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## REPORT OF THE COUNCIL.

April 30, 1888.

THE Council have the pleasure of submitting to the Fellows their fifty-ninth Annual Report upon the progress

of the Society.

This, in accordance with previous Reports, is divided into three heads, the first of which relates to the General Condition of the Society and its Finances, the second to the business transacted at the Office in Hanover Square, and the last to the state of the Gardens in the Regent's Park.

# I. GENERAL CONDITION OF THE SOCIETY.

# 1. STATE OF THE ROLL OF MEMBERS.

#### a. Fellows.

The number of Fellows and Fellows Elect on the 1st of January, 1888, was 3104, classified as follows:—

Compounders who have paid £20		25
Ditto ditto £30		900
Compositions remitted		20
Paying annual contributions of £2		20
Ditto ditto £3		1963
Dormant		153
Admission-fees unpaid		23

3104

The number of Fellows at the corresponding date in 1887 was 3146, showing a decrease of 42 during the year 1887.

Comparative Statement of Elections, Deaths, Resignations, and Removals during the past Ten Years, with the number of Fellows at the end of each Year.

-	. 1		Died. I											
Zears.	ed or	Con	mpoun	ders.	Subsc	ribers.	ers. Subscribers.		ribers.	Admission Fees Unpaid.	Ceased to Fellows.	umber of Fellows, cember 31.		
, cars.	Elected or Readmitted	£20.	£30.	Fee re- mitted.	£2.	£3.	£2.	£3.	Adm Fe Unp	£2.	£3.	Adm F Un	Oes F	Dec
					5	52	1	40	1			1	118	3412
1878.	176	6	12			52		54			50	6	195	3361
1879.	144	9	17		7	1000		74	2000		38	4	208	3306
1880.	153	4	18	1	4	65		65	3	1	27		231	3213
1881.	138	24	31		5	75			0		11	13	164	3213
1882.	164	3	23	1	4	61		48				4	162	3210
1883.	159	4	25		3	55		38			33			3255
		1	28		5	53		37		1	7	6	138	11.30
1884.	1 3 3 4 3 3		17		5	69	2	55		1	20	2	173	3193
1885.	1000000	2			4	64		59			12	5	170	3146
1886.	123	4	22				1	67	1 202		10	3	180	3104
1887.	138	4	20		7	68	1	0,		1	1			

# b. Foreign Members.

One Foreign Member was elected in 1887, namely:-Dr. Karl Möbius, Director of the Royal Zoological Museum of Berlin.

# c. Corresponding Members.

The following Corresponding Members were elected in 1887, to fill vacancies in the List, namely:-

Herbert Musgrave Phipson, Esq., of Bombay.

Dr. Alfred G. Bourne, Ph.D., Professor of Biology in the Presidency College, Madras.

Dr. Alfred R. C. Selwyn, C.M.G., Director of the Geological Survey of Canada, Ottawa.

William Brewster, Esq., of the Museum of Comparative Zoology, Cambridge, Mass., U.S.A.

Dr. Emin Pasha.

Capt. John Fairchild, of Wellington, New Zealand.

Dr. Michel Menzbier, of the Imperial Society of Naturalists, Moscow.

Prof. Theophilus Studer, of Berne.

Edgar Thurston, Esq., Director of the Government Central Museum, Madras.

Dr. Oscar Bættger, of Frankfort-o.-M.

Dr. Lorenzo Camerano, of the Royal Zoological Museum, Turin.

Dr. Walter F. Dale, Falkland Islands.

Dr. George Brown-Goode, of the United-States National Museum, Washington.

Dr. H. A. Alford Nicholls, of Dominica, West Indies. Monsieur Pierre A. Pichot, of 132 Boulevard Hausmann, Paris.

#### 2. STATE OF THE FINANCES.

#### a. Income.

The Council regret to have to announce a serious decrease in the Income of the Society during the past year, caused mainly by the large falling-off of the Receipts from admissions to the Gardens. The sum received from this source in 1887 was only £12,138 5s. 6d., instead of £14,974 4s., the corresponding amount in 1886. The Council cannot attribute this falling-off of the Society's most important source of revenue to any defects in the Garden-establishment, which, as they believe, was kept up in its usual high state of efficiency throughout the year. But they are inclined to think that the usual number of excursionists did not visit London during the summer and autumn of the past year, and that many of those who did come were led away from their usual visit to the Society's Gardens by rival attractions in other parts of the metropolis.

The other variations under the other heads of Income hardly call for special remarks; but the Council are pleased to be able to point out an increase of the sum received for compositions, which was £180 more in 1887 than in the previous year.

The total Income of the Society for 1887 was £23,102 15s. 6d., being less than that of 1886 by the sum of £2684 4s. 10d., as shown by the subjoined Table:—

		Inc	om	e of		-	Increase.			Door	000	
	1887.		188	1886.			Increase.		Decrease.			
	£	8.	d.	£	8.	d.	£	8.	d.	£	8.	d
Admissions to Gardens	12,138	5	6	14,974	4	0,				2,835	18	6
Elephant and Camel-riding						-0.0				122		
receipts	419	5	2	454	7	1				35	1	1
Garden Sales	446	8	2	733		6				287		
Rent for Refreshment-rooms	890	13	4	A CONTRACTOR OF THE PARTY OF TH	13	4				136	0	1
Rent for Freehold Premises		0	0	255	0	0						
Admission Fees:												
Past	75	0	0	45	0	0	30	0	40			
Present	515	0	0	445	0	0	70	0	0			• •
Annual Subscriptions:—	1						10000			T TO		
Past	18	0	0	18		0						
Present	5,887	0	0	6,080		0				193	0	1
Future	222	0	0	180		0		0	0	*****		
Compositions	0.70	0	0	630		0	180	0	0			
Ivory Tickets	32	1	0	47		0					5	•
Publications	825	16	11	739	8	5		8	6			
Zoological Record	301	10	4				301					
Dividends	73	10	11	73		4		1	7			
Miscellaneous	193	4	2	85	0	8	108	3	6			
au iscondino des	-					_	-		_	0.70		_
	23,102	15	6	25,787	0	4	10.000					3
Decrease	2,684	4	10			••••	Ded.	In	er.	818	5 6	3
	25,787	0	4	25,787	0	4				2,684	1 4	1

# b. Expenditure.

The ordinary Expenditure of the Society in 1887, under which head is included every item necessary to keep up the whole establishment in a perfect state of efficiency, was £23,876 9s. 1d., being £562 8s. 8d. less than in 1886. On the other hand, a sum amounting altogether to £1259 1s. 1d. was devoted to certain special works and objects, which will be explained in subsequent portions of the Report. These were as follows:—

# Extraordinary Expenditure paid in 1887.

Buildings:— New Wolves' Dens	£ 446		
Works:— Night-Heron's Aviary	. 309	8	1
Publications:— Library Catalogue	. 244	1	11
Jubilee Reception Expenses	0.00		
	£1259	1	1

On adding the Ordinary and Extraordinary Expenditure together it will be seen that the total Expenditure of the year 1887 was £25,135 10s. 2d., the particulars of which, together with a comparison of the corresponding amounts paid in 1886, are given in the subjoined Table:—

	Expenditure of						Increase.	Decrease.
	18	87.		18	86.			
	£	8	. d.	£	8.	d.	£ s. d.	£ 8. d
Rent, Rates, Taxes, and Insurance	1,434	12	10	1,700	7	7		265 14 9
Salaries, Wages, and Pensions	5,919	1	8	5,937	4	9		18 3 1
Provisions	3,932	11	10	4,041	6	4		108 14 6
Cost and Carriage of Animals	961	12	5	803	1	6	158 10 11	
Menagerie Expenses	3,324	8	3	3,561	18	5		237 10 2
Keepers' Dresses		12	8	167	6	6	33 6 2	
Works, Materials, &c		13	6	2,585	19	4		67 5 10
Buildings		7	0				446 7 0	
Garden Expenses		12	5	791	17	9		0 5 4
Advertisements		10	11	234	6	2	31 4 9	
Band Expenses		2	0	225	12	0		. 58 10 0
House and Office Expenses		18	0	786	4	4	16 13 8	
Stationery and Printing (Miscella-								
neous)	385	6	11	387	7	0		2 0 1
Cost of Publications	4		6	2,108	4	3		120 10 9
Cost of Zoological Record		7	4	-,			717 7 4	
Library Expenses		7	7	633	2	8		59 15 1
Expenditure of Davis Bequest	1		11	80		6		1 8 7
Interest on Mortgage and Loan		4	8	367	6	8		28 2 0
Reception Expenses		4	1	001			259 4 1	20 2 0
Grant in aid of Science		-	-	100	0	0	200 4 1	100 0 0
Miscellaneous	28	11	8	56	8	0		27 16 4
Miscenaucous		11	0	0.0	0	-		21 10 4
	25,135	10	9	24,568	10	9	1,662 13 11	1,095 16 6
Increase	20,100	10	-	566		5	1,095 16 6	Ded. Decr.
Increase				900	1.4		1,000 10 0	Ded. Decr.
	25,135	10	2	25,135	10	2	566 17 5	
Ordinary Payments	23 876	9	1	24,438	17	9		562 8 8
Extraordinary ditto	1,259	1	1	129		0	1,129 6 1	
	25,135	10	2	24 568	19	9	566 17 5	
	20,100	10	4	24,000	10	0	000 11 5	

In order to meet the Expenditure of 1887 it was found necessary towards the close of the year to obtain a temporary loan of £3000 from the Society's Bankers. This temporary loan, which it is proposed to pay off during the present and two succeeding years, will not interfere with the operation of extinguishing the remaining mortgage-debt of £8000 on the Society's House, which, according to the arrangement made at the time of its purchase, will be effected by annual instalments of £1000 on the 15th of June in each year, so that the whole will be paid off in June 1895

Thus the total receipts and payments of the past year may be summarized as follows:—

Receipts, 1887.				Payments, 1887.			
Balance brought from December 31, 1886	1,190 23,192	15	8 6 0	Repayment of Mortgage-debt Balance, carried over to 1888	£ 25,135 1,000 1,158  27,293	0	0

# c. Assets and Liabilities.

The Assets and Liabilities of the Society on December 31, 1887, were estimated as follows:—

ASSETS.			
	£	8.	d
Animals in the Menagerie in the Regent's Park	25,902	0	0
Books in the Library at Hanover Square	13.764	0	
Unsold Publications	3,058	0	0
Stock of the Zoological Record	1,000		0
	25,000	0	0
Freehold Premises Railway New			
Cost of £1,900 London and South-Western Railway New	1,938	9	6
4 per cent. Preference Stock (Davis Trust Fund)	1,158	1	0
Cash at the Bankers' (Mesers. Drummond) £ s. d.	1,100		
Rent for Refreshment Rooms 57 3 4			
Rent for Freehold Premises 88 15 0			
Garden Sales			
Annual phoscipulous			
Publication paics			
Zoological Record Sales 27 10 0	492	e	11
	A& VI //		
	102		
	£72,312		
LIABILITIES.			
LIABILITIES.		17	5
Rent and Taxes unpaid:£ s. d.			
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say		17	5
Rent and Taxes unpaid:— $\pounds$ s. d. For the Gardens, say	£72,312	17	5 
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say	£72,312	17	5 
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say	£72,312	17	5 
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say       266 7 6         , Office, say       46 5 0         Bills, &c., estimated at :—       1,273 7 9	£72,312	17	5 
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say       266 7 6         , Office, say       46 5 0         Bills, &c., estimated at :—       1,273 7 9	£72,312	17 8.	5 d.
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say	£72,312 £ 312	17 s. 12	5 d.
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say       266 7 6         , Office, say       46 5 0         Bills, &c., estimated at :—       1,273 7 9         For the Gardens, say       1,273 7 9         , Office, eay       755 10 7	£72,312 £ 312 2,028 3,000	17 8.	5 d. 6
Rent and Taxes unpaid:—       £ s. d.         For the Gardens, say       266 7 6         , Office, say       46 5 0         Bills, &c., estimated at:—       1,273 7 9         For the Gardens, say       755 10 7         Messrs. Drummond, Temporary Loan       755 10 7	£72,312 £ 312 2,028 3,000	17 8.	5 d. 6
Rent and Taxes unpaid :—       £ s. d.         For the Gardens, say       266 7 6         , Office, say       46 5 0         Bills, &c., estimated at :—       1,273 7 9         For the Gardens, say       1,273 7 9         , Office, eay       755 10 7	£72,312 £ 312 2,028 3,000	17 8. 12 3 18 0 0	d. 6

# II. OFFICE, 3 HANOVER SQUARE.

#### 1. SCIENTIFIC MEETINGS.

To the fourteen meetings for the despatch of scientific business held in the Society's Rooms in Hanover Square, in 1887, 133 communications were made. Of these, 95 were from Fellows and 11 from Corresponding Members of the Society. The remaining 27 papers were from individuals not belonging to the Society, and were communicated to it by the Secretary or by other Members. The corresponding number of communications in the year 1886 was 117.

These communications were submitted to the Committee of Publication, by whom the following orders were made respecting them: 5 were ordered to be printed entire in the 'Transactions' of the Society, and 91 in the 'Proceedings,' such illustrations being in each case allowed as the Committee considered necessary for the purpose. Of the remaining communications, abstracts or extracts were considered to be sufficient for publication.

## 2. SCIENTIFIC PUBLICATIONS.

#### a. Proceedings.

The volume of 'Proceedings' for 1887 is on the table. It contains 730 pages illustrated by 55 plates. In the following table are given the number of pages and plates of the volumes of 'Proceedings' for the past ten years:—

			plates.	pages.
1878			62	1056
1879			64	868
1880			64	743
1881			72	1056
1882			61	827
1883			61	704
1884			58	645
1885			62	991
1886			60	716
1887			55	730

#### b. Transactions.

Only one part of 'Transactions' was published in 1887, namely:—

Vol. XII. Part VI. (April, 1887), containing the following memoirs.

On the Anatomy of the Sondaic Rhinoceros. By Frank E. Beddard, M.A., F.R.S.E., F.Z.S., Prosector to the Society, Lecturer on Biology at Guy's Hospital, and Frederick Treves, F.R.C.S., F.Z.S., Hunterian Professor at the Royal College of Surgeons, Surgeon to the London Hospital (with five Plates).

On some new Exotic Amphipoda from Singapore and New Zealand. By the Rev. Thomas R. R. Stebbing, M.A. (with two Plates).

Memoirs which will occ

Memoirs which will occupy five more parts of the Society's 'Transactions' were ordered for publication in 1887. One of these has been already issued, and most of the others are in a forward state.

# c. Zoological Record.

The arrangements made by the Council for taking over the old stock of the 'Zoological Record,' and for carrying on the future publication of that work, were fully explained to the Members in the last Annual Report. Owing to the late date at which some of the Recorders were set to work, and to other slight obstructions, it was not found possible to issue the 'Record' for 1886 until early in the present The volume has now been sent out to about 140 Subscribers, consisting of Members of this Society and of the former "Zoological Record Association," and of certain Learned Societies and Institutions who have likewise the privilege of subscription. Besides this, 33 complete sets of the former years' issues have been sold, at the price of £5 10s. a set, together with a number of odd volumes required by purchasers to complete their sets.

The Council are pleased to think that the Society's efforts to continue the publication and augment the circulation of a work so useful to zoologists have been so far

successful; but they trust that as the value of the work becomes better known, a much greater increase in its circulation will take place.

#### 3. LIBRARY.

The Library has been kept in good working order during the past year, and has been much used by working

zoologists.

The new edition of the Library Catalogue, spoken of in the last Annual Report as ready for issue, was published last summer. It has been long required, owing to the large additions recently made to the Library, and has been found to be most useful.

The cost of its preparation and printing was £244 1s. 11d., which has been charged to the Extraordinary Expenditure

of 1887.

During the year 1887 many important additions were made to the Library, among which attention may be called to the following donations:-

Boulenger. Catalogue of the Lizards in the British Museum. Vol. iii. 1887. Presented by the Trustees of the British Museum.

Burmeister. Atlas de la description physique de la République Argentine. Mammiferes. Livr. 3. 1886. Presented by the Author.

Canestrini. Prospetto dell' Acarofauna Italiana. 1886. Presented by the Author.

Cotes and Swinhoe. A Catalogue of the Moths of India. Part i. Sphinges. Presented by the Trustees of the Indian Museum.

Cunningham. The Lumbar Curve in Man and the Apes. 1886. Presented by the Royal Irish Academy.

Dijmphna. Togtets zoologisk-botaniske Udbytte. 1887. Presented by Dr. C. F. Lütken.

Godwin-Austen. Land and Freshwater Mollusca of India. Part vi. (Plates.) 1887. Presented by the Author.

Johnson. Treatise on the Medicinal Leech. 1816. Presented by the Royal Society.

Journal of Comparative Medicine and Surgery. Vol. viii. No. 4. 1887. Presented by the Editors.

Lubbock. Scientific Lectures. 1879. Presented by W. C. Dale, Esq.

Catalogue of the Fossil Mammalia in the British Lydekker. Museum. Part iv. 1886. Presented by the Trustees of the British Museum.

Moore's Lepidoptera of Ceylon. Part xiii. (completed). 1887. Presented by the Government of Ceylon.

Muhr. Die Mundtheile der Insecten. 1878. Presented by Dr. Emil Holub.

Norske Nordhavs-expedition, 1876–78. Parts xvii. & xviii., a, b. 1887. Presented by Prof. H. Mohn.

Riley. A Collection of Entomological Papers. Presented by the Author.

Taránek. Monographie der Nebeliden Bohmen's. 1882. Presented by Dr. Emil Holub.

The following is a list of the principal zoological works in course of publication of which parts were purchased in 1887:—

Berlese. Acari, Myriapodi e Scorpioni Italiani. Fasc. xxxii.-xlv. Blasius und Hayek. Ornis. Jahr. II. Heft 4; Jahr. III. Heft. 1-3.

Booth. British Birds. Parts xiv., xv. (completed).
Bronn's Thierreich. Band I. (*Protozoa*), Lief. 35-40; Band II. (*Parifera*) Lief 12-16; Band IV. (*Vermes*), Lief. 1-6; Band VI.

(Porifera), Lief. 12–16; Band IV. (Vermes), Lief. 1–6; Band VI. Abth. iii. (Reptilien), Lief. 54–56; Abth. iv. (Vögel), Lief. 16, 17; Abth. v. (Säugethiere), Lief. 29.

Bucquoy, Dautzenberg, et Dollfus. Mollusques marins du Roussillon. Tome i.

Buller. Birds of New Zealand. Parts 1, 2.

'Challenger,' Voyage of H.M.S. Zoology, Vols. xvii.-xxii. Botany, Vol. ii.

Clessin. Malakozoologische Blätter. N. F. Band IX. Bog. 2-4; X. Bog. 1.

—. Die Mollusken-Fauna Oesterreich-Ungarns und der Schweiz. Lief. 1, 2.

Edwards. Butterflies of North America. Ser. 3. Parts 1-4.

Encyclopædia Britannica. Vol. xxii.

Fauna und Flora des Golfes von Neapel. Monogr. xiv.

Fischer. Manuel de Conchyliologie. Fasc. xi. (completed).

Fol. Recueil Zoologique Suisse. Tome iv.

Fowler. Coleoptera of the British Isles. Parts 3-13.

Giglioli. Iconografia dell' Avifauna Italica. Fasc. xxxii -xxxvii. Godman and Salvin. Biologia Centrali-Americana. Zoology, Parts liv.-lxiv.; Botany, Parts xxii.-xxiv.

Gould's Birds of New Guinea. Part xxiii.

—. Trochilidæ. Suppl. Part v. (completion).

Grandidier. Histoire de Madagascar. Vol. xviii. Tome i., Texte. (Lépidoptères.)

Greene. Parrots in Captivity. Vol. iii.

Gruber. Beobachtungen aus der menschlichen und vergleichenden Anatomie. Heft. 1-8.

Haeckel. Die Radiolarien. Theil 2.

Hamann. Beiträge zur Histologie der Echinodermen. Heft 3.
Helmerson und Schrenck. Beiträge zur Kenntniss des Russischen

Reiches. Folge 3. Band II. Herman. Naturhistorische Hefte. Band X. Heft 4; Band XI.

Heft 1. Janson's Cistula Entomologica. Part xxxix. Kobelt. Prodromus Faunæ Molluscorum Testaceorum maria Europæa inhabitantium. Fasc. i.-iv.

—. Iconographie der schalentragender europäischen Meeres-

conchylien. Heft. v.-vii.

—. Rossmässler's Iconographie der europäischen Land- und Süsswasser-Mollusken. N. F. Band III. Lief. i.-iv.

Koch. Arachniden Australiens. Lief. 35, 36. Lescuyer. Mélanges d'Ornithologie. Parts 1-4.

Lilford. British Birds. Parts iv., v.

Martini und Chemnitz. Conchylien-Cabinet. Lief. 342-354. Meinert. Entomologiske Meddelelser. Bind I. Hefte 1, 2.

Nordenskiöld. Vega-Expeditionens. Bände iv., v.

Oberthür. Études d'Entomologie. Part xi.

Olphe-Galliard. Contributions à la Faune Ornithologique de l'Europe Occidentale. Fasc. ii., vi.-xi., and xxii.

Paetel. Catalog der Conchylien-Sammlung. Lief. 1-4. Pelzeln und Madarász. Monographie der Pipridæ. Lief. 1.

Pryer. Rhopalocera Nihonica. Part i.

Rochebrune. Faune de la Sénégambie. Supplement. Fasc. i.

Romanoff. Mémoires sur les Lépidoptères. Tome iii.

Russ. Vögel der Heimat. Lief. 10-17.

Sarasin. Ergebnisse naturwissenschaftlicher Forschungen auf Ceylon. Band I. Heft 1; Band II. Heft. 1, 2.

Schiödte. Zoologia Danica. Hefte 5.

Schneider. Zoologische Beiträge. Band II. Heft 1.

Selenka. Studien über Entwickelungsgeschichte der Thiere. Heft iv. Hälfte 2.

Semper (C.). Reisen im Archipel der Philippinen. Theil II. Band ii. Suppl. Heft iii. Hälfte 1; Band v. Lief. 2.

Semper (G.). Die Schmetterlinge der Philippinischen Inseln. Band i. Lief. 1, 2.

Sharpe and Wyatt. Monograph of the Hirundinidæ. Parts v., vi. Smith and Kirby. Rhopalocera Exotica. Parts i., ii.

Sowerby. Thesaurus Conchyliorum. Part xliv.

Spengel. Zoologische Jahrbücher. Band ii. Heft. 2-4; Band iii. Heft 1.

Staudinger. Exotische Schmetterlinge. Lief. 17-19; Theil II. Lief. 3.

Sundman. Finska Fogelägg. Häft. vii. —. Finlands Fiskar. Häft. vii., viii.

Taschenberg. Bibliotheca Zoologica ii. Lief. iii., iv.

Tryon. Manual of Conchology. Parts xxxiii.-xxxvi.; Ser. 2. Parts ix.-xi.

Veth. Midden-Sumatra. Deel iv. Afd. 5.

Vogt et Yung. Traité d'Anatomie Comparée. Livr. 9, 10.

———. Lehrbuch der Anatomie. Lief. 8-12. Waterhouse. Aid to the Identification of Insects. Part xxviii.

Westerlund. Fauna der in der Paläarctischen Region. Binnenconchylien. Part iii.

Zittel. Handbuch der Paläontologie. Abth. i. Band III. Lief. 1; Abth. ii. Lief. 5.

Some of the most important additions to the Society's

Library, purchased since the last Anniversary, are the following:-

Annali di Storia Naturale and Nuovi Annali delle Scienze Naturali, Bologna. 34 vols. 8vo, 1829-54.

Barnes. Handbook to the Birds of Bombay. 8vo, 1885.

Bonnanus. Museum Kircherianum. 2 vols. Folio, 1773-82.

Capen. Oology of New England. Folio, 1886.

Claus. Die Platysceliden. Folio, 1887.

Collins. An Account of the English Colony of New South Wales. 2 vols. 4to, 1798-1802.

Cope. The Origin of the Fittest. 8vo, 1887.

Darwin. The Life and Letters of Charles Darwin. 3 vols. 8vo, 1887.

Day. British and Irish Salmonidæ. Royal 8vo, 1887.

Dixon. Voyage round the World. 4to, 1789.

Fritsch. Die elektrischen Fische. Abth. I. Folio, 1887.

Green. Ocean Birds. 4to, 1887.

Guillemard. The Cruise of the 'Marchesa.' 2 vols. 8vo, 1886.

Guppy. The Solomon Islands. 2 vols. Royal 8vo, 1887.

Haddon. An Introduction to the Study of Embryology. 8vo, 1887.

Harvie-Brown and Buckley. A Vertebrate Fauna of Sutherland, Caithness, and West Cromarty. 8vo, 1887.

Kirby and Spence. Introduction to Entomology. 4 vols. 8vo, 1815-26.

Maund and Holl. The Naturalist. 5 vols. Royal 8vo, 1837-39.

Meyer. Unser Auer-, Rackel- und Birkwild und seine Abarten.

Text, folio; Plates, Elephant folio, 1887.

Mulsant et Rey. Histoire Naturelle des Coléoptères de France. 16 vols. 8vo, 1854-79.

Pallas. Icones Insectorum. 4to, 1781.

Philosophical Transactions. Vols. xc.-cx. 4to, 1800-20.

Ridgway. Manual of North-American Birds. Royal 8vo, 1887. Rösel. Der monatlich - herausgegebenen Insecten - Belustigung. Theil. I.-IV., in 6 vols. 4to, 1746-61.

Schaeffer. Icones Insectorum. 3 vols. 4to, 1766.

Seebohm. The Geographical Distribution of the Charadriidæ. 4to, 1887.

Smith. The Birds of Wiltshire. 8vo, 1887.

Spencer. The Principles of Psychology. 2nd edition. 2 vols. 8vo, 1870-72.

Trimen and Bowker. South-African Butterflies. 2 vols. Royal 8vo, 1887.

Waterton. Wanderings in South America. 4to, 1825.

Wiedersheim. Lehrbuch der vergleichenden Anatomie der Wirbelthiere. Zweite Auflage. 8vo, 1886.

Wilkes. English Moths and Butterflies. 4to, 1772.

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- The American Academy of Arts and Sciences, Boston.

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  Memoirs, vol. xi., part 4, no. 5.
- The Buffalo Society of Natural Sciences, Buffalo. Bulletin, vol. v., no. 2.
- The Museum of Comparative Zoölogy, Harvard College, Cambridge, Mass.

Bulletin, vol. xiii., nos. 2-5. Memoirs, vol. xvi., nos. 1, 2. Annual Report, 1886-87.

- The Elliott Society of Science and Art, Charleston. Proceedings, 1875-86.
- The Nova Scotia Institute of Natural Science, Halifax.
  Proceedings and Transactions, vol. vi., pt. 4.
- The "Antonio Alzate" Scientific Society, Mexico. Memorias, tomo i., cuad. 1-4.
- The Geological and Natural History Survey of Minnesota, Minneapolis.

  Annual Reports, 13, 14.
- The Royal Society of Canada, Montreal.

  Proceedings and Transactions, vols. iii., iv.
- The Connecticut Academy of Arts and Sciences, New Haven.

  Transactions, vol. vii., part 1.
- The American Museum of Natural History, New York.

  Bulletin, vol. i., no. 8; ii., no. 1.

  Annual Report, 1886-87.
- The New York Academy of Sciences, New York.

  Annals, vol. iii. nos. 11, 12; iv., nos. 1, 2.

  Transactions, vol. iv.; v., nos. 7, 8.

- The Geological and Natural-History Survey of Canada, Ottawa.
  - Annual Report, n. s., vol. i.
- The Academy of Natural Sciences, Philadelphia. Proceedings, 1886, part 3; 1887, parts 1, 2.
- The American Entomological Society, Philadelphia. Transactions, vol. xiii., nos. 3, 4.
- The American Philosophical Society, Philadelphia. Proceedings, vol. xxiii., no. 124; xxiv., no. 125.
- The Franklin Institute, Philadelphia. Journal, 1887.
- The Wagner Free Institute of Science, Philadelphia. Transactions, vol. i.
- The American Association for the Advancement of Science, Salem.

  Proceedings, 34th and 35th Meetings, 1886, 1887.
- The Peabody Academy of Science, Salem.
  Annual Report, 1887.
- The California Academy of Science, San Francisco. Bulletin, vol. ii., nos. 6, 7.
- The Trenton Natural-History Society, Trenton. Journal, vol. i., no. 2.
- The Biological Society, Washington.
  Proceedings, vol. iii.
- The Philosophical Society, Washington. Bulletin, vol. ix.
- The Smithsonian Institution, Washington.

  Annual Report, 1884, part 2; 1885, part 1.

  Annual Report of the Bureau of Ethnology, 1882-83.

# AMERICA (SOUTH).

The National Academy of Sciences of Cordoba, Buenos Ayres.

Boletin, tomo ix., entr. 1-4. Actas, tomo v., entr. 3.

## AUSTRALIAN COLONIES.

The Royal Society of Tasmania, Hobart.
Papers and Proceedings for 1886.

The Linnean Society of New South Wales, Sydney.

Proceedings, ser. 2, vol. i., parts 3, 4; vol. ii., parts 1, 2.

The Royal Society of New South Wales, Sydney.

Journal and Proceedings, vol. xix.

The New-Zealand Institute, Wellington.
Transactions and Proceedings, vol. xix.

#### AUSTRIA.

The Academy of the University, Cracow.

Sprawozdanie komisyi fizyjograficznej, tome xx.

The Imperial Academy of Sciences, Vienna.

Denkschriften, Bänd. l.-lii.

Sitzungsberichte, Bänd. xcii-xciv.

The Zoological and Botanical Society, Vienna.

Verhandlungen, Band xxxvi., Quartal 3, 4; xxxvii., Quartal 1, 2.

#### BELGIUM.

The Entomological Society of Belgium, Brussels.

Annales, tome xxx.

The Senckenbergian Natural-History Society, Frankfort a. M.

Bericht, 1887.

The Royal Society of Sciences, Göttingen.

Abhandlungen, Band xxxiii. Nachrichten, 1886.

The Imperial Leopoldino-Carolinian Academy of Naturalists, Halle.

Nova Acta, Bänd. xlvii., xlviii. Leopoldina, Heft. 21, 22.

The Natural History Society, Halle.

Abhandlungen, Band xvi., Heft 4. Bericht, 1885–86.

The Natural History Union, Hamburg.

Abhandlungen, Band ix., Heft. 1, 2.

The Society of Natural History Conversation, Hamburg. Verhandlungen, Band vi.

The Medical and Natural-History Society, Jena. Jenaische Zeitschrift, Band xx.

The Academy of Metz.

Mémoires, sér. 3, ann. xiii.

The Royal Bavarian Academy of Sciences, Munich.

Abhandlungen, Band xvi., Abth. 1. Sitzungsberichte, 1886, Heft. 1-3; 1887, Heft. 1, 2. Inhaltverzeichniss der Sitzungsberichte, 1871-85.

The Westphalian Provincial Union of Science and Art, Münster.

Jahresbericht, xv.

The Natural-History Union, Würtemberg. Jahreshefte, Jahrg. xliii.

GREAT BRITAIN AND IRELAND.

The Belfast Natural-History and Philosophical Society, Belfast.

Report and Proceedings, Sessions 1886-87.

- The Birmingham Philosophical Society, Birmingham. Proceedings, vol. v., part 2.
- The Essex Field Club, Buckhurst Hill, Essex.

  Transactions, vol. iv., part 2.

  The Essex Naturalist, vol. i., nos. 1, 2, 5-11.
- The Philosophical Society, Cambridge.

  Proceedings, vol. v., part 6; vi., parts 1, 2.

  Transactions, vol. xiv., part 2.
- The Royal Dublin Society, Dublin.

  Scientific Transactions, ser. 2, vol. iii., parts 11-13.

   Proceedings, n. s., vol. v., parts 3-6.
- The Royal Geological Society of Ireland, Dublin. Journal, n. s., vol. viii., part 2.
- The Royal Irish Academy, Dublin.

  Proceedings (Science), ser. 2, vol. iv., no. 5.

   (Polite Literature), ser. 2, vol. ii., no. 7.

  Transactions (Science), vol. xxviii., nos. 21–25.

   (Polite Literature), vol. xxvii., nos. 6–8.
- The Hertfordshire Natural-History Society, Hertford.
  Transactions, vol. iv., parts 5-7.
- The Philosophical and Literary Society, Leeds.
  Annual Report, 1886-87.
- The Yorkshire Naturalists' Union, Leeds.
  Transactions, part 9.
- The Literary and Philosophical Society, Liverpool.

  Proceedings, nos. xxxix., xl.
- The British Association for the Advancement of Science, London.

  Report, 56th Meeting, Birmingham, 1886.
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  Transactions, 1886, part 5; 1887, parts 1-3.

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Quarterly Journal, vol. xliii. List of Fellows of the Society, 1887.

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Transactions (Botany), vol. ii., parts 9, 11, 12.

Journal (Zoology), vol. xx., nos. 117, 118; xxi., nos. 127-129; xxii., no. 136.

— (Botany), vol. xxi., nos. 136-139; xxii., nos. 148, 149; xxiii., no. 152; xxiv., nos. 158-161.

Proceedings, Nov. 1886—June 1887.

# The National Fish Culture Association, London. Journal, vol. i., nos. 2, 3.

# The Quekett Microscopical Club, London. Journal, ser. 2, vol. iii., nos. 17-20.

# The Royal Agricultural Society of England, London. Journal, ser. 2, vol. xxiii., parts 1, 2.

### The Royal Asiatic Society of Great Britain and Ireland, London.

Journal, new series, vol. xix., part 4.

# The Royal Geographical Society, London. Proceedings, vol. ix.

# The Royal Institution of Great Britain, London. Proceedings, vol. xi., part 3; xii., part 1. List of Members, 1886-87.

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# The Royal United Service Institution, London. Journal, 1887.

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- The Tyneside Naturalists' Field Club, Newcastle.

  Natural History Transactions, vol. viii., part 2; ix., part 1.
- The Marine Biological Association, Plymouth. Journal, no. 1.
- The Plymouth Institution and Devon and Cornwall Natural-History Society, Plymouth.

  Annual Report and Transactions, vol. ix., part 3.
- The Royal Institution of Cornwall, Truro. Journal, vol. ix., part 2.
- The Yorkshire Philosophical Society, York.
  Annual Report, 1886.

#### HOLLAND.

The Royal Academy of Sciences, Amsterdam.

Verhandelingen (Natuurkunde), deel xxv. Verslagen en Mededeelingen (Natuurkunde), derde reeks, deel 2; (Letterkunde), derde reeks, deel 3. Jaarboek, 1885.

The Dutch Society of Sciences, Haarlem.

Archives Néerlandaises, tome xxi., livr. 2-5; xxii., livr. 1-3. Natuurkundige Verhandelingen, vers. 3, deel iv., no. 4; v., no. 1.

The Entomological Society of the Netherlands, The Hague.

Tijdschrift voor Entomologie, deel xxix. afl. 4; xxx.

#### ITALY.

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  Mittheilungen, Band vii. Heft 2.
- The Society of Naturalists, Naples. Bollettino, ser. 1, vol. i., fasc. 1, 2.
- The Royal Academy of the Lincei, Rome.

Rendiconti, vol. ii. sem. 2, fasc. 10–12; iii., fasc. 1–13; iii., sem. 2, fasc. 1–5.

Memorie, ser. 4, vol. i.

The Museum of Zoology and Comparative Anatomy of the Royal University, Turin. Bollettino, nos. 1-32.

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Atti, vol. xxii., disp. 1-15.

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#### JAPAN.

The Imperial University, Tōkyō.

Journal of the College of Science, vol. i.

Mittheilungen of the Medical Faculty, Band i., no. 1.

#### PORTUGAL.

The Royal Academy of Sciences, Lisbon.

Jornal, nos. xliii.-xlvi.

#### RUSSIA.

The Natural-History Society, Dorpat.
Sitzungsberichte, Band viii., Heft 1.
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The Society of Sciences of Finland, Helsingfors. Bidrag, Haftet 44.

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Mélanges Biologiques, tome xii., livr. 5.

Mémoires, 7e série, tome xxxiv., nos. 7-13; xxxv., nos. 1-7.

#### SCANDINAVIA.

The Bergen Museum, Bergen.
Aarsberetning, 1886.

The Natural History Society, Copenhagen. Videnskabelige Meddelelser, 1884-86.

The Royal Danish Society of Sciences, Copenhagen.

Oversigt, 1886, no. 3; 1887, no. 1.

Mémoires, 6e sér., vol. iv., no 3.

The Royal Society of Sciences, Upsala. Nova Acta, ser. 3, vol. xiii., fasc. 2.

#### SPAIN.

The Royal Academy of Sciences, Madrid.

Revista, tomo xxii., no. 2, 3.

Memorias, tome xi.

The Spanish Natural-History Society, Madrid. Anales, tomo xv., cuad. 3; xvi., cuad. 1, 2.

#### SWITZERLAND.

The Vaudoise Society of Sciences, Lausanne. Bulletin, 3° série, vol. xxii., no. 95; xxiii., no. 96.

The Society of Natural Sciences, Neuchâtel.
Bulletin, tome xv.

Donations, Memoirs, and Papers have also been received from:—Prof. Paul Albrecht; the Editors of the 'American Journal of Science'; the Editors of the 'American Naturalist'; the Editors of the 'Archiv für Naturgeschichte'; the Editors of the 'Athenæum'; A. F. Baillie, Esq.; the Editors of the 'Athenæum'; A. F. Baillie, Esq.; T. S. Barrett, Esq.; Edward Bartlett, Esq.; Dr. G. Baur; Dr. R. Blasius; Rev. L. Blomefield; T. B. Blow, Esq.; Dr. H. Bolau; the Brazilian Legation; the Trustees of the British Museum; Dr. H. Burmeister; F. M. Campbell, Esq.; the Geological and Natural History Survey of Canada; the Editors of the 'Canadian Record'; Prof. E. D. Cope; Dr. A. Dubois; Dr. A. Ernst; The National Central Library, Florence; H. J. K. Gaskoin, Esq.;

J. H. Gurney, Jun., Esq.; Dr. Holub; the Geological Survey of India; the Editors of the 'Journal de Conchyliologie'; Sydney T. Klein, Esq.; Prof. A. Kölliker; Dr. H. Lansdell; Mons. F. Lataste; Dr. R. Leuckart; Dr. C. Lütken; R. Lydekker, Esq.; Professor K. Möbius; Prof. H. Mohn; the Editors of the 'Naturalist'; the Editors of 'Nature'; the Colonial Museum of New Zealand; the Nottingham Naturalists' Society; the Oxford and Cambridge Club; Dr. Paul Pelseneer; Prof. C. V. Riley; Alfred Sanders, Esq.; Dr. R. Scharff; P. L. Sclater, Esq.; Dr. R. W. Shufeldt; the South Australian Zoological and Acclimatization Society; Dr. Michele Stossisch; E. E. Thompson, Esq.; the United States Fish Commission; the United States Geological Survey; the University College of London; F. H. Waterhouse, Esq.; and the Zoological Society of Philadelphia.

# III. GARDENS, REGENT'S PARK.

# 1. WORKS AND REPAIRS.

Two important additions were made to the buildings in the Society's Gardens during the past year, and seem in each case to have fully answered the purposes for which

they were intended.

The foundations of the new Dog-kennels or "Wolves-and-Foxes Dens" were laid in 1886, and the plan for their erection was spoken of in the last annual Report. The Council thought it unadvisable to delay the completion of this building any longer, and the Society's workmen were accordingly employed upon it during the greater part of the past autumn. Only the iron-work and the stone-work were let out, the rest of the building having been erected by the Society's staff, under the supervision of Mr. Trollope, by whom the plans were drawn. The whole building was completed in November last, and is now tenanted by a series of representatives of the genus Canis, which were previously lodged in several different parts of the Gardens. The building consists of a centre with four larger dens (12 ft. by 11), and two wings, each

containing five smaller dens (8 ft. by 10). It is placed on the extreme southern edge of the Gardens, beyond the Lion-House. The following is a list of the representatives of the various species of Dogs, Foxes, and Wolves now exhibited in it, or to be removed thereto, when vacancies occur.

# List of Specimens of the Genus Canis in the Society's Gardens.

1, 2. Canis lupus, 3 ♀. Received in exchange, Dec. 5, 1887.

3. Canis lupus, 3. Presented by C.S. Hardy, Esq., Dec. 14, 1887.

4. Canis niger, 3. Received in exchange from the Zool. Gardens, Calcutta, May 5, 1883, to which institution it was presented by Major Fred. Clowes.

5. Canis vulpes. Presented by Mr. Thos. Legge, July 30, 1884.

6. Canis vulpes. Presented by Lady Brassey, F.Z.S., Feb. 21, 1885.

7. Canis vulpes. Presented by A. B. Priestly, Esq., July 3, 1886.

8. Canis vulpes. Presented by C. Heseltine, Esq., July 8, 1885.

9, 10, 11. Canis lagopus. Presented by T. Nordenfelt, Esq., C.E., Sept. 27, 1887.

12. Canis javanicus, 3. Purchased, Sept. 29, 1887.

13. Canis aureus. Presented by J. Smith, Esq., Aug. 22, 1878.

 Canis aureus, ♀. Presented by Capt. W. Greake, Sept. 23, 1887.

15. Canis griffithii. Presented by Lt.-Col. Sir O. B. St. John, Dec. 29, 1887.

16. Canis anthus, J. Presented by Capt. W. F. Wardroper, Dec. 4, 1882.

17. Canis anthus, ♀. Presented by A. T. Marsh, Esq., Sept. 14, 1886.

18, 19. Canis mesomelas, ♂♀. Presented by F. Mosenthal, Esq., May 12, 1886.

20, 21. Canis lateralis, & Q. Purchased, May 28, 1886.

22. Canis pallidus. Presented by Capt. J. S. Talbot, Nov. 24, 1885.

23. Canis chama. Purchased, June 26, 1886.

24. Canis latrans. Presented by R. Payze, Esq., July 8, 1884.

25. Canis latrans, J. Presented by Prof. C. M. Vincent, Aug. 21, 1887.

26. Canis latrans, Q. Presented by Baron Ferdinand de Rothschild, F.Z.S., Dec. 5, 1885.

27. Canis fulvus. Deposited, Nov. 10, 1876.

- 28. Canis fulvus. Presented by Messrs. Ensor, Weber, & Co., July 23, 1886.
- 29. Canis fulvus. Presented by Miss Cameron, Sept. 24, 1887.

30. Canis velox. Received in exchange, Jan. 17, 1885.

31. Canis virginianus. Received in exchange, Oct. 23, 1886.

32. Canis azaræ. Purchased, June 16, 1885.

33. Canis rudis, 3. Presented by Capt. J. Smith, Sept. 30, 1886.

34. Canis rudis. Purchased, Dec. 2, 1886.

35. Canis fulvipes? (Tierra del Fuego). Presented by Miss M. M. Wroughton, Sept. 26, 1887.

36. Canis dingo, ♀. Deposited July 4, 1887.

A second noteworthy addition to the buildings in the Gardens made during the past year is the New Aviary for flying birds, which has been erected on the Water-fowls' Lawn, opposite the Eastern Aviary. The object of it is to enclose a space so large and high that the birds which inhabit it may be induced to use their wings, and to lead a more natural life and show off their habits better than they can be expected to do in ordinary Aviaries. The New Aviary or "Night-herons' Pond," as it is proposed to call it, is 105 feet long and 62 broad, and rises to a height of 27 feet in the centre of the roof, which is formed of galvanized wire. It encloses a pond and a number of trees and shrubs, in which it is hoped that the tenants may be induced to build their nests. Although the birds were not placed in it until the month of June last, a pair of Ibises made a nest in one of the trees, and successfully reared two young birds. This year it is hoped that Nightherons and other selected tenants of the Night-herons' Pond will follow the good example set them.

Besides these two new buildings, various repairs and renovations were carried out by the Society's staff of workmen during the year 1887. Amongst these may be mentioned the general repair of the roof of the Eastern Aviary, the repair and re-glazing of the roof of the Ostrichhouse, and the painting outside of the new Reptile-house. Besides these, a quantity of ballast was burnt for the repairs of the roads and paths, and many other and smaller works and improvements were carried out.

#### 2. STAFF.

The permanent Staff of the Society's Gardens consists of:

1 Superintendent.

1 Assistant Superintendent.

1 Head Keeper.

6 Keepers (1st class).

10 Keepers (2nd class). 8 Keepers (3rd class).

3 Money-takers.

1 Storekeeper.

1 Cook.

1 Office Clerk.

1 Prosector's Assistant.

1 Head Gardener.

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Besides these there are usually 19 Helpers in the Menagerie, 10 Garden-labourers, 7 Artisans, 2 Painters, 6 Labourers, 1 Butcher, 2 Firemen, 2 Night-Watchmen, and 1 Time-keeper employed at weekly wages; so that the number of the whole staff may be reckoned at about eighty-five persons.

#### 3. VISITORS.

The total number of visitors to the Society's Gardens during the year 1887 was 562,898, as will be seen by the following Table, which gives the corresponding numbers of entrances under each head for 1886 and 1887:—

#### Visitors to the Gardens.

	1887.	1886.	Comp	arison.
Fellows and Friends	176,401 119,325 206,825	181,637 155,021 228,863		5,236
Paying { at 6d. each	38,631 21,716	58,013 16,140		22,038 19,382 5,576
	562,898	639,674	Decr.	76,776

The subjoined Table contains a statement of the Number of Visitors to the Society's Gardens during each year, from the year 1828 to the year 1887.

Number of Visitors to the Gardens, 1828-87.

Year. Number.	Year. Number.
1828 98,605	1859 364,356
1829 189,913	1860 394,906
1830 223,420	1861 381,837
1831 262,193	†1862 682,205
1832 206,652	$1863 \dots 468,700$
1833 211,343	1864 507,169
1834 208,583	$1865 \dots 525,176$
1835 210,068	$1866 \dots 527,349$
1836 263,372	1867 556,214
1837 173,778	1868 573,186
1838 179,197	1869 572,848
1839 158,432	1870 573,004
1840 141,009	1871 595,917
1841 132,616	1872 648,088
1842 107,459	1873 713,046
1843 98,280	1874 706,907
1844 101,527	1875 699,918
1845 99,615	±1876 915,764
1846 100,045	1877 781,377
1847 93,546	1878 706,713
1848 143,630	1879 643,000
1849 168,895	1880 675,979
1850 360,402	1881 648,694
*1851 667,243	1882 849,776
1852 305,203	1883 743,485
1853 409,076	1884 745,460
1854 407,676	1885 659,896
1855 315,002	1886 639,674
1856 344,184	1887 562,898
1857 339,217	
1858 351,580	† Year of the International Exhibition.
* Year of the Great Exhibition.	I Year of the exhibition of the Prince of Wales's Indian Menagerie.

# 4. PROSECTOR'S DEPARTMENT.

The Prosector (Mr. F. E. Beddard) reports as follows:— The number of deaths in the Society's Menagerie during the year 1887 was 925, showing a decrease of 152 as compared with those of the previous year.

The most important deaths which have occurred during

the year were the following:-

1. A Hooker's Sea-Lion (Otaria hookeri), one of three males presented to the Society in January 1887. A paper upon the external characters and anatomy of this littleknown Sea-Lion has been read before the Society and will shortly be published in the "Transactions."

2. The young Gorilla purchased on the 24th of Oct. 1887, died on the 9th December following, having thus lived for a period of about two months in the Gardens. Its body was purchased by the Royal College of Surgeons.

3. A Lion, purchased by the Society in 1878, died,

apparently of peritonitis.

4. Two Hoffmann's Sloths, which had lived for eleven

years in the Menagerie.

Two examples, a male and a female, of Michie's Tufted Deer and two Camels complete the list of the more important animals which have been lost during the past year.

A large amount of the constantly accumulating material of the Prosector's stores has been utilized for various

purposes.

The greater part of the pathological material has been studied by Mr. J. Bland Sutton and Mr. Sibley. Mr. Storer Bennett has also acquired specimens illustrating the

diseases of teeth for the Dental Museum.

Material has also been supplied for Museum purposes to Prof. Flower (Natural History Museum, South Kensington); Mr. Stewart (Royal College of Surgeons Museum); Prof. Macintosh (St. Andrews University); Prof. D'Arcy Thompson (University College, Dundee), and Prof. Milne-Edwards (Paris). Specimens for purpose of research have been sent to Prof. W. K. Parker and Prof. B. C. Windle.

# 5. ZOOLOGICAL LECTURES. .

The arrangements for the Davis Lectures on zoological

subjects for the present year are as follows:-

A course of 10 Lectures, which commenced April 19th, is being delivered in the Lecture-room in the Society's Gardens, Regent's Park, on Thursdays, at 5 P.M., by

Mr. F. E. Beddard, M.A., Prosector to the Society and Davis Lecturer. Subject: REPTILES, LIVING AND EXTINCT.

These Lectures are a continuation of the series given last year in connection with the London Society for the Extension of University Teaching. In accordance with the method adopted by that Society, each Lecture is followed by a Class, which is occupied by an inspection and study of the animals referred to in the Lecture.

The Fee for the Course (including admission to the Gardens on the days of Lecture) is 10s. The Course is free to Fellows of the Society. Tickets for the Course may be obtained from Mr. F. E. Beddard, Zoological

Society's Gardens, Regent's Park, N.W.

#### 6. The Jubilee Fête of 1887.

In celebration of the Fiftieth Anniversary of Her Majesty's reign, and in accordance with a general desire to mark this epoch in some special manner, it was determined by the Council to hold the General Meeting of the Society in June last in the Gardens, and at its conclusion to have a general Reception of the Fellows of the Society

and other invited guests.

This plan was carried out in a manner which, the Council believe, was allowed on all sides to be very successful. At the General Meeting which was first held, after the usual formal business the Silver Medal, awarded to the Maharajah of Kuch-Behar, in acknowledgment of his donations to the Society's Menagerie, was presented to His Highness in person, and suitably acknowledged. Before concluding the Meeting the President of the Society delivered an address upon the progress of the Society since its commencement. The address, which will be found in the form of an Appendix to the present Report, was received with much interest, and the vote of thanks to Prof. Flower for preparing it was moved by Sir Joseph Fayrer, F.R.S., and seconded by the Maharajah of Kuch-Behar, F.Z.S.

The Reception held after the General Meeting was numerously attended by Fellows of the Society and their friends and other specially invited guests, amongst whom may be mentioned the Queen of Hawaii and Princess Liliokalani, His Highness the Thakore Sahib of Limbdi, His Highness the Prince Devawongse, and the Maharajah of Bhurtpore.

#### 7. REFRESHMENT DEPARTMENT.

The long-standing contract between the Society and Messrs. F. Trotman & Sons for the supply of refreshments in the Society's Gardens having come to an end by mutual agreement on the 31st of December last, the Council determined to invite an offer from Messrs. Spiers and Pond, the well-known refreshment-contractors, to succeed to the vacant tenancy. After some negotiation an agreement was arrived at which the Council trust will be satisfactory to both parties, and Messrs. Spiers and Pond, accordingly commenced the supply of refreshments in the Society's Gardens on the 1st of January of the present year. The well-known position of the firm of Messrs. Spiers and Pond in this class of business renders it quite unnecessary for the Council to say more on this subject, further than that they have every reason to believe that the business will be carried on in a style creditable to the Society and satisfactory to the Fellows and to the Visitors.

#### 8. MENAGERIE.

# a. Additions to the Menagerie in 1887.

The number of animals belonging to the first three classes of Vertebrates living in the Society's Menagerie at the close of 1887 was 2525. The corresponding number on the 31st of December, 1886, was 2609, as will be seen by the subjoined Table:—

	Decem	ber 31.	Composicon		
	1887.	1886.	Comparison.		
Quadrupeds	735 1331 459	777 1429 403	Decr. 42 Decr. 98 Incr. 56		
	2525	2609	Decr. 84		

The total number of registered additions to the Menagerie in 1887 was 1135, of which 600 were acquired by presentation, 176 by purchase, 138 were bred in the Gardens, 135 were received on deposit, and 86 obtained in exchange.

The mode in which these figures compare with those of

previous years is shown in the subjoined table:-

	Presented.	Purchased.	Born.	Deposited.	Received in Exchange.	Total.
1875.	559	557	156	143	43	1458
1876.	533	316	171	172	27	1219
1877.	506	324	181	181	68	1260
1878.	511	272	150	178	71	1182
1879.	550	421	115	124	56	1266
1880.	624	515	148	161	40	1488
1881.	565	310	167	136	35	1213
1882.	772	402	113	111	25	1423
1883.	637	376	128	219	28	1388
1884.	646	524	174	229	133	1706
1885.	762	251	241	135	62	1451
1886.	851	236	171	232	48	1538
1887.	600	176	138	135	86	1135

The following is a list of the most noticeable additions made to the Menagerie during the year 1887:—

1. Two Blakiston's Owls (Bubo blakistoni), from Japan, pre-

sented by J. H. Leech, Esq., F.Z.S., January 20th.

2. Three Hooker's Sea-Lions (Otaria hookeri), from the Auckland Islands, presented by the Hon. W. J. M. Larnach, C.M.G., Minister of Marine of New Zealand, and received on the 26th January.

3. A Blue Penguin (Eudyptula minor), from Cook's Straits, New Zealand, presented by Bernard Lawson, Esq., January 26th, being the first example of this interesting little Penguin that

has been received by the Society.

4. A White-fronted Heron (Ardea novæ-hollandiæ), from Australia, presented by F. B. Dyas, Esq., February 25th, new to the Society's Collection

to the Society's Collection.

5. A young specimen of a Black-winged Kite (*Elanus cæruleus*), taken from the nest by Mr. R. Southey, of Southfield, Plumstead, Cape of Cood Hope, and received February 28th. This species was likewise new to the Society's Collection.

6. Two Long-tailed Grass-Finches (Poëphila acuticauda) from Derby, King Sound, N.W. Australia, presented to the Collection

by Mr. Walter Burton, F.Z.S., March 18th.

7. A Fisk's Snake (Lamprophis fiski) and a Narrow-headed

Toad (Bufo angusticeps) from South Africa, presented to the Society by the Rev. G. H. R. Fisk, and received March 24th. Both of these were new to the Society's Collection, and Fisk's Snake, being new to science, has been named by Mr. Boulenger after its donor.

8. Two Crested Ducks (Anas cristata) from the Falkland Islands, received April 16th, presented by Frederick E. Cobb,

Esq., C.M.Z.S.

9. A Tooth-billed Pigeon (Didunculus strigirostris), brought home from the Samoan Islands, and presented to the Society by Mr. Wilfred Powell, C.M.Z.S., H.B.M.'s Consul for those Islands. But three specimens of this rare, and now nearly extinct, Pigeon have previously reached the Society's Collection.

10. A Red-and-White Flying Squirrel (*Pteromys alborufus*), from the province of Szechuen, in the interior of China, presented by Percy Montgomery, Esq., of Ichang, China, and received

September 9th.

11. An Urva Ichneumon (Herpestes urva), purchased September 17th. This Himalayan Carnivore was also new to us.

12. A young male Gorilla (Anthropopithecus gorilla), purchased October 10th of Mr. Cross of Liverpool, being the first Gorilla acquired by the Society. This animal was not strong on its arrival, and lived only about two months in the Gardens.

13. An Aye-Aye (Chiromys madagascariensis), purchased October 28th, being the second example of this rare animal

acquired by the Society.

# b. List of Species new to the Collection exhibited during the year 1887.

The following list contains the specimens exhibited in 1887 which are referable to species not included in the last (ninth) edition of the List of Animals.

#### i. MAMMALS.

- 1a. Anthropopithecus gorilla (Savage). Gorilla. Hab. West Africa.
  - a. Male. Purchased, Sept. 10, 1887. See P. Z. S. 1887,
     p. 559.
- 75 a. Cebus apella, I. Geoffr. Horned Capuchin Monkey. Hab. South America.
  - a. Male. Purchased, Feb. 19, 1887.

75b. Cebus flavescens, Gray. Yellowish Capuchin Monkey.

Hab. South America.

a. Presented by J. H. Williams, Esq., Aug. 26, 1887.

203a. Herpestes urva, Hodgs. Urva Ichneumon.

Hab. Nepal.

a. Purchased, Sept. 17, 1887. See P. Z. S. 1887, p. 559.

223a. Canis griffithi (Blyth). Griffith's Fox. Hab. Afghanistan.

a. Presented by Lieut.-Col. Sir Oliver B. C. St. John, K.C.S.I., R.E., F.Z.S., Dec. 29, 1887.

290a. Otaria hookeri (Gray). Hooker's Sea-Lion. Hab. Auckland Islands, New Zealand.
a-c. Males. Presented by the Hon. W. J. M. Larnach, C.M.G., Jan. 26, 1887. See P. Z. S. 1887, p. 138.

333 a. Sciurus arizonensis, Coues. Arizona Squirrel.

Hab. New Mexico, U.S.A.
a. Presented by Dr. R. W. Shufeldt, July 21, 1887.

345 a. Pteromys alborufus, A. Milne-Edwards. Red-and-White Flying-Squirrel.

Hab. Szechuen, China.

a. Presented by Percy Montgomery, Esq., Sept. 9, 1887. See P. Z. S. 1887, p. 559.

# ii. BIRDS.

167 c. Poëphila acuticauda (Gould). Long-tailed Grass-Finch.

Hab. N.W. Australia.

a. Male; b. Female. Presented by Mr. Walter Burton, F.Z.S., March 18, 1887.

- 237 a. Passer arcuatus (Gm.). Cape Sparrow.Hab. South Africa.a, b. Purchased, June 2, 1887.
- 330a. Sturnus unicolor, Temm. Unspotted Starling. Hab. Spain.

  a-h. Deposited, July 13, 1887.
- 576a. Platycercus cyanogenys, Gould. Blue-cheeked Parrakeet.
   Hab. North Australia.
   a. Received in exchange, May 13, 1887.
- 719a. Bubo blakistoni, Seebohm. Blakiston's Eagle-Owl. Hab. Yesso, Japan.
  a, b. Presented by J. H. Leech, Esq., F.Z.S., Jan. 20, 1887. See P.Z.S. 1887, p. 138.
- 724a. Scops pennatus, Hodgson. Himalayan Scops Owl. Hab. Himalayas.
  a. Presented by J. H. Leech, Esq., F.Z.S., Nov. 6, 1887.
- 834a. Elanus cæruleus (Desf.). Black-winged Kite.

  Hab. South Africa.
  a. Presented by R. Southey, Esq., Feb. 28, 1887. See
  P. Z. S. 1887, p. 319.
- 890a. Ardea novæ-hollandiæ, Latham. White-fronted Heron.
  Hab. Australia.
  a. Presented by F. B. Dyas, Esq., Feb. 25, 1887. See P. Z. S. 1887, p. 319.
- 995 a. Anas cristata, Gmelin. Crested Duck.
  Hab. Falkland Islands.
  a, b. Presented by Fred. E. Cobb, Esq., C.M.Z.S., April 16, 1887. See P. Z. S. 1887, p. 396.

- 1420a. Eudyptula minor (Temm.). Blue Penguin. Hab. New Zealand.
  - a. Presented by Bernard Lawson, Esq., Jan. 26, 1887. From Cook's Straits. See P. Z. S. 1887, p. 139.

#### iii. REPTILES.

- 98c. Hemidactylus turcicus (Linn.). Turkish Gecko. Hab. S. Europe.
  a-d. Purchased, Aug. 8, 1887. From Sardinia.
- 124a. Eremias rubro-punctata, Dum. et Bibr. Red-spotted Lizard.

Hab. Egypt.

- a, b. Presented by G. Wigan, Esq., May 17, 1887. From Moses' Wells, Sinaitic Peninsula. See P. Z. S. 1887, p. 482.
- 145 a. Chalcides tridactylus, Laur. Three-toed Chalcis. Hab. South of Europe.
  a, b. Purchased, Aug. 8, 1887. From Sardinia.
- 272 a. Thamnodynastes nattereri (Boie). Natterer's Snake. Hab. Brazil.
  a, b. Purchased, May 3, 1887.
- 231 a. Tropidonotus erythrogaster (Shaw). Copper-bellied Snake.
  Hab. North America.
  a. Purchased, Sept. 8, 1887.
- 241a. Coluber quadrivittatus, Holbr. Chicken Snake. Hab. North America.
  - a. Presented by the Natural History Society of Toronto, Canada, Oct. 24, 1887. From Florida.

- 276a. Lamprophis fiski, Boulenger. Fisk's Snake. Hab. South Africa.
  - a. Presented by the Rev. G. H. R. Fisk, C.M.Z.S., March 24, 1887. See P. Z. S. 1887, p. 397, pl. xxxiv.
- 300 a. Crotalus adamanteus, Beauvais. Water Rattlesnake. Hab. Florida.
  - a. Presented by the Natural History Society of Toronto, Canada, Oct. 24, 1887.

#### iv. BATRACHIANS.

- 4a. Rana sylvatica, Leconte. Wood Frog. Hab. Canada.
  - a. Received in exchange, Oct. 24, 1887.
- 12a. Bufo angusticeps, Smith. Narrow-headed Toad. Hab. South Africa.
  - a. Presented by the Rev. G. H. R. Fisk, C.M.Z.S., March 24, 1887.
  - 4a. Dendrobates typographus, Keferst. Scarlet Tree-Frog.

Hab. Costa Rica.

- a. Presented by C. H. Blomefield, Esq., May 29, 1887. See P. Z. S. 1887, p. 482.
- 24a. Hyla stepheni, Boulenger. Stephen's Tree-Frog. Hab. Port Hamilton, Corea.
  - a. Presented by Mr. George Stephen, H.M.S. 'Champion,' June 17, 1887. See P. Z. S. 1887, p. 579, pl. li. fig. 1.
- 27 a. Discoglossus pictus, Otth. Painted Frog. Hab. Sardinia.

a-d. Purchased, Aug. 8, 1887.

e. Presented by Alban Doran, Esq., F.R.C.S., Sept. 8, 1887.

40a. Plethodon erythronotus (Green). Red-backed Salamander.

Hab. Canada.

a-i. Received in exchange, Oct. 24, 1887.

c. List of Animals bred in the Gardens during the year 1887.

#### MAMMALS.

1 Rhesus Monkey (Macacus rhesus).

2 Black Lemurs (Lemur macaco).

1 White-fronted Lemur (Lemur albifrons).

3 Lions (Felis leo).

8 Collared Fruit-Bats (Cynonycteris collaris).

4 Prairie-Marmots (Cynomys ludovicianus).

10 Long-fronted Gerbilles (Gerbillus longifrons).

2 Coypus (Myopotamus coypus).

1 Crested Porcupine (Hystrix cristata).

1 Chinchilla (Chinchilla lanigera).

8 Viscachas (Lagostomus trichodactylus).

6 Wood Hares (Lepus sylvaticus).

1 African Wild Ass (Equus tæniopus).

1 Yak (Poëphagus grunniens).

1 Gayal (Bibos frontalis).

1 Persian Gazelle (Gazella subgutturosa).

1 Burrhel Wild Sheep (Ovis burrhel).

1 Barbary Wild Sheep (Ovis tragelaphus).

2 Wapiti Deer (Cervus canadensis).

3 Japanese Deer (Cervus sika).

1 Sambur Deer (Cervus aristotelis).

1 Molucca Deer (Cervus moluccensis).

2 Axis Deer (Cervus axis).

2 Mule Deer (Cariacus macrotis).

1 Mesopotamian Fallow Deer (Dama mesopotamica).

1 Squirrel-like Phalanger (Belideus sciureus).

1 Red Kangaroo (Macropus rufus).

2 Bennett's Wallaby (Halmaturus bennetti).

3 Yellow-footed Rock-Kangaroos (Petrogale xanthopus).

#### BIRDS.

2 American Robins (Turdus migratorius).

2 Diuca Finches (Diuca grisea).

- 1 Cockateel (Calopsitta novæ-hollandiæ).
- 2 Hybrid Ibises (between *Ibis strictipennis* and *Ibis bernieri*).
- 1 Hybrid Ruddy Sheldrake (between Tadorna casarca and Chenalopex ægyptiaca).
- 1 Variegated Sheldrake (Tadorna variegata).
- 2 Australian Wild Duck (Anas superciliosa).
- 2 Slender Ducks (Anas gibberifrons).
- 6 Chilian Pintail (Dafila spinicauda).
  2 Shoveller Ducks (Spatula clypeata).
- 1 Mandarin Duck (Æx galericulata).

9 Summer Ducks (Æx sponsa).

- 2 Red-crested Pochards (Fuligula rufina).
- 4 Hybrid Doves (between Zenaida maculata and Zenaida auriculata).

1 Auriculated Dove (Zenaida auriculata).

1 Bronze-spotted Dove (Chalcopelia chalcospilos).

2 Crested Pigeons (Ocyphaps lophotes).

- 5 Blood-breasted Pigeons (Phlogænas cruentata).
- 1 Common Crowned Pigeon (Goura coronata).
- 1 Sonnerat's Jungle-fowl (Gallus sonnerati).
- 2 Yellow-legged Herring-Gulls (Larus cachinnans).

## REPTILES.

2 Dwarf Chameleons (Chamæleon pumilis).

6 Mocassin Snakes (Tropidonotus fasciatus).

16 Puff-Adders (Vipera arietans).

# d. List of Donors and their Donations for the year 1887.

Absell, Mr.

One Common Chameleon.

Adams, J. A., Esq.

One Common Peafowl.

Adeney, Mr. F. A.

One Macaque Monkey.

Agassiz, Alex., Esq.

One Alligator Terrapin.

Alexander, W. M., Esq. One Cuckoo.

Allwright, Dr. and Mrs. F. W. One Red-and-Blue Macaw.

Archer, C. W., Esq. Two Weasels.

Armbrecht, E. L., Esq., F.Z.S. Nine Barbary Turtle-Doves.

Armytage, O. F., Esq.
One Vulpine Phalanger.

Arnold, Mr. S. R.
One Common Crossbill.

Ashton, R. C., Esq.
One Yellow-billed Sheathbill.

Austen, F., Esq.
One Common Buzzard.

Austin, Miss.
One Rhesus Monkey.

Bacon, T. C., Esq.
One Spotted Ichneumon.

Barclay, Mrs. Robert.
One Black-tailed Godwit.

Barker, Miss.

Two Macaque Monkeys.

Barlow, Miss F. L. Two Blue Tits.

Barnaby, Sir Nathaniel.
One Bare-eyed Cockatoo.

Barton, Miss.
One Goffin's Cockatoo.

Bates, E. Percy, Esq. One Black Bear.

Batchelor, Dr. A.
One Daubenton's Curassow.

Batson, Stanlake, Esq., F.Z.S. One Grey Ichneumon.

Beale, Mrs. J. S.
One Larger Hill-Mynah.

Bell, Mrs. Isaac, Jr.
One Common Fox.

Bellas, Hugh, Esq. One Alligator. Benett-Stanford, Mrs.

Two Patas Monkeys.

Benham, A. H., Esq.

One Dark-green Snake.

Bennitt, P. Wilmot, Esq., F.Z.S. One Larger Hill-Mynah.

Best, G., Esq.

Two Black-eared Marmosets.

Bingham, Mrs.

One Malayan Bear.

Bisset, Gen. J. J.

Three Blotched Genets.

Blackie, Maxwell, Esq.

Two Horned Lizards.

Blake, H. A., Esq.

One Pale-headed Tree-Boa.

Blomefield, E. H., Esq.

One Sharp-nosed Crocodile, one Scarlet Tree-Frog.

Blythe, G. S., Esq.

One Alligator Terrapin.

Bombay Natural History Society. Two Striped Hyænas.

Bonnerville, Capt. J.

One Black-headed Lemur, one Grey Lemur.

Bourke, The Hon. Terence.

Two Egyptian Jerboas, one Moorish Toad.

Bowker, Col. J. H., F.Z.S.

One Crowned Hawk-Eagle.

Breton, Gen. W. H.

Two White-eared Bulbuls.

Brodrick, W., Esq.

Two Lanner Falcons.

Brooks, Mrs.

One Pennant's Parrakeet.

Brooks, Mr. N.

Two Turtle-Doves.

Brydon, Major W., B.S.C., C.M.Z.S.

One Blyth's Tragopan.

Buckworth, Miss Mildred.

Two Red-footed Foxes.

Buller, Sir Walter, K.C.M.G., C.M.Z.S. One Huia-bird.

Bunn, Mr. H.

One Corn-Crake, one Knot, one Common Guillemot.

Burton, Walter, Esq., F.Z.S.

Two Long-tailed Grass-Finches.

Callender, Gerald, Esq.

One Three-striped Paradoxure.

Cameron, Miss.

One Red Fox.

Castro, Wm. de, Esq.

Two Scaly Ground-Doves.

Chamberlain, V. I., Esq.

One Egyptian Mastigure.

Charrington, Mrs. M. V.

One Indian Antelope.

Clarke, S. A., Esq.

Two Green-winged Doves.

Clifton, Chas., Esq., F.Z.S.

One Great Eagle-Owl, one Virginian Eagle-Owl.

Cloutte, G., Esq.

One Green Monkey.

Cobb, F. E., Esq., C.M.Z.S.

Two Crested Ducks.

Cook, J. M., Esq., F.Z.S.

One Larger Hill-Mynah.

Colls, A., Esq.

One Aldrovand's Skink.

Copeland, G. S., Esq.

One Bonnet-Monkey.

Corfield, Prof. W. H., M.A., F.Z.S. One Proteus.

Cotton, T. A., Esq.

Five Common Gulls.

Craig, Wm. J., Esq.

One Mississippi Alligator.

Crick, J., Esq.

Two Black-eared Marmosets.

Crocker, Charles, Esq.

One Macaque Monkey.

Crossfield, H. A., Esq., F.Z.S.

Two Edible Frogs.

Czarnikow, C., Esq., F.Z.S.

One Chilian Sea-Eagle, one Golden Eagle, one Brazilian Caracara.

Dana, R., Esq.

One Martinique Gallinule.

Dawkins, Lieut.-Col. W. G., F.Z.S.

Three White-crowned Pigeons.

Deacon, Mr. J. W.

One Grey Ichneumon.

Dempsey, C. W., Esq.

One Green Monkey.

Dick, Mrs.

One Common Squirrel.

Dissawe of Tamankadua, The Adigar Dullewe.

One Leopard.

Doddrell, Mr. G.

One Brown Capuchin.

Donovan, H. C., Esq.

Two Schlegel's Doves.

Doran, Alban, Esq., F.R.C.S.

Two Crested Newts, two Alpine Newts, one Spotted Salamander, one Painted Frog, one European Pond-Tortoise.

Douglas, Capt. Archibald, R.N. Two Vervet Monkeys.

Dudding, Miss.

One Grey Ichneumon.

Dudley, The Earl of. One Ocelot.

Duff-Gordon, -, Esq.

One Crowned Horned Lizard.

Dyas, F. B., Esq.

One White-fronted Heron.

Ellice, Mrs.

One Guilding's Amazon.

Elliott, Capt. J. B. Bowes, F.Z.S.

One Moustache Monkey, two Lesser White-nosed Monkeys, two White-crowned Mangabey Monkeys, one African Civet-Cat, one Blotched Genet, one Two-spotted Paradoxure, five Tambourine Pigeons, three Schlegel's Doves, one White-crested Tiger-Bittern, one Madagascar Porphyrio.

Ellis, G., Esq.

One Patas Monkey.

Eves, C. W., Esq.

One White-crowned Mangabey Monkey.

Farrer, F. Percival, Esq. One Grey Squirrel.

Fellowes, W. H., Esq.

One Blue-eyed Cockatoo.

Fisher, Mrs. C. J.

One Rhesus Monkey.

Fisk, The Rev. G. H. R., C.M.Z.S.

Nine Horned Vipers, seven Dwarf Chameleons, one Many-spotted Snake, one Rufescent Snake, seven Angulated Tortoises, two Hoary Snakes, two Robben-Island Snakes, one Fisk's Snake, one Narrow-headed Toad.

Flack, T. Sutton, Esq.

One Malbrouck Monkey.

Flower, Prof. W. H., C.B., F.R.S., President. Ten Short-nosed Sea-horses.

Foster, J. J., Esq.

One Black-eared Marmoset.

Frodsham, G. E., Esq.

One Laughing Kingfisher.

Garle, H., Esq., F.Z.S.

One European Pond-Tortoise.

Garman, Samuel, Esq., C.M.Z.S.

One Speckled Terrapin, one Black Snake.

Geake, Capt. W. G. J.

One Common Jackal.

Gilmour, W. J. Little, Esq.

One Brazilian Hangnest.

Green, F. W., Esq.

Five European Tree-Frogs.

Green, J. W., Esq.

One Algerian Tortoise.

Grieve, S. P., Esq.

One Pig-tailed Monkey.

Gunn, Mr. T. E.

One Common Viper, twenty Ruffes, one Great Crested Grebe.

Haines, The Rev. F. W.

Two Green Lizards, two Marbled Newts, two Viperine Snakes, one Bordeaux Snake.

Hall, John, Esq.

One Common Otter.

Hallett, J. H., Esq.

One Common Marmoset.

Hamilton, His Grace The Duke of, K.T., F.Z.S. One Crested Porcupine.

Hankey, Mrs. Alexander.

Two Common Squirrels.

Hanrott, Miss May.

One Common Squirrel.

Hardy, C. S., Esq. One Wolf.

Harrison, H. D., Esq.

Three American Flying Squirrels.

Hart, Edward, Esq., F.Z.S. One Common Otter.

Hart, H., Esq.

One Purple-faced Monkey.

Hart, E. A., Esq.

One Crowned Hawk-Eagle.

Hawkshaw, J. C., Esq., F.Z.S. Two Burrowing Owls.

Hawtayne, G. H., Esq., C.M.Z.S. One Common Trumpeter.

Hill, Mrs.

One Ring-necked Parrakeet.

Hincks, S. C., Esq.

Two Corn-Crakes.

Hird, C. F., Esq.

One Grey Ichneumon.

Hoare, Miss.

Two Chinese Geese.

Hoendorff, Miss Constance.

One Common Marmoset.

Holding, Mr. R. E.

One Naked-footed Owlet.

Holland, W. M., Esq. One Scops Owl.

Holms, W. L., Esq.

One Ring-hals Snake.

Holmwood, F., Esq., C.B., C.M.Z.S. One Cheetah.

Holub, Dr. E., C.M.Z.S.

One Fettered Cat, one Spotted Eagle-Owl, one Hoary Snake, four Spotted Slowworms.

Howell, C. A., Esq.

One Red-throated Diver.

Hume, E., Esq.

Two Barn-Owls.

Humfrey, Major J., B.S.C., F.Z.S.

Two Indian Lions.

Humphries, Mr. R.

One Turtle-Dove.

Hurt, Miss R. M.

One Rhesus Monkey.

Ince, W. H., Esq.

One Magpie. Ingram, Walter, Esq., F.Z.S.

Two Wood Hares.

James, Miss E.

One Bonnet-Monkey.

Jay, T., Esq.

One Virginian Deer.

Johnston, Capt. J. B.

One Tuberculated Iguana.

Joyce, Mr. W.

One Suricate.

Justice, H., Esq.

One Spotted Eagle-Owl.

Kane, C. E., Esq.

One Domestic Sheep (4-horned variety).

Keenan, Dr.

One Green Turtle.

Kent, Capt. A.

One Anubis Baboon, one Angolan Vulture.

Kenyon, T. H., Esq., R.N.

One Lesser White-nosed Monkey.

Kestell-Cornish, Mrs. M.

One Ruffed Lemur.

Keulemans, Mr. J. G.

One Peregrine Falcon.

Kiston, W. F., Esq.

Two Spotted Cavies.

La Primandage, Mrs.

One Bonnet-Monkey.

Larmer, Capt.

One Secretary Vulture.

Larnach, The Hon. W. J. M., C.M.G.

Three Hooker's Sea-Lions.

Lawson, Bernard, Esq.

One Moustache Monkey.

Lawson, B., Esq.

One Blue Penguin.

Lee, H. H., Esq.

Two African Lepidosirens.

Leech, J. H., Esq., F.Z.S.

Two Blakiston's Eagle-Owls, one Himalayan Scops Owl.

Lewis, Mrs.

One Pig-tailed Monkey.

Lilford, The Lord, F.Z.S.

Two Hybrid Herring-Gulls, fifty-nine Pleurodele Newts, seven Marbled Newts.

Lister, G., Esq.

One Bonnet-Monkey.

Livingstone, Mrs.

One Rhesus Monkey.

Lock, W. F., Esq.

Two Rhesus Monkeys.

Lockwood, Miss P.

One Grand Eclectus.

Lloyd, Mr. John.

One White-tailed Buzzard.

Lynch, Mr. B.

One Pig-tailed Monkey.

Macdonald, R. E., Esq.

One Vervet Monkey.

McGregor, J., Esq.

One Green Turtle.

McIver, Robert, Esq.

One Ring-tailed Coati.

Mackenzie, T., Esq.

One Serval.

MacLachlin, Mrs.

One Carrion-Crow.

Manger, W. T., Esq.

One Raccoon-like Dog, one Leopard.

Markham, W. H., Esq.

One Purple-faced Monkey.

Marks, H. Stacy, Esq., F.Z.S.

One Magpie.

Marquis, Ernest Heydon, Esq. One Striped Hyæna.

Marshall, Miss Ida.

One Alexandrine Parrakeet.

Marshall, John, Esq.

Two Blue-headed Pigeons, one Black-winged Peafowl.

Mason, F. T., Esq.

One Ring-Dove, one Sand-Lizard.

Mathews, G. F., Esq., R.N., F.Z.S.

Two Lapwings.

Maude, Herbert, Esq.

One Short-tailed Wallaby.

Mayes, J., Esq.

One White-tailed Sea-Eagle.

Meadows, H. B., Esq.

One Common Squirrel.

Meyrick, Miss M.

One Green Bittern.

Millard, Claude A., Esq.

One Crowned Horned Lizard.

Miller, Mr. J.

One Three-striped Paradoxure.

Miller, Mr. W.

One Maugé's Dasyure.

Mitford, C. B., Esq.

One Campbell's Monkey.

Mitford, R. H., Esq.

One Vinaceous Dove.

Monekton, Francis, Esq.

Two Rufous Tinamous.

Monteith, Joseph, Esq. Two Polar Bears.

Montgomery, Percy, Esq.

One Red-and-white Flying Squirrel.

Moore, J. H., Esq.

Two Turkey Vultures.

Morrell, L. G., Esq.

One Dusty Ichneumon.

Morshead, Lady.

One Grey-headed Porphyrio.

Natural History Society of Toronto.

One Water Rattlesnake, one Water Viper, two American Black Snakes, two Mocassin Snakes, one Chicken Snake.

Neilson, Miss Julia.

One Negro Tamarin.

Neville, Hugh, Esq., F.Z.S.

One Ceylonese Jungle-fowl.

Newberry, Mr. & Mrs.

One Secretary Vulture.

Newton, Master C. J.

Two Brown-throated Conures.

Nicholls, H. A. Alford, Esq., M.D., C.M.Z.S. Two Common Boas.

Nicholson, M., Esq.

One Bronze-winged Pigeon.

Nicholson, S., Esq.

Two Cardinal Grosbeaks.

Nicholson, G., Esq.

One Carrion-Crow.

Nordenfelt, T., Esq., C.E. Three Arctic Foxes.

Northumberland, His Grace the Duke of, F.Z.S. Two Cereopsis Geese.

Ogilby, R. O. L., Esq.

One Peaceful Dove.

Oldham, T. M., Esq.

One Common Cormorant.

Pain, W. H. B., Esq.

One Smooth Snake.

Pitman, E. A. B., Esq.

One Brown Capuchin.

Paul & Co., Messrs.

Two Green Lizards, twelve Spotted Salamanders, two Common Snakes, two Thunder-fiish, four Chub.

Pawelzig, Mrs.

One Red-fronted Lemur, one Vervet Monkey.

Poole, Major Rowland.

One Domestic Sheep (four-horned variety).

Powell, Wilfred, Esq., C.M.Z.S. One Tooth-billed Pigeon.

Prentice, W. L., Esq.

One Entellus Monkey.

Price, R. J. Lloyd, Esq., F.Z.S. One Horned Tragopan.

Proger, T. W., Esq.

One Spotted Crake.

Pryer, H., Esq., C.M.Z.S.

One White-whiskered Swine.

Rankin, Master.

Two Greater Sulphur-crested Cockatoos.

Rawlinson, W. G., Esq.

One Black-headed Gull.

Reade-Revell, W., Esq.

One Blue-and-Yellow Macaw.

Reed, Miss Muriel.

One Common Squirrel.

Rhind, John, Esq.

Two Brown Bears.

Richman, Mrs. M. S.

One Australian Crane.

Rickards, Dr. E.

One Proteus.

Robinson, Capt. J. C.

One Blotched Genet, two Madagascar Porphyrios.

Russell, G., Esq.

One Ocellated Sand-Skink, One Horseshoe Snake.

Sadler, C., Esq.

Two White-backed Piping Crows.

St. John, Lt.-Col. Sir Oliver B. C., K.C.S.I., F.Z.S. One Griffith's Fox, two Spotted Ichneumons.

St. Quintin, W. H., Esq.

Two Crossbills, one Hawfinch.

Sawer, A. L., Esq.

One Common Pheasant.

Scovell, J., Esq.

One Common Toad.

Sheppard, W. R., Esq.

One Brown Capuchin.

Sherren, Mr. H. R.

One Bonnet-Monkey.

Shufeldt, Dr. R. W., C.M.Z.S. One Arizona Squirrel.

Sibley, W. K., Esq.

Six Aurora Snakes, two Rough-scaled Lizards, one Hygian Snake.

Skeffington, C. N., Esq.

One Weeper Capuchin Monkey.

Skegg, Mr. G.

One Wall-Lizard.

Slatter, Mrs.

One Macaque Monkey.

Smith, Capt. J.

One Mexican Crocodile, one White-crested Guan.

Smith, S. G., Esq.

One Smooth Snake.

Southey, R., Esq.

One Black-winged Kite.

Spooner, Mr. W.

One Macaque Monkey.

Stephen, Mr. G.

One Stephen's Tree-Frog.

Streeter, Miss.

One Western Slender-billed Cockatoo.

Studart, Dr. William.

One Brazilian Tree-Porcupine.

Sumner, Allen, Esq.

One King Vulture.

Sutherland, C. L., Esq., F.Z.S.

One Ring-Dove, one Turtle-Dove.

Sykes, G. G., Esq. One Pike.

Taylor, R., Esq.

One Macaque Monkey.

Tegetmeier, W. B., Esq., F.Z.S.

Two Tree-Pipits.
Theobald, Capt. C., R.N.

Three Green Turtles.

Thompson, F. J., Esq.

Two Daubenton's Curassows.

Thomson, W., Esq.

Two Little Guans.

Thornton, H., Esq.

Four Common Chameleons.

Townsend, A, Esq.

One Common Squirrel.

Travers, Capt.

One Bosch-Bok.

Travers, Mrs. M.

One Lesser Kestrel.

Trentler, Dr. J. W.

Three Kestrels.

Tudor, W., Esq.

One White-collared Mangabey Monkey.

Verner, Col.

One Chinese Jay-Thrush, two Crested Larks, one Fieldfare.

Verschoyle, A. R., Esq.

One American Flying-Squirrel.

Walters, Col. F. D.

Two Red-crested Cardinals.

Walton, Master H. J.

One Greenfinch, one Goldfinch, one Reed-Bunting.

Warburg, J. C., Esq.

One Eyed Lizard, three Lineated Chalcis.

Ward, Mr. R. T.

One Loggerhead Turtle.

Warwood, Mrs. H. A.

One Suricate.

Wickenden, T. D., Esq.
One Rhesus Monkey.

Wickham, —, Esq. One Barn-Owl.

Wigan, G., Esq.

Two Red-spotted Lizards.

Willett, J. A., Esq.

One Cape Zorilla.

Williams, Miss Grace.

One Squirrel-Monkey.

Williams, J. H., Esq.

One Capuchin Monkey.

Willows, J. B., Esq.

Six Land-Rails.

Wilson, J. A., Esq., F.Z.S.

Two Hawk's-billed Turtles.

Wilson, Julius, Esq.

One Green Monkey.

Wood, Miss Kate.

One Lesser White-nosed Monkey.

Wroughton, E., Esq., F.Z.S.

Six European Tree-Frogs, one Larger Hill-Mynah.

Yard, Mr. F.

One Bonnet-Monkey.

Yeates, Mrs.

One Bonnet-Monkey.

Young, H. E., Esq.

One Pike.

Zandt, F. van, Esq.

One Common Raccoon.

## APPENDIX.

## ADDRESS OF THE PRESIDENT,

PROFESSOR FLOWER, C.B., LL.D., F.R.S.,

TO THE

#### GENERAL MEETING

HELD AT THE SOCIETY'S GARDENS,

JUNE 16th, 1887.

Nowhere has the progress which the world has made during the fifty years of Her Majesty's reign, the completion of which we are now happily celebrating, been more strikingly manifested than in the advance of that so-called "natural knowledge" for the improvement of which our Royal Society was instituted more than two centuries ago. Although there have been, without doubt, immense strides in other directions—in morals, in art, in historical and literary criticism—I venture to say that none of these can be compared with the marvellous progress that has been made in scientific knowledge and scientific methods.

The tangible results that have followed the practical applications of mechanics, physics, and chemistry have so deeply affected the material interests of mankind, that the progress of these branches of knowledge may seem to put into the shade the wonderful changes that have taken place in the kindred sciences. Nevertheless, I think we may safely say that Zoology, in a certain sense one of the oldest of human studies, has in these latter times undergone a new birth, which has not only changed the standpoint from which we view the special objects of our studies, but has also spread its influence far and wide, and profoundly modified our conceptions on many ques-

tions at first sight entirely remote from its sphere. The universal abandonment of the doctrine of fixity of species, which was an article of faith with almost every zoologist in 1837, has introduced new interests, as well, it must be confessed, as new difficulties, the extent of which we are only beginning to appreciate. The definite systems of classification and methods of nomenclature on which our fathers relied utterly fail before the wider field of vision which it is the privilege, as well as the embarrassment, of the present generation of zoologists to realize.

But it is no part of my intention, in the brief space of time for which I shall ask your patience, to attempt to give a history of the recent advances of zoological science in general, but only, as requested by your Council, to say a few words on the progress of the particular Institution established for its cultivation in which we are personally interested, and the duration of which is so nearly contem-

poraneous with that of Her Majesty's reign.

Before this Society was founded there was no distinct organization in the country devoted solely to collecting, recording, and discussing the facts upon which zoological science rests. The dignified parent of all our scientific Societies, the Royal, certainly undertook, as it does still, the discussion of many zoological subjects; but it could not be expected to treat them in any detail. The Linnean was a Society of great respectability, devoted solely to biological research, both zoological and botanical, already nearly forty years of age, and possessed of all the usual appurtenances of a scientific organization-meetings, library, and collections for reference. I cannot help thinking that if its leading Fellows had, at that time, displayed more energy, it might have kept in its hands the principal direction of the biological studies of the country, instead of allowing what has since proved so formidable a rival to spring up, and to absorb so large a portion of its useful functions. However, for reasons which it is perhaps not worth while to inquire into now, it did not supply all the needs of the lovers of Zoology; and in the year 1826 an active and zealous band united together and, as the Charter tells us, "subscribed and expended considerable sums of money for the purpose" of founding the Zoological Society of London.

The leading spirit of this band was Sir Stamford Raffles, then just returned from the administration of those Eastern islands of which the history, both natural and political, will ever be intimately associated with his name. He was chosen for the office of President, but his death, on the 4th of July, 1826, deprived the Society, while yet in its infancy, of his valuable services even some years before it acquired its Charter of Incorporation. In this deed, dated March 27th, 1829, Henry, Marquis of Lansdowne, is named as the first President of the chartered Society, Joseph Sabine as the first Treasurer, and Nicholas Aylward Vigors the first Secretary.

The Society appears to have acquired great popularity in a surprisingly short time. The first printed list of Members that I can discover (dated January 1st, 1829) contains the names of 1294 ordinary Fellows and 40 honorary and corresponding Members. The list is an interesting one from the number of names it includes of persons eminent either in science, art, literature, politics, or social life: indeed, there were not many people of distinction in the country at that time who are not to be found in it.

A piece of ground in the Regent's Park having been obtained from the Government at little more than a nominal rent, the Gardens were laid out, and opened in 1828, during which year 98,605 visitors are recorded as having entered. In the following (the first complete) year there were as many as 189,913 visitors, and this number

was increased in 1831 to 262,193.

While the menagerie of living animals was being formed in the Regent's Park, the Officers and Fellows of the Society were also engaged in establishing a Museum of preserved specimens, which soon assumed very considerable dimensions. A Catalogue printed as early as the year 1828 contains a classified list of 450 specimens of Mammalia alone; and it continued for many years to attract donations from travellers and collectors in all parts of the world, and became of great scientific importance, inasmuch as it contained very many types of species described for the first time in the publications of the Society. It was at first lodged in rooms of the Society's house in Bruton Street; but these becoming so crowded as to present the "confused air of a store rather than the appearance of an arranged Museum," premises were taken in 1836 in Leicester Square, the same which were formerly occupied by the Museum of John Hunter before its removal to the College of Surgeons. At this time the Museum is

reported to have contained as many as 6720 specimens of Vertebrated animals, and numerous additions were still being made both by donations and by purchase. The rooms in Leicester Square being found inconvenient for the purpose, it was finally resolved, after considerable discussion of various sites, to transfer the collection to the Gardens in the Regent's Park; and in 1843 the building on the north side of the Tunnel which is now occupied as a lecture-room on the upper floor and a store-room below was con-

structed and fitted up for its reception.

Although the Museum was at one time looked upon as a very important part of the Society's operations, being spoken of as "the centre of the Society's scientific usefulness" (Report of Council, 1837), and one upon which considerable sums of money were spent, it was afterwards a cause of embarrassment from the difficulty and expense of keeping it up in a state of efficiency; and when the Zoological Department of the British Museum acquired such a development as to fulfil all the objects proposed by the Society's collection, the uselessness of endeavouring to maintain a second and inferior zoological museum in the same city became apparent, and in 1856 it was, as I think very wisely, determined to part with the collection, the whole of the types being transferred to the National Museum, and the remaining specimens to other institutions where it was thought their value would be most appreciated.

Another enterprise in which the Fellows of the Society were much interested in its early days was the Farm at Kingston, the special object of which was thus defined:—
"It will be useful in receiving animals which may require a greater range and more quiet than the Gardens at the Regent's Park can afford. It is absolutely necessary for the purpose of breeding and rearing young animals and giving facilities for observations on matters of physiological interest and research, and, above all, in making attempts to naturalise such species as are hitherto rare or unknown in this country." The Farm, however, apparently not fulfilling the objects expected of it, and being a source of expense which the Society could not then well afford, was gradually allowed to fall into neglect, and was finally aban-

doned in 1834.

The mention of this establishment, however, causes me to allude to one of the objects on which the Society laid considerable stress at its foundation, and which is defined in the Charter as "the introduction of new and curious subjects of the Animal Kingdom," but which, as may be gathered from the Annual Reports of the Council and from other Documents, meant not only the temporary introduction of individuals for the purpose of satisfying curiosity about their external characters and structure, but also the permanent domestication of foreign animals which might become of value to man, either for their utility in adding to our food-supplies or for the pleasure they afford by their

beauty.

Abundant illustrations of the vanity of human expectations are afforded by the details of the hopes and disappointments recorded in the Reports of the Society relating to this subject. It is mentioned in the Report of the year 1832 that "the Armadillo has three times produced young, and hopes are entertained of this animal, so valuable as an article of food, being naturalized in this country." More than fifty years have passed, and British-grown Armadillo has not yet appeared upon the menu-cards of our dinnertables. At one time the South-American Curassows and Guans were confidently looked upon as future rivals to our barn-door Fowls and Turkeys. Various species of Pheasants and other game-birds from Northern India, collected and imported at great expense, were to add zest and variety to the battue of the English sportsman. The great success which for many years attended the breeding of Giraffes in the Gardens not unnaturally led to the expectation that these beautiful creatures might become denizens of our parks, or at all events a source of continued profit to the Society; and it is possible that some who are here now may have been present at the feast, for which an Eland was sacrificed, amid loudly-uttered prognostications that the ready acclimatization of these animals would result, if not in superseding, at least in providing a change from our monotonous round of mutton, beef, and pork. Unfortunately for these anticipations, no Giraffe has been born in the Gardens during the last twenty years, and Elands are still far too scarce to be killed for food of man in England.

It is well that these experiments should have been tried; it may be well, perhaps, that some of them should be tried again when favourable opportunities occur; but it is also well that we should recognize the almost insuperable difficulties that must attend the attempt to introduce a new

animal able to compete in useful qualities with those which, as is the case with all of our limited number of domestic animals, have gradually acquired the peculiarities making them valuable to man, by the accumulation of slight improvements through countless generations of ancestors. While all our pressing wants are so well supplied by the animals we already possess, it can no longer pay to begin again at the beginning with a new species. This appears to be the solution of the singular fact, scarcely sufficiently appreciated, that no addition of any practical importance has been made to our stock of truly domestic animals since the commencement of the

historic period of man's life upon earth.

I now turn to the history of one of the most important features of the Society, the scientific meetings. In the early days of the Society there was only one class of general meetings for business of all kinds; and the exhibition of specimens and the communication of notices on subjects of zoological interest formed part of the ordinary proceedings at those meetings. The great extent, however, of the general business was soon found to interfere with such an arrangement. The number of the elections, and of the recommendations of Candidates, the reports on the progress of the Society in its several establishments during each month, and other business, were found to require so much time as to leave little for scientific communications, and the Council saw with regret that these were frequently and necessarily postponed for matters of more pressing but less permanent interest. To obviate this inconvenience and to afford opportunities for the reception and discussion of communications upon zoological subjects, the Council had recourse to the institution of a "Committee of Science and Correspondence," composed of such Members of the Society as had principally applied themselves to science; at the meetings of which Committee communications upon zoological subjects might be received and discussed, and occasional selections made for the purpose of publication.

The first Meeting of the Committee took place on the evening of Tuesday, November 9th, 1830, at the Society's house in Bruton Street, when a communication was received upon the Anatomy of the Urang Utan by a young, and then unknown, naturalist, Richard Owen by name, the first of that long series of memoirs, extending over a

period of more than fifty years, the publication of which in our 'Transactions' has done so much to advance the knowledge of comparative anatomy and to give an illustrious place to their author in the annals of science.

Among other well-known names of those mentioned as having taken part in the business of the Committee during the first year of its existence, either by their actual presence or by forwarding communications, are N. A. Vigors, W. Yarrell, J. E. Gray, J. Gould, E. T. Bennett, Andrew Smith, T. Bell, W. Martin, Joshua Brookes, W. Kirby, W. H. Sykes, Marshall Hall, W. Ogilby, John Richardson, and B. H. Hodgson, who, I am happy to see, is with us to-day.

The Committee continued in existence for two years, having met for the last time on December 11, 1832. success of its meetings was so great that it was thought desirable to make an alteration in the Bye-laws, by which the meetings of the Committee were replaced by the "General Meetings of the Society for Scientific Business." The first of these meetings took place on Tuesday, the 8th of January, 1833, and they have continued to be held on two Tuesdays in each month during the season to the present time. As long as the Society retained its house in Bruton Street, the meetings were held there. In 1843 the Society took another house, No. 11 Hanover Square, which it occupied for forty-one years; but its needs having outgrown the accommodation afforded there, it removed in 1884 to the far more spacious and commodious premises in No. 3 of the same square, which we at present occupy. meetings of the Society, which are open to all the Fellows and to friends introduced by them, have exercised a considerable influence upon the progress of zoological knowledge, not only by the reading and discussing of communications formally brought before them, but also by the interchange of ideas at the informal social gatherings over the coffee-table in the library afterwards, which have great value as affording a common meeting-ground and bond of union for all the working zoologists of the country, as well as of many visitors from foreign lands.

The more important scientific communications to these meetings have from the commencement been published in the form of quarto 'Transactions' and octavo 'Proceedings,' which constitute a series of inestimable importance both for the value of the material contained in them and for the excellence of the illustrations of new or rare

forms of animal life with which they are embellished. In later times they have also formed a vehicle for communicating to the world the important results obtained from the dissection of animals which have died at the Gardens, and which, since the establishment of the office of Prosector in 1865, have been systematically used for this purpose.

In connection with the scientific meetings must be mentioned the Library, the first formation of which is described in the Report of the Council for the year 1837, and which has been steadily growing ever since by donations of books, by exchange of publications with other learned societies, and by judicious annual expenditure of money, to be one of the best-selected, well-arranged, and most accessible collection of works of reference that it is possible for the zoological student to enjoy. Its value has been greatly increased by the publication within the past month of an excellent catalogue, which contains the titles of about 6560 publications.

The most recent addition to the functions that the Society has undertaken with a view to carry out the purposes of its foundation is the publication of an Annual Record of Zoological Literature, containing a summary of the work done by British and Foreign naturalists in the various branches of Zoology in each year, a publication of the utmost value to the working zoologist. Such a Record has been carried on for some years past by a voluntary association of Naturalists, but, owing to the difficulties met with in obtaining sufficient support, it was in danger of being abandoned, until the Council, after the full consideration which the importance of the subject deserved, resolved to take it in hand as part of the operations of the Society.

The Society has, however, not only been mindful of advancing scientific knowledge—it has also endeavoured to spread some of this knowledge in a popular manner by means of lectures. In former years these were only given in an occasional manner; but the liberal bequest of Mr. Alfred Davis to the Society in 1870 has enabled the Council to undertake a more regular and systematic method of instruction; and the Fellows and others have had every summer for several years past the opportunity of hearing many of our most eminent naturalists and able expositors upon subjects which they have made especially their own. I must, however, confess that the interest taken by the Society generally in these lectures has not quite equalled

the expectations that were raised when the question of establishing them was first brought before the notice of the Council.

Although, as will be seen by a consideration of the various subjects which I have already referred to, the Society has a wide sphere of operation and many methods by which the objects of its founders are carried out, it is undoubtedly the maintenance of the menagerie of living animals in the Gardens where we are now assembled, by which it is most known, both to the public as well as to a large number of our Fellows. It will be well therefore, before concluding, to add a few words upon some points of interest connected with the past history and present condition of this branch of the Society's operations, the one which is at the same time the largest source of its revenue and cause of expenditure.

The collection and exhibition of rare and little-known living animals has long been a subject of interest and instruction in civilized communities, and in many countries either the State or the Sovereign has considered it as part of their duty or privilege to maintain a more or less

perfect establishment of the kind.

Before the Zoological Society was formed the "Lions" at the Tower had been for centuries a national institution; and it may be interesting to those who derive pleasure in tracing the links between the present and the past, to be reminded that our collection is in some measure a lineal continuation of that time-honoured establishment, as it appears from the Reports of the Council that in the year 1831 His Majesty King William the Fourth "was graciously pleased to present to the Society all the animals belonging to the Crown lately maintained at the Tower." It is also recorded that in the previous year His Majesty had made a munificent donation of the whole of the animals belonging to the Royal Menagerie kept in Windsor Park. This may perhaps be the place to mention that in the Report read April 1837 the Council "had the gratification to call the special attention of the members to a donation from Her Royal Highness the Princess Victoria," consisting of a pair of those pretty and interesting little animals the Stanley Musk-deer. During the fifty years that have elapsed since this first-recorded mark of interest in the Society on the part of her present Majesty, the Queen and her family have never failed to show their regard

for its welfare whenever any opportunity has arisen, of which the acceptance of the Presidency by the late Prince Consort, on the death of the Earl of Derby in 1851, was one of the most signal instances. The advantages which the Society has received from the numerous donations to the Menagerie, and the constant kindly interest shown in its general progress by H.R.H. the Prince of Wales, are so continually before the observation of the Fellows, that I need scarcely do more than allude to them here, beyond stating that in no year of the Society's existence has the number of visitors to the Gardens or the Society's income been so great as in 1876, when the large collection of animals brought from India by His Royal Highness

formed the special object of attraction.

Except for the collection, necessarily of limited extent, exhibited in the Tower, and a few others having their origin in commercial enterprise, as Mr. Crosse's menagerie at Exeter Change and the various itinerant wildbeast shows, there were, before the foundation of the Society's Gardens, little means in the country of gaining knowledge of the strange forms of exotic animal life with which the world abounds. An extensive, well-arranged, and well-kept collection, where the circumstances of exhibition were more favourable than in the institutions just referred to, seemed then to fulfil a national need, as the rapidly acquired popularity of the Society already alluded to testifies. Indeed, when we consider the amount of enjoyment and instruction which has been afforded to the 24,572,405 visitors who are registered as having entered our Gardens from their first opening in 1828 to the end of last year, it is easy to recognize what a loss the country would have sustained if they had not existed. There was a period, it is true, in which they fell rather low in popular favour, the record of 1847 showing both the smallest number of visitors and the lowest income of any year in the Society's existence. A new era of activity in the management of the Society's affairs was then happily inaugurated, which resulted in a prosperity which has continued ever since, with only slight fluctuations, arising from causes easy to be understood—a prosperity to which the scientific knowledge, zeal, and devotion to the affairs of the Society of our present Secretary, ably seconded in all matters of detail by the Resident Superintendent, have greatly contributed.

One of the greatest improvements which have been gradually effected in the Gardens in recent years is the erection of larger, more commodious, and more substantial buildings for the accommodation of the animals than those that existed before. A few examples will suffice to illustrate the successive steps that have been taken in this direction. The primary habitation of the Lions and other large feline animals was the building on the north side of the Tunnel, which many of us may remember as a Reptile-house, and which has been lately restored as a dwelling-place for the smaller Carnivora. The Council Reports of the period frequently speak of the bad accommodation it afforded to the inmates, the consequent injury to their health, and the disagreeable effects on visitors from the closeness of the atmosphere. In September 1843 the terrace, with its double row of cages beneath, was completed; and the Report of the following spring, speaking of this as "one of the most important works ever undertaken at the Gardens," congratulates the Society upon the fact that the anticipations of the increased health of this interesting portion of the collection, resulting from a free exposure to the external air and total absence of artificial heat, have been fully realized. The effects of more air and greater exercise were indeed said to have become visible almost immediately. Animals which were emaciated and sickly before their removal, became plump and sleek in a fortnight after, and the appetites of all were so materially increased that they began to kill and eat each other. This, however, led to an immediate increase in their allowance of food, since which time, it is stated, no further accidents of the kind have occurred. As this structure, looked upon at that period as so great an improvement upon its predecessors, still remains, though adapted for other inmates, we all have an opportunity of contrasting the size of its dens and the provision it affords generally for the health and comfort of the animals and the convenience of visitors, with those of the magnificent building which superseded it in 1876.

In the Report of the year 1840 it is stated that the only work of considerable magnitude undertaken since the last anniversary was the erection of the "New Monkey-house," and the Council speak with great satisfaction of the substantial nature of the structure and the superior accommodation which its internal arrangements are calculated to

afford to its inmates.

Many of us may remember this building, which stood on the space now cleared in the centre of the Gardens. Twenty-four years after its erection, in their Report, dated April 1864, we find the Council speaking of it as "what is at present perhaps the most defective portion of the Society's Garden establishment," and the erection of a second "New Monkey-house" was determined upon. This is the present light and comparatively airy and spacious building, the superiority of which over the old

one in every respect is incontestable.

Up to the year 1848 the only attempt which had been made to familiarize the visitors with the structure and habits of animals of the class Reptilia was by the occasional display of a pair of Pythons, which were kept closely covered in a box of limited dimensions in one of the smaller Carnivora-houses. In 1849 the building which had been rendered vacant by the removal of the Lions to the new terrace was fitted up with cases with plate-glass fronts on a plan entirely novel in this country, and which for many years afforded an instructive exhibition of the forms, colours, and movements of many species of Serpents, Lizards, and Crocodiles. This house was a vast improvement upon anything of the kind ever seen before; but the contrast between it and the present handsome and spacious building so recently erected in the south-eastern corner of the grounds affords another illustration of the great progress we are making.

If time allowed I might also refer to the Elephanthouse, completed in 1870, to the Insect-house, opened in

1881, and to various others of less importance.

The erection of these houses has necessarily been a very costly undertaking; in fact, since what may be called the reconstruction of the permanent buildings of the Gardens, which commenced in the year 1860, more than £50,000 has been expended upon them. It is only in years of great prosperity, when the Society's income has considerably exceeded its necessarily large permanent expenditure, that works such as these can be undertaken.

Much as has been done in this direction, we must all admit that there is still more required. The buildings of to-day will, we may even hope, some day seem to our successors what the former ones appear to us. The old idea of keeping animals in small cramped cages and dens,

inherited from the Tower and travelling wild-beast shows, still lingers in many places. We have a responsibility to our captive animals, brought from their native wilds to minister to our pleasure and instruction, beyond that of merely supplying them with food and shelter. The more their comfort can be studied, the roomier their place of captivity, the more they are surrounded by conditions reproducing those of their native haunts, the happier they will be, and the more enjoyment and instruction we shall obtain when looking at them. Many of our newest improvements are markedly in this direction. I may especially mention the new inclosure for Wild Sheep near the Lionhouse in the South Garden, with its picturesque rockwork and fall of water, and the large Aviary for Herons and similar birds just completed on what used to be called the Water-Fowls' Lawn.

All such improvements can, however, only be carried out by the continued aid of the public, either by becoming permanently attached to the Society as Fellows or by visiting the Gardens. I hope that this brief record of the principal events of the Society's history will show that such support is not undeserved by those to whom the management of its affairs has been entrusted.

# THE ZOOLOGICAL RECORD.

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THE object of the Zoological Record is to give, in an annual Volume, reports on, abstracts of, and an index to, the various Zoological publications which have appeared during the preceding year; to acquaint Zoologists with the progress of every branch of their science in all parts of the globe; and to form a repertory which will retain its value for the Student in future years.

The 'Zoological Record' is published for the Society by Messrs. Gurney and Jackson at the price of 30s. per volume. But all Members of the Zoological Society of London have the privilege of receiving it, including the cost of delivery (within the United Kingdom), at a subscription price of 20s. per annum. This Subscription is due on the 1st of July in every year, but the privilege of Subscription is forfeited unless the amount be paid before the 1st of December following.

The Zoological Society, having purchased the entire stock of the 'Zoological Record,' are able to supply complete sets of the first twenty-two volumes at the price of £5 10s., that is, at 5s. per volume. Volumes of any single year (exclusive of vol. vi. and the last two volumes) can likewise be supplied at 10s. per volume.

Members of the Society wishing to subscribe to the 'Record' are requested to apply at this office for a Form, to be returned when filled up and signed by the subscriber. In order to facilitate the payment of the subscription, a Banker's Order Form is also furnished to those who prefer that mode of payment. This order, when filled up and signed, should be sent to the Society's office for registration; it will then be sent to the Agents named therein.

Learned Societies and Institutions and members of the former Zoological Record Association are permitted to subscribe to the 'Record' on the same conditions as are accorded to Members of the Zoological Society.

P. L. SCLATER,

Secretary.

ZOOLOGICAL SOCIETY OF LONDON, 3 HANOVER SQUARE, W.

### REPORT

OF THE

## AUDITORS OF THE ACCOUNTS

OF THE

# ZOOLOGICAL SOCIETY OF LONDON,

Appointed January 19, 1888.

THE Committee of Auditors to the Zoological Society having fully examined the accounts, inspected the books, and seen vouchers for all the various payments ordered by the Council for the year ending December 31st, 1887, respectfully submit to the Society an abstract of the accounts, together with a statement of the Assets and Liabilities at the close of the year.

## RECEIPTS IN 1887.

Balance brought from December 31, 1886		••••••			£ 1,190	s. 15	<i>d</i> . 8
INCOME.  £ s.  1883 Garden Sales		£	s. 5	d.			
1884 Garden Sales			7	100			
	10000000	<b>TO</b>	10	0			-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	10 8 8 0 0 0 0 0 0 0		18				
Admissions to Gardens	2 0 10 6 8 6 0 0 0 0 0 0 0 0 0 0 0 11 0 0 4	99 999					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0	22,338 240					
INCOME RECEIVED IN 1887		23,102	15	6	23,102	15	6
Messrs. Drummond, Temporary Loan					3,000	0	0
					27,293	11	2

## PAYMENTS IN 1887.

EXPENDITURE			
Rent, Rates, Taxes, and Insurance Ditto ditto Office Salaries and Pensions Gardens Ditto ditto Office Provisions Cost &c. of Animals Menagerie Expenses Keepers' Dresses. Works, Materials, &c. Gardens Ditto ditto Office Buildings Garden Expenses Advertisements Band Expenses House and Office Expenses Gardens Ditto ditto Office Stationery Printing (Miscellaneous) Cost of Publications Cost of Zoological Record Library Expenses Returned Subscriptions. Davis Lectures Interest on Mortgage Debt Interest on Loan Law Expenses Reception at the Gardens Cost of Silver Medal.	222 4 6 3,814 17 0 2,104 4 8 3,932 11 10 961 12 5 3,324 8 3 200 12 8 2,386 3 9 132 9 9 446 7 0 791 12 5 265 10 11 167 2 0 244 14 1 558 3 11 69 17 3 315 9 8 1,987 13 6 717 7 4 573 7 7 19 4 0 79 10 11 329 12 11 9 11 9	£ s	. d.
EXPENDITURE PAID IN 1887	25,135 10 2	25,135 10	2
Paid Messrs. Drummond on account of Mortgage Debt Cash at the Banker's, December 31, 1887:— General Account		1,000 0	0
Petty Cash Account	£596 5 7	1,158 1	0
	The state of the s		
		27,293 11	2

## Comparison of Receipts in 1886 and 1887.

		-		me of						
	188	87.		188	6.		Increase.	Dec	e.	
	0		,	-				-		-
Admissions to Gardens Elephant and Camel	£ 12,138		d. 6	£ 14,974			I CANADA AND AND AND AND AND AND AND AND AN	£ 2,835		
riding receipts	419			454	7	1		35	1	11
Garden Sales Rent for Refreshment-	446			733		6		287		
Rooms	890	13	4	1,026	13	4		136	0	0
mises	255	0	0	255	0	0			•••	
Past	75			45	0	0				
Annual Subscriptions:	515			445	0	0	70 0 0		••••	
Past Present	18 5,887	7.7	0	6,080	0	0		109		
Future	222	0	0	180	0	0	42 0 0	193	0	U
Compositions	810	0	0	630	0	0	180 0 0			
Ivory Tickets	32	1	0	47	6	0		15	5	0
Publications	825	16	11	739	8	5	86 8 6			
Zoological Record	301	10	4				301 10 4			
Dividends	73 193	10 4	11 2	73 85	9	8	0 1 7 108 3 6			
Decrease	23,102 2,684	15	6	25,787	0	4		3,502 818		-
	1181687119							1 0 0 10 10		
Total Pay	ments ir	118	87				23,102 15 .6 25,135 10 2 2,032 14 8			
Dr.			Co	ish						
Γο Balance brought from 1 Γο Income received in 188 Γο Temporary Loan from	7						5	£ 1,190 23,102 3,000	15	d. 8 6 0

# Comparison of Payments in 1886 and 1887.

	Expend	liture of	Increase.	Decrease.		
	1887. 1886.		Increase.	Decrease.		
	£ s. d.	£ s. d.	£ 8, d.	£ s. d.		
lent, Rates, Taxes, and In-	1,434 12 10	1,700 7 7		265 14 9		
alaries, Wages, and Pen-	1,454 12 10	1,700 / /				
sions	5,919 1 8			18 3 1		
rovisions	3,932 11 10			108 14 6		
ost and Carriage of Animals	961 12 5	900	158 10 11	237 10 2		
Ienagerie Expenses	3,324 8 3 200 12 8	3,561 18 5 167 6 6	33 6 2	20, 10 2		
Ceepers' Dresses	2,518 13 6	201		67 5 10		
Vorks, Materials, &c	446 7 0	2,000 79 4	446 7 0			
Garden Expenses	791 12 5	791 17 9		0 5 4		
dvertisements	265 10 11	234 6 2				
Band Expenses	167 2 0			58 10 0		
House and Office Expenses	802 18 0	786 4 4	16 13 8			
Stationery and Printing (Mis- cellaneous)	385 6 11	387 7 0		2 0 1		
Cost of Publications	1,987 13 6	2,108 4 3		120 10 9		
Cost of Zoological Record	717 7 4		717 7 4			
Library Expenses	573 7 7	633 2 8		59 15 1		
Davis Lectures	79 10 11	80 19 6		10/		
interest on Mortgage and	339 4 8	367 6 8		28 2 (		
Loan	259 4 1	307 0 0	259 4 1			
Grant in aid of Science	200	100 0 0		100 0 0		
Miscellaneous	28 11 8	56 8 0		27 16		
	05 195 10 9	24,568 12 9	1,662 13 11	1,095 16 6		
Increase	25,135 10 2	- 19 19	1,095 16 6	Ded. Decr		
Audicaso		25,135 10 2				
	25,135 10 2					
Ordinary Payments		24,438 17 9	1,129 6 1	562 8		
Extraordinary ditto	1,259 1 1	129 15 0	1,129 0 1			
	25,135 10 2	24,568 12 9	566 17 5			
	Cox	ntra		Cr.		
				£ 8.0		
By Expenditure paid in the	ear			25,135 10		
By Repayment of Mortgage- By Balance at the Bankers,	debt			1,000 0 1,158 1		

Assets and Liabilities of the Society on December 31, 1887.

## ASSETS.

Animals in the Menagerie in the Regent's Park  Books in the Library at Hanover Square	£ 25,902 13,764		0
Chsord I doncations	3,058		
Stock of the Zoological Record			
Freehold Freihises	1,000		
Cost of £1,900 London and South-Western Railway New 4 per	25,000	0	0
cent. Preference Stock (Davis Trust Fund)	* ***		
Cash at the Bankers (Messrs. Drummond)	1,938	9	6
	1,158	1	0
Arrears considered good:—  £ s. d.			
Rent for Refreshment Rooms 57 2 4			
Rent for Freehold Premises			
Garden Sales			
Annual Subscriptions			
Publication Sales			
Publication Sales			
Zoological Record Sales 27 10 0			
	492	6	11
	£72,312	17	5

## LIABILITIES.

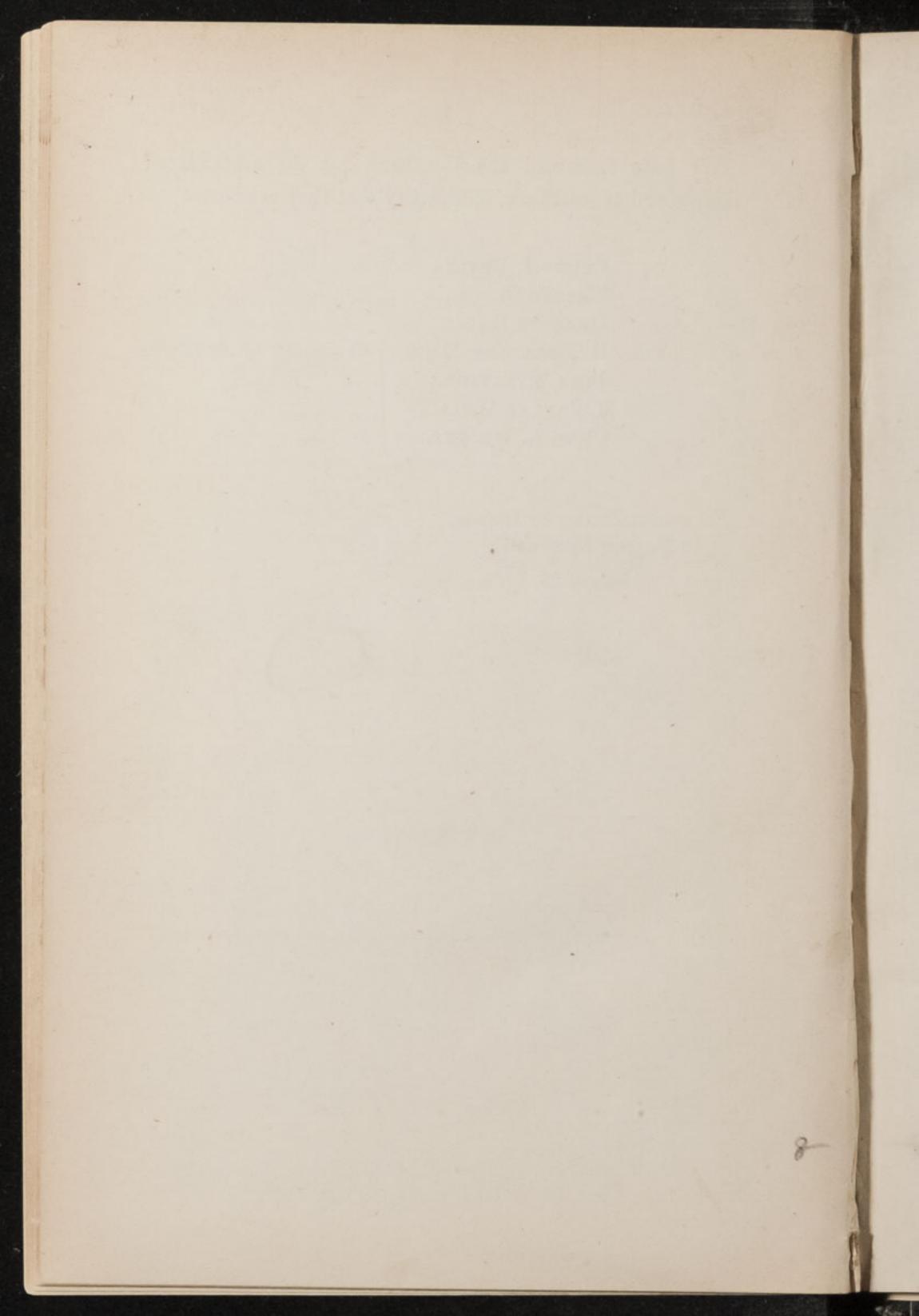
Rent and Taxes unpaid:—  For the Gardens, say	£	s.	d.	£	8.	d.
For the Gardens, say	266	7	6			
,, Office, say	46	5	0			
Bills, &c., estimated at:			_	312	12	6
For the Gardens, say	1.273	7	9			
" Office, say	755	10	7			
				2,028	18	4
Messrs, Drummond, Temporary Loan				3,000	0	0
Messrs. Drummond, Mortgage Debt				8,000	0	0
				£13,341		

We have examined the Vouchers and the accounts of receipts and expenditure, and certify that they are correct.

PHILIP J. BUTLER.
WALTER CROUCH.
HERBERT DRUCE.
H. BERKELEY JAMES.
JOHN T. TAYLOR.
J. JENNER WEIR.
CHAS. A. WRIGHT.

Committee of Auditors.

Zoological Society of London, 3 Hanover Square, W. February 23, 1888.



The Royal Academy of Sciences, Letters, and Fine Arts, Brussels.

Annuaire, lii., liii.
Bulletins, sér. 3, tomes ix.-xiii.
Mémoires, tome xlvi.
Mémoires couronnés (4to), tomes xlvii., xlviii.
Mémoires couronnés (8vo), tomes xxxviii., xxxix.

The Royal Malacological Society of Belgium, Brussels.

Annales, tome xxi.
Procès-Verbaux, tome xvi., pp. i-lxxx.

The Royal Museum of Natural History, Brussels.

Bulletin, tome iv., no. 4. Annales, tome xiii., part 5.

#### CHINA.

The China Branch of the Royal Asiatic Society, Shanghai. Journal, vol. xxi., nos. 3-6.

### EAST INDIES.

The Royal Society of the Dutch East Indies, Batavia.

Natuurkundig Tijdschrift, deel xlvi.

The Bombay Natural-History Society, Bombay. Journal, vol. ii., nos. 2, 3.

The Asiatic Society of Bengal, Calcutta.

Proceedings, 1886, nos. 8-10; 1887, nos. 1-8.

Journal, vol. liv., part 2, no. 4; lv., part 2, nos. 3-5; lvi., part 2, no. 1.

The Geological Survey of India, Calcutta.

Records, vol. xx., parts 1-3. Memoirs (*Palæontologia Indica*), ser. 12, vol. iv., part 2; ser. 13, vol. i., part 6.

#### FRANCE.

- The Agricultural and Natural History Society, Lyons. Annales, sér. 5, tomes vii., viii.
- The Museum of Natural History, Lyons.
  Archives, tome iv.
- The Society Philomathique, Paris.

  Bulletin, sér. 7, tome x., nos. 3, 4; xi., nos. 1-3.
- The National Society of Acclimatation, Paris. Bulletin, sér. 4, tome iv.
- The Entomological Society, Paris. Annales, sér. 6, tomes v., vi.
- The Natural History Society, Toulouse. Bulletin, 1886; 1887, part 1.

#### GERMANY.

- The Royal Prussian Academy of Sciences, Berlin. Sitzungsberichte, 1886, nos. 40-53; 1887, nos. 1-39. Abhandlungen, 1886.
- The Society of Friends of Natural History, Berlin. Sitzungs-Berichte, 1886.
- The Natural-History Union of Rhenish Prussia and Westphalia, Bonn.

  Verhandlungen, Jahr. xliii., Hälfte 2; xliv., Hälfte 1.
- The German Malacological Society, Frankfort a. M. Jahrbücher, xiv., Heft. 1, 2.
- The New Zoological Society, Frankfort a. M. Der Zoologische Garten, Jahr. xxviii., nos. 1-10.