	} Baron A. von Hugel.
Patent of Knighthood by Queen Victoria, 1846 ... ..	
Rough draft of a deed of partnership entered into for the purpose of printing and publishing a newspaper in Melbourne, to be called the <i>Port Phillip Gazette</i> , which paper has now merged into one of the principal daily papers in Melbourne. The water-mark on this draft is 1832. Prepared by the late J. S. Clarke, Esq., solicitor ... ..	} Miss Taylor.
	} Sir Alfred Stephen, G.C.M.G. C.B., &c.
	} Mr. W. S. Clarke.

*Numismatics.*

English testoon or shilling, Edward VI, 1547 ... ..	Mr. G. T. Hall.
Bronze coin, 1 cent, Indo-Chine Française Republique Française ... ..	Mr. B. Lucas.
Bronze medal in commemoration of visit of Colonial and Indian Representatives to the city of London, 25 June, 1886 ... ..	} London Corporation.
Centennial bronze medal, in commemoration of the completion of the first 100 years of settlement of the Australian Colony ... ..	
	} Centennial Celebration Commission.

*Photography.*

"Cook's tree." A Tamarind tree planted by Captain Cook on Point Venus, Tahiti, to mark the spot from which he viewed the transit of Venus in 1768. (Photo. taken in 1883) ... ..	} Mr. C. T. Burfitt.
10 original proof photos. of New Guinea, &c. ... ..	
Photographic view of their exhibit ... ..	Mr. Theo. Bevan. Messrs. Ward & Howell.

*Books for the Library.*

Reports of Meetings ... ..	} Marine Biological Association, Plymouth.
Journal, Nos. 1 and 2 ... ..	
Plan of Building ... ..	} E. Thurston.
Report, Marine Fauna of Rameswaram ... ..	
Catalogue of Batrachia Salientia and Apoda ... ..	} Government Central Museum, Madras.
Report, 1887-8 ... ..	
Odontornithes; O. O. Marsh ... ..	} British Museum.
Icones Fossilium Sectiles; Konig ... ..	
Catalogue of Fossil Mammalia. Part 5 ... ..	} Societa Adriatica, Trieste.
A number of Geological Publications ... ..	
Catalogue of Birds, vols. 12 to 14 ... ..	} Prof. T. Kirk, New Zealand.
Guide to Shell and Starfish Galleries ... ..	
Catalogue of Fossil Reptilia and Amphibia ... ..	} Indian Museum, Calcutta.
Bolletino, vol. 10 ... ..	
Insects Noxious to Agriculture; Maskell ... ..	} A. W. Waters, Microscopical Society, King's College, Lond.
Catalogue of the Moths of India: Cotes & Swinhoe. Parts 2 and 3 ... ..	
Notes on Economic Entomology, No. 2 ... ..	} Museum of Archaeology, Cambridge.
Annual Report, 1886-7 ... ..	
Preliminary Account, Wheat and Rice Weevil; Cotes ... ..	} Department of Mines.
Bryozoa from N.S.W., &c. Parts 1, 2, and 3 ... ..	
Third Annual Report of Antiquarian Com., 1887 ... ..	} The Museum, Bergen. Dr. O. Finsch, Bremen.
Annual Reports, 1886-7 ... ..	
Geology of Vegetable Creek Tin-mining Field ... ..	} Director Geol. Survey of India, Calcutta.
Mineral Products of New South Wales and other Publications, 1887 ... ..	
Memoirs Geological Survey of N.S.W.; Palaeont. Nos. 1 and 2 ... ..	} American Museum of Natural History, New York.
Catalogue of Exhibits of Metals, &c. ... ..	
Aarsberetning for 1886 ... ..	} Academy of Science, San Francisco.
Abnorme Eberhauer ... ..	
Memoirs, vol. 24. Part 1 ... ..	}
Palaeontologia Indica, ser. X, vol. 4, part 3; ser. XIII, vol. 1, part 7 ... ..	
Manual of the Geology of India. Part 4 ... ..	}
Records, vol. 18, part 4; and vol. 21, parts 1, 2, and 3 ... ..	
Annual Report, 1886-7 ... ..	}
Bulletin, vol. 1, title and index; vol. 2, No. 1 ... ..	
Bulletin, vol. 2, Nos. 6, 7, and 8 ... ..	

Donations.	Presented by—
<i>Books for the Library—continued.</i>	
Proceedings, 1887. Parts 1, 2, and 3 ... ..	Academy of Natural Science, Philadelphia.
„ 1888. Part 1 ... ..	
Quarterly Report, July, September, 1887 ... ..	S. Tegima, Director Tokyo Library, Tokyo, Japan.
Lepidoptera of Ceylon. Sup. part 13 ... ..	
Aboriginals of Victoria; Smyth ... ..	Government of Ceylon, per Agent-General, N.S.W.
Prodromus Zoology of Victoria. Decade 16 ... ..	
Annual Report, 1885. Parts 1 and 2 ... ..	Public Library of Victoria.
Catalogue of North American Birds ... ..	
„ „ Mammals ... ..	Smithsonian Institute, Washington.
Progress of Geography ... ..	
Smithsonian Miscellaneous Collections, vol. 24 ... ..	Biological Society, Washington.
Review of American Birds ... ..	
Bureau of Ethnology, 2nd and 3rd Reports ... ..	Geological Survey of Canada, Ottawa.
U.S. National Museum Bulletins, 17 to 32 ... ..	
Proceedings, vols. 1, 2, and 4 ... ..	B. Friedlander & Son, Berlin.
Catalogue Canadian plants. Part 3 and 4 ... ..	
Map of a portion of British Columbia ... ..	Soc. des Naturalistes, Moscow.
Summary Report, 31 December, 1887 ... ..	
Annual Report, new series, vol. 2 ... ..	F. W. F. Danker, Rockhampton.
Fauna and Flora des G. von Neapel Mon, 15-16 ... ..	
Bulletin, 1887, part 4; 1888, part 1 and part 2 ... ..	Colonial Museum, New Zealand.
Account of Mount Morgan ... ..	
22nd Annual Report ... ..	Professor Parker, London.
Reports Geological Explorations, 17 and 18 ... ..	
Index to Reports ... ..	Royal Society, N.S.W.
Studies in Biology, No. 3 ... ..	
Structure and Development of the Skull in Mammalia. Parts 2 and 3 ... ..	Linnean Society, N.S.W.
Journal and Proceedings, vol. 21, part 8; vol. 22, part 1 ... ..	
Proceedings, vol. 2, part 4 ... ..	Belgian Consul, Melbourne.
Abstracts of Proceedings, 1883-8 ... ..	
Proceedings, vol. 3, parts 1, 2, and 3 ... ..	Royal Society of Victoria.
Mém. de l'Acad. Roy. des Sciences, parts of vols. 24, 36, 37, 43, and 47 ... ..	
Proceedings, vols. 2 to 5 and 7 to 22 and 24, part 1 ... ..	Manchester Microscopical Society.
„ vol. 24, part 2 ... ..	
Transactions, vol. 1, part 1 ... ..	Mechanics' Institute, Goulburn.
Report and Transactions, 1883-7 ... ..	
Annual Report ... ..	Auckland Institute and Museum.
Report, 1887-8 ... ..	
Reports of Meetings ... ..	Natural History Society, Rockhampton
Bulletin, vol. 13, Nos. 6, 7, 8, 9, and 10; vol. 16, part 1; vol. 17, No. 1; vol. 1, Nos. 11 and 12; vol. 2, Nos. 2 and 4; vol. 3, Nos. 3, 6, 9, and 16; vol. 5, Nos. 2 and 6; vol. 7, Nos. 1, 9, and 10; vols. 14 and 15 ... ..	
Memoirs, vol. 2, Nos. 4, 5, and 6; vol. 5; vol. 10, title page; vol. 15 ... ..	Museum of Comparative Zoology, Harvard University, Cambridge, Mass.
Canadian Record of Science, vols. 1, 2, and 3, parts 1 and 2 ... ..	
Mathematische and Naturwissenschaftliche Mitt. Heft, 1 and 6, 1888 ... ..	Natural History Society, Montreal.
Puffin Island Biological Station ... ..	
An ideal Natural History Museum ... ..	K. P. Pruessischen Akad. de Wissenschaften, Berlin.
A number of Pamphlets ... ..	
Vid. antea—Insects injurious to Agriculture; Maskell ... ..	Dr. Herdman, Victoria University, Liverpool.
S. African Butterflies, vols. 1 and 2; Trimen ... ..	
Reports, 1887, 1887-8 ... ..	Crown Lands Department, Wellington, N.Z.
Victorian Government Prize Essays, 1861 ... ..	
A number of Geological publications ... ..	South African Museum.
Verhandlungen, 1887 ... ..	
University Dissertations, 1887 ... ..	Government of Victoria.
Sixth Report of Mineralogist. Parts 1 and 2 ... ..	
Mittheilungen, yr 12, Nos. 4, 5, 6, 7, 8, 9, and 10 ... ..	R. Etheridge, Junr.
Transactions, vol. 2 ... ..	
	K. K. Zoologisch-Botanisch, Gesellschaft-Wien.
	Rector and Senat. K. Rhemischen Fr. Wil. Universitat, Bonn.
	California State Mining Bureau, Sacramento, Cal.
	Ornithologischen Vereines, Vienna.
	Meriden Science Association, Meriden, Conn.

Donations.	Presented by—
<i>Books for the Library—continued.</i>	
Transactions, vols. 1, 2, 4, 6, and 7, Nos. 1 and 2 ...	Academy of Sciences, New York.
Annals, vols. 1 and 2, parts 3 and 4, Nos. 3 and 4...	
Catalogue of Chinese Exhibits at Fisheries Exhibition ...	Dr. E. P. Ramsay.
Ramsay: Tabular List of Australian Birds...	
Reports of the U.S. Geological Surveys west of the 100th meridian, vols 2 and 3, sup. 4, 5, 6, and 7 ...	U.S. Geological Survey, Washington.
Reports of the U.S. Geological Explorations of the 40th parallel, vols. 1, 2, 4, 6, 7, and Atlas ...	
Calendar for 1888 ...	University of Sydney.
Abhandlungen und Berichte, 1886-7 ...	K. Zoologischen and Anthropologischen Ethnographischen Museums, Dresden.
Journal, vol. 2, parts 1, 2, and 3 ...	College of Science, Imperial University, Yokohama, Japan.
17th Annual Report ...	Zoological Society, Philadelphia
Proceedings and Transactions, vol. 7, parts 1 and 2 ...	Nova Scotian Institute of Natural Science, Halifax, N.S.
Proceedings, vols. 5, 6, 7, 8 (part 2 only), and 9 ...	Royal Physical Society, Edinburgh.
Transactions, vol. 20, 4th series ...	Highland and Agricultural Society, Edinburgh.
G. W. Griffin: N.S.W., her Commerce and Resources ...	Government Printer, Sydney.
Warren: Strength and Elasticity of Timber ...	
Coghlan: Wealth and Progress of N.S.W. ...	
Wood: Mineral Products ...	
Wilkinson: Geology ...	
Mackenzie: Coal Seams ...	
David: Vegetable Creek Tin-mining Field ...	
Clarke: Sedimentary Formations ...	
Fitzgerald's Orchids, vol. 2, part 3 ...	
Report, Department of Public Instruction, 1886-7 ...	
Annual Reports, 1883 and 1886 ...	Department of Geology and Natural History, Indianapolis, U.S.A.
White: Ancient History of the Maori ...	N.Z. Government, per Sir Jas. Hector.
Tregear: Ayrrian Maori ...	
Grey: Polynesian Mythology ...	
Larnach: Handbook of N.Z. Mines...	
Sherrin: Fishes of N.Z. ...	
Hector: N.Z. Geology ...	
Buller: Birds of N.Z. ...	
Sounds, Lakes, Rivers, and Thermal Springs ...	
Smith: Kermadec Islands ...	
Smith: Eruption of Tarawera ...	
Proceedings, vol. 10 ...	Royal Society of S.A.
Proceedings, 1887 ...	Royal Society of Tasmania.
Catalogue of Minerals ...	School of Mines, Ballarat.
Report, 1887 ...	
Handbook of Information ...	Burns, Philp & Co.
Proces verbaux July, December, 1887 ...	Société Royal Malacologique de Belgique.
Proceedings, vols. 4 and 5, parts 1, 2, and 3 ...	Royal Society of Queensland.
Darwinism ...	Professor F. W. Hutton, Christchurch.
Annales, tomes 1 and 2, parts 1 and 2 ...	Museo Nazionale de Costa Rica, San Jose.
Proceedings, vol. 12, 13, and 14 ...	Royal Society of Edinburgh.
Olliff: Short Life-histories of nine Australian Lepidoptera ...	A. S. Olliff.
Report for 1887 ...	Montrose Natural History and Antiquarian Association, per Honorable J. Inglis.
Report Geological Features, Mackay District ...	R. L. Jack, Brisbane.
Bulletin, 1888, Nos. 1, 2, 3, 4, 5, and supplement ...	Comite Geologique de la Russe, St. Petersburg.
Mémoires, vol. 5, Nos. 2, 3, and 4 ...	
" vol. 6, No. 12 ...	
" vol. 7, Nos. 1, and 2 ...	K. K. Naturhistorischen Hofmuseums, Vienna.
Annales, band 3, No. 3 ...	Musee d'Hist Nat. de la Belgique, Brussels.
Bulletin, tome 5, No. 1 ...	
Annales, tome 14 ...	

Donations.	Presented by—
<i>Books for the Library—continued.</i>	
Maclurian Lyceum, Nos. 1, 2, and 3... ..	} R. L. Foster, Pine-street, New York.
Zoological Nomenclature, natural selection Ornith, Union Bulletin 1 and 2 ... ..	
Catalogue of Books ... ..	} H. Fotheran & Co., London.
Proceedings, vol. 19 ... ..	
Calendar for 1888-89 ... ..	} The University of Glasgow.
Report, 1887 ... ..	
Amtliche Berichte, Nos. 1, 2, 3, and 4, 1886 ... ..	} K. Kunstsammlungen, Berlin.
Verhandlungen, 1883, part 2; 1887, parts 1 and 2 ... ..	
Berichte, 1888 ... ..	} Naturhistorisches Vereins, per Dr. A. Krautz, Bonn.
Transactions, vol. 16, part 2 ... ..	
Mémoires, tome 9; liv. 1 and 2 ... ..	} Senckebergische, Naturforschende Gesellschaft Frankfurt, A.M.
Annual Reports, 11 and 12 ... ..	
Miscellaneous Publications, No. 12 ... ..	} Asiatic Society of Japan, Yokohama.
Reports, vols. 3, 8, and 12 ... ..	
Catalogue of Books ... ..	} Société des Naturalistes, Kien, Russia.
Miscellaneous Papers... ..	
	} U.S. Geological Survey.
	} Science and Art Museum, Dublin.

## APPENDIX VI.

## EXCHANGES.

Received from—	Forwarded to—
	Professor Collett, Christiana, Norway. (8, 24.)
Mammalia:—4 species—4 specimens. Aves:—20 species—21 specimens.	Mammalia:—3 species—3 specimens.
	P. H. Carpenter, F.R.S., London. (20.)
Named duplicates.	Echinodermata:—7 species—19 specimens.
	Dr. Carroll, Sydney.
	Photography:—24 prints of ethnological specimens.
	Blackmore Museum, Salisbury, Wilts. (38.)
Cretaceous fossils promised.	Pisces:—2 species—2 specimens.
	James Dall, New Zealand. (12, 25.)
Aves:—1 species—1 specimen. 8 Birds Nests and Eggs. Mollusca:—18 specimens.	Aves:—14 species—14 specimens. Mollusca:—54 species—148 specimens. Minerals:—1 specimen.
	Educational Museum, Tokio, Japan.
	Aves:—125 species—169 specimens. Minerals:—Small collection.
	Fisheries Commission of New South Wales.
	Pisces:—89 species—161 specimens.
	L. S. Foster, New York. (32.)
Books:—6 vols.	Books:—2 vols.
	Royal Zoological Museum, Florence, per Professor Giglioli.
Reptilia:—1 species—2 specimens.	

## EXCHANGES.

Received from—	Forwarded to—
Robert Grant, Lithgow. (11.)	
Mammalia :—13 species—15 specimens. Aves :—46 species—89 specimens.	Aves :—2 species—2 specimens.
G. W. Griffin, Consul for U.S.A. (17.)	
	Minerals :—50 specimens.
Tasmanian Museum, Hobart. (31, 37.)	
Mammalia :—3 species—5 specimens.	Photography :—19 negatives of fossils. Bottles :—192 glass stoppered. Boxes :—Glass top.
R. H. Ivy, Sydney.	
Mammalia :—2 species—2 specimens. Aves :—53 species—64 specimens.	
Hon. Jas. Inglis, M.L.A., for Montrose Museum, Scotland. (15.)	
	Aves :—23 species—24 specimens. Mollusca :—42 species—109 specimens. Echinodermata :—16 species—30 specimens. Fossils :—17 species—25 specimens. Ethnology :—30 specimens.
Ed. Lovett, Croydon, England. (18.)	
Specimens illustrating the manufacture of Gun Flints, &c., at Brandon.	
Prof. M'Coy, Melbourne. (22.)	
Specimens lent for comparison.	Reptilia :—2 specimens.
Prof. M'Intosh, Scotland. (14.)	
Fishes and Crustacea promised :—Pamphlets.	Mammalia :—46 species—135 specimens.
F. M'Knight, Melbourne. (5, 33.)	
Fossils :—11 species—28 specimens.	Fossils :—19 specimens.
Mines Department, Sydney. (26, 41.)	
Ethnology :—1 specimen.	Fossils :—2 casts. Books.
L. Montagnat, New Caledonia. (27.)	
Minerals :—Collection of.	Book.
N.S.W. Commission, Centennial International Exhibition, Melbourne.	
	Mammalia :—5 species—9 specimens. Aves :—61 species—103 specimens. Album of Photos. of Fishes.
Natural History Society Museum, Newcastle-on-Tyne. (16.)	
Mollusca :—4 type specimens shells.	
H. Payten, Sydney. (34.)	
Aves :—2 species—2 specimens.	Aves :—1 species—1 specimen.
A. S. Olliff. (29.)	
Book :—1 vol.	Book :—2 vols.
Sir Richard Owen, England. (19.)	
	Fossils :—3 casts.
Queensland Museum, Brisbane. (10.)	
Fossils :—2 casts.	Fossils :—4 casts.
U.S. National Museum, Washington.	
	Reptilia :—10 species—20 specimens. Pisces :—39 species—88 specimens.
H. Smithurst, Brisbane. (7.)	
Reptilia :—9 species—13 specimens. Insecta :—Small collection.	Aves :—2 species—2 specimens.
H. Suter, New Zealand. (30.)	
Mollusca :—30 specimens.	



MINERAL DEPARTMENT.—(*F. Ratte, Mineralogist*).—1,406 numbers (corresponding to about 1,930 specimens) have been entered in the Register of Minerals. Leaving out retrospective registrations and purchases, there are 750 numbers, half of which represent minerals and rocks collected and the other half, donations. Three-fourths of the donors are amateur collectors, with whom correspondence is kept up, or persons interviewed in the course of collecting excursions and visits. This shows progress compared to last year, and demonstrates that a system of correspondence, combined with occasional collecting excursions, will ultimately succeed in filling the gaps of a colonial collection, methodically arranged, and illustrating such mineralogical features necessary to the education of the people and the advance of science.

PALEONTOLOGICAL DEPARTMENT.—(*R. Etheridge, jun., Palaeontologist*).—The chief work consisted in naming and registering new acquisitions, and naming portions of the old collection. Of specimens registered, 227, including 56 species, were obtained by purchase; 130, including 20 species, by exchange; and 459, including 111 species, were collected by members of the Museum staff. Of these a collection from the Shoalhaven district of the marine fossils of the Coal Measures; Post-Tertiary bird bones (small Moa) from New Zealand, partly purchased from and partly presented by Mr. Illidge; bones of Marsupials Thylacine skull; and, lastly, the Geological specimens, consisting chiefly of bones of *Meiolania*, obtained from Lord Howe Island by the Museum Collecting Party in 1887, are among the most important. In addition to the foregoing a large series of shells and other fossils has been collected from the Tertiary strata of Muddy Creek, Hobson's Bay, and other localities. A part of these were collected by Mr. A. J. North, and the remainder received in exchange from Mr. T. Worcester. This collection will be referred to in detail in the next Annual Report. Those portions of the old collection determined consist of the higher-Permo-Carboniferous Mollusca and some of the Australian Secondary fossils. During a portion of June Mr. Etheridge was engaged with Mr. J. Mitchell in a preliminary exploration of the Murrumbidgee Caves at Cave Flat, on which a report has already been made.

CONCHOLOGICAL DEPARTMENT.—(*J. Brazier, Conchologist*).—During the year the purchases have been 8 from New Zealand, Mauritius, Lord Howe Island, Phillipine and Solomon Islands, Port Jackson, New Hebrides. The most important collection purchased is a foreign one; it embraces nearly all European species, including the land and fresh water forms. *Nautilus Pampilius* with the animal in spirits was secured from the New Hebrides. Specimens presented number 16 from New Hebrides, New South Wales, and Western Australia; among them are two rare *Cypræa decipiens*, E. A. Smith, obtained in deep water at Cape Joubert and Amphinome Shoals, N. W. Australia. Exchanges received are *Helix Sileeri*, Angas; *Angasiana*, Pfr. *Flindersi*, Ad & Angas; *Eyrei*, Angas; typical specimens from the collection of the late Mr. George French Angas, from the Natural History Society Museum, Barras Bridge, Newcastle-upon-Tyne, England; and a small collection of land shells from New Zealand.

ETHNOGRAPHICAL DEPARTMENT.—(*J. Brazier, Ethnologist*).—During the year ending 31st December, 1888, a number of specimens (632) have been purchased to fill up the many gaps in this department. Specimens have been secured from Queensland, British and German New Guinea, New Britain, Viti, or Fiji Islands, Solomon Islands, New Ireland, New Hebrides, New Zealand, New South Wales, Niue, or Savage Island, Mortlock, Stewart, Greenwich, French, Sir Charles Hardy, and O'Brien Islands, Caroline Group. The number of specimens presented during the year has been only nineteen, from New South Wales, Viti or Fiji, Gilbert, Marshall, and Solomon Islands. The exchanges number two, viz., portion of a large tree with native carvings, New South Wales, from the Department of Mines; large square of tappa cloth, from Viti or Fiji, Dr. Williams. Although the Ethnological Hall was formally opened by Sir Alfred Stephen, G.C.M.G., Crown Trustee of the Museum and Chairman of the Board of Trustees, in January last, the ceremony was but a concession to the exigencies of the Centenary celebration, and so much had to be done before all the contents were properly arranged and catalogued that the place was closed at the end of the week and remained so until the 16th of October, when it was finally thrown open for inspection. The hall is already too small for the collection, which must grow from year to year. The hall itself is 70 feet by 30 feet, lofty and well ventilated, with galleries all round.

HISTORIOLOGICAL DEPARTMENT.—(*J. Brazier, Ethnologist*).—During the year five old historical documents have been presented, viz.:—Indenture of the time of Queen Elizabeth, 1602; Colonial Land Grant by Governor John Hunter, 1796; Patent of knighthood by Queen Victoria, 1846, to Alfred Stephen, Esq., presented by Sir Alfred Stephen, G.C.M.G.; Race Card, printed on satin, Corfu, 1833, Miss Taylor; Rough draft of a deed of partnership entered into for the purpose of printing and publishing a newspaper in Melbourne to be called the "Port Phillip Gazette," which paper has now merged into one of the principal daily papers in Melbourne, prepared by the late J. S. Clarke, Esq., Solicitor; this is understood to be the first printed newspaper in Melbourne, the only previous one being a written one; the watermark on this draft is 1835. Two coins and one medal have been presented, viz.:—English Testoon or Shilling, Edward VI, 1547, silver; and bronze one cent, Indo-Chine Française. Centennial Medal, bronze, in commemoration of the completion of the first hundred years of Australian settlement, has been received from the Centennial Celebration Commission.

E. P. RAMSAY,  
Curator.

APPENDIX VIII.  
ADDITIONS TO THE LIBRARY.

Reg. No.	Book.
CLASS A—ZOOLOGY.	
3004	Balfour (Ed.) Agricultural pests of India, and of Eastern and Southern Asia, injurious to man and his products. 1 vol. Svo. London, 1887.
3122-25	Bronn (H. G.) Lethæa Geognostica. 3 vols. Svo. and atlas 1 vol. Folio. Stuttgart, 1850-86.
3197	Buller (Walter L.) Manual of Birds of New Zealand. 1 vol. Svo. Wellington, 1882.
3005	Cantor (Theod.) Catalogue of Malayian Fishes. 1 vol. Svo. Calcutta, 1850.
3361	Cobbold (T. Spencer.) Parasites: A treatise on the Entozoa of Man and Animals. 1 vol. Svo., London, 1879.
2786	Colton (Buel P.) Elementary Course of Practical Zoology. 1 vol. Svo. Boston, 1887. Conchylien Cabinet ( <i>see</i> Martini und Chemnitz).
2781	Darwin (Chas.) The Structure and Distribution of Coral Reefs, 2nd Ed. 1 vol. Svo. London, 1874.
2825	Darwin (Chas.) Expression of the Emotions in Man and Animals. 1 vol. Svo. London, 1872.
2826	Darwin (Chas.) Insectivorous Plants. 1 vol. Svo. London, 1875.
2827	Darwin (Chas., assisted by Francis Darwin.) The Power of Movement in Plants. 1 vol. Svo. London, 1880.
2940	Delprino (M. le chev.) La Nouvelle Sericiculture. 1 vol. Svo. Acqui, 1867.
3175	Suites a Buffon (Aug-Dumeril). Histoire Naturelle des poissons ou Ichthyologie Générale. Vol. 1, parts 1 and 2, vol. 2 and atlas. 4 vols. Svo. Paris, 1865.
3276	Fowler (Rev. Canon). Coleoptera of the British Islands. Vol. 2, Staphylinidæ. 1 vol. Svo. London, 1888.
2866	Gemminger and B. de Harold. Catalogus Coleopterorum. Tome VIII. 1 vol. Svo. Munich, 1871.
2782	Green (J. F.) Oceanic Birds, with a Preface by A. G. Guillemard and notes on the Skinning of Birds by F. H. N. Guillemard. 1 vol. 4to. London, 1887.
2927	Griffiths (Edward). General and particular Descriptions of vertebrated Animals. Order Carnivora. 1 vol. Svo. London, 1821.
3371	Hanley (Sylvanus). Ipsa Linnæi Conchylia. 1 vol. Svo. London, 1855.
3297	Leach (Wm. E.) Zoological Miscellany: being description of new or interesting Animals. Illustrated by R. P. Nodder. Vol. 2. 1 vol. Svo. London, 1885.
3181	Leach (W. E.) Malacostraca podophthalmata Britannicæ; or description of British Species of Genus Cancer as have eyes on footstalks. Illustrated by James Sowerby. 1 vol. 4to. London, 1815.
2788	Lutken (Chr. Fr.) Dyreriget. Un Haand og Lærebog til brug ved hojere læreanstalter. 1 vol. Svo. Kjobenhavn, 1881-2.
3008	Martini & Chemnitz. System. Conchylien Cabinet, Bd. VII, Abt 2. Spondylus und peption. C. H. Kuster and W. Kobelt.
3224	Band VII., Abt. 3. Die Gattung Avicula. W. Dunbar. 1 vol. 4vo. Nürnberg, 1872.
2817	Maskell (W. M.) An account of the Insects noxious to Agriculture and Plants in New Zealand:—The Scale Insects (Coccididæ). 1 vol. Svo. Wellington, 1887.
2818	Nicholson (H. A.) A manual of Zoology. Seventh edition. 1 vol. Svo. London, 1887.
3230	Parker (W. K.) Structure and Development of the Skull in the Mammalia:—Part 2, Edentata; Part 3, Insectivora (from Phil. Trans. Part 1, 1885). 1 vol. 4to. London, 1885.
2836	Perrier (Edmond). Revision de la Collection de Stellérides du Museum d'Histoire Naturelle de Paris (from Archives de Zoologie expérimentale et générale. Tome 4, 1875). 1 vol. Svo. Paris, 1875.
3225	Ramsay (E. P.) Tabular list of all the Australian Birds at present known, showing the distribution of the species over the continent of Australia and adjacent Islands. 1 vol. 4to. Sydney, 1888.
3372	Ridgway (Robert). A Nomenclature of Colours for Naturalists, and Compendium of useful knowledge for Ornithologists. 1 vol. Svo. Boston, 1886.
2844	Seebohm (Henry). The Geographical Distribution of the Family Charadriidæ or the Plovers, Sandpipers, Snipes, and their Allies. 1 vol. 4to. London, 1888.
3195	Sherrin (R. A. A.) Handbook of the Fishes of New Zealand. 1 vol. Svo. Auckland, 1886.
2843	Skuse (F. A. A.) British Stalk-eyed Crustacea and Spiders. 1 vol. Svo. London, 1887.
2787	Spolia Atlantica. Om nogle pelagiska Annulata, ved G. M. R. Levrnsen. 1 vol. 4to. Kjobenhavn, 1886.
3234	Thurston (Edgar). Catalogue of the Batrachia Salientia, and Apoda, of Southern India. 1 vol. Svo. Madras, 1888.
2828-9	Trimen (Roland). Assisted by J. H. Bowker. South African Butterflies. A Monograph of the Extra-tropical Species. Vol. 1. Nymphalidæ. Vol. 2. Erycinidæ and Lycænidæ. 2 vols. Svo. London, 1887.
2970	Tryon (G. W.) Manual of Conchology; Structural and Systematic. Vol. 9. Solaridæ, Ianthinidæ, Trichiropidæ, Scalarotidæ, Cerithidæ, Rissoidæ, Littorinidæ. 1 vol. Svo. Philadelphia, 1887.
2971	Tryon (G. W.) Manual of Conchology; Structural and Systematic. Second series, Pulmonata. Vol. 3. Helecidæ, vol. 1. 1 vol. Svo. Philadelphia, 1887.
3021	Waterhouse (Chas. Owen). Aid to the Identification of Insects. Vol. 1. 1 vol. Svo. London, 1880-2.

Reg. No.	Book.
CLASS B—BIOLOGY, &c.	
2867	Evans (John). The Ancient Stone Implements, Weapons, and Ornaments of Great Britain. 1 vol. 8vo. London, 1872.
2868	Evans (John). The Ancient Bronze Implements, Weapons, and Ornaments of Great Britain and Ireland. 1 vol. 8vo. London, 1881.
2886	Evans (John). Flint Implements in the Drift. 1 vol. 4to. London, 1860-2.
3207	Gegenbaur (Carl). Elements of Comparative Anatomy, translated by G. Jeffrey Bell, and revised by E. Ray Lankester. 1 vol. 8vo. London, 1878.
3193	Grey (Sir George). Polynesian Mythology and Ancient Traditional History of the New Zealand Race, as furnished by their priests and chiefs. 2nd edition, English and Maori. 1 vol. 8vo. Auckland, 1885.
3143	Lubbock (Sir John). Prehistoric Times, as illustrated by Ancient Remains and the Manners and Customs of Modern Savages. 1 vol. 8vo. London, 1878.
3140	Maout (Emm. la), and Decaisne (J.) <i>Traité général de Botanique descriptive et analytique</i> . 1 vol. 4to. Paris, 1868.
2819	Smyth (R. Brough). The Aborigines of Victoria, with notes relating to the habits of Natives of other parts of Australia and Tasmania. 2 vols. R. 8vo. Melbourne, 1878.
3192	Tregear (Edward). The Aryan Maori. 1 vol. 8vo. Wellington, 1885.
3014	Warren (W. H.) Strength and Elasticity of New South Wales Timbers of Commercial value. 1 vol. 8vo. Sydney, 1887.
3189-91	White (John). Ancient History of the Maori, his Mythology and Traditions. Horouta or Taki-tumu Migration. 3 vols. 8vo. Wellington.
3142	Wilson (Daniel). Prehistoric Man. Researches into the origin of civilization in the old and new worlds, 1 vol. 8vo. London, 1865.
CLASS C.—GEOLOGY.	
2914	Agassiz (Louis). Feuilleton additional aux Recherches sur les poissons fossiles. 1 vol. 4to.
2906	Alth (Alois V.) Ueber die palæozoischen Gebilde Podoliens und deren Versteinungen. 1 Abth (K. K. Geol. Reich. Abhand. Bd. VII). 1 vol. 4to. Wien, 1874.
3281	Andra (Dr. Carl Justus). Vorweltliche pflanzen aus dem Steinkohlengebirge der preussischen Rheinlande und Westphalens. Heft 1, 2, 3. 1 vol. 4to. Bonn, 1865-69.
2897	Barrande (Joachim). Défense des Colonies. III Etude générale [sur nos Etages. G—H avec application spéciale aux environs de Hlubocép, près Prague. 1 vol. Prague and Paris.
2902	Barrois (Charles). Recherches sur la Terrain Crétacé supérieur de l'Angleterre et de l'Irlande. 1 vol. 4to. Stockholm, 1872-73.
2804	Benecke (E. W.) Uber Trias und Jura in den Südalpen. 1 vol. Munchen, 1866.
2895	Benecke (E. W.) Ueber die Umgebungen von Esino in der Lombardei. 1 vol. 8vo. Munchen, 1876.
2802	Binckhorst (J. J. S. van). Monographie des Gastéropodes et des Céphalopodes de la Craie supérieure du Limbourg. 1 vol. 4to. Bruxelles—Leipzig, 1873.
3007	Blake (J. F.) Monograph of the British Fossil Cephalopoda. Part 1: Introduction and Silurian species. 1 vol. 4to. London, 1882.
2841	Briart (A.), and Cornet (F. L.) Description de Fossiles du Calcaire grossier de Mons. Parts 1, 2, 3, 4. (Mem. de l'Acad. Roy. des. Sciences, Belgique. Tomes 36, 37, 43, 47). 1 vol. 4to. Bruxelles, 1871-87.
2903	Briart (A.), Cornet (F. L.), and Coemans (E.) Description minéralogique et stratigraphique de l'Etage inférieur du Terrain Crétacé du Hainaut, par A. Briart et F. L. Cornet, suivie de la description des Végétaux Fossiles de cet Etage, par E. Coemans. 1 vol. 4to. Bruxelles, 1867.
3131-2	Buckland (Rev. William). Geology and Mineralogy considered with reference to Natural Theology. New edition, edited by Francis F. Buckland (being Treatise VI of the Bridgewater Treatises). 2 vols. 8vo. London, 1858.
3135	Burmeister (Hermann, or German). Los Caballos fosiles de la Pampa Argentina. Die fossilen pferde der Pampas formation. 1 vol. fol. Buenos Aires, 1875.
2695	Cope (E. D.) Synopsis of the extinct Batrachia and Aves of North America. (Trans. Am. Phil. Soc., vol. XIV). 1 vol. 4to. 1869.
2791-2	Coquand (H.) Monographie du Genre Ostrea. Terrain Crétacé. Texte; 1 vol. 8vo.; Marseille, 1869. Atlas; 1 vol. fol. Paris, 1869.
3279	Dames & Kayser. Palæontologische Abhandlungen. Band IV. 1 vol. 4to. 1887-8.
2904	D'Orbigny (Alcide). Forimánifères fossiles au Bassin tertiaire de Vienne, découvertes par S.E. le Chev. Joseph de Hauer. (Published in German and French.) 1 vol. 4to. Paris, 1846.
2832-5	Dumortier (Eug.) Etudes paléontologiques sur les Dépot jurassiques du Bassin du Rhone. 4 vols. 8vo. Paris, 1864-74.
2809-14	Eichwald (Ed. d'). Lethæa Rossica ou Paléontologie de la Russie. Text, 3 vols. 8vo.; and Atlas, 3 vols. 4to. Stuttgart, 1853-68.
2901	Erdmann (Edward). Beskrifning öfver Skanes stenkolsforande Formation (Sveriges Geologiska Undersökning, 1872). Description de la Formation carbonifère de la Scanie. Edition abrégée (Recherches géologique sur la Suede, 1873). In 1 vol. 4to. Stockholm, 1872-3.

Reg. No.	Book.
Class C—Geology— <i>continued.</i>	
3010	Etheridge (R., jun.) Catalogue of Australian Fossils (including Tasmania and Timor). 1 vol. Svo. Cambridge, 1878.
2905	Eudes Deslongchamps (Eugene). Etudes sur les Etages jurassiques de la Normandie. 1 vol. 4to. Paris and Caen, 1864.
	Fischer de Waldheim. (See Waldheim.)
2794	Geinitz (Hanns Bruno). Grundriss der Versteinerungskunde. 1 vol. Svo. Leipzig, 1856.
2965	Geinitz (Hanns Bruno). Das Quadersandstiengebirge oder Kreidegebirge. 1 vol. Svo. Freiberg, 1849-50.
3283	Goldenburg (Friedrich). Die Pflanzenversteinerungen des Steinkohlengebirges von Saarbrücken. Heft 1, 2, 3. 1 vol. 4to. Saarbrücken, 1825-62.
2893	Grateloup (Mr.) Mémoire de Géozoologie sur les Oursins Fossiles (Echinides) qui se rencontrent dans les Terrains calcaires des environs de Dax. (Soc. Linn., Bordeaux, VIII). 1 vol. Svo. 1836.
2910	Grunewaldt (M. V.) Notizen über die versteinierungsführenden Gebirgsformationen des Ural. 1 vol. 4to. 1857.
3280	Schimper (W. P.) and Zittel (Karl A.) Handbuch der Paläontologie. II Abt. Paläophytologie. 1 vol. Svo.
2923	Hantken (Max von). Die Fauna der Clavulina Szabói Schichten. Theil, Foraminiferen (K. Ung. Geol. Anstalt, Bd. 4). 1 vol. Svo. Budapest, 1875.
3144	Heer (Oswald). Le monde primitif de la Suisse, traduit de l'Allemand par Isaac Demole. Vol. Svo. Genève and Bale, 1872.
2922	Hoffmann (Karl). Beiträge zur Kenntniss der Fauna des Haupt-Dolomites und der Älteren Tertiär-gebilde des Ofen-koväesier Gebirges.
	Hantken (Max V.) Der Ofner Mergel. In 1 vol. Svo. Pest, 1873.
2882	Hudleston (Wilfred H.) The Yorkshire Oolites. Parts 1 and 2, secs. 1 and 2. (Proc. Geol. Assoc. Vols. 3, 4, and 5.) In 1 vol. Svo.
3201	Hutton (Prof. F. W.) Report of the Tarawera Volcanic District. 1 vol. Svo. Wellington, 1887.
2911	Jaeger (Geo. Fried.) Über die Fossile Reptilien welche in Wurtemberg aufgefunden worden sind. 1 vol. 4to. Stuttgart, 1824.
2797	Kloden (K. F.) Die Versteinerungen der Mark Brandenburg. 1 vol. Svo. Berlin, 1834.
3121	Kobell (Franz von). Tafeln zur Bestimmung mineralien. 1 vol. Svo. München, 1858.
2785	Konig (Charles). Icones Fossilium Sectiles. 19 plates and letterpress of first 100 figures—all published. 1 vol. fol. London, about 1825.
2936	Leanta (Argangilo). Lo stats presente della Sicilia. Tomo primo. 1 vol. Svo. Palermo, 1761.
2880	Lyell (Chas.) The Tertiary Strata of Belgium and French Flanders. (Proc. Geol. Soc., 1852.) 1 vol. Svo.
3120	Macartney (John Neill). The Bendigo Gold-fields Registry. Maps by G. W. Hart, and an Essay on the saving of Fine Gold and the undeveloped resources of the Bendigo District, by a Bendigonian. 1 vol. Svo. Melbourne, 1871.
2842	Malaise (C.) Description du Terrain Silurien du centre de la Belgique. (Mém. de l'Acad. Royale des Sciences de Belgique. Tome 37. 1873.)
	Saporta (G. de) and Marion (A. F.) Essai sur l'Etat de la végétation à l'Epoque des marnes Heersiennes de Gelinden. (Mém. de l'Acad. Roy. des Sciences de Belgique. Tome 37. 1873.)
	Van Beneden (P. J.) Mémoire sur les Orques observés dans les mers d'Europe. (Mem. de l'Acad. Roy. des Sciences de Belgique. Tome 43. 1880.) In 1 vol. 4to. Brussels, 1873-80.
3119	Mantell (Gideon Algernon). Petrifications and their teachings. A Handbook to the Gallery of Organic Remains in the British Museum. 1 vol. Svo. London, 1851.
3138-9	Mantell (Gideon Algernon). Medals of Creation; or, First Lessons in Geology. 2 vols. Svo. London, 1844.
2972	Mallet (F. R.) Manual of the Geology of India. Part IV. Mineralogy (mainly non-economic). 1 vol. Svo. Calcutta, 1887.
3303	Mojsisovics (E.) and Neumayr (M.) Beiträge zur Paläontologie Österreich-Ungarns und des Orients. Band VII. 1888.
2937	Mongitore (Antonius). Della Sicilia ricercate nelle cose piu' memorabili. 1 vol. Svo. Palermo, 1742.
2899	Montpereux (Fred. du Bois de). Conchyliologie Fossile et aperçu Géognostique des formations du plateau Wolhyni Podolien. 1 vol. 4to. Berlin, 1831.
2894	Mourlon (Michel). Sur l'Etage dévonien de Psammites du Condroz. 1 vol. Svo. Bruxelles, 1875.
2793	Muller (Joseph). Monographie der Petrefacten der Aachener Kriedeformation. 1 vol. 4to. Bonn, 1847.
3369	Myers (Herman von). Die Saurier des Muskelahlkes. 1 vol. Frankfort, A. M. 1847-55.
3127-30	Nauman (Carl Freidrich). Lehrbuch der Geognosie, with Atlas. 4 vols. Svo. Leipzig, 1858.
2900	Pictet (F. J.) Matériaux pour la Paléontologie Suisse. 4me Série, Livraison 11 contenant Monographie des Couches de l'Etage valangien des Carrières d'Arzier (Vaud.) par P. de Loriol. 1 vol. 4to. Bale and Genève, 1840.

Reg. No.	Book.
<i>Class C—Geology—continued.</i>	
2839	Pictet (F. J.) <i>Mélanges paléontologique. Tome 1.</i> 1 vol. 4to. Bale, Genève, and Paris, 1863-68.
2912	Pirona (Guilio Andrea). <i>Le Ippuritidi del Colle di Medea nel Friuli (Mem. Inst. Veneto XIV.</i> 1 vol. 40.
2881	Prestwich (Joseph). <i>The Structure of the Stratl. between the London Clay and the Chalk in the London and Hampshire Systems. (Quart. Journ. Geol. Soc. Vol. 8.)</i> 1 vol. 8vo. London, 1852.
2885	Prestwich (Joseph). <i>Report on the explorations of Brixham Cave, with Description of the Animal Remains, by G. Busk; and the Flint Implements by J. Evans. (Phil. Trans. 1872).</i> On the structure of the neighbourhood of Gamrie, Banffshire, particularly on the deposit containing Ichthyolites. (Phil. Trans., 1835.) Tables of Temperature of the Sea at different depths beneath the surface, from observations made between 1749 and 1868. (Phil. Trans., 1874.) In 1 vol. 4to.
2798-9	Quenstedt (Fr. Aug.) <i>Die Cephalopoden. Text, 1 vol. 8vo. Atlas, 1 vol. 4to.</i> Tübingen, 1849.
2800-1	Quenstedt (Fr. Aug.) <i>Handbuch der Petrefactenkunde. Text and Atlas. 2 vols. 8vo.</i> Tübingen, 1885.
2133-4	Quenstedt (Fr. Aug.) <i>Handbuch der Petrefactenkunde. 1 vol. Text. 1 vol. Tafeln. 2 vols. 8vo.</i> Tübingen, 1852.
2891	Rénevier (E. H. and E.) <i>Description des Fossiles du Terrain Nummulitique Supérieur des Environs de Gap des Diablerets, et de quelques localites de la Savoie. In 1 vol. Prague and Paris, 1868.</i>
2907	Reusch (Hans H.) <i>Silurfossiler og pressede Konglomerater i Bergenskifrene. 1 vol. 4to.</i> Kristiania, 1882.
2795	Reuss (August E.) <i>Die Versteinerungen der Bohmischen Kreideformation mit Abbildungen de neuen oder weniger bekanten arten von Joep Rubesch. 1 vol. 4to.</i> Stuttgart, 1845-6.
3370	Roehl (E. von). <i>Fossila Flora der Steinkohlen—formation Westphalens. 1 vol. 4to.</i> Cassel, 1869.
2964	Roemer (C. F.) <i>Das Rheinische Uebesgangsgebirge. Ein palæontologische geognostische Dartstellung. 1 vol. 4to.</i> Hannover, 1844.
2831	Roemer (F. A.) <i>Die Versteinerungen des Norddeutschen, Oothengebirges. 1 vol. 4to.</i> Hannover, 1836-39.
2797	Roemer (F. A.) <i>Die Versteinerungen der Norddeutschen Kreidegebirges. 1 vol. 4to.</i> Hannover, 1841.
2908	Roemer (F. A.) <i>Bertrage zur geologischen Kenntniss des nordwestlichen Harzgebirges. 1 vol. 4to.</i> 1850.
2840	Ryckholt (Le Baron P. de.) <i>Mélanges paléontologique. (Mém. de l'Acad. Roy. des Sciences de Belgique. Tome xxiv.) 1 vol. 4to.</i> Bruxelles.
3126	Senft (Dr. Ferdinand). <i>Krystallinischen Felsgemengtheile. 1 vol. 8vo.</i> Berlin, 1868.
3200	Smith (S. Percy). <i>The Eruption of Tarawera, New Zealand. 1 vol. 8vo.</i> Wellington, 1887.
2805-8	Stoppani (Antoine). <i>Paléontologie Lombarde ou description des Fossiles de Lombardie. 4 vols. 4to.</i> Milan, 1858-81. 1. Série Les petrefactions d'Esino, par A. Stoppani. Milan, 1858-60. 2. Série Mammifères Fossiles de Lombardie, par Emile Cornalia. Milan, 1858-71. 3. Série Geologie et paléontologie des Couches a Aircula concerta en Lombardie et de l'Apennin central, par Joseph Meneghini. Milan, 1867-81.
2896	Sveriges Geologiska Undersokning. <i>Odd parts. In 1 vol. 8vo.</i> Stockholm.
3228	Teall (J. J. Harris). <i>British Petrography, with special reference to the igneous rocks. 1 vol. 8vo.</i> London, 1888.
2909	Trantschold (H.) <i>Die Kalkbruche von Mjatschkowa, eine Monograph desoteren. Berghalks. (2 parts.) 1 vol. 4to.</i> Moscou, 1874-76.
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- ED. P. RAMSAY,  
Curator.

## APPENDIX IX.

To the Curator.—Report on the Limestone Caves at Cave Flat, junction of the Murrumbidgee and Goodradigbee Rivers, County of Harden.

Sir,

Sydney, 6 July, 1888.

In compliance with your instructions, I have the honour to herewith hand a report on my visit to the Murrumbidgee Caves, in company with Mr. J. Mitchell, of Bowning, between the dates of June 16th and June 22nd. We had intended visiting the Goodradigbee Caves also, some distance up the river of that name, above its junction with the Murrumbidgee, but time did not permit of our so doing.

Cave Flat is about twenty-five miles south-west of Bowning, and can be reached comfortably from that place by arriving there by the night-train from Sydney in the morning, and then driving. For the first nine miles the Great Southern Road is followed, but at that distance from Bowning the Goodradigbee Road branches off, and is a good track the whole way. The country is undulating and open until within a short distance of the flat, on entering the Barren Jack Ranges. The ground here becomes more broken and thickly wooded, a rapid descent of 800 feet taking place to the Murrumbidgee. Cave Flat is situated at the junction of the two rivers—the Bowning and Yass Road here crossing the former stream—and is a large alluvial tract of more than one geological age, extending on both sides the Murrumbidgee, and forming a delta-like piece of land between it and the mouth of the Goodradigbee.

The caves, for there are a series of them, are situated in a belt of limestone, running in a general north-west and south-east direction, along the strike of which the Goodradigbee River has more or less cut its course. Three caves in all were explored, one other is known, which we did not examine, and there are numerous depressions existing in the limestone ridge which probably represent filled in entrances to others.

The principal cave, or that which will be known throughout this report as "The Cave," and which was partially examined by Mr. Charles Jenkins, L.S., of Yass, in 1881, on behalf of your Trustees, is situated on the river's edge, within the conditional purchase of Mr. Weston, No. 14, Parish of Childowla; the two others examined by us are on the conditional purchase, No. 13, of Mr. John Hannam. To Mr. Weston we were indebted for much assistance and information, and I wish to take this opportunity of thanking him.

## THE CAVE.

This, the principal cave, so far as our knowledge at present goes, is situated on the steep and narrow north bank of the Murrumbidgee, immediately at the south-west corner of Cave Flat. Its precise position, as surveyed by Mr. Jenkins, is 4 chains 86 links west of the south-east corner peg of Weston's (formerly Swift's) 65-acre conditional purchase, No. 14 (H. 3929), Parish of Childowla, County Harden. It was the subject many years ago of a brief description by Dr. G. Bennett,\* and as before stated, has been briefly reported on by Mr. Jenkins.† His report refers almost wholly to excavations carried on in searching for fossil bones in the main, or entrance chamber of the cave. It "has a noble entrance in the

\* Wanderings in New South Wales, &c., 1834, I, p. 224.

† Exploration of the Caves and Rivers of New South Wales. N. S. Wales Parl. Papers, 1882, 162—A, p. 32.

the face of a nearly vertical cliff of limestone, about 78 feet high. The entrance is about 40 feet above the Murrumbidgee ordinary summer level, and above the height reached by the greatest known flood.

\* \* \* As seen on the face of the cliff the entrance has a triangular form; but immediately within the entrance the form is modified by stalactitic roof cutting off the upper angle." This magnificent chamber, which for the sake of distinction, may be called "The Hall," is 42 feet wide, and has a depth of 80 feet, with a height of about 30 feet. The triangular form assumed at the entrance is continued more or less throughout all the chambers of the cave, and as Mr. Jenkins very justly remarks, is dependent on the dip of the limestone rock, which varies in the hall from  $60^{\circ}$  to  $63^{\circ}$ . Speaking generally of this cavern and its branches, Jenkins remarks, "The west side inclines generally at an angle of about  $60^{\circ}$ , so that the opposite side rises to a great height, whenever the passage is not very narrow. The right side (by the right I mean the right-hand side on entering) is nearly vertical throughout, more or less covered with stalactite incrustations, and where the passages widen out, the right halves of the chambers are filled with beautifully formed white, or variously tinted, and sometimes massive, stalactites and stalagmites. The left side exhibiting throughout little more than the dark grey limestone rock of the cliff, is relieved by bold massive fractures, and occasionally by small stalactites and stalactite stains." The size of this fine hall is adequately expressed by Dr. Bennett, who says, "a slight ascent brought us to the spacious and lofty entrance into which the horses were easily led and conveniently stabled."

The general form of this chamber is that of an irregular square, with a sloping roof. On entering, the visitor is confronted with the remains of fallen stalactites, broken and stained, but on the right are two very large columnar masses of united stalactite and stalagmite. Behind them the whole of the right-hand side is occupied by a massive deposit fantastically arranged in tiers and pillars. Up and over this is the path leading to the right-hand and main passage of this cavern, and the masses of deposited matter in this part of the hall are the result of water issuing from this passage as well as percolating through the roof above. In some of these festoon-like masses, where broken, the laminated and mammilated structure of the lime deposit is well exhibited. The roof of the hall is mottled with blunt and obtuse parti-coloured stalactites. At its further end, about the centre, is a short upcast passage of 20 feet, containing red earth.

Two main passages proceed from the hall—that already mentioned on the right, and one from the immediate far left-hand or north-west corner of the chamber. The course of the former will be first followed. Proceeding upwards over the worn surfaces of stalagmitic masses, the hall gradually narrows at 64 feet, along its eastern or vertical wall, from the entrance, from the successive accumulations of calcareous matter, to a narrow triangular passage. The entrance is almost blocked by a stalactitic doorway, through the pillars of which the dim chamber at the end of this passage can be seen. A gutter-like passage leads round this, and then passes in a direct line for 110 feet.

#### PLATEAU CHAMBER.

At about the middle of its course the above passage widens to the extent of 20 feet into a small and low chamber of the usual triangular form. This we have named from its position the Plateau Chamber (No. 2 on plan). On the left-hand side a blind branch is given off, now completely filled up, but it is just possible that it may communicate in a downwards direction with the short upcast from the end of the hall. A few stalactites are visible on both sides of this chamber, but they are not important, and have ceased forming. The floor is composed of the dull-red earth, partly bone earth, and partly bat guano, so prevalent in these caves. It imperceptibly lowers as progress is made forwards until a brow is reached, and an abrupt descent of 66 feet, at an angle of  $32^{\circ}$ , takes place into the Altar Chamber.

Along the passage to and from the Plateau Chamber are a few excellent examples of the method in which the stalagmites first commence to form. A constant drip takes place from the roof, resulting in the scattering of the soft earth on which it falls into a small basin-shaped outline. The dripping continuing into this, the water gradually evaporates, leaving a small pinnacle of stalagmite in the centre.

The descent to the Altar Chamber appears to be wholly stalagmitic, and whether following on a bed of limestone rock or is composed of successive beds of stalagmite and bone earth it is difficult to say, but from the resonance which takes place on percussion it is probably the latter. The present slope is covered with 1 ft. 6 in. of bone earth, in places hardened into a breccia filled with bone fragments.

#### ALTAR CHAMBER.

As the previously mentioned descent takes place, a large and high chamber is entered, 41 feet wide and including the gentle ascent at its further end, about 140 feet long (No. 3 on plan.) The general triangular form is again noticeable here, but it is somewhat more rounded than in other instances, the ultimate roof attaining a very considerable height. The left-hand, or western side, runs generally in a direction varying from N.  $20^{\circ}$  W. to N.  $35^{\circ}$  W., and immediately at the foot of the descent from the plateau chamber, the hanging wall has fallen, revealing a declivity below this chamber (No. 4 on plan) for 32 feet, and following the dip of the rock, and is more or less filled with general *débris* and bone earth. In consequence of this fall, a magnificent face of limestone is here exposed.

The mass of stalactitic and stalagmitic matter from which this chamber takes its name stands in about the centre of the cavern, just as the floor commences to rise again in a corresponding manner to the descent into it. It occupies more or less the whole of the floor, and consists of two portions, a right and left. The former is a number of thin pendant stalactites like a chandelier or candelabra, joined below to four chief masses of stalagmite. The left-hand portion is formed of two large pillars, fluted by the formation of smaller stalactites around them. These unite with a heavy base of stalagmitic matter, arranged in festoon-like groups. The height cannot be less than 20 feet, and probably more. It is possible to go behind and around these pillars, and if, when in such a position, the chamber is illuminated by means of magnesium wire a very fine effect is produced.

Behind the altar the chamber throws off a subsidiary branch (No. 5 on plan), which it was not possible to follow up without much labour and excavation. Immediately past this point the chamber narrows to 19 feet, and the floor continues to rise, but with traces of an old stalagmitic stratum, perhaps corresponding with one of those on the opposite and downward slope. It is at present 2 feet above the existing roadway. On this ascent, a little distance further on, is the finest single stalagmite in these caves, about 10 feet high, with a stalactite above, to which it is barely joined. The surface is fluted and concentrically wrinkled, the whole attaining a basal girth of 4 feet 6 inches, and at the top 6 feet. Adjoining this individual is an immense mass of stalactitic and stalagmitic matter combined, forming a huge pedestal.

pedestal, with a girth of 58 feet. At one time a small recess existed in this mass, with a continuous drip from its roof, representing a small fountain; but now, as a result of the vulgar vandalism of the day, this natural feature has been destroyed, and the whole face is simply an inscription-post for the vain and ignorant. This deposit of calcareous matter seems to have acted as the starting point of at least one, if not more, of the floors with which this part of the cave is covered. The longest stalactites may be seen just at the point where the fall of the hanging wall had taken place; they extend from the roof to the floor.

Returning to the altar once more, we found, by a little diligent examination, two openings immediately below it. The right-hand aperture led into a narrow downward passage, in a direction N. 1° W., at an angle of 32°, and extending for 40 feet. At the bottom the sides and roof are covered with a stalactitic incrustation, which has evidently proceeded from a crack in the limestone above. The bottom or lowest level of this passage is completely blocked up with stalagmitic layers and ossiferous earth and breccia, which seems to have entered through the before-mentioned crack, and more or less filled the whole passage, as it is still adhering to the roof in places. The present face cannot be less than 5 feet thick. This is the lowest point to which this cave was explored by us, and appears to be the lowest level to which any of the passages have yet been traced. The left-hand opening simply consists of the hollowed-out base of the altar, but is, however, of interest, as it is filled with ossiferous red earth.

Beyond the large pedestal, like mass of stalagmitic deposit, the main passage extends but about 40 feet further, the rising floor still showing alternations of stalagmite and bone-earth.

#### BAT CHAMBER.

On the left-hand side of the Altar Chamber, and opposite the large pedestal stalagmite, is a very low and irregular opening in the limestone wall, partially blocked by red earth and bat guano. By crawling through a fourth chamber is gained (No. 7 on plan), long and narrow, but with a high roof, lost in the depths of upward blackness. It is 52 feet in length, with a long terminal fissure-like passage, which it is impossible to traverse. Like that of the other chambers the floor is composed of deposited matter, red earth, and an immense quantity of recent bat guano, and is resonant on percussion. The floor rises at a considerable angle. About half-way in its course, on the left-hand side, is an old branch passage, now partially closed by fallen *débris*; and, as a fresh current of air issues hence, this cannot be far from the surface of the hill. Just at the entrance, and immediately on the right-hand side, is a narrow upcast passage, where red earth is again visible; and a third similar fissure occurs at the lowest point of this cave, to the left of the entrance aperture. The cave is inhabited by a large number of bats (*Scotophilus morio*), and must have been so for ages, from the immense quantity of droppings accumulated not only in this cave, but throughout the chambers generally. In fact, I believe that the red earth, which so freely enters into the composition of the present flooring of the chambers, is to a large extent composed of bat guano. The walls of the bat chamber are coated with a peculiar semi-greasy black carbonaceous-looking film, which I apprehend is the result of some form of chemical change brought about by the decay of the guano at a somewhat high temperature. The temperature of all the chambers and passages is much above the external atmosphere. The total length of this eastern branch of the cave, according to Mr. Jenkins, is 420 feet, and our measurements made it but a few feet more, too trivial to comment on in such a difficult and ever-varying matter as cave measurement.

The lower or eastern passage leads off from the north-east corner of the hall (No. 8 on plan) in a direction of S. 2° E., and in round numbers extends for a distance of 140 feet, terminating at its distal end in a mere fissure. This portion of the cave calls for but brief notice, being low and narrow, but retaining in a marked form the triangular outline, so frequently referred to before. The passage is nowhere more than 13 feet wide, and perhaps as much as 15 feet high, narrowing and widening imperceptibly. The floor appears to be composed of general fine alluvial matter, mixed with a proportion of red earth and calcareous *débris*, and I think little doubt can exist that it has been filled to a considerable depth, like the hall, of which it is practically a continuation, by an in-wash in times of flood from the river, and matter brought down from the higher parts of the cave. By excavation no doubt this passage could be cleared out to some depth, and rendered a worthy continuation of The Hall.

Some differences in the length of the passage now under description, as given by Mr. Jenkins, and the measurement as taken by Mr. Mitchell and myself, exist. The former, speaking of the branches from the hall, or entrance chamber, as he terms it, says:—"That from the right is 200 feet; that from the left a length of 420 feet." Now by the explanation of his own terms—"by the right I mean the right-hand side on entering,"—he has clearly changed the places of his figures, and the numbers should be reversed; then the reading would be,—"That from the right is a length of 420 feet; that from the left a length of 200 feet." The length of 200 feet, however, is clearly too much for this passage, unless it has greatly altered its character since Mr. Jenkins' visit; we made it only 140 feet. If the 200 feet be calculated from the absolute plumb-line entrance of the hall, along its actual western or lower wall, it is quite correct; but Mr. Jenkins distinctly speaks of his measurement as a passage, and here there clearly exists a discrepancy.

Touching the question of ossiferous deposits in these caves, the excavations for determining this point were made by Mr. Jenkins in the floor of The Hall only, in the deposit which I believe to be the least likely to contain fossil bones. So far as can be gathered from his not too clear statement, his section of the excavations made by him would be as follows:—

1. "Dark earth," with lime, recent bones of small marsupial, 1 foot 6 inches.
2. "Yellowish earth," with lime, insect remains, fur, similar bones, and towards the bottom bones of large marsupials, reaching to a depth of 5 feet.
3. Broken stalactites and lumps of rock, followed by a stalagmite floor, at 6 feet.
4. Solid limestone floor, at 9 feet.

Mr. Jenkins distinctly speaks of fossil bones coming in at a depth of 5 feet, but I am assured by yourself that most of the specimens sent from the cave were recent and unfossilised. Mr. Jenkins says, "as to how the bones came into the cave, I remark that they were never brought there by water, no drift was found in sinking." The presence of drift is not required to account for their transport by water. Little doubt exists in the minds of Mr. Mitchell and myself that these bones have acquired their present position through flood-waters, to which The Cave or at any rate The Hall has been subjected at a remote period.

True ossiferous deposits exist in these chambers although they certainly were found by Mr. Jenkins, only to a limited extent, and I am of opinion that they are well worthy of investigation on an extended



extended scale. We have undoubtedly proved the presence of bone earth, passing into ossiferous breccia, at certainly three spots, viz. :—The descent into the Altar Chamber, in the long passage below the altar, and on the ascent from the Altar Chamber, at its further extremity.

The evidence seems to point to a filling of these inner chambers with bone earth from above, through cracks and fissures, and if such is the case the best possible results may be anticipated. Judicious excavation will probably result in the extension of the branches of "The Cave" to a considerable extent, and I believe they are capable of being rendered worthy objects for the attention of the enquiring.

#### THE BONE CAVE.

The Bone Cave so named by Mr. Mitchell, from the fact that this was the first in which his attention was attracted to fossil bones, is the smallest cavern examined by us. It is situated on the 200-acre conditional purchase, No. 13 (H. 3928), of Mr. John Hannam, Parish of Childowla, and lies barely a chain inside the fence separating the lot on which it stands from that containing "The Cave."

The entrance is small, just sufficiently large to admit the body of an ordinary sized man, and is situated on the rocky ridge traversing the above lot. The descent from the entrance is vertical for a distance of 40 feet, in two flights of 20 feet each, with a small platform half way. The cave at the bottom of this pipe-like fissure is a low excavation of three irregular prolongations—one having an upward direction towards the surface, another a rather downward inclination, and the most important portion horizontal. The first has a direction N. 45° W., and extends upwards for 58 feet, at an inclination of 40°, tailing off into a very narrow long fissure-like passage, filled with small stalactites and red earth, but much fallen about. The width varies from 5 to 20 feet. The second branch proceeds in an E. 5° S. direction for 16 feet, and is hardly more than an expansion of the main hollow at the foot of the descent, it is about 13 feet wide. The third and most important branch has a bearing of S. 15° W., and terminates in a right and left prolongation. The former is a long, low, and narrow entry, leading some 30 feet to a small chamber, which is now blocked up, but Mr. Mitchell penetrated into this on a former visit. The left-hand split extends but 12 feet, and is a rounded prolongation of the main passage, it is however of the greatest importance, as it was here the most important bones were found. The walls of all these passages bear stalactites, but they are poor and small.

The whole of this cave must at one time have been filled with alternations of bone earth and stalagmite. Immediately at the bottom of the fissure are evidences of two breccia deposits, the higher 5 feet 6 inches above the present floor, and just under the roof, and 3 feet 5 inches below this is the second. The latter stalagmitic and bone floor although broken away and destroyed generally shows its lateral portions adhering to the sides of the cave, like portions of a shelf. Below it the bone earth has been removed for a depth of 1 foot 6 inches, representing the space now existing between the shelves and the present bottom, which is composed of black alluvium brought from the above, through the entrance fissure. In the E. 5° S. passage the ossiferous deposit has been as much as 3 feet 4 inches thick, resting on a stalagmite floor 1 foot 6 inches.

The whole of the infilling of this cave is of a brick red colour, in some places soft, in others quite hard, and resembles the Wellington bone-breccia very much in appearance, the red stains even hiding up the surface of the limestone walls.

The bones in the best state of preservation occur at the further end of the *cul-de-sac*, terminating the S. 15° W. passage, where the Thylacine skull was found by Messrs. Weston and Mitchell. There are here several small layers of stalagmitic matter associated with strata of hair bone breccia.

The Bone Cave would, without doubt, yield by far the best immediate results by detailed examination.

#### CATHEDRAL CAVE.

The Cathedral Cave, so called by the residents on the flat, from the large number of pillar stalactites it contains, is excavated in the same hilly mass of limestone as The Cave, but removed some little distance from it. It is situated on the same block as the Bone Cave, but some way further south, and is quite contiguous to the fence.

Like the Bone Cave, the entrance is very small, and would be readily passed unnoticed, but the descent although steep is gradual, 50 feet in length, and is in fact a talus formed by inwashed detritus. The cave consists of one large chamber, more or less oval in form, and dome-shaped above. It is 80 feet long, by 54 feet broad, and on the left-hand or west side there is a further prolongation or recess of 30 feet, making a total width of 84 feet. The roof is covered with fine drooping stalactites, and the entire walls are a similar mass. Simply from the point of view of effect this is the finest cave visited, and is a really wonderful example of stalactitic and stalagmitic structure. The centre of the chamber is occupied by a large pedestal of stalagmite, and on the east and south are some grand masses. The recess on the right above referred to, cannot be better compared, than to an ice-floe, from the huge blocks scattered about, and on one another, completely filling up the lower portions; several of these blocks of calcareous matter must be several tons in weight. The further wall of this recess is covered with stalactites resembling a series of cascades, mounting one above the other. There are also traces of red earth in some of the cracks and crevices of the walls. The extreme southern end of the oval chamber rises like so many of the terminations of these caves.

#### GENERAL REMARKS.

The Murrumbidgee limestone is a dense blue-black in colour, much jointed and fissured, highly brittle in places, with a hackly conchoidal fracture, and crammed with fossils, especially corals. As a display of these beautiful organisms in natural section I have never seen its equal. Large faces of limestone—none are better than one at the entrance to the lower passage from The Hall in The Cave, and another in the Altar Chamber—may be seen, with the weathered corals, and particularly *Stromatopora*, standing out in relief and in section also. Many of these masses of coral, particularly those of *Stromatopora* and *Favosites*, are as much as 4 feet in diameter.

The Murrumbidgee limestone has been classed as Devonian by the late Prof. de Koninck; but I have not yet sufficiently examined the fossils of this deposit either to gainsay or confirm this view; but it is not improbable that his view may be correct.

The bones collected comprised portions of those of kangaroo—femora, humerus, radius, tibia, pelvic,

pelvic, and toe bones; portion of the lower jaw of a bear (*Phascolarctos*) or wombat (*Phascalomys*), and a tibia of a bear. The chief specimen, however, is a very large skull of a Thylacine,  $10\frac{1}{2}$  inches in length and 7 inches in breadth. These are all from the Bone Cave.

From The Cave the specimens are more fragmentary and commingled together.

I have, &c.,

R. ETHERIDGE, JUNR.,  
Palaeontologist.

The Curator, Australian Museum.  
P.S.—Appendices herewith—

1. Plan of The Cave.
2. Plan of the Bone Cave.
3. Plan of the Cathedral Cave.
4. Plan showing position of caves.

#### APPENDIX X.

##### Publications of the Australian Museum.

- Catalogue of the Specimens of Natural History and Miscellaneous Curiosities in the Australian Museum, by Dr. George Bennett. 1837. [Out of print.]
- History and Description of the Skeleton of a new Sperm Whale in the Australian Museum, by W. S. Wall. 1851. With two plates. Reprint, with photographs, &c., 1887.
- Catalogue of Mammalia in the Collection of the Australian Museum, by G. Krefft. 1864. [Out of print.]
- Guide to the Australian Fossil Remains in the Australian Museum. 1870. [Out of print.]
- Catalogue of the Minerals and Rocks in the Collection of the Australian Museum, by G. Krefft. 1873. [Out of print.]
- Catalogue of the Australian Birds in the Australian Museum, by E. P. Ramsay. Part I, Accipitres. 1876.
- Catalogue of the Australian Stalk and Sessile-eyed Crustacea, by W. A. Haswell. 1882. With four plates.
- Guide to the Contents of the Australian Museum. W. A. Haswell. 1883.
- Catalogue of the Library of the Australian Museum. 1883. With two supplements.
- Catalogue of a Collection of Fossils in the Australian Museum, with Introductory Notes, by F. Ratte. 1883.
- Catalogue of the Australian Hydroid Zoophytes, by W. M. Bale. 1884. With nineteen plates.
- List of old Documents and Relics in the Australian Museum. 1884.
- Descriptive Catalogue of the General Collection of Minerals in the Australian Museum, by F. Ratte. 1885. With a plate.
- Catalogue of Echinodermata in the Australian Museum, by E. P. Ramsay. Part I. Echini. 1885. With five plates.
- Descriptive List of Aboriginal Weapons, Implements, &c., from the Darling and Lachlan Rivers. K. H. Bennett. 1887.
- Notes for Collectors. 1887. Containing—  
Hints for the preservation of Specimens of Natural History, by E. P. Ramsay.  
Hints for Collectors of Geological and Mineralogical Specimens, by F. Ratte. With a plate.
- Descriptive Catalogue of the Medusae of the Australian Seas. Part I, Scyphomedusae. Part II, Hydromedusae, by R. von Lendenfeld. 1887.
- Descriptive Catalogue of the Nests and Eggs of Australian Birds, by A. J. North. With twenty plates.
- Descriptive Catalogue of the Sponges in the Australian Museum, by R. von Lendenfeld. With twelve plates.
- Catalogue of the Fishes in the Australian Museum. Part I. Palaeichthyan Fishes, by J. Douglas Ogilby. 1888.
- Lord Howe Island: its Zoology, Geology, and Physical Characters. 1889. With eleven plates.

##### In Preparation:—

- Catalogue of the Library. Revised and corrected.
- \*Guide to the Museum. New Edition.
- Catalogue of Shells. Hargraves and General Collections, by J. Brazier.
- Catalogue of Lizards, Batrachia, Fishes, &c., by J. D. Ogilby.
- Catalogue of Butterflies, by A. S. Olliff.

[Four Plans.]

Sydney: Charles Potter, Government Printer.—1889.

\* This, above, was published.



*Plan 1*  
**THE CAVE**  
LOT 14  
*Cave Flat, Murrumbidgee River.*

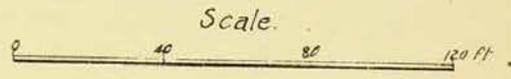
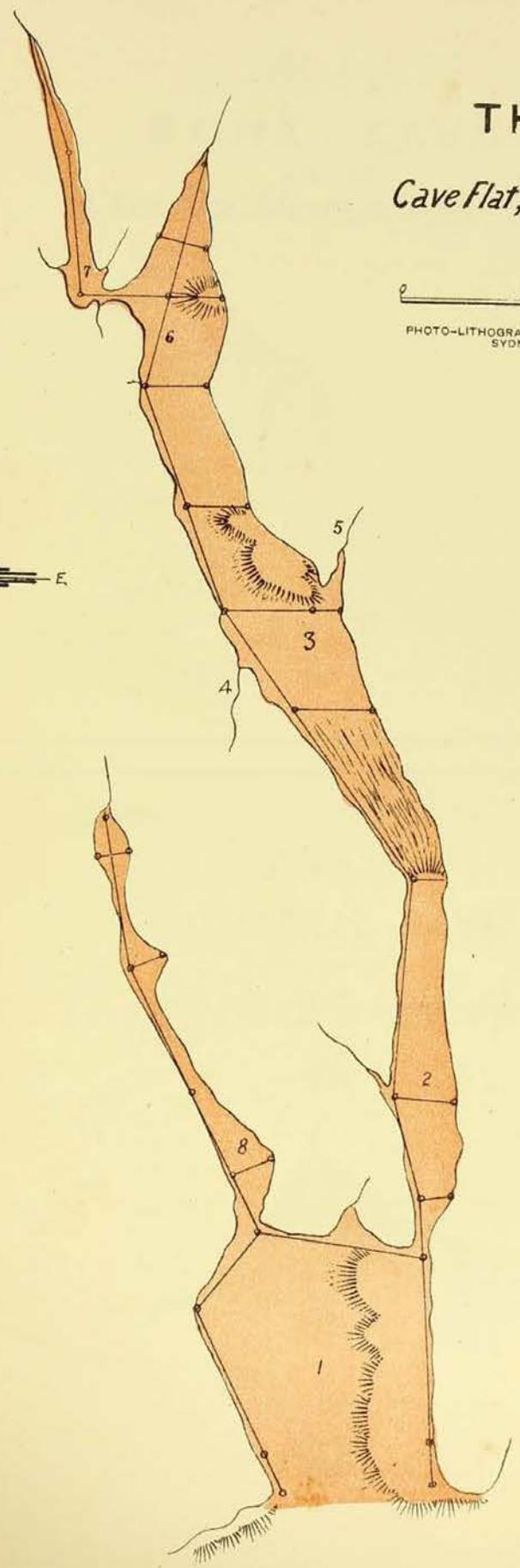
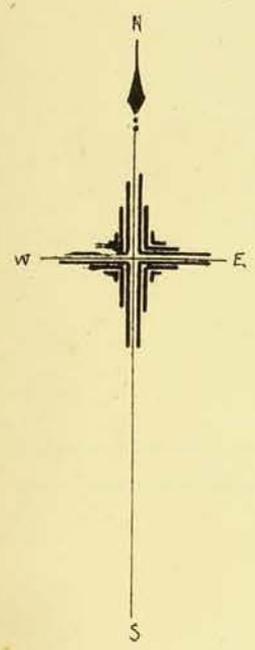
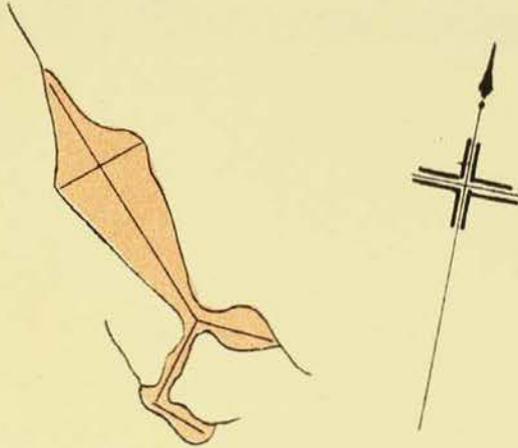


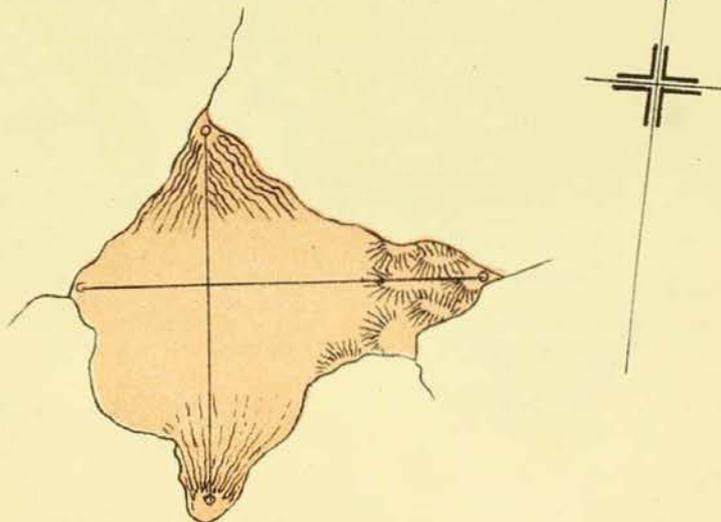
PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE,  
SYDNEY, NEW SOUTH WALES.



*Plan 2.*  
**BONE CAVE**  
LOT 13  
*Cave Flat, Murrumbidgee River.*



*Plan 3.*  
**CATHEDRAL CAVE**  
LOT 13  
*Cave Flat, Murrumbidgee River.*



(Sig. 46.)

# PLAN

## *Shewing Position of Caves at Cave Flat, Murrumbidgee R.*

