









Richardson & Co

100 Broadway New York

to be used

July 1872

The 25 July I am  
very glad to see the  
of the Museum

and I have no

in the year 1872

Brighton & Sussex  
Natural History & Philosophical Society

64 Middle Street.

Brighton. 19<sup>th</sup> July 1892

Dear Sirs

In reply to your letter of the 5<sup>th</sup> July, I am sorry that I am not able to send you the reports required for the South Kensington Museum.

The 13<sup>th</sup> report is out of print and I have no spare copy.

No reports were printed in the years 1878, 1879.

I will send you the 1892 report and future reports when issued

Yours truly

Jr. Colbatch Clarke

Mess<sup>rs</sup> Dulau & Co

37 Soho Square

London W.

# FIRST REPORT

OF THE

BRIGHTON AND SUSSEX

Natural History Society,

ADOPTED AT A MEETING HELD

SEPTEMBER 13TH, 1855.



BRIGHTON:

PRINTED BY ARTHUR WALLIS, BOOKSELLER.

1855.

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# FIRST REPORT

OF THE

BRIGHTON AND SUSSEX

Natural History Society,

K

ADOPTED AT A MEETING HELD

SEPTEMBER 13TH, 1855.



BRIGHTON:

PRINTED BY ARTHUR WALLIS, BOOKSELLER.

1855.

President :

MR. HOLLIS.

Vice-President :

DR. WILLIAM KING.

Treasurer :

MR. SIMONDS.

Committee :

MR. G. DE PARIS,

MR. J. PETO,

„ G LOWDELL,

„ BARCLAY PHILLIPS,

„ M. PENLEY,

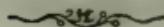
„ ARTHUR WALLIS.

Honorary Secretaries :

DR. BAYES.

MR. HORNE.

## R E P O R T .



It is with much pleasure and satisfaction that your Committee present to your notice this first annual report on the affairs and proceedings of this Society, during the past year.

The first few monthly meetings were held at the Dispensary; which locality being found inconvenient, they subsequently took place at the Athenæum; the committee of that Institution having kindly placed a room at their disposal.

The number of members who have joined the Society during this the first year of its existence is 74; and it is to be hoped that this number will be increased, as its objects are more generally understood and appreciated.

The financial state of the Society is satisfactory, showing a balance in the hands of the Treasurer of £13 4s. 4d. The outlay for Printing and other incidental expenses, has been heavier than it is likely to prove in future years; when we hope to be able to devote a larger sum to the purchase of books, especially those of a standard character.

Several Journals, devoted to Natural History, are taken in, and placed upon the table at the Society's Room at the Athenæum, from ten till four daily; and members desiring to peruse them at their own homes, may obtain the works after the first month, on application to the librarian.

Several interesting Papers have been communicated at the usual meetings of the Society, (which have been regularly held on the second Thursday in each month,) and many valuable Zoological, Geological, Botanical, and Microscopical specimens exhibited on these occasions.

The following are the Papers which have been read:—

## I.

On the "Hotété," a root Caterpillar of New Zealand, by  
MR. W. CONSTABLE.

## II.

On the "Habits of the *Geotrupes*," MR. J. N. WINTER.

## III.

Remarks on two new British Plants, the *Agrimonia odorata*, and the *Alopecurus pronus*, by MR.  
A. WALLIS.

## IV.

On the "Fungi," by DR. KING.

## V.

On "Red Snow," by MR. BARCLAY PHILLIPS.

## VI.

On "Ferns," by MR. WONFOR.

## VII.

On the "Genus *Cinchona*," by DR. KING.

## VIII.

On the "*Diatomaceæ*," by MR. HORNE.

## IX.

On the "Geological features of Ardingly," MR. HOLLIS.

## X.

On the "Flora of the Ardingly District," MR. A. WALLIS.

The annual Excursion, in compliance with Rule XV, took place on Friday, August 3rd, to the Ardingly Rocks, and gave rise to the very interesting Papers

last mentioned in the above list, copies of which are now lying on the table for general perusal, and a sketch of the locality has been kindly presented by Mr. Penley.

Before concluding their report, the Committee take this opportunity of suggesting, that any Member having duplicate copies of works on subjects connected with Natural History, will confer no slight boon on the Society by presenting them to it.

It is with the greatest pleasure that the Committee, in taking this retrospect, gather so much to encourage the promoters and well-wishers of the Society, and they trust that each member will individually exert himself to increase its prosperity and success.

TREASURER'S ACCOUNT FOR THE YEAR ENDING SEPT. 1, 1855.

<i>Dr.</i>	<i>Cr.</i>	£	s.	d.
Subscriptions	Assistant Secretary...	1	2	6
...	Collector ...	0	8	6
...	Printing Rules ...	3	0	0
...	Set of Ballot Balls...	0	6	0
...	Tea and Coffee...	3	15	2
...	Printing and Stationery ...	7	5	6
...	Periodicals ..	6	2	6
...	Secretary's Petty Disbursements ...	0	3	0
...	Delivery of Notices of Meetings ...	1	12	6
...	Balance in hand of Treasurer	13	4	4
		<u>£ 37 0 0</u>		

24 SEP 1887



PRINTED BY  
ARTHUR WALLIS,  
BOOKSELLER AND STATIONER.

# SECOND REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

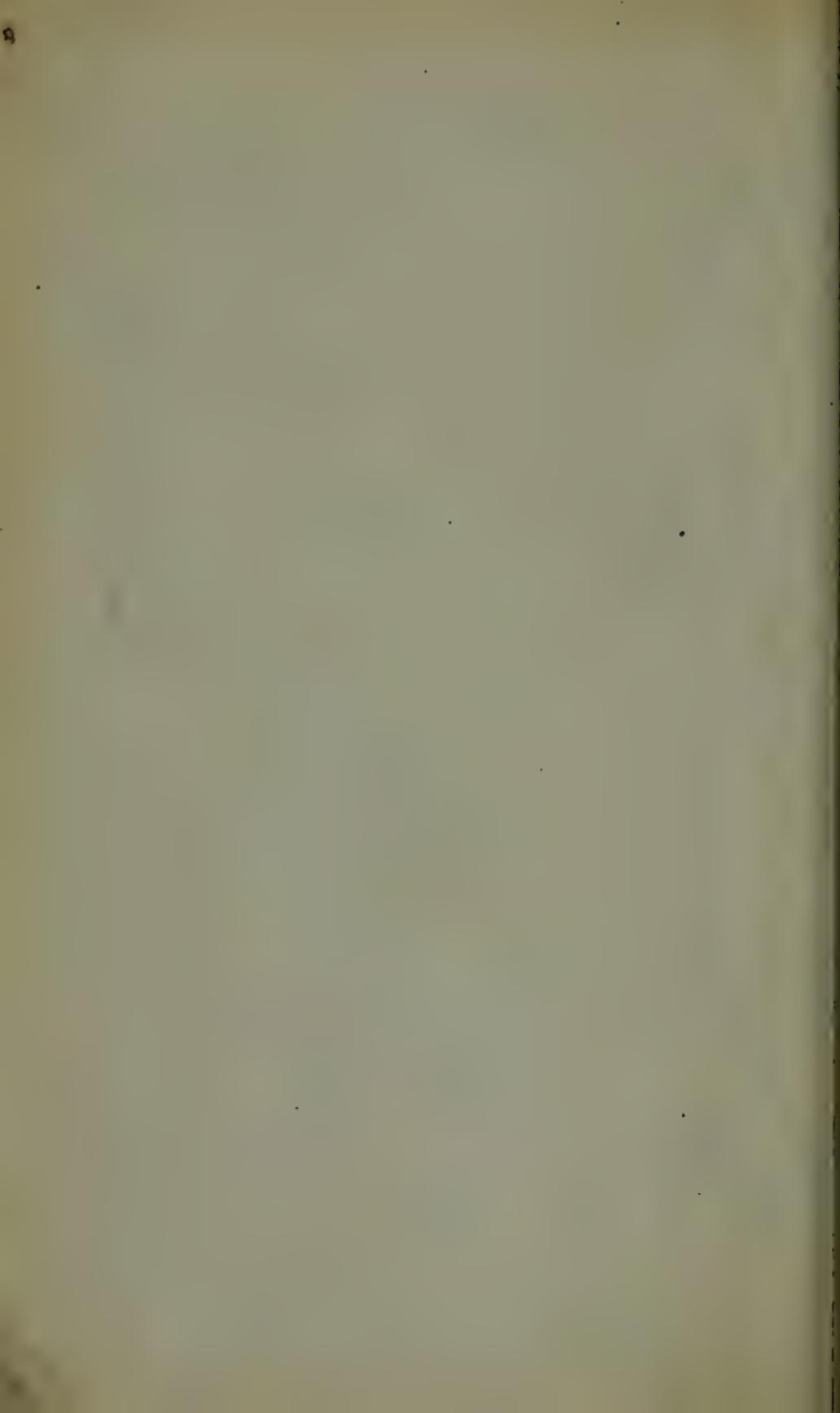
SEPTEMBER 11, 1856.



Brighton:

PRINTED BY H. WALLIS, PRINTER AND BOOKSELLER.

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MDCCLVI.



# SECOND REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

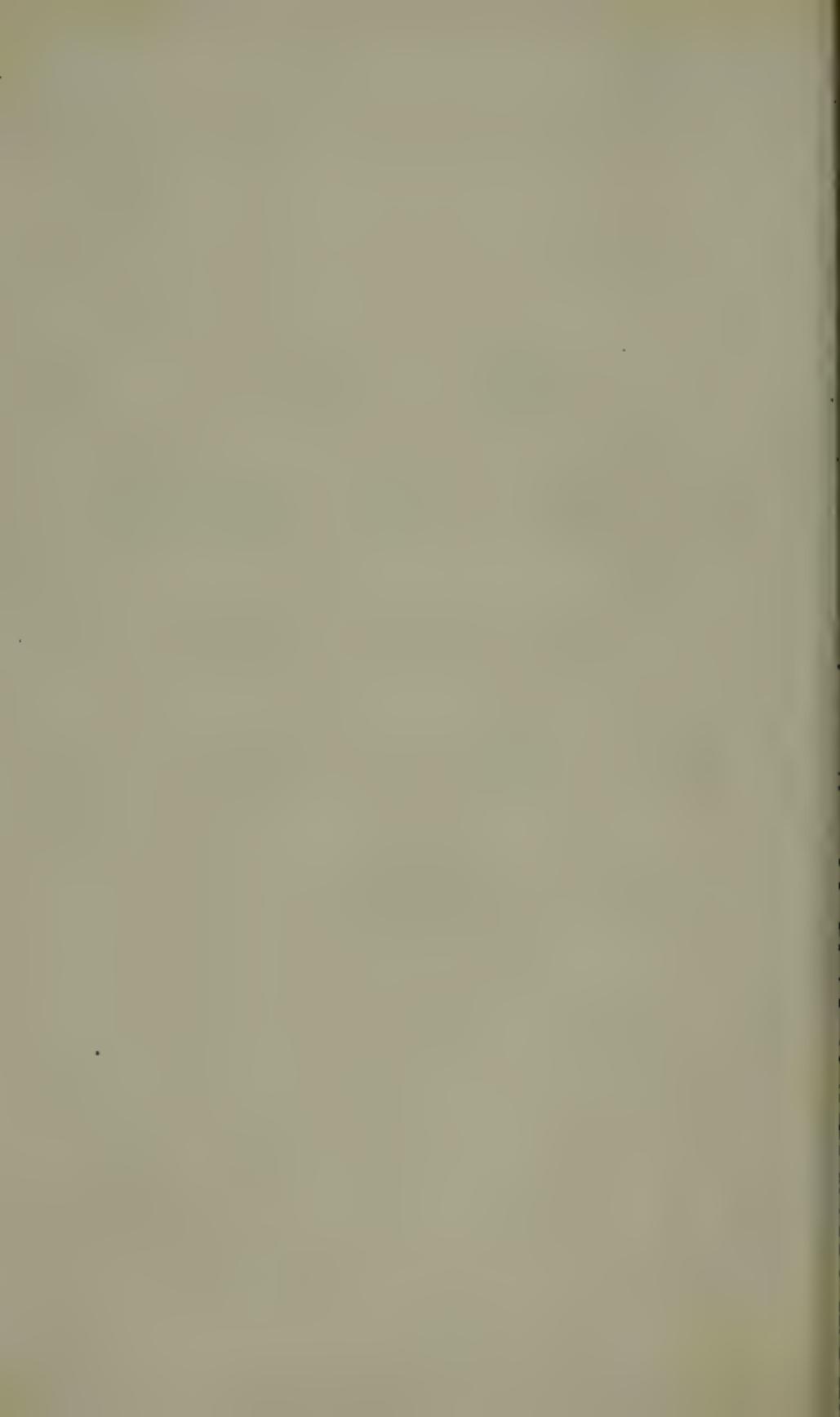
SEPTEMBER 11, 1856.



Brighton:

PRINTED BY H. WALLIS, PRINTER AND BOOKSELLER.

—  
MDCCCLVI.



AT the SECOND ANNUAL MEETING of the Brighton  
and Sussex Natural History Society, held at the Athenæum,  
September, 11th, 1856,

*It was resolved :—*

“That the following Report be received, approved, and  
entered on the minutes : and that it be printed and  
circulated among the Members.

W. M. HOLLIS,

CHAIRMAN.

President :

MR. A. BIGGE.

Vice-Presidents :

DR. KING.            MR. HOLLIS.

Treasurer :

MR. SIMONDS.

Committee :

MR. G. DE PARIS,	MR. J. ANDREWS,
„ M. PENLEY,	„ F. MERRIFIELD,
„ J. PETO,	„ WHATELY.

Honorary Secretaries :

MR. T. B. HORNE.      MR. T. W. WONFOR.

## REPORT.

---

IN presenting the Second Annual Report, your Committee feel they have the very pleasing task to perform of recording the continued prosperity of this Society, which is gradually taking that place among learned bodies, which in a town, containing so many votaries of Natural History, it ought to assume; this prosperity is more remarkable from the fact, that it has been gaining fresh strength during a year which has been marked by others as one of trial and decreasing numbers.

As will be seen by the balance sheet, the finances are in a very flourishing condition, there being a balance in the hands of the Treasurer of £5. 10s. 7d.

While this Society has to rejoice at its continued prosperity and increased numbers, it still has to deplore the loss by death of some valuable members, among whom your Committee mention with feelings of deep regret, Messrs. Arthur Wallis, Payne, and Lennard, the first of whom was one of the originators of the Society,

and its most valuable member; and considering the fluctuating character of the population, it will not be felt a matter of surprise that it has also lost some few by retirement and removal, of the latter class, one of its Hon. Secretaries, Dr. Bayes, in whose stead Mr. Wonfor was elected.

In addition to the periodicals in circulation last year, there has been added the Quarterly Journal of the Geological Society; the volumes for the current year of the Palæontographical and Ray Societies will shortly be in the Library, and in fulfilment of a promise in last year's report, your Committee have purchased the following standard works on Natural History:—

Harvey's British Marine Algæ.

Bell's Reptiles.

Bell's Crustacea.

Forbes' Star-fishes.

Dr. Johnson's Zoophytes.

Newman's Ferns.

Owen's Fossil Mammals and Birds.

Rymer Jones' Comparative Anatomy.

Forbes and Hanley's Molluscous Animals and  
their Shells.

The Magazine of Natural Philosophy which was in circulation has ceased to exist.

It will also be seen amongst the expenditures, that a

very convenient piece of furniture has been purchased, which, for the present, answers both as a book-case, and Museum.

At the usual Monthly Meetings, several interesting papers have been communicated, and many valuable specimens of Natural History, and sketches illustrating Geological peculiarities have been exhibited.

The following are the subjects which have been introduced and discussed:—

“Formation of a *Hortus Siccus*, and the Methods of drying Plants,” MR. WHATELY.

“Memoir of Dr. George Johnson, of Berwick,” DR. KING.

“The Yew Tree, and the question whether grafts die at the same time as the parent stem,” MR. WONFOR.

“Habits and Peculiarities of Moths and Butterflies,” MR. WINTER.

“Instinct and Reason,” MR. LÖWENTHAL.

“The Puss Moth,” Mr. MERRIFIELD.

“The *Baobab*, and the *Wellingtonia Gigantea*,” MR. WONFOR.

“The Structure of the human eye,” DR. KING.

“Ethnology, in its relation to Zoology, and the other Branches of Natural History,” DR. R. GORDON LATHAM.

The annual Excursion took place on Wednesday, July 16th, to Balcombe and the district adjoining Tilgate

Forest; a report of which, drawn up by Mr. Wonfor, and illustrated with a sketch presented by Mr. Penley, lies upon the table.

The average attendance at the monthly meetings has considerably exceeded that of our first year, proving that the interest in the Society is not of an Ephemeral character.

Your Committee have to record the following donations:—Hawkins on the "*Ichthyosauri and Plesiosauri*," from B. Vallence, Esq.; Wood's "*Crag Mollusca*," from W. Hollis, Esq.; preparation of a Double Chick, from G. Willis, Esq.; and three sketches, made during the excursion, from A. Bigge, Esq.; and would take this opportunity of earnestly requesting its members to lend or present, for the purpose of forming the nucleus of a library, duplicate copies, or any other works on the subject of Natural History, and its collateral branches, which they are not in the immediate want of.

The 3rd, 4th, and 5th numbers of the Quarterly Journal of Microscopical Science being out of print, your Committee would feel obliged to any member who could procure them for the Society.

TREASURER'S ACCOUNT FOR THE YEAR ENDING SEPT. 1, 1856.

<i>Dr.</i>		<i>Cr.</i>	
£.	s. d.	£.	s. d.
Balance from 1855	... 13 4 4	Delivery of Notices	... 1 11 6
Subscriptions	... 39 0 0	Collector	... 1 3 0
		Contributions to the Ray and Palaeontographical Societies	2 2 0
		Bookcase	5 2 6
		Donation, Athenæum	5 5 0
		Periodicals	4 16 2
		Printing, Stationery, &c.	5 1 1
		Purchase of Books	13 17 0
		Assistant Secretary	1 17 0
		Tea and Coffee	4 18 2
		Petty Disbursements	1 0 4
		Balance in hand	5 10 7
			<hr/> £52 4 4

24 SEP 1857



*Brighton:—Printed by H. Wallis, Printer and Bookseller,  
5, Bartholomews.*









THIRD REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

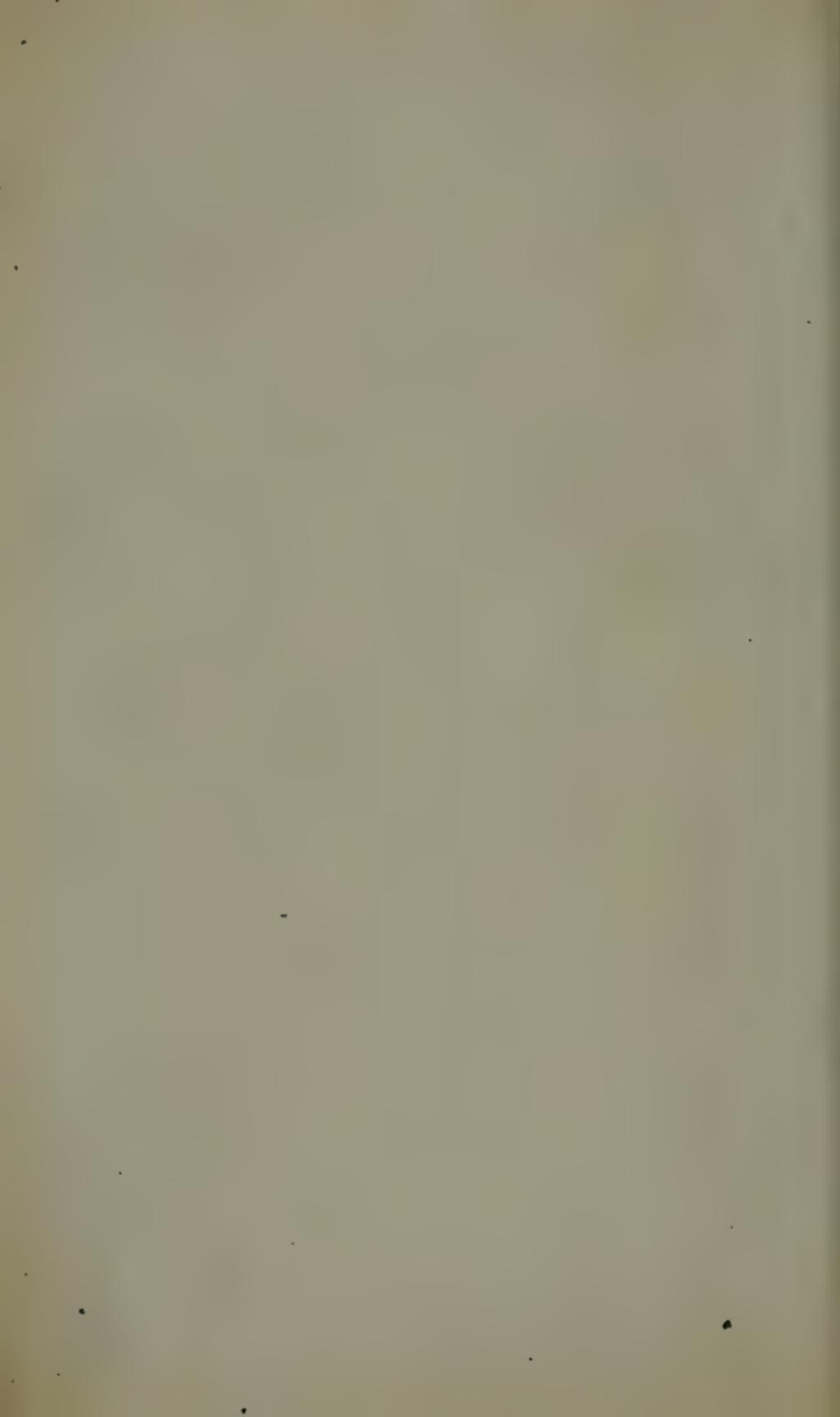
SEPTEMBER 11, 1857.



Brighton :

PRINTED BY H. WALLIS, BOOKSELLER AND STATIONER.

—  
MCCCCLVII



# THIRD REPORT

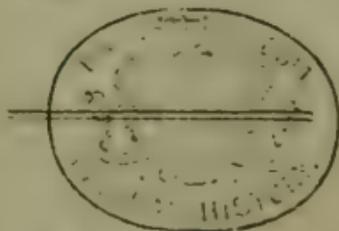
OF THE

Brighton and Sussex

## NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 11, 1857.



Brighton :

PRINTED BY H. WALLIS, BOOKSELLER AND STATIONER.

MDCCCLVII.



AT the THIRD ANNUAL MEETING of the Brighton  
and Sussex Natural History Society, held at the Athenæum,  
September 11th, 1857,

*It was resolved :—*

“That the following Report be received, approved, and  
entered on the minutes : and that it be printed and  
circulated among the Members.”

A. BIGGE,  
CHAIRMAN.

President :

DR. HALLIFAX.

Vice-Presidents :

DR. KING.      MR. HOLLIS.      MR. A. BIGGE.

Treasurer :

MR. SIMONDS.

Committee :

MR. J. ANDREWS.	DR. HALL.
„ F. MERRIFIELD.	MR. EDEN.
„ WHATELY.	„ GWATKIN.

Honorary Secretaries :

MR. T. B. HORNE.      MR. T. W. WONFOR.

Messrs. Penley, Peto, and De Paris retired from the  
Committee in rotation.

## REPORT.

---

YOUR Committee, in presenting their Third Annual Report, record with pleasure the favourable condition of this Society, which may now be said to have passed through its infant state and become one of the established Societies of the Town. As will be seen by the balance sheet, the finances are in a flourishing condition, there being a balance in the hands of the Treasurer of £2 10s. 2d.

A working Naturalist in the Town, named Hemings, having died, leaving his wife and family in great distress, your Committee purchased his collection of mosses, lichens, and hepaticæ, and have since had them made complete and bound.

In recording the donations, your Committee have to report that Mr. Hollis has presented the

Society with valuable specimens of a Logwood pile, and a piece of Pine from the harbour of Jamaica, showing the ravages of teredo; and a root of the Mangrove with oyster shells attached. He has promised a collection of British fossils, illustrative of the different strata. Mr. I. G. Bass has presented the Society with a number of organic remains from the coal formation. And Mr. R. Glaisyer a slice of wood from the London clay, containing teredo, together with a recent specimen of the animal.

Several interesting papers have been communicated at the ordinary monthly meetings, many illustrated by well-executed drawings; and choice specimens of Natural History have been from time to time exhibited.

The following are the subjects which have been introduced and discussed:—

“Natural History of Guano.” MR. EDEN.

“The comparative structure and physiology of the organ of Vision.” MR. HOLLIS.

“The Esculent Swallow’s nest.” MR. SIMONDS.

“The preservation of organic remains.” MR. EDEN.

"Certain differences in isomeric compounds discoverable by vegetable growth, but not recognisable by chemical analysis." MR. HOLLIS.

"Curiosities of the vegetable kingdom." MR. SIMONDS.

"Vorticella Opercularis." MR. RIDDLE.

"The Waltonian case, an adaptation of the Wardenian case for raising plants." MR. WONFOR.

The annual Excursion took place on Thursday, July 16th, to Pevensey, Hurstmonceux, and Hailsham. A report of the day's proceedings, drawn up by Mr. Wonfor, and illustrated by a sketch, kindly presented by Mr. Penley, lies on the table for the perusal of the members, together with an account, communicated by Mr. Riddle through Dr. Hallifax, of some microscopic objects found by him during the day.

The Monthly meetings have been well attended, and the discussions have increased in interest.

Several papers have been promised for the forthcoming year; and your Committee feel confident there will be an interesting subject presented at each of the monthly meetings.

In concluding this report, your Committee would again take the opportunity of requesting its members either to lend or present specimens or duplicate copies of works bearing directly or indirectly on the subject of Natural History, and suggest their placing before their friends the objects of this Society, feeling that by this means its interests will be materially advanced.

TREASURER'S ACCOUNT FOR THE YEAR ENDING SEPT. 1, 1857.

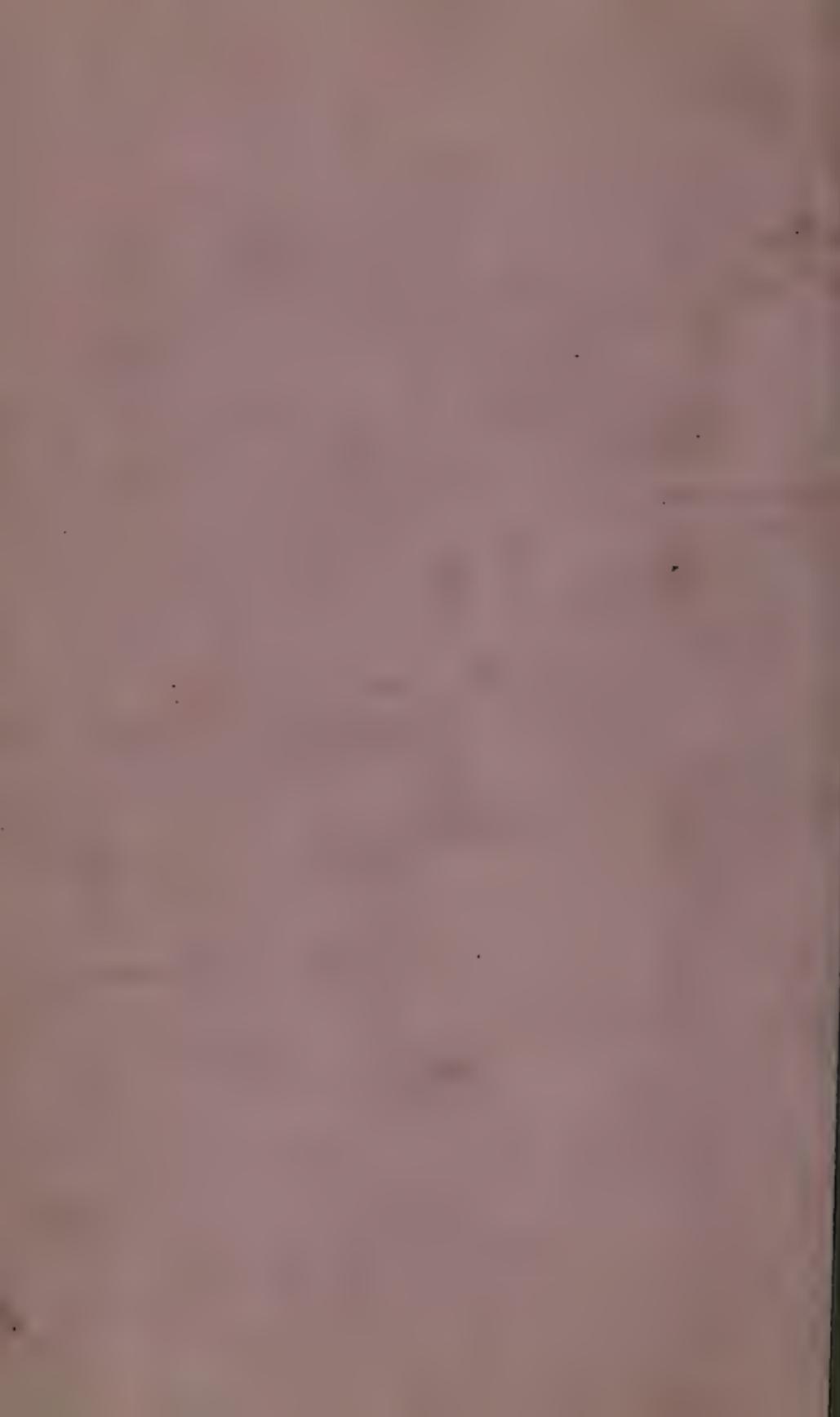
<i>Dr.</i>		<i>Cr.</i>	
	£ s. d.		£ s. d.
Balance, 1855-56	- 5 10 7	Smith, Delivering Notices	- 2 0 0
Subscriptions	- 30 0 0	Donation to Athenæum	- 5 5 0
		Dixon, Mosses, &c.	- 4 15 6
		Tea and Coffee	- 6 11 0
		Assistant-Secretary's Salary	- 1 7 6
		Sundries	- 0 12 4
		Books and Stationery	- 10 7 7
		Assistant Secretary, writing labels	0 16 6
		Hadlow, Stamp, &c.	- 1 5 0
		Balance	2 10 2
	<u>£35 10 7</u>		<u>£35 10 7</u>

9 APR. 92



BRIGHTON : H. WALLIS, PRINTER AND BOOKSELLER,  
BARTHOLOMEWS.





FOURTH REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 1, 1858:



BRIGHTON:

PRINTED BY H. WALLIS, BOOKSELLER AND STATIONER.

—  
MDCCCLVIII.



# FOURTH REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

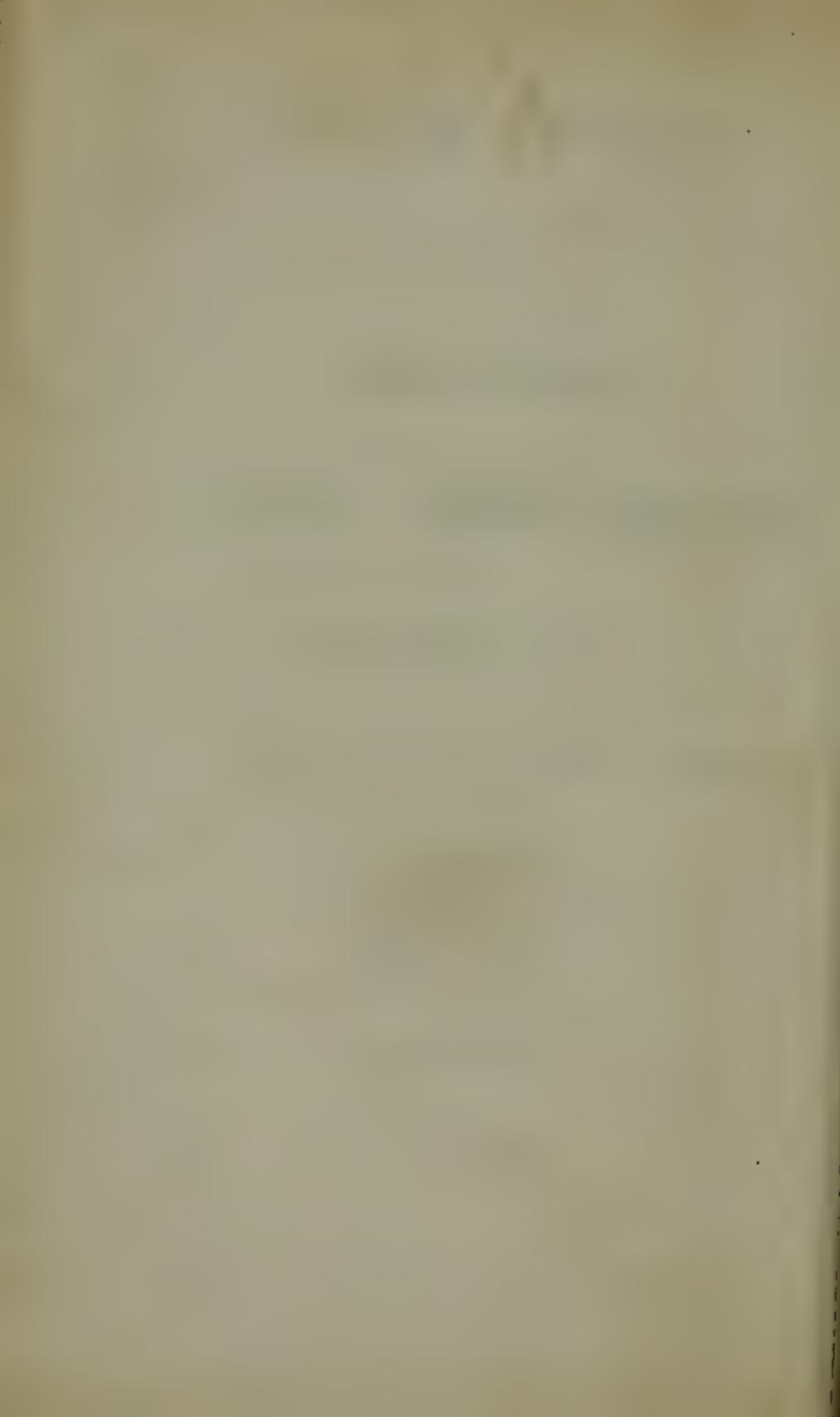
SEPTEMBER 1, 1858.



BRIGHTON:

PRINTED BY H. WALLIS, BOOKSELLER AND STATIONER.

—  
MDCCLVIII.



At the **FOURTH ANNUAL MEETING** of the Brighton  
and Sussex Natural History Society, held at the Athenæum,  
September 9th, 1858,

*It was Resolved :—*

“That the following Report be received, approved, and  
entered on the minutes; and that it be printed and  
circulated among the Members.”

**J. HALLIFAX,**

Chairman.

**President :**

MR. SIMONDS.

**Vice-Presidents :**

DR. KING.      MR. HOLLIS.      MR. A. BIGGE.  
DR. HALLIFAX.

**Treasurer :**

MR. T. B. HORNE.

**Committee :**

DR. HALL.		MR. J. WINTER.
MR. EDEN.		„ EMBERSON.
„ GWATKIN.		„ REV. DR. CARY.

**Honorary Secretaries :**

T. W. WONFOR.      J. C. ONIONS.

Messrs. Andrews, F. Merrifield, and Whately,  
retired in rotation from the Committee.

# REPORT.

---

IN presenting their Fourth Annual Report, your Committee again congratulate the members on the continued prosperity of the Society.

As will be seen from the Treasurer's statement, the finances are in a very satisfactory condition, shewing a balance in his hands of £6 5s. 5d.

Your Committee have to record donations of books on Natural History, from Messrs. Gwatkin, Seabrook, and Dr. Hallifax. Mr. T. B. Horne has also presented the Society with a magnificent specimen of *Icthyosaurus*, from the Lias formation.

A new periodical, the "Geologist," has been added to those already in circulation, so that now all branches of Natural History are represented by the

periodicals circulated among the members. The volumes of the Ray and Palæontographical Societies have been received and placed in the Library.

A considerable addition has been made to the Library by the loan of valuable and expensive books on specified conditions, from Messrs. H. Catt, Horne, R. Glaisyer, and Mrs. Wallis.

The works of the Palæontographical Society, lent by Mr. H. Catt, being of a very valuable character the Committee have deemed it necessary for their proper preservation, to bind them.

Your Committee regret to announce the retirement of Mr. Horne from the office of an Honorary Secretary, a post he has filled with very great advantage to the Society since its commencement; but have great satisfaction in adding that Mr. Horne has consented to undertake the less onerous duties of Treasurer.

At each of the Monthly Meetings, a paper on some subject in Natural History has been communicated, and many valuable specimens and illustrative drawings exhibited; the average attendance at these meetings has been good. The following are the subjects which have been introduced and discussed :—

“Comparative Respiration,” (two papers)	Dr. Hallifax.
“Phosphorescence” .....	Mr. Peto.
“Vegetable Secretions” .....	Mr. Wonfor.
“The Rocks which constitute the Crust of the Earth” .....	Mr. Hollis.
“The comparative Anatomy of the Teeth”	,, Eden.
“Earthquakes and Volcanoes” .....	,, Peto.
“The Teeth of Reptiles” .....	,, Eden.

The Annual Excursion took place on Wednesday, July 14th, to Arundel, when the Duke of Norfolk in a most handsome manner, threw open the Castle and Grounds to the members and friends. An account of the day's proceedings, drawn up by Mr. Wonfor, and illustrated by a Drawing, presented by Mr. Penley, now lies on the table.

In concluding their Report, your Committee again request the members to lend or present specimens or duplicate copies of works bearing directly or indirectly on the subject of Natural History, and trust each member will endeavour to increase the prosperity and success of the Society by bringing its merits and objects before their friends.

TREASURER'S ACCOUNT FOR THE YEAR ENDING SEPT. 1, 1858.

		<i>Dr.</i>		<i>Cr.</i>			
		£	s.	d.	£	s.	d.
To Balance, from 1856-57.....		2	10	2			
” Subscriptions in arrear on 1st Sept, 1857, and since received .....		3	10	0	0	10	0
” Subscriptions due on the 1st Sept. 1857, and since received .....		32	10	0	2	2	0
By One Subscription over-paid last year, and since re- turned .....					0	10	0
” Donation to Athenaeum....					5	5	0
” Two years' Subscription to the Palaeontographical Society, 1856-57.....					2	2	0
” The like to Ray Society, one year, 1857. ....					1	1	0
” Fire Insurance of Books to March, 1859 .....					0	6	0
” Books, Printing, & Stationery					10	0	0
” Book Binding .....					3	1	0
” Salary to Assistant Secretary					1	10	0
” Ditto, for writing out Labels for circulating books ....					0	18	0
” Tea and Coffee .....					2	19	6
” Commission on Subscriptions received by the Collector					2	7	6
” Messenger for delivering Notices .....					1	17	0
” Sundry small payments....					0	7	9
” Balance.....					6	5	5
		£38	10	2	£38	10	2

24 SEP 1857







1879

THE SIXTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

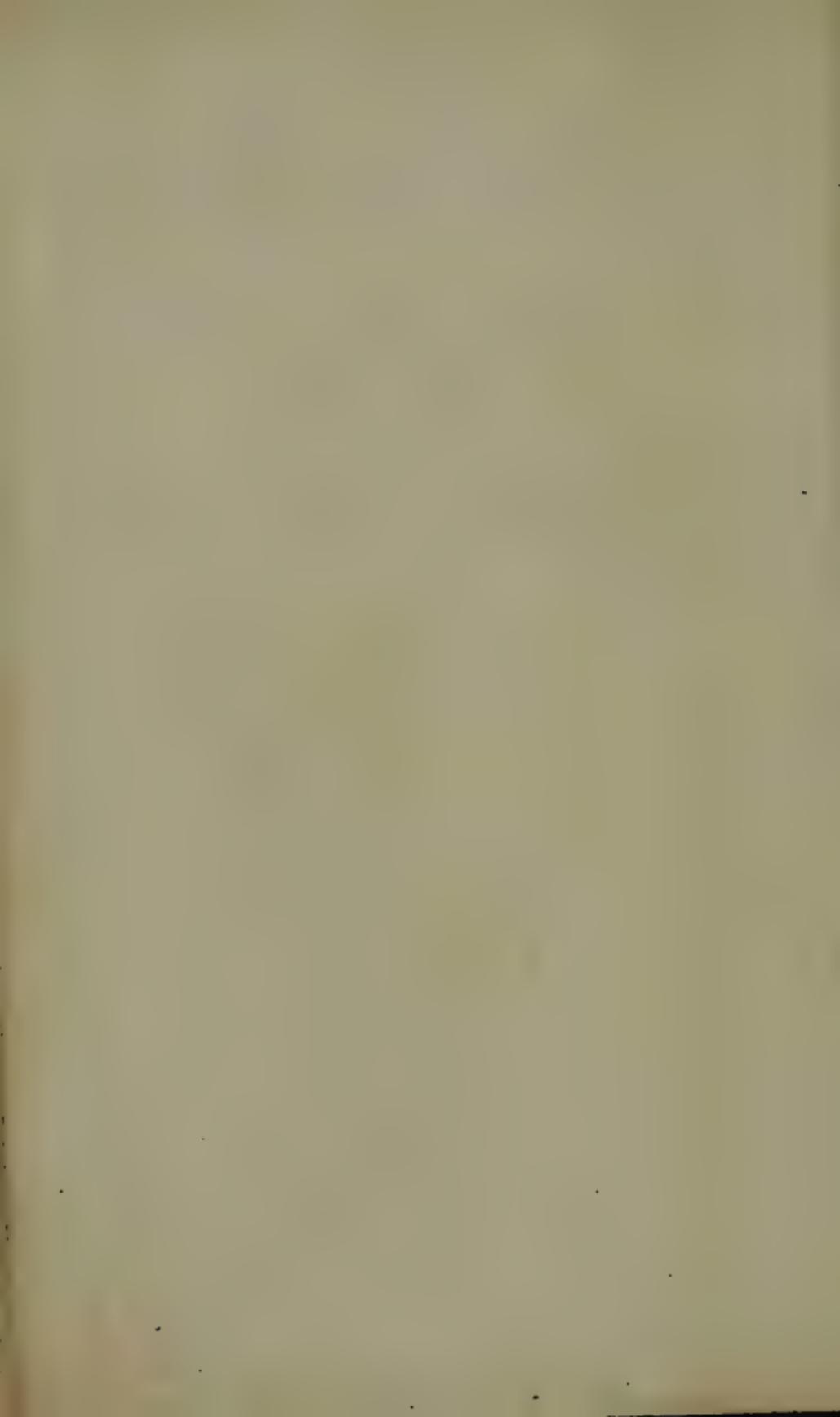
SEPTEMBER 8th, 1859.



BRIGHTON:

PRINTED BY W. PEARCE, (LATE WALLIS,) BARTHOLOMEWS.

1859.



THE SIXTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

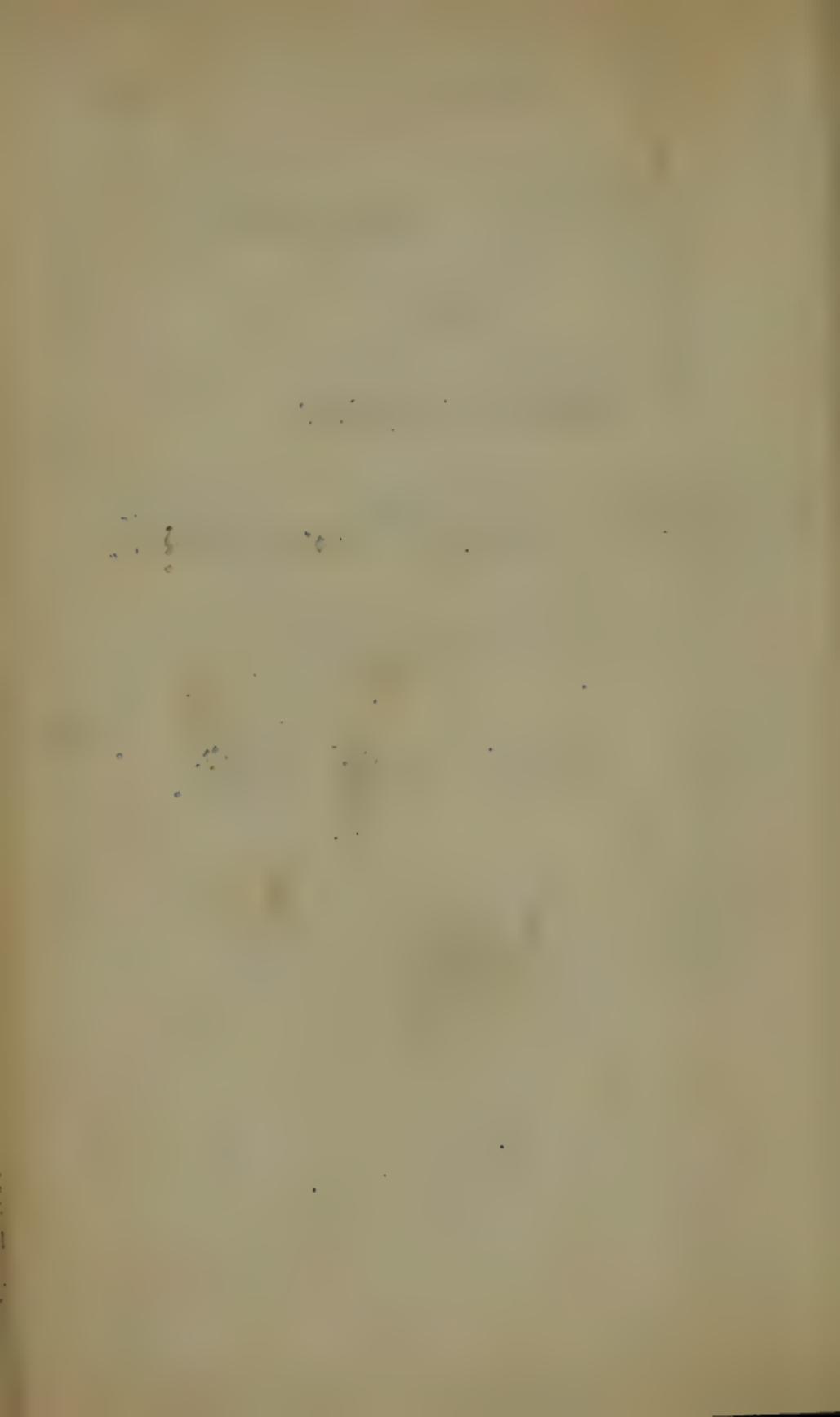
SEPTEMBER 8th, 1859.



BRIGHTON:

PRINTED BY W. PEARCE, (LATE WALLIS,) BARTHOLOMEWS.

—  
1859.



## President :

MR. G. LOWDELL.

## Vice-Presidents :

DR. KING.

MR. HOLLIS.

MR. A. BIGGE.

DR. HALLIFAX.

MR. SIMONDS.

## Treasurer :

MR. T. B. HORNE.

## Committee :

MR. EMBERSON,  
,, G. GRANTHAM,  
,, R. GLAISYER,

MR. EDEN,  
,, GWATKIN,  
,, JOHN WINTER.

## Honorary Secretaries :

MR. T. W. WOLFORD.

MR. J. C. ONIONS.

At the Sixth Annual Meeting of the Brighton and  
Sussex Natural History Society, held, at the Athenæum,  
September 8th, 1859,

IT WAS RESOLVED,

“That the following Report be received, approved, and  
entered on the Minutes; and that it be printed and  
circulated among the Members.”

T. R. SIMONDS,  
CHAIRMAN.

## R E P O R T .

---

IN presenting the Sixth Annual Report your Committee have the satisfaction of recording the continued and increasing prosperity of the Society.

The number of members at the present time is 86, being an increase of 15 on the previous year.

The state of the finances is very satisfactory, there being a balance of £7 13s. 9d. in the hands of the Treasurer, after expending £11 5s. 0d. in new books, as appears by the Treasurer's account.

Two boxes of specimens from Ascension have been presented to the Society by Mr. TATHAM, a box of preparations of Chincona by Dr. KING, and a copy of his pamphlet on the Pholas Dactylus by Mr. ROBERTSON. The volumes of the Ray and Palæontographical Society have been received and added to the Library, and the following books have been purchased, viz. :—

Yarrell's British Birds, 3 vols; Kirby and Spence's Entomology; Selby's Forest Trees; Hogg's Microscope; Drew's Practical Meteorology; Wilson's Bryologia Britannica; Stainton's Natural History of Tineina, 4 vols; Stainton's Entomologist's Companion to Tineina; Ansted's Ancient World.

Your Committee felt considerable anxiety as to the choice of books to be purchased, and hope that the selection which they have made will meet with the approbation of the Society; and they would suggest that members desiring any particular works to be purchased should, from time to time, send their names, and the titles of the books to one of the Secretaries, in order that the Committee may on future occasions be enabled to appropriate the funds at their disposal in a manner most in accordance with the wishes of the members.

A Catalogue of the books belonging to the Society has been made, and will be ready for circulation with the Annual report.

Your Committee regret to have to report that great irregularity exists amongst the members in the circulation of the periodicals, whereby the usefulness of the Society is much diminished; and they also beg to call the attention of the members to the circular which was some time since sent to them concerning the missing numbers, to which no response has been made.

The monthly meetings have been very numerously attended, and an interesting paper on some subject connected with Natural History has on each occasion been read and animatedly discussed. The following are the subjects which have been introduced:—

The Natural History of Egypt and  
 Nubia, from observations made  
 in 1856-7... .. Mr. John Winter

Anatomy and Physiology of the Perforating Instruments of Pholas Dactylus	... ..	Mr J. Robertson
British Butterflies . .	... ..	Mr John Winter
Some of the phenomena of re-pro- duction in plants and animals		Dr. Hallifax
Notes of a Tour through Scandinavia		Mr W. Grantham
Certain Mollusks and their Cancer friends ... ..	... ..	Mr J. Robertson
More Adams than one (?)—two papers .. ..	... ..	Dr. Bryce
Sensibility of Insects	... ..	Mr Hollis
Vitality of Plants and Animals	... ..	Mr Wonfor
Thunderstorms	... ..	Mr J. Robertson

The Annual Excursion took place on Wednesday, July 20th, to Uckfield, when the Rocks on the Streatfield Estate, the Woodlands' Rose Gardens, Buxted Park, and Mr. Prince's Grounds and Fernery were respectively visited by the kind permission of the several proprietors. Mr. Wonfor has been good enough to prepare a report of the day's proceedings from Dr. King's and his own notes, which lies on the table, together with a water colour painting of the Steatfield Rocks kindly presented by Mr. Penley, and a list of Uckfield plants, contributed by Mr. D'Alquen.

Your Committee have great pleasure in thankfully recording the further obligation of the Society to Mr. H. Catt, whose liberality has placed at its disposal an additional loan of 23 works on Natural History and kindred subjects.

In concluding their report, your Committee would again request the members to endeavour to promote the prosperity and usefulness of the Society, both by bringing its merits under the notice of their friends, and also by contributing or lending specimens or duplicate copies of Books, bearing directly or indirectly upon the subject of Natural History.

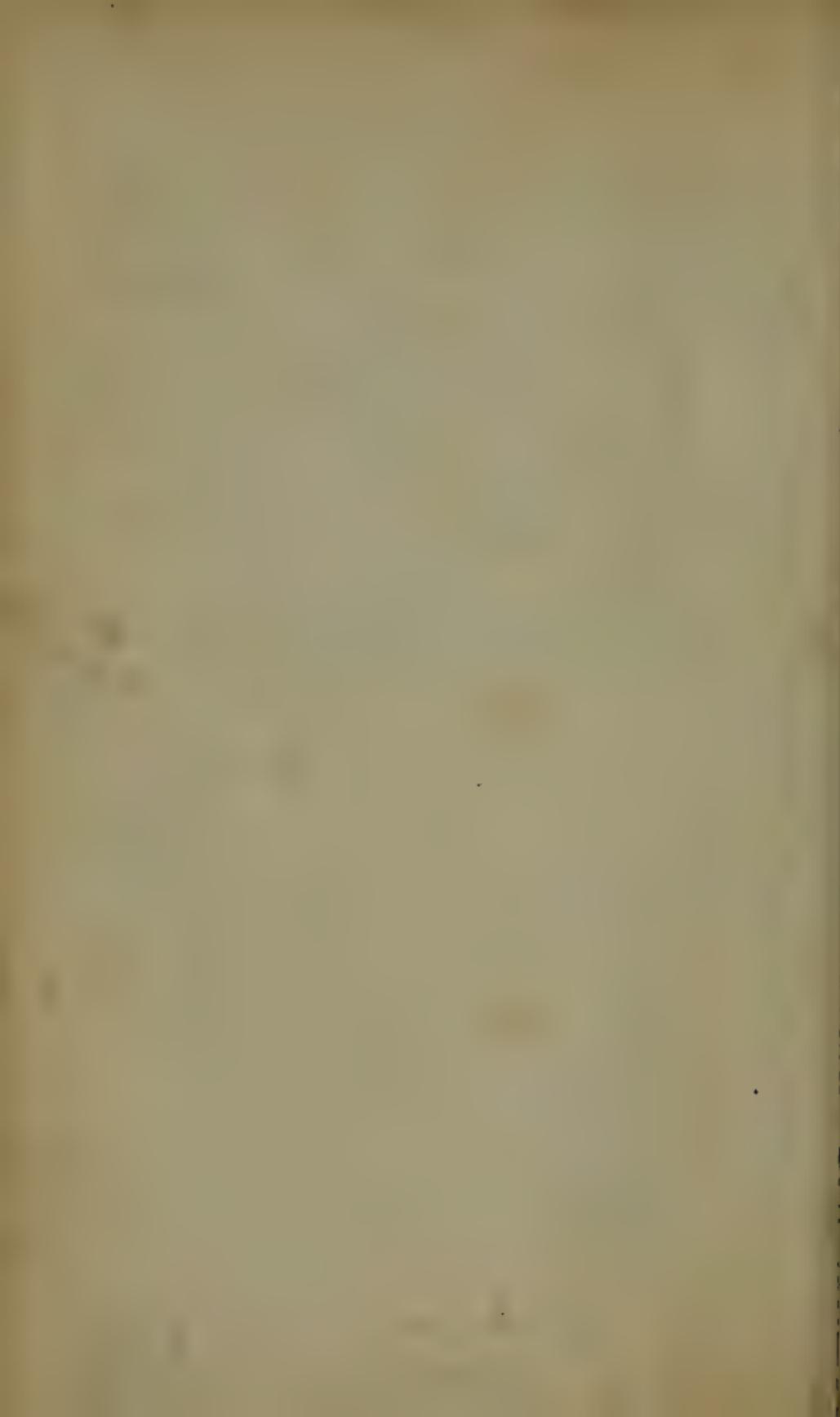
TREASURER'S ACCOUNT  
FOR THE YEAR ENDING SEPT. 1, 1859.

	Dr.	Cr.
	£ s. d.	£ s. d.
To, Balance, from 1857-58 .....	6 5 5	
„ Subscription in arrear, on 1st Sept., 1858, and since received .....	0 10 0	
„ Subscriptions due on the 1st Sept., 1858, and since received .....	37 10 0	
„ Surplus received on account of the Annual Excursion .....	0 5 0	
By Donation to Athenaeum .....		
„ One year's Subscription to Palaeontographical Society .....		1 1 0
„ The like to Ray Society, two years, 1858-59 .....		2 2 0
„ Fire Insurance of Books, to March, 1860 .....		0 4 6
„ Periodicals, Printing, and Stationery .....		7 11 6
„ Salary to Assistant Secretary .....		1 10 0
„ Ditto for writing out Labels for Circulating books .....		0 18 0
„ Tea and Coffee .....		3 0 0
„ Commission on Subscription received by the Collector .....		1 0 0
„ Messenger for Delivering Notices .....		1 16 0
„ Ballot Box .....		0 11 6
„ New Books .....		11 5 0
„ Sundry small payments for Coal, Wood, Candles, &c. ....		0 12 2
Balance .....		7 13 9
	£41 10 5	£41 10 5

Balance in hand ..... £7 13 9

24 SEP 1887









THE SEVENTH

# ANNUAL REPORT

OF THE

Brighton and Sussex

# NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

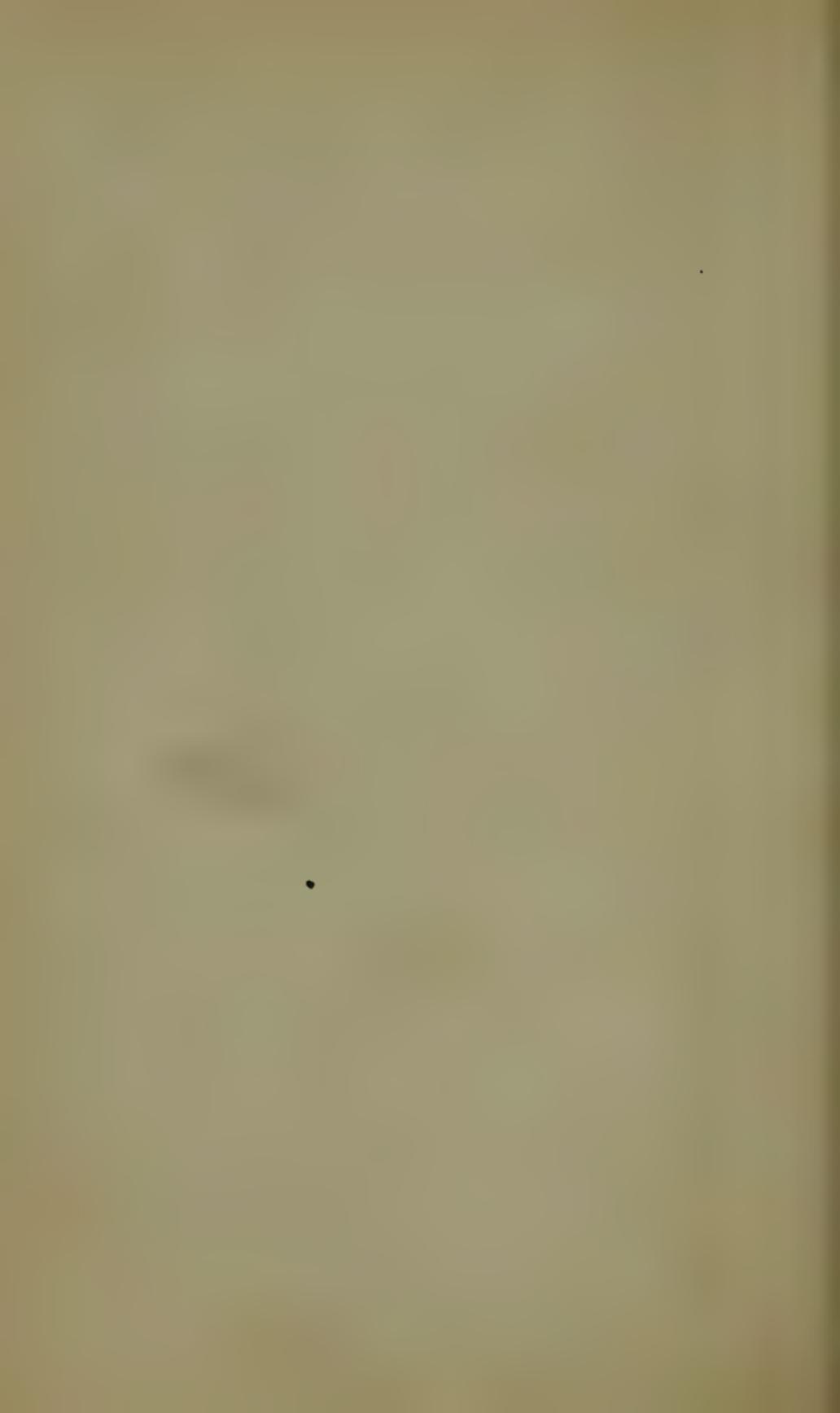
SEPTEMBER 13th, 1860.



BRIGHTON :

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

—  
1860.



THE SEVENTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 13th, 1860.



BRIGHTON :

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

—  
1860.



President :

MR. PENLEY.

Vice-Presidents :

DR. KING.	MR. HOLLIS.	MR. A. BIGGE.
DR. HALLIFAX.	MR. SIMONDS.	MR. LOWDELL.

Treasurer :

MR. T. B. HORNE.

Committee :

MR. G. GRANTHAM,		MR. GWATKIN,
“ R. GLAISYEB,		“ ALLFREE,
“ EDEN,		“ BRANWELL.

Honorary Secretaries :

MR. T. W. WONFOR.	Mr J. C. ONIONS.
-------------------	------------------

Honorary Librarian :

MR. GWATKIN.

At the Seventh Annual Meeting of the Brighton and  
Sussex Natural History Society, held at the Dispensary,  
September 13th, 1860,

IT WAS RESOLVED,

“ That the following Report be received, approved, and entered  
on the Minutes; and that it be printed and circulated among  
the Members.”

GEO. LOWDELL,

CHAIRMAN.

## REPORT.

---

In presenting the Seventh Annual Report, your Committee have the pleasure of recording the continued prosperity of the Society; the number of members being about the same as last year; but your Committee regret the loss which the Society has sustained by the death of Dr. Williamson, who was one of its most active members.

The state of the finances is satisfactory, there being a balance of £1 6s. 10d. in the hands of the Treasurer, after expending £20 17s. 2d. in new books, periodicals, and bookbinding, as appears by the Treasurer's account.

Your Committee have great pleasure in thankfully recording the liberal donation by Dr. W. St. George Davies of 40 volumes of books, being the Naturalist's Library, and which have been in very great request. Dr. Davies has been elected an honorary member, in accordance with Rule 5 of the Society.

The following books have been purchased during the year:—The Micographical Dictionary, Natural History of Brighton (Mrs Merrifield), Guenée's Lepidoptère, with Atlas, Kurr's Mineral Kingdom, Sowerby's British Wild Flowers, Bennett's Gatherings of a Naturalist in Australasia, Owen's Palæontology, Darwin's Origin of Species, Stainton's Tineina (5th vol.), Stainton's Manual of Butterflies and Moths.

Your Committee have much pleasure in reporting that there is a very marked increase in the circulation of the books and periodicals, and that high encomiums are continually passed upon them by those well qualified to judge of their intrinsic value as books of reference.

Twenty-one volumes have been bound during the year, but your Committee regret to say that the following numbers are required to complete the periodicals and magazines ordered to be bound,—all efforts to recover the missing numbers having been hitherto fruitless:—

The Zoologist—February and March, 1854 ; February and March, 1856 ; July, 1857 ; Nov., 1858 ; Jan., Feb., and June, 1859.

The Geologist—Jan. and Feb., 1859.

The Geological Quarterly Journal—Nos. 56, 57, 58 and 59.

The Phytologist—Nov., 1857 ; Feb., 1858.

The Naturalist—Jan., Feb., March, and April, 1854 ; Jan., Feb., April, Dec., 1856 ; Jan., 1857.  
The whole of 1855, excepting May.

A catalogue of the books belonging to the Society has been printed and circulated amongst the members, and a list of such books as have been added during the year will be found at the end of this report. The number of books now in the Library of the Society is 223.

The monthly meetings have been numerous attended, and the papers which have been read have been of a very interesting character, and the discussions upon them very animated. The following are the subjects which have been introduced :—

The Miscellanea of Entomology.....	Mr Kirby.
Codium Bursa .....	Mr Robertson.
Longevity of Plants and Animals.....	Mr Wonfor.
Nervous System of Insects.....	Dr. Hallifax.
The Organs of the Senses and the Cerebral Faculties connected with them (two papers).....	Mr Nourse.
Fern Culture .....	Mr Wonfor.
Common Sensation, considered as a sixth sense .....	Mr Nourse.
The Reproductive Organs in relation to the Nervous System in general .....	Dr. Foreman.
The Hawk Moth .....	Mr Kirby.
Notes on the Natural History of Australia, in illustration of boxes of specimens lately received from that country .....	Mr Wonfor.

The Annual Excursion took place on Friday, June 29th, to East Grinstead, when the members, with their friends, also visited Brambletye House and Forest Row, and many interesting specimens of subjects connected with Natural History were collected. Mr Wonfor and Mr De Paris have kindly prepared reports of the day's proceedings, which lie on the table, together with illustrations by Mr Penley and Mr De Paris.

Since the last annual meeting the books belonging to the Society have been removed from the residence of Mr Horne, who does not now reside continuously in Brighton, to the residence of Mr Gwatkin, No. 49, Grand Parade, who has kindly undertaken the Office of Honorary Librarian, from whom members may obtain them at any time.

In consequence of the difficulty experienced in the circulation of the periodicals amongst the members, your Committee have discontinued to send them out, and they are now kept by Mr Gwatkin, and may be obtained in the same manner as the books in the Library of the Society.

Your Committee for various reasons considered it desirable to avail themselves of the permission of the Medical Society to hold the monthly meetings in the room of that Society at the Dispensary, and the meetings have been, since February last, and will in future, be held there.

Your Committee having found it impossible, with the means at their command, to find any permanent location for the specimens which have been kindly presented

to the Society, and also having regard to the future prospects of the Society, and to the fact that a Local Museum on a large scale is now in the course of formation in Brighton, recommend that the Society discontinue to receive donations of specimens, and that such specimens as the Society now possesses be either transferred to the Town Museum, or returned to the contributors, as may be respectively desired by the several contributors.

In concluding their Report, your Committee would again request the members to endeavour to promote the prosperity of the Society, both by bringing its merits under the notice of their friends, and also by contributing or lending duplicate copies of books bearing directly or indirectly upon the subject of Natural History.

TREASURER'S ACCOUNT  
FOR THE YEAR ENDING SEPT. 1, 1860.

	<i>Dr.</i>	<i>Cr.</i>																																																
	£ s. d.	£ s. d.																																																
To Balance, from 1858-59 .....	7 13 0																																																	
„ Subscription in arrear, on 1st September, 1859, and since received .....	0 10 0																																																	
„ Subscriptions due on 1st September, 1859, and since received .....	33 0 0																																																	
<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">By Donation to Athenaeum .....</td> <td style="width: 10%; text-align: right;">6 6 0</td> <td style="width: 10%;"></td> </tr> <tr> <td>„ One year's Subscription to Palaeontographical Society .....</td> <td style="text-align: right;">1 1 0</td> <td></td> </tr> <tr> <td>„ The like to Ray Society .....</td> <td style="text-align: right;">1 1 0</td> <td></td> </tr> <tr> <td>„ Fire Insurance of Books, to March, 1861 ..</td> <td style="text-align: right;">0 5 6</td> <td></td> </tr> <tr> <td>„ Periodicals, Printing, and Stationery ....</td> <td style="text-align: right;">10 13 6</td> <td></td> </tr> <tr> <td>„ Salary to Assistant Secretary .....</td> <td style="text-align: right;">1 10 0</td> <td></td> </tr> <tr> <td>„ Ditto for writing out Labels for Circulating Books .....</td> <td style="text-align: right;">0 7 6</td> <td></td> </tr> <tr> <td>„ Tea and Coffee .....</td> <td style="text-align: right;">3 10 0</td> <td></td> </tr> <tr> <td>„ Commission on Subscriptions received by the Collector .....</td> <td style="text-align: right;">1 6 0</td> <td></td> </tr> <tr> <td>„ Messenger for Delivering Notices .....</td> <td style="text-align: right;">1 18 0</td> <td></td> </tr> <tr> <td>„ New Books .....</td> <td style="text-align: right;">14 9 6</td> <td></td> </tr> <tr> <td>„ Bookbinding .....</td> <td style="text-align: right;">1 10 2</td> <td></td> </tr> <tr> <td>„ Removing Bookcase, &amp;c. ....</td> <td style="text-align: right;">0 8 6</td> <td></td> </tr> <tr> <td>„ Sundry small payments for Coal, Wood, Candles, &amp;c. ....</td> <td style="text-align: right;">0 10 3</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Balance .....</td> <td style="text-align: right;">1 6 10</td> <td></td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">£46 3 9</td> <td style="text-align: right; border-top: 1px solid black;">£46 3 9</td> </tr> </table>			By Donation to Athenaeum .....	6 6 0		„ One year's Subscription to Palaeontographical Society .....	1 1 0		„ The like to Ray Society .....	1 1 0		„ Fire Insurance of Books, to March, 1861 ..	0 5 6		„ Periodicals, Printing, and Stationery ....	10 13 6		„ Salary to Assistant Secretary .....	1 10 0		„ Ditto for writing out Labels for Circulating Books .....	0 7 6		„ Tea and Coffee .....	3 10 0		„ Commission on Subscriptions received by the Collector .....	1 6 0		„ Messenger for Delivering Notices .....	1 18 0		„ New Books .....	14 9 6		„ Bookbinding .....	1 10 2		„ Removing Bookcase, &c. ....	0 8 6		„ Sundry small payments for Coal, Wood, Candles, &c. ....	0 10 3		Balance .....	1 6 10			£46 3 9	£46 3 9
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„ Tea and Coffee .....	3 10 0																																																	
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„ Removing Bookcase, &c. ....	0 8 6																																																	
„ Sundry small payments for Coal, Wood, Candles, &c. ....	0 10 3																																																	
Balance .....	1 6 10																																																	
	£46 3 9	£46 3 9																																																

Balance in hand.....£1 6s. 10d.

# LIST OF BOOKS ADDED TO THE LIBRARY

*During the year 1859—1860.*

The Micographical Dictionary ... ..	1 vol.
Natural History of Brighton (Mrs Merrifield) ...	1 vol.
Guenée's Lepidopterè, with Atlas... ..	8 vols.
Kurr's Mineral Kingdom ... ..	1 vol.
Sowerby's British Wild Flowers ... ..	1 vol.
Bennett's Gatherings of a Naturalist in Australasia	1 vol.
Owen's Palæontology ... ..	1 vol.
Darwin's Origin of Species... ..	1 vol.
Stainton's Tineina ... ..	5th vol.
Stainton's Manual of Butterflies and Moths ...	2 vols.

## Naturalist's Library, viz.:

Entomology ... ..	7 vols.
Ichthyology ... ..	6 vols.
Mammalia ... ..	13 vols.
Ornithology ... ..	14 vols.
Hawkin's Book of the Great Sea Dragons ...	1 vol.

*And also the following Periodicals:—*

Quarterly Journal of Microscopical Science.

Quarterly Journal of the Geological Society.

The Phytologist.

— Zoologist.

— Geologist.

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Curtis and Son, Printers, Gazette Office, Brighton.

24 SEP 1887









217.  
THE EIGHTH

# ANNUAL REPORT

OF THE

Brighton and Sussex

# NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 12TH, 1861.



BRIGHTON

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

1861.



THE EIGHTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 12TH, 1861.



BRIGHTON

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

1861.



## President.

MR. EDEN.

## Vice-Presidents.

DR. KING.  
DR. HALLIFAX.  
MR. HOLLIS.

MR. SIMONDS.  
MR. A. BIGGE.

MR. LOWDELL.  
MR. PENLEY.

## Treasurer.

MR. T. B. HORNE.

## Committee.

MR. TATHAM.  
MR. NOURSE.  
MR. RICKARDS.

MR. GLAISYER.  
MR. GRANTHAM.  
MR. HENNAH.

## Honorary Secretaries.

MR. T. W. WONFOR.

MR. J. C. ONIONS.

## Honorary Librarian.

MR. GWATKIN.

At the Eighth Annual Meeting of the Brighton and  
Sussex Natural History Society, held at the Dispensary,  
September 12th, 1861,

IT WAS RESOLVED,

“ That the following Report be received, approved, and entered  
on the Minutes; and that it be printed, and circulated among  
the Members.”

MONTAGUE PENLEY,

CHAIRMAN.

## R E P O R T .

---

In presenting the Eighth Annual Report, your Committee have the pleasure of recording the continued prosperity of the Society.

The number of members remains about the same as last year, and the state of the finances continues to be satisfactory, there being a balance of £13 16s. 9d. in the hands of the Treasurer, after expending £8 0s. 6d. in new books, as appears by the Treasurer's account, which is annexed.

The following books have been purchased during the year :—Gosse's Marine Zoology, Lindley's Vegetable Kingdom, Wood's Tourist's Flora, Equatorial Africa (by Du Chaillu), The Dodo and its Kindred (by Strickland),

Balfour's Botanist's Companion, Ward's Growth of Plants in Cases, The Seaweed Collector's Guide (by Cocks), Half-hours with the Microscope (by Lankester), The Varieties of Man (by Latham), Elements of Geology (by Ansted), History of Insects (by Newman), Life on the Earth (by Phillips).

The library now consists of 258 volumes. A list of such as have been added during the year will be found at the end of this report.

Your Committee have great pleasure in reporting that during the past year there has been a great increase on the number of members using the library.

Two of the monthly meetings have been devoted to the examination of Microscopical objects, these meetings have been so well attended, that your Committee would advise that similar meetings be occasionally held.

The thanks of the Society are due to those gentlemen who have read papers before the Society, and also to those who have exhibited microscopes.

A *Conversazione* was held in the month of January, which seemed to give great satisfaction.

The ordinary monthly meetings have also continued to be numerously attended, and the papers which have been introduced, and the discussions upon them, have been of a very interesting character.

The following are the subjects which have been introduced :—

Sept.	Heterogenia, or Spontaneous Generation .....	Mr Robertson.
Oct.	Culture of the Hop.....	Mr Lowdell.
Nov.	Implements in the Drift.....	Mr Peto.
Dec.	Volcanic Districts of the Rhine	Mr Bigge.
Jan.	Conversazione.	
Feb.	Harmony of the Nervous System .....	Dr. Foreman.
March.	Microscopical Soirée.	
April.	Absorbtion and Circulation of Nutritive Fluids in Vegetables .....	Dr. Hallifax.
May.	The Elephant .....	Mr Eden.



TREASURER'S ACCOUNT.

FOR THE YEAR ENDING SEPT. 1, 1861.

<i>Dr.</i>	£	s.	d.	<i>Cr.</i>	£	s.	d.
To Balance from 1859-60 .....	1	6	10	By one year's Subscription to Palaeontological Society .....	1	1	0
„ Subscription in arrear, on 1st September, 1860, and since received .....	0	10	0	„ The like to Ray Society .....	1	1	0
„ Subscriptions due on 1st September, 1860, and since received .....	41	5	0	„ Fire Insurance of Books, to March, 1862 .....	0	5	6
„ Share of profit on Insurance .....	0	0	3	„ Periodicals, Printing, and Stationery .....	8	0	2
				„ Salary to Assistant Secretary .....	1	10	0
				„ Tea and Coffee .....	4	5	0
				„ Commission on Subscriptions received by the Collector .....	1	10	0
				„ Messenger for Delivering Notices .....	1	19	0
				„ New Books .....	8	0	6
				„ Bookbinding .....	0	8	8
				„ Lamps, Candles, &c. ....	1	4	6
				„ Balance .....	13	16	9
					£43	2	1

Balance in hand.....£13 16s. 9d.



# LIST OF BOOKS ADDED TO THE LIBRARY

*During the Year 1860—1861.*

- Gosse's Marine Zoology.  
Lindley's Vegetable Kingdom.  
Wood's Tourist's Flora.  
Equatorial Africa, by Du Chaillu.  
The Dodo and its Kindred, by Strickland.  
Balfour's Botanist's Companion.  
Ward's Growth of Plants in Cases.  
The Seaweed Collector's Guide, by Cocks.  
Half-hours with the Microscope, by Lankester.  
The Varieties of Man, by Latham.  
Elements of Geology, by Ansted.  
History of Insects, by Newman.  
Life on the Earth, by Phillips.  
Blackwell's Spiders. (Ray Society.)  
The Country Walk, by G. Rooper.  
Lepidopeterist's Indicator.  
Examination of Darwin's Treaties, by Assa Gray.  
Semnopithecus pentelicus.

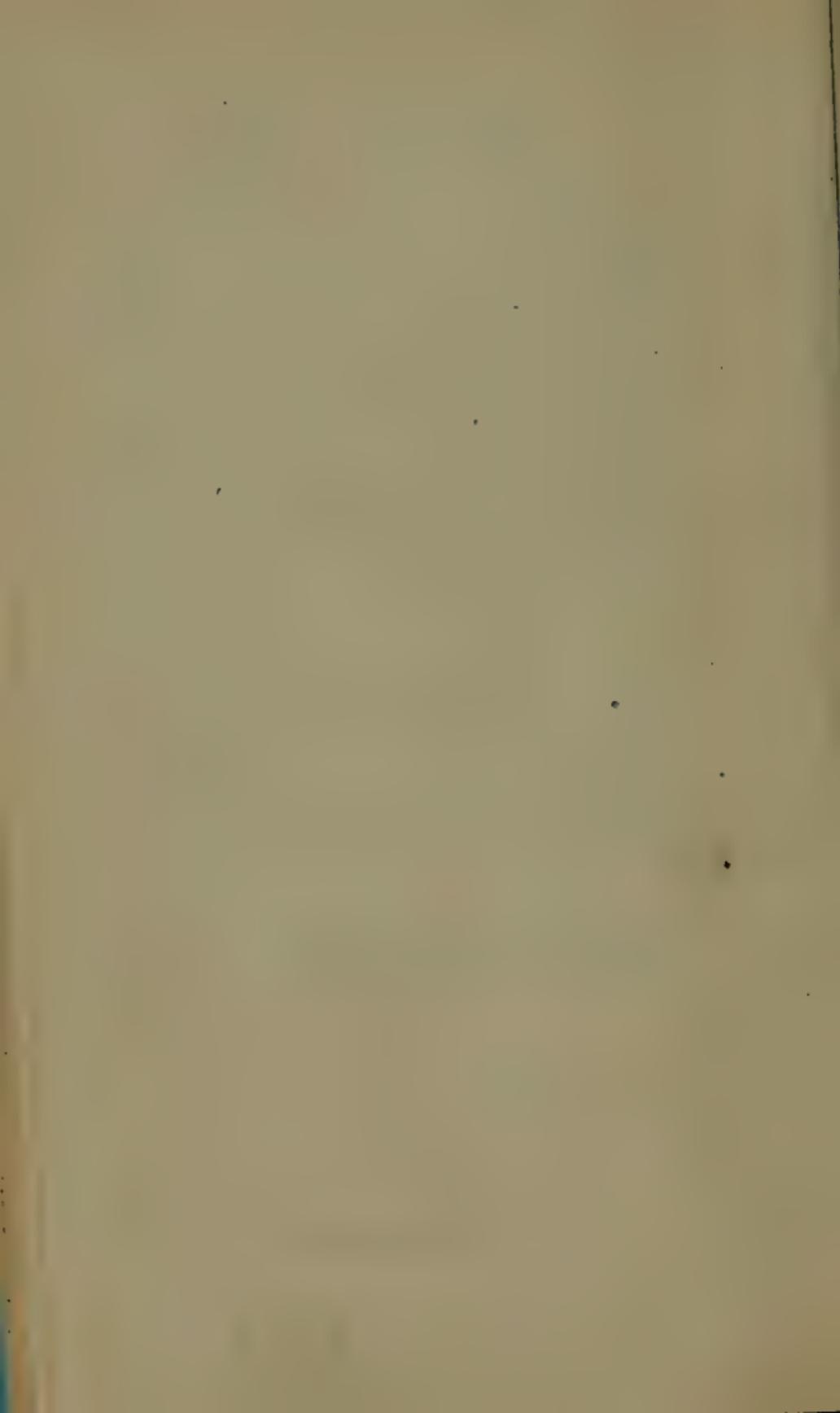
## PERIODICALS.

- Quarterly Journal of Microscopical Science.  
The Phytologist.  
— Zoologist.  
— Geologist.  
— Natural History Review.
- 

Curtis and Son, Printers, Gazette Office, Brighton.

24 SEP 1887









p. 19.

THE NINTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 11TH, 1862.



BRIGHTON :

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

1862.



THE NINTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

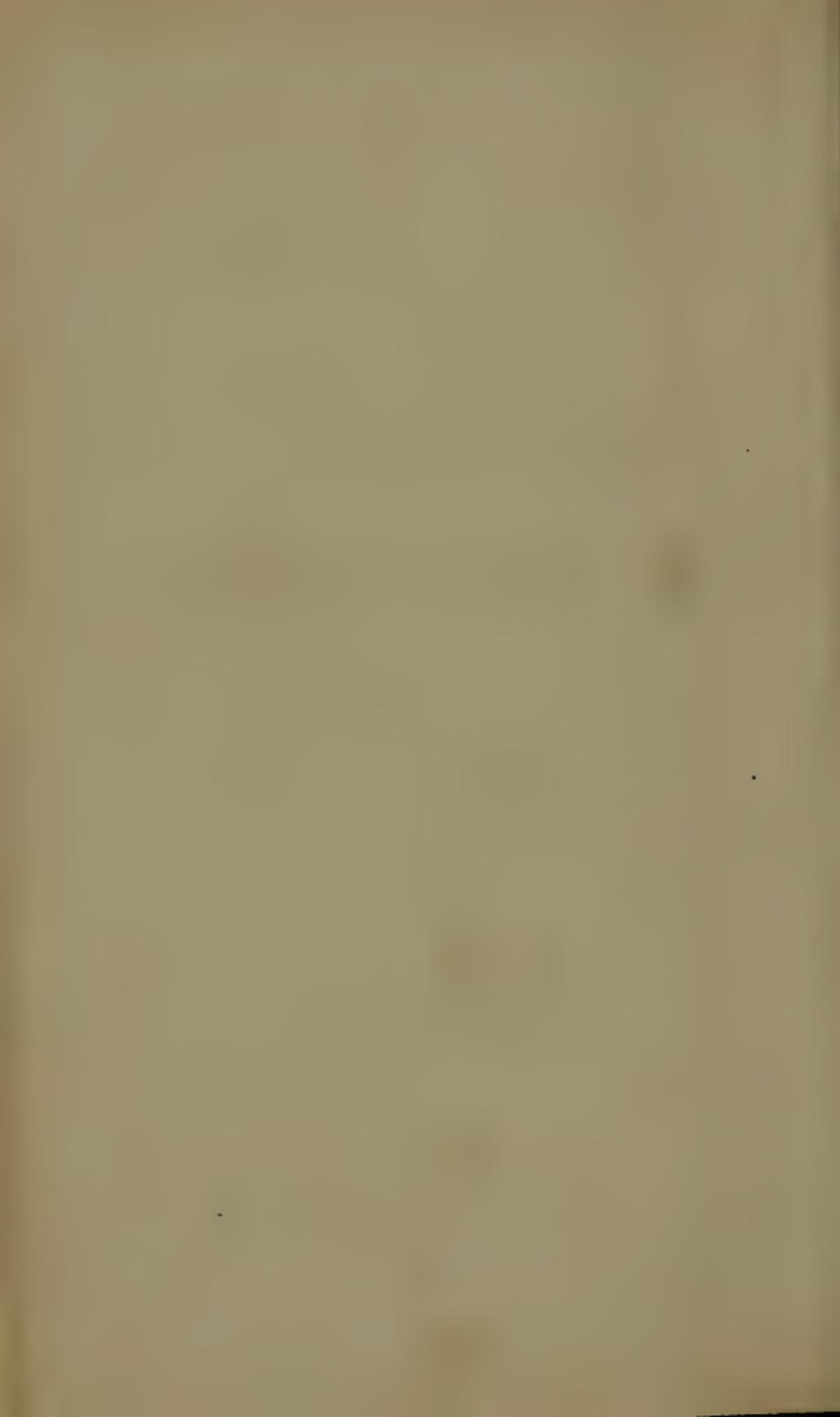
SEPTEMBER 11TH, 1862.



BRIGHTON :

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

—  
1862.



## President.

MR. GWATKIN.

## Vice-Presidents.

DR. KING.  
MR. HOLLIS.  
MR. A. BIGGE.

DR. HALLIFAX.  
MR. SIMONDS.  
MR. LOWDELL.

MR. PENLEY.  
MR. EDEN.

## Treasurer.

MR. T. B. HORNE.

## Committee.

MR. GLAISYER.  
MR. GRANTHAM.  
MR. HENNAH.

MR. S. EVERSHERD.  
DR. FOREMAN.  
MR. NOAKES.

## Honorary Secretaries.

MR. T. W. WONFOR.

MR. J. C. ONIONS.

## Honorary Librarian.

MR. GWATKIN.

At the Ninth Annual Meeting of the Brighton and  
Sussex Natural History Society, held at the Dispensary,  
September 11th, 1862,

IT WAS RESOLVED,

“ That the following Report be received, approved, and entered  
on the minutes ; and that it be printed, and circulated  
among the Members.”

T. E. EDEN,

PRESIDENT.

## REPORT.

---

In presenting the ninth Annual Report, your Committee have the pleasure of recording the continued prosperity of the Society.

The number of members has slightly increased during the year; a list of the present members is appended to this Report. The state of the finances continues to be satisfactory, there being a balance of £1 2s. 2d. in the hands of the Treasurer, after expending £38 18s. 4d. in new Books, as appears by the Treasurer's account, which is annexed.

The following books have been purchased during the year:—Tennant's Ceylon, Forbes' Life, Carpenter's Vegetable Physiology, Carpenter's Elements of Animal Physiology, Knox's Ornithological Rambles; Miller's Testimony of the Rocks, Pickering's Races of Man, Pritchard's Infusoria, Somerville's Physical Sciences, Nature-Printed Seaweeds (4 vols.), Forbes' European

Seas, Wood's Natural History (2 vols.), Gosse's Romance of Natural History (2 vols.), Hartwig's Sea, &c., Lewes's Physiology (2 vols.), Darwin's Orchids, Maury's Physical Geography, McMillan's Footnotes, Smith's Diatomaceæ (2 vols.), Siebold on Parthenogenesis, Henfrey's Vegetable Cell, Lewis's Sea-side Studies, Sowerby's Ferns of Great Britain, Leach's Mollusca, Beale's Sperm Whale, Beale's Tissues, Nature-Printed Ferns (2 vols.), Carpenter's Physiology, Carpenter's Human Physiology, Hooker's Himalayas, Kirby's Bridgewater Treatise, Chambers' Sea Margins, Humboldt's Cosmos (5 vols.), Humboldt's Views of Nature, Samuelson's Humble Creatures (2 vols.), Phillips's Mineralogy, Mudd's British Lichens, Memoirs of Bewick, Tugwell's Sea Anemones, Shield's Moths, &c., Jones's Aquarian Naturalist, Intellectual Observer, Schacht's Microscope, Murchison's Siluria, Slack's Pond Life, Lowe's British Grasses, Recreative Science (3 vols.), Holland's Essays, Carpenter's Foraminifera, Hofmeister's Cryptogamia.

The Library now consists of 305 volumes. A list of such as have been added, to the number of 70, during the year will be found at the end of this Report.

The thanks of the Society are due to those gentlemen who have read Papers before the Society, and also to those who have exhibited Microscopes.

The ordinary Monthly Meetings have continued to be numerously attended, and the Papers which have been introduced, and the discussions upon them, have been of a very interesting character.

The following are the subjects which have been introduced :—

1861.

- Sept. 12. The Physical Life of  
Norway . . . . . Mr W. E. C. Nourse
- Oct. 10. Darwin's Origin of  
Species . . . . . Mr J. Merrifield.
- Nov. 4. Darwin's Origin of  
Species (2nd paper) Mr J. Merrifield.
- Dec. 12. The Organ of Prehen-  
sion in Man and  
the other Animals. Mr Tainsh.

1862.

- Jan. 9. A Microscopical Meet-  
ing.
- Feb. 13. Observations of Insect  
Life . . . . . Mr F. Merrifield.
- March 13. Physical condition of  
the Sun . . . . . Mr Brown.
- April 10. The Warren Farm Well Mr H. Catt.
- May 8. The Physiology of the  
Bones of the Human  
Frame . . . . . Dr. W. King.
- June 12. A Microscopical Meet-  
ing.
- July 14. The Annual Excursion Mr Wonfor.
- Aug. 14. Certain Curious Coinci-  
dences in Nature... Mr Wonfor.

The Annual Excursion took place to Bramber and Steyning, on the 26th day of June, when the Members with their friends also visited Wiston Park and the garden of the Rev. T. Medland.

Photographs of objects of Natural History, and of Views taken during the last Excursion, having been offered to the Society, the Committee recommend that an Album be obtained in which to place those already offered and any future contributions ; and, at the same time, would suggest to those Members possessing cameras to photograph any objects of a striking or novel character, and thus preserve memorials of them for the Society.

In concluding their report, your Committee would again request the Members to endeavour to promote the prosperity of the Society, both by bringing its merits under the notice of their friends, and also by contributing or lending duplicate copies of Books bearing directly or indirectly upon the subject of Nature<sup>s</sup> History.

TREASURER'S ACCOUNT.

FOR THE YEAR ENDING SEPT. 1, 1862.

<i>Dr.</i>	£ s. d.	<i>Cr.</i>	£ s. d.
To Balance from 1860-61 .....	13 16 9	By one year's Subscription to Palaeontographical Society .....	1 1 0
" Subscriptions in arrear, on 1st September, 1861, and since received.	2 10 0	" The like to Ray Society .....	1 1 0
" Subscriptions due on 1st September, 1861, and since received .....	40 10 0	" Fire Insurance of Books, to March, 1863 .....	0 5 6
" Entrance Fees .....	3 0 0	" Printing and Stationery .....	8 16 8
" Cash received for sale of Bookcase ..	1 0 0	" Salary to Assistant Secretary .....	1 10 0
" Donation by Rev. T. Moseley .. .....	5 0 0	" Tea and Coffee .. .. ..	5 11 4
" Cash received for extra payments on Tickets for Excursion Dinner .....	0 2 2	" Commission on Subscriptions received by the Collector .....	0 17 0
		" Messenger for Delivering Notices .....	1 16 0
		" New Books .....	38 18 4
		" Periodicals .....	3 16 0
		" Lamps, Candles, &c. ....	1 3 11
		Balance .....	1 2 2
	<u>£65 18 11</u>		<u>£65 18 11</u>

Balance in hand .....£1 2 2

## MEMBERS OF THE SOCIETY.

Ainslie, Rev. R., 10, Round Hill Cres.  
 Allen, Dr., 23, Regency Square  
 Allfree, Mr J., Clarence Lodge  
 Andrews, Mr J., Wellington Villas  
 Barbier, Mons., 13, Powis Villas  
 Barker, Dr., 18, Eaton Place  
 Bellingham, Mr, 22, German Place  
 Bigge, Mr A., 15, Montpelier Villas  
 Black, Mr D., 45, Ship Street  
 Braithwaite, Mr, 1, Osborne Villas,  
 Cliftonville  
 Branwell, Mr R., 3, Cambridge Road  
 Breton, Mr W., North Street  
 Bright, Mr E., 13, Pavilion Buildings  
 Brown, Mr J. H., Old Steine  
 Browne, Mr G., 35, Montpelier Road  
 Bryce, Dr., 59, Old Steine  
 Catt, Mr H., 14, Montpelier Terrace  
 Chapman, Mr E., 23, Cannon Place  
 Cobbett, Mr A., 4, Powis Grove  
 Cooper, Mr T. J., 4, Farm Rd., Hove  
 Coppard, Mr, North Street  
 Curtis, Mr J., 29, Norfolk Square  
 D'Alquen, Mr, 8, Montpelier Terrace  
 Day, Rev. H. G., Bristol Road  
 De Paris, Mr G., 55, Marine Parade  
 Dill, Dr., 19, Regency Square  
 Dixon, Mr J. L. M., 4, Round Hill Pk.  
 Dixon, Mr Josh., 6, Lansdowne Ter.  
 Eden, Mr T. E., 26, Old Steine  
 English, Mr W. H., 13, Gloucester Pl.  
 Evershed, Mr S., Arundel House,  
 Clifton Road  
 Foreman, Dr., Church Hill House  
 Fox, Mr O. A., 12, Pavilion Parade  
 Fuller, Rev. J., 2, Clifton Road  
 Glaisyer, Mr T., 96, London Road  
 Glaisyer, Mr R., 113, Queen's Road  
 Grantham, Mr G., Lansdowne Place  
 Griffith, Rev. J., Brighton College  
 Gutteridge, Mr, Park Crescent  
 Gwatkin, Mr J. T., 49, Grand Parade  
 Hale, Mr J., Black Lion Street  
 Hall, Dr., 30, Old Steine  
 Hallifax, Dr., 21, Montpelier Street  
 Hart, Mr W., 35, Clifton Terrace  
 Hennah, Mr, Clifton Villa  
 Hollis, Mr W. M., 4, St. George's Pl.  
 Horne, Mr T. B., Torquay  
 Hughes, Dr. R., 10, Clarence Square  
 Image, Rev. J., 13, Wellington Road  
 Jones, Mr A. B., 6, Ship Street  
 King, Dr., 23, Montpelier Road  
 King, Dr. A., 5, Old Steine

King, Mr T., Richmond Place  
 Lowdell, Mr G., 24, Cannon Place  
 Lueliette, Mons., 35, Clifton Road  
 Madden, Dr., 10, Pavilion Parade  
 Merrifield, Mr J., 2, Dorset Gardens  
 Merrifield, Mr F., Park Crescent  
 Money, Mr F. W., 51½, Old Steine  
 Mosely, Rev. T., Rose Hill Villa  
 Neate, Mr, St. Margaret's Place  
 Newton, Rev. J., Eastern Road  
 Noakes, Mr R., 35, North Street  
 Nourse, Mr W. E. C., 11, Marlbro' Pl.  
 Ockenden, Mr, 4, Prince Albert Street  
 Onions, Mr J. C., Rose Hill.  
 Passmore, Mr, Clarence Square  
 Pearce, Dr. R., 4, Ventnor Villas  
 Penley, Mr M., 2, Western Terrace  
 Peto, Mr J., 49, Buckingham Place  
 Peto, Mr J. F., " "  
 Phillips, Mr B., 75, Lansdowne Place  
 Rickards, Mr P., Dudley House  
 Savage, Mr W. D., 65, Edward Street  
 Scott, Mr E., 41, Russell Square  
 Scott, Mr J., 59, Brunswick Road  
 Seabrook, Mr B. T., 61, Old Steine  
 Sewell, Mr J. J., 36, Grand Parade  
 Shugar, Mr G., 56, Montpelier Road  
 Simonds, Mr T., 18, Marlbro' Place  
 Smith, Mr, 14, London Road  
 Stuckey, Mr W. A., Montpelier Road  
 Taaffe, Mr R. P. B., 6, Pavilion Pde.  
 Tainsh, Mr, Western Terrace  
 Tatham, Mr G., 46, Old Steine  
 Tuke, Mr J. K., 1, Devonshire Place  
 Turner, Mr E., German House,  
 Marine Parade  
 Turrell, Dr., 97, Montpelier Road  
 Unwin, Mr, High Street, Lewes  
 Upperton, Mr R., Jun., 7, Lansdowne  
 Place  
 Verrall, Mr H., 26, Gloucester Place  
 Verrall, Mr W., 3, " "  
 Whately, Mr E., 33, Vernon Terrace  
 Wilkinson, Mr P. R., 168, North St.  
 Willoughby, Mr E. T., Ashford, Kent  
 Wilson, Dr., 18, Regency Square  
 Winter, Mr T. B., 23, Montpelier Rd.  
 Winter, Mr J. N., 23, Montpelier Rd.  
 Wonfor, Mr T. W., Clifton Cottage,  
 Clifton Hill  
 Wood, Mr E., Richmond Place  
 Woodhead, Captain, Norfolk Terrace  
 Young, Mr E., Steyning

## HONORARY MEMBERS.

Davies, Dr., W. S. G., Eastbourne  
 Latham, Dr. R. G., 29, Upper  
 Southwick Street, London

Robertson, Mr, 15, Bath Street,  
 Brighton  
 Smith, Professor, Cork.

# LIST OF BOOKS ADDED TO THE LIBRARY

*During the Year 1861—1862.*

- |   |                                       |
|---|---------------------------------------|
| Tennant's Ceylon.                           | Beale's Sperm Whale.                  |
| Forbes' Life.                               | Beale's Tissues.                      |
| Carpenter's Vegetable Physiology.           | Nature-Printed Ferns, 2 vols.         |
| Carpenter's Elements of Animal Physiology.  | Carpenter's Physiology.               |
| Knox's Ornithological Rambles.              | Carpenter's Human Physiology.         |
| Miller's Testimony of the Rocks.            | Hooker's Himalayas.                   |
| Pickering's Races of Man.                   | Kirby's Bridgewater Treatise.         |
| Pritchard's Infusoria.                      | Chambers' Sea Margins.                |
| Somerville's Physical Sciences.             | Humboldt's Cosmos, 5 vols.            |
| Nature-Printed Seaweeds, 4 vols.            | Humboldt's Views of Nature.           |
| Forbes' European Seas.                      | Samuelson's Humble Creatures, 2 vols. |
| Wood's Natural History, 2 vols.             | Phillips's Mineralogy.                |
| Gosse's Romance of Natural History, 2 vols. | Mudd's British Lichens.               |
| Hartwig's Sea, &c.                          | Memoirs of Bewick.                    |
| Lewes's Physiology, 2 vols.                 | Tugwell's Sea Anemones.               |
| Darwin's Orchids.                           | Shield's Moths, &c.                   |
| Maury's Physical Geography.                 | Jones's Aquarian Naturalist.          |
| McMillan's Footnotes.                       | Intellectual Observer.                |
| Smith's Diatomaceæ, 2 vols.                 | Schacht's Microscope.                 |
| Siebold on Parthenogenesis.                 | Murchison's Siluria.                  |
| Henfrey's Vegetable Cell.                   | Slack's Pond Life.                    |
| Lewis's Sea-side Studies.                   | Lowe's British Grasses.               |
| Sowerby's Ferns of Great Britain.           | Recreative Science, 3 vols.           |
| Leach's Mollusca.                           | Holland's Essays.                     |
|   | Carpenter's Foraminifera.             |
|   | Hofmeister's Cryptogamia.             |

## PERIODICALS.

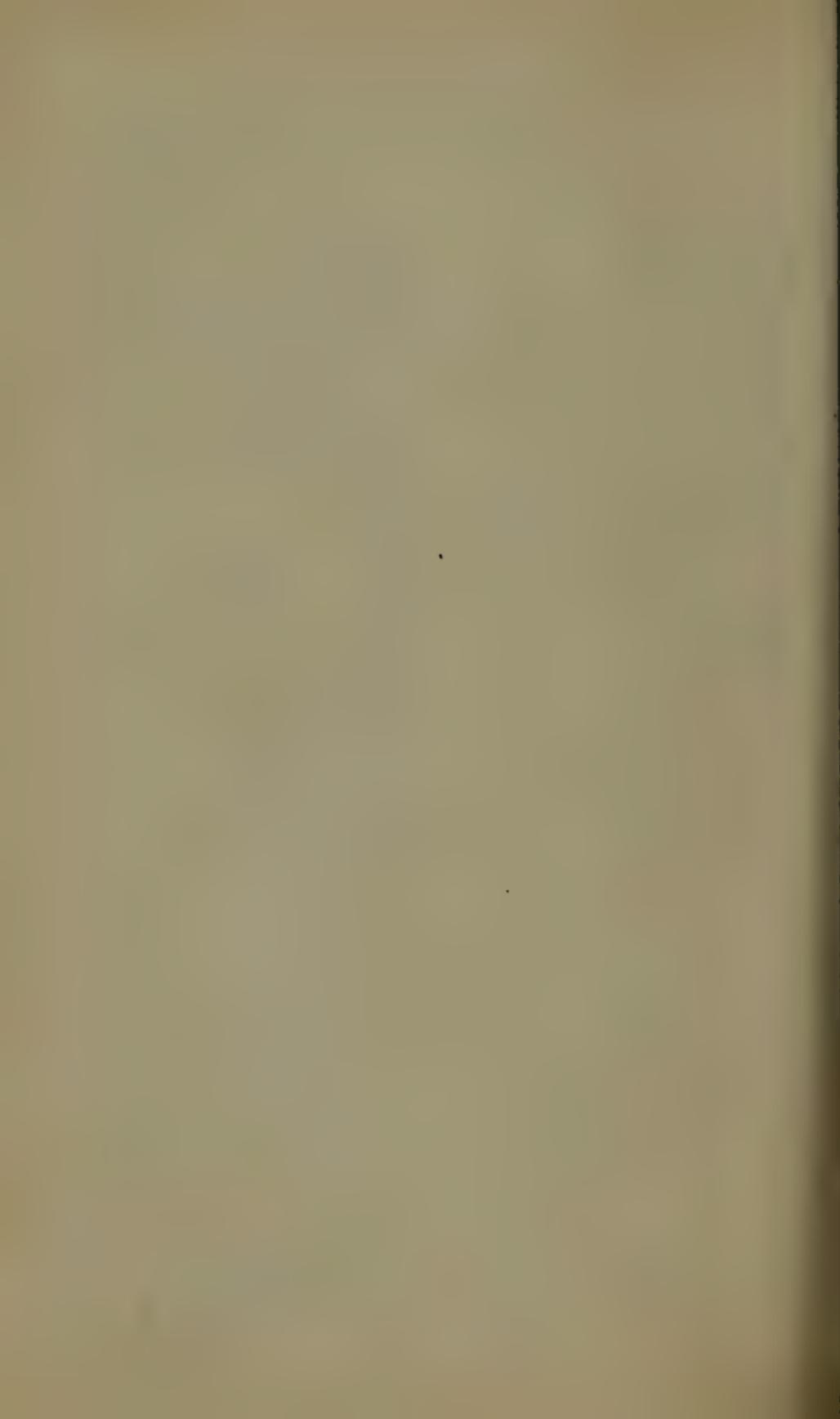
- Quarterly Journal of Microscopical Science.  
——— Geological Society.  
The Phytologist.  
— Zoologist.  
— Geologist.  
— Natural History Review.

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Curtis and Son, Printers, Gazette Office, Brighton.

24 SEP 1887









THE TENTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 10TH, 1863.



BRIGHTON

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1863.



THE TENTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 10TH, 1863.

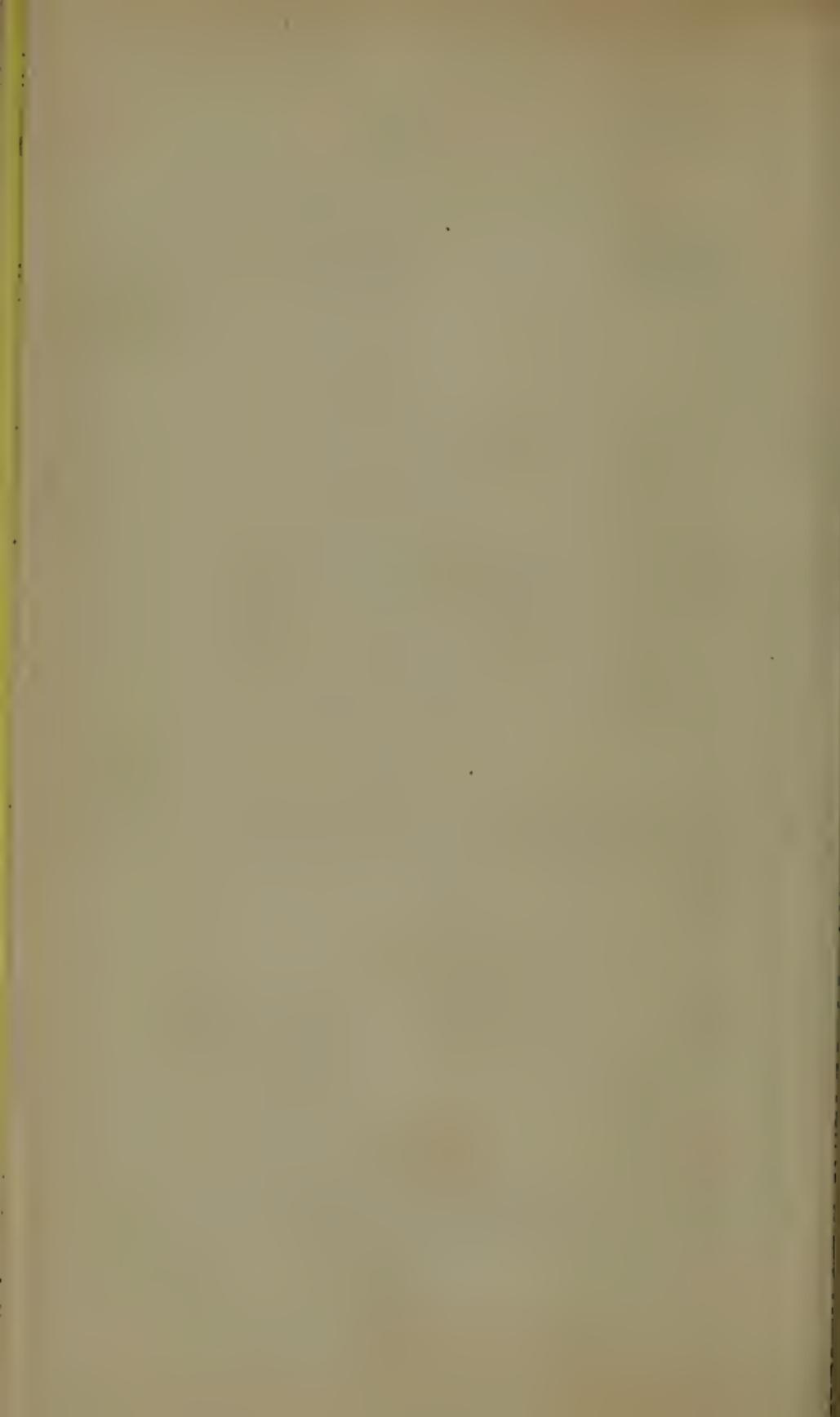
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BRIGHTON

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1863.



President.

MR. PETO.

Vice-Presidents.

DR. KING.

DR. HALLIFAX.

MR. PENLEY.

MR. HOLLIS.

MR. SIMONDS.

MR. EDEN.

MR. A. BIGGE.

MR. LOWDELL.

MR. GWATKIN.

Treasurer.

MR. T. B. HORNE.

Committee.

MR. R. GLAISYER.

MR. NOAKES.

MR. HENNAH.

MR. J. H. BROWN.

DR. FOREMAN.

MR. NOURSE.

Honorary Secretaries.

MR. T. W. WOLFORD.

MR. J. C. ONIONS.

Honorary Librarian.

MR. GWATKIN.

At the Tenth Annual Meeting of the Brighton  
and Sussex Natural History Society, held at the  
Dispensary, September 10th, 1863,

IT WAS RESOLVED,

“That the following Report be received, approved, and entered  
on the minutes; and that it be printed, and circulated  
among the Members.”

J. T. GWATKIN,

PRESIDENT.

24 SEP 1887



## REPORT.

---

IN presenting the tenth Annual Report, your Committee have the pleasure of again recording the continued prosperity of the Society.

The number of Members remains nearly the same as it was at the date of the last Report ; but your Committee deeply regret to have to record the death of Dr. H. S. Turrell, who was one of the founders and first members of the Society, and who always took a lively interest in its welfare.

The state of the finances continues to be satisfactory, there being a balance of £9 5s. 9d. in the hands of the Treasurer.

The following Books have been purchased during the year:—Somerville's Physical Geography, Lyell on the Antiquity of Man, Carpenter's Microscope, Man's Place in Nature, by Huxley, Huxley's Lectures; and the following Periodicals have also been added to the Library, which now consists of 314 volumes, viz. :—The Zoologist, Geologist, Phytologist, Natural History Review, Intellectual Observer, The Quarterly Journal of Microscopical Science, and The Quarterly Journal of the Geological Society.

Your Committee recommend that a fresh catalogue of the books in the Library be made and printed.

The thanks of the Society are due to those Gentlemen who have read Papers before the Society, and also to those who have exhibited Microscopes.

The ordinary Monthly Meetings have continued to be numerously attended, and the Papers which have been introduced, and the discussions upon them, have been of a very interesting character.

The following are the subjects which have been introduced :—

1862.

- Sept. Spiders ..... Mr Robertson.  
 Oct. The Reproduction of Spiders ... Mr Robertson.  
 Nov. A Microscopical Meeting.  
 Dec. Unity and Analogies of Animal  
       and Vegetable Life..... Mr Wonfor.

1863.

- Jan. Volcanoes..... Mr Wonfor.  
 Feb. A Microscopical Meeting.  
 March. Wookey Hole and its Inhabitants. Mr Peto.  
 April. The Natural History of Man ... Dr. Hallifax.  
 May. Discussion on Dr. Hallifax's  
       Paper.  
 June. A Microscopical Meeting.  
 July. The Ninth Annual Excursion ... Mr Wonfor.  
 Aug. The Generative Forces Psycho-  
       logically considered..... Dr. Foreman.

The Annual Excursion took place to West Grinstead, on the 25th day of June, when the Members with their friends also visited Knepp Castle.

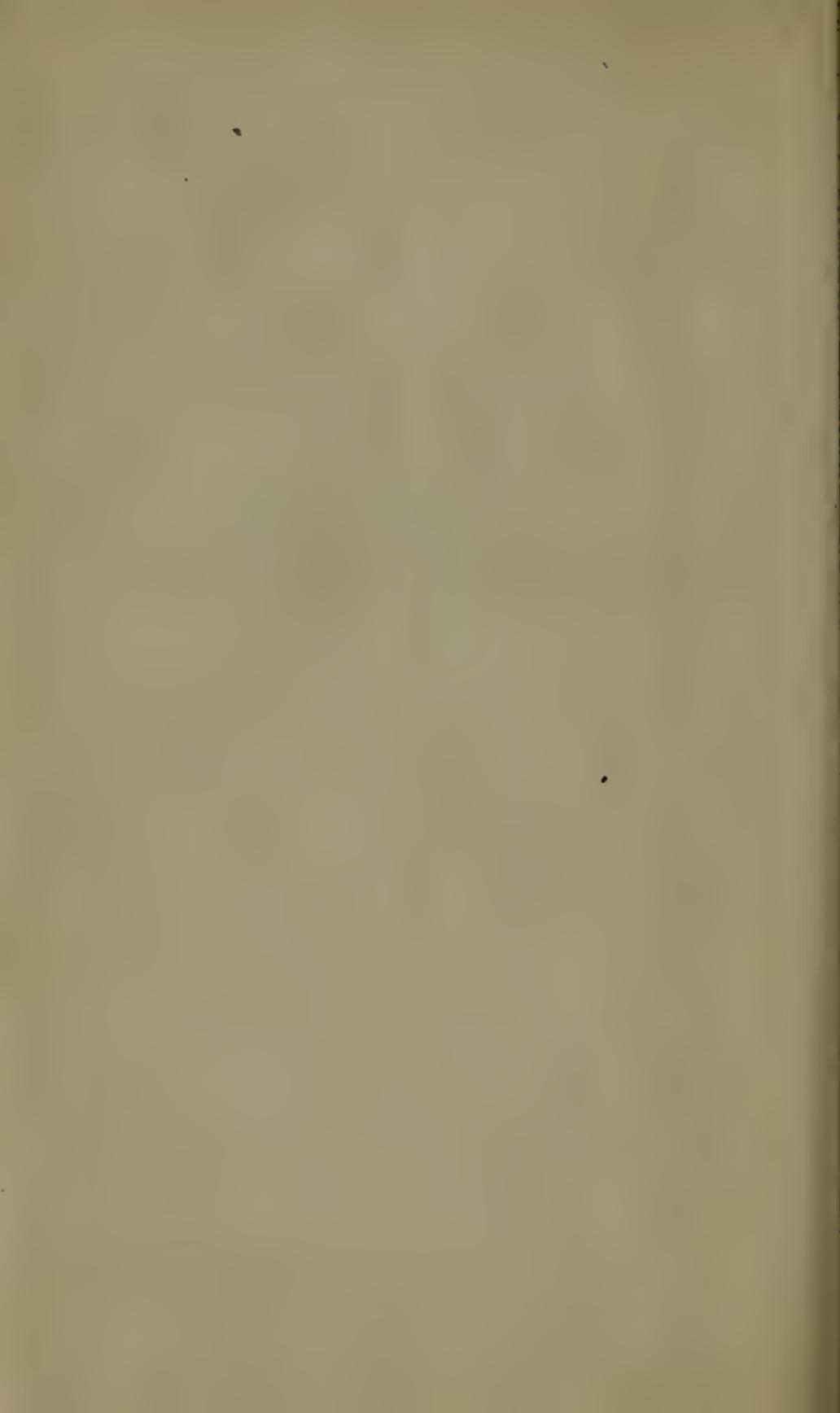
In concluding their Report, your Committee would again request the Members to endeavour to promote the prosperity of the Society, both by bringing its merits under the notice of their friends, and by contributing or lending duplicate copies of works bearing directly or indirectly upon the subject of Natural History.

TREASURER'S ACCOUNT.  
FOR THE YEAR ENDING SEPT. 1, 1863.

	£	s.	d.
<i>Dr.</i>			
To Balance from 1861-62 .....	1	2	2
“ Subscriptions in arrear, on 1st September, 1862, and since received...	3	15	0
“ Subscriptions due on 1st September, 1862, and since received.....	33	10	0
“ Entrance fees .....	1	15	0

	£	s.	d.
<i>Cr.</i>			
By one year's subscription to Palaeontological Society .....	1	1	0
“ The like to Ray Society .....	1	1	0
“ Fire Insurance of Books to 29th September, 1863 .....	0	9	9
“ Printing and Stationery .....	6	17	3
“ Salary to Assistant Secretary .....	1	12	6
“ Tea and Coffee .....	4	14	8
“ Commission on Subscriptions received by the Collector .....	0	18	6
“ Messenger for Delivering Notices ...	2	2	0
“ New Books and Book-binding .....	4	6	4
“ Periodicals .....	4	10	9
“ Lamps, Candles, Postage, &c. ....	3	2	8
“ Balance .....	9	5	9
	£40	2	2

Balance in hand ..... £9 5s. 9d.











1117  
THE ELEVENTH

# ANNUAL REPORT

OF THE

Brighton and Sussex

# NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 8TH, 1864.

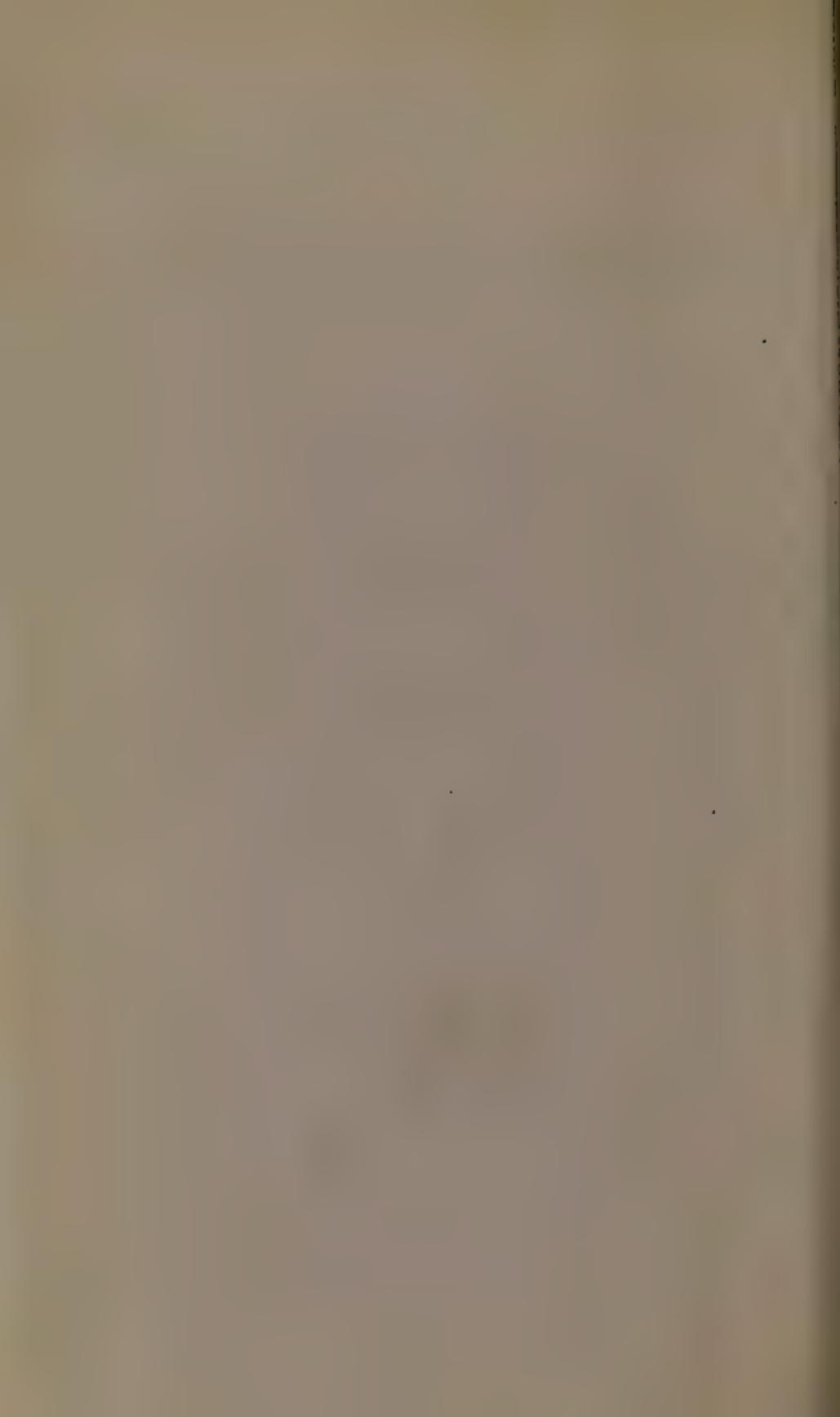


**BRIGHTON:**

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1864.



THE ELEVENTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 8TH, 1864.

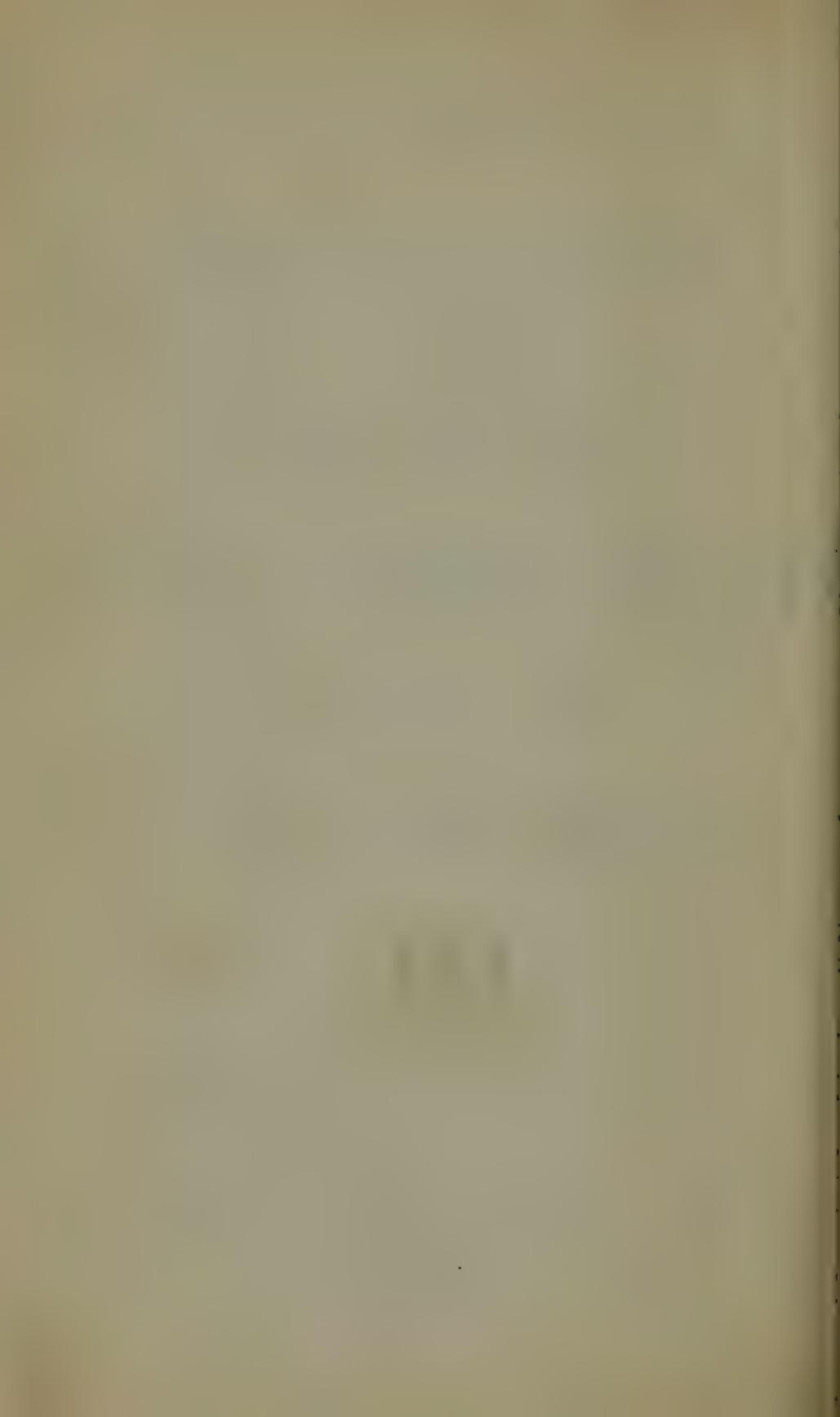


**BRIGHTON:**

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1864.



President.

MR. W. E. C. NOURSE.

Vice-Presidents.

DR. KING.

MR. SIMONDS.

MR. EDEN.

MR. HOLLIS.

MR. LOWDELL.

MR. GWATKIN.

MR. A. BIGGE.

MR. PENLEY.

MR. PETO.

DR. HALLIFAX.

Treasurer.

MR. T. B. HORNE.

Committee.

MR. R. GLAISTER.

:

MR. NOAKES.

MR. HENNAH.

:

MR. PEEK.

DR. FOREMAN.

:

REV. J. IMAGE.

Honorary Secretaries.

MR. T. W. WONFOR.

MR. J. C. ONIONS.

Honorary Librarian.

MR. GWATKIN.

At the Eleventh Annual Meeting of the Brighton  
and Sussex Natural History Society, held at the  
Dispensary, September 8th, 1864,

IT WAS RESOLVED,—

“That the following Report be received, approved, and entered  
on the minutes; and that it be printed and circulated  
among the Members.”

J. PETO,  
PRESIDENT.

## REPORT.

---

In presenting the Eleventh Annual Report, your Committee have the pleasure of again recording the continued prosperity of the Society.

The number of Members remains about the same as at the date of the last Report.

The state of the finances continues to be satisfactory, there being a balance of £8 13s. 8d. in the hands of the Treasurer, after expending the sum of £35 11s. 10d. in the purchase of new Books and Periodicals.

The following Books have been purchased during the year:—Somerville's Physical Geography, Lyell's Antiquity of Man, Huxley's Man's Place in Nature, Huxley's Origin of Species, Carpenter's Microscope, Popular Science Review (2 vols.), Berkeley's Fungology, Berkeley's Mosses, Blackwall's Spiders (Ray Society), Stainton's Tineina (2 vols.), Parnell's Grasses, Bates' Naturalist on the Amazons, Flora of Surrey, Cyclopædia of Natural

History (4 vols.), Couch's Fishes of British Islands (3 vols.), Mantell's Wonders of Geology (2 vols.), Mantell's Medals of Creation (2 vols.), Mantell's Fossils of Tilgate Forest, Paleontographical Society vol. for 1862, Couch's Illustrations of Instinct. Manual of Natural History for Travellers, Latham's Descriptive Etymology (2 vols.), Sowerby's British Botany (2 vols.), Lowe's Ferns (8 vols.), Ditto ditto—new and rare (1 vol.), Mantell's Fossils of the South Downs, British and Garden Botany (by Leo H. Grindon).

Your Committee have the pleasure of recording the following donations, viz. :—The Flint Drift, presented by the author, Sir R. Murchison ; Latham's Birds, 10 vols. ; Drury's Exotic Entomology, 3 vols. ; Pictorial Museum, &c., 2 vols. ; Flora Conspicua, 1 vol. ; Aquarian Naturalist, Rymer Jones, 1 vol. ; Evenings with Microscope, Gosse, 1 vol., presented by the Rev. Thomas Moseley, who, on a former occasion, gave £5 towards the funds of the Society ; Mantell's Geology of Sussex, presented by Mr Hollis ; and Eight Engravings, covered with glass, illustrating subjects of Natural History, particularly the formation of sponge masses, presented by Mr Robertson ; and also a loan to the Library, by Mr Hennah, of Hewitson's Eggs of British Birds.

The Library is much used, and appears to give very general satisfaction, 314 vols. having been issued during the year. The number of volumes in the Library at the date of the last Report was 314, which has since been increased to 382.

The thanks of the Society are due to those Gentlemen who have read Papers before the Society, and also to those who have exhibited Microscopes.

The ordinary Monthly Meetings have continued to be numerously attended, and the Papers which have been introduced, and the discussions upon them, have continued to be of a very interesting character.

The following are the subjects which have been introduced :—

1862.

- Sept. The Generative Forces Psychologically considered (continuation)..Dr. Foreman.  
 Oct. A Microscopical Meeting.  
 Nov. The Extinction of Species.....Mr Wonfor.  
 Dec. Summer Rambles at Redhill.....Mr Simonds.

1864.

- Jan. A Microscopical Meeting.  
 Feb. Exogenous Seeds and Fern Spores...Dr. Dawson.  
 March. The Parental Instincts of some kinds of Fishes .....Mr Peek.  
 April. Conversatione.

1864.

May.	Wingless Birds .....	Mr Wonfor.
June.	The Organs of Flight .....	Mr Eden.
July.	The Excursion .....	Mr Wonfor.
Aug.	The Nervous Tissue concerned in Perception .....	Mr W. E. C. Nourse.

The Annual Excursion took place to Amberley on the 29th of June, when the Members with their friends were very kindly received and liberally entertained by the Rev. G. L. Clarkson, the Vicar. The Roman Pavement at Bignor was also visited.

Your Committee have great pleasure in announcing that, since the date of their last Report, a Natural History Society has been formed at Lewes, and is progressing favourably. Arrangements have been made between it and this Society by which the Members of each Society are admissable without introduction to the Meetings of the other.

In concluding their Report, your Committee would again request the Members to endeavour to promote the prosperity of the Society, both by bringing its merits under the notice of their friends and by contributing or lending duplicate copies of works bearing directly or indirectly upon the subject of Natural History.

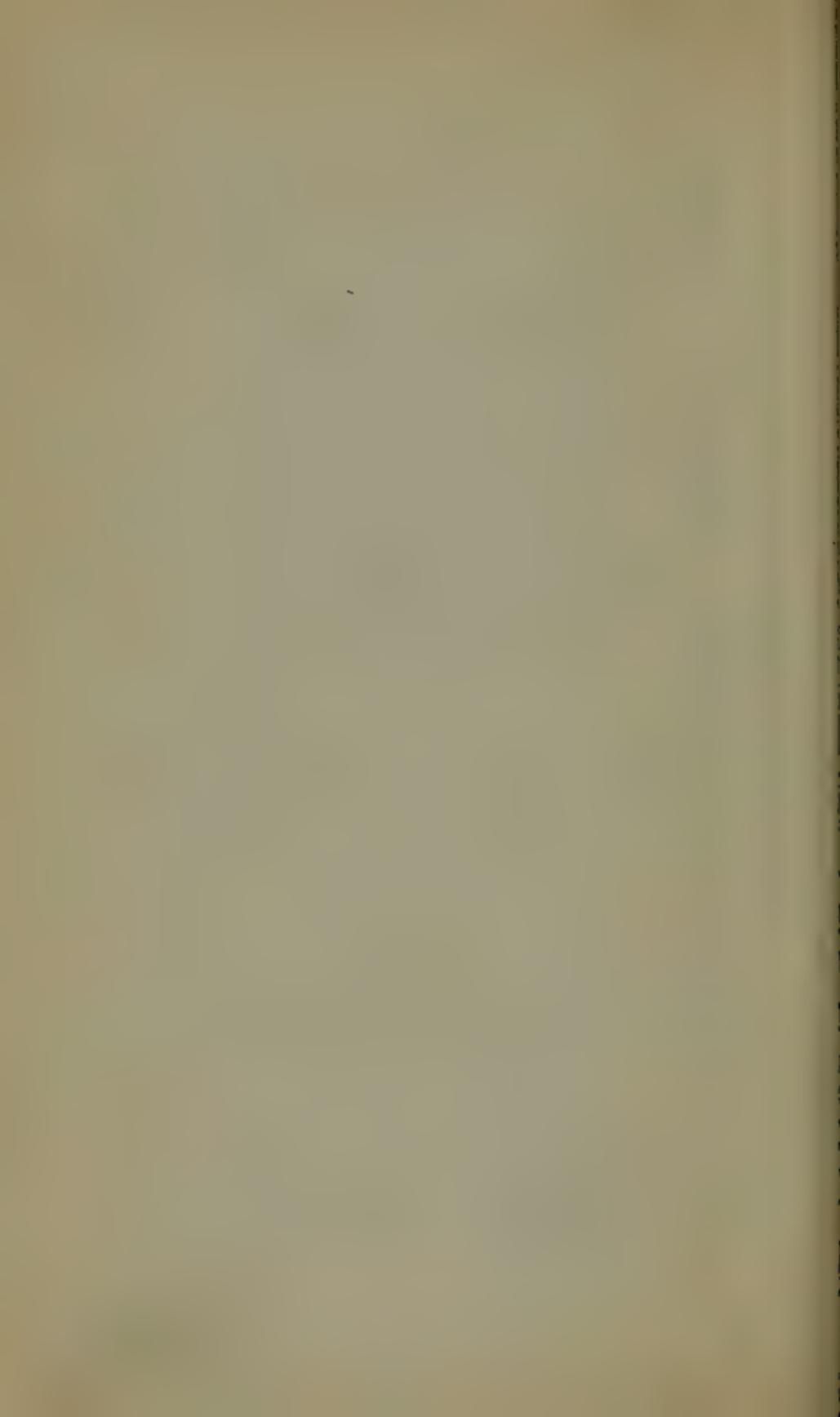
TREASURER'S ACCOUNT,  
FOR THE YEAR ENDING SEPT. 1, 1864.

	£	s.	d.	£	s.	d.
<i>Dr.</i>						
To balance of 1862-3 .....	0	5	9			
“ Subscriptions in arrear, on 1st September, 1863, and since received .....	14	0	0			
“ Subscriptions due on 1st September, 1863, and since received .....	37	10	0			
“ Entrance fees .....	2	0	0			
				£62	15	9
<i>Cr.</i>						
By two years' Subscription to Palaeontographical Society, 1863 and 1864 .....				2	2	0
“ One year's ditto to Ray Society, 1864 .....				1	1	0
“ Fire Insurance of Books to 29th September, 1864 .....				0	11	0
“ Printing and Stationery .....				6	13	10
“ Salary to Assistant Secretary .....				1	10	0
“ Tea and Coffee .....				3	14	4
“ Commission on Subscriptions received by the Collector .....				0	13	6
“ Messenger for Delivering Notices .....				1	19	0
“ New Books and Book-binding, Periodicals .....				35	11	10
“ Lamps, Candles, Postage, &c. .....				0	5	7
Balance .....				8	13	8
				£62	15	9

Balance in hand .....£8 13s. 8d.

24 SEP 1887













5.19

THE TWELFTH

ANNUAL REPORT

OF THE

BRIGHTON AND SUSSEX

NATURAL HISTORY SOCIETY

ADOPTED AT A MEETING HELD

SEPTEMBER 14TH, 1865.



BRIGHTON:

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

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1865.



THE TWELFTH  
ANNUAL REPORT  
OF THE  
BRIGHTON AND SUSSEX  
NATURAL HISTORY SOCIETY

ADOPTED AT A MEETING HELD

SEPTEMBER 14th, 1865.

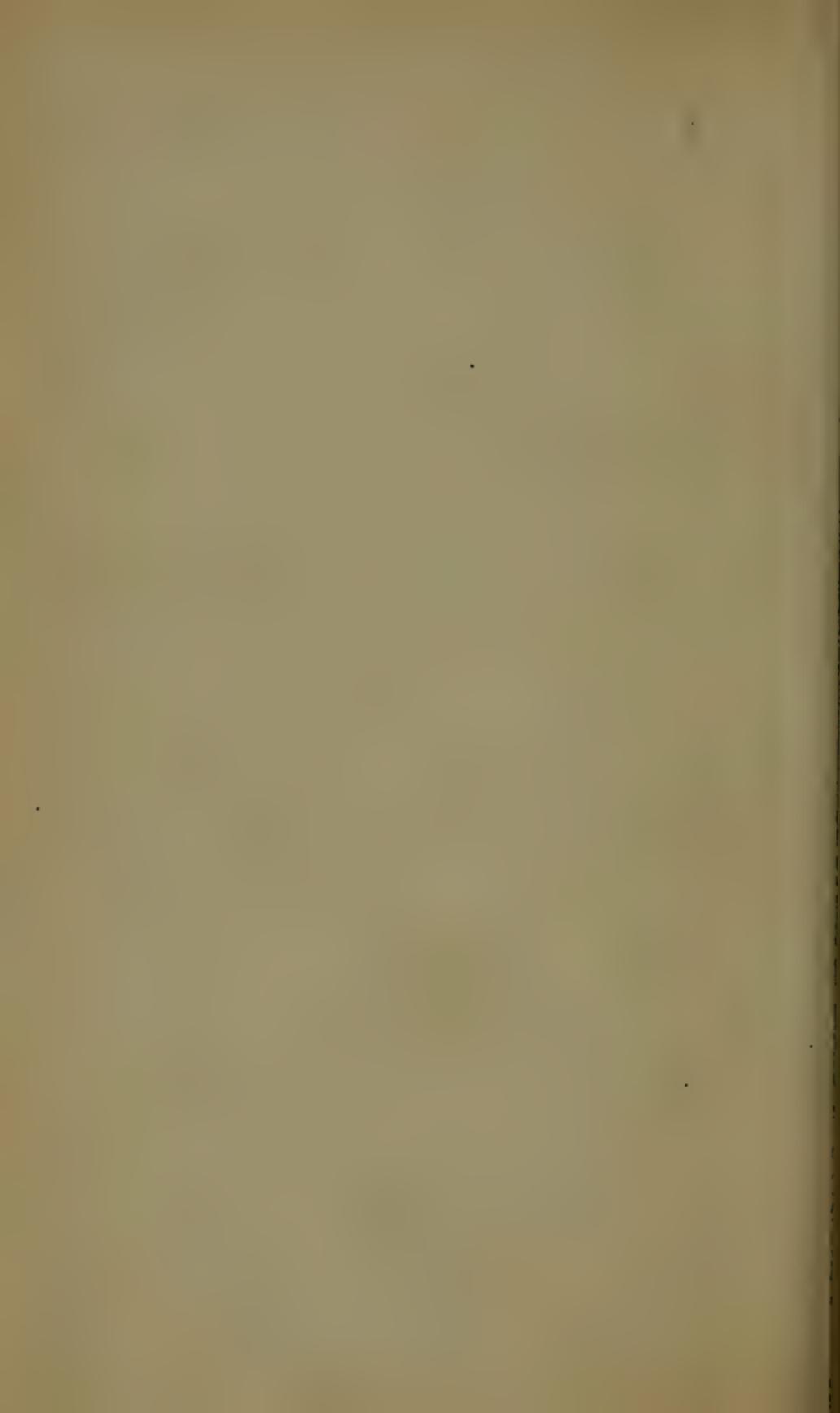


*BRIGHTON:*

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1865.



President:

MR. J. CORDY BURROWS.

Vice-Presidents:

DR. KING.	MR. SIMONDS.	MR. GWATKIN.
MR. HOLLIS.	MR. LOWDELL.	MR. PETO.
MR. A. BIGGE.	MR. PENLEY.	MR. W. E. C. NOURSE.
DR. HALLIFAX.	MR. EDEN.	

Treasurer:

MR. T. B. HORNE.

Committee:

MR. R. GLAISYER.	MR. SEWELL.
MR. NOAKES.	MR. JOHN SCOTT.
MR. PEEK.	MR. TURNER.

Honorary Secretaries:

MR. T. W. WONFOR, 53, Buckingham Place.	MR. J. C. ONIONS, 56, Middle Street.
--	---

Honorary Librarian

MR. GWATKIN,  
49, Grand Parade.

At the Twelfth Annual Meeting of the Brighton and Sussex Natural History Society, held at the Dispensary, September 14th, 1865.

IT WAS RESOLVED,—

“That the following Report be received, approved, and entered on the minutes; and that it be printed and circulated among the Members.”

W. E. C. NOURSE,  
PRESIDENT.

## REPORT.

---

In presenting the Twelfth Annual Report, your Committee have the pleasure of recording the continued prosperity of the Society.

The number of Members remains about the same as at the date of the last Report.

The state of the finances is still satisfactory, there being a balance of 3s. in the hands of the Treasurer, after expending £32 15s. 2d. in the purchase of new Books and Periodicals.

The following Books have been purchased during the year :—The last<sup>3</sup> volume of Sowerby's British Botany, the Quarterly Journal of Science, the Transactions of the Linnean Society (5 vols.), Proceedings of the Zoological Society (1 vol.), Beale on the Microscope, Henfrey's Botany, Sowerby's Conchology, and Lovell Reeves' Elements of Conchology.

The Library is much used, and continues to give general satisfaction. The number of volumes in the Library at the date of the last Report was 382, which has since been increased to 394. A new catalogue is in the course of publication.

The thanks of the Society are due to those Gentlemen who have read Papers before the Society, and also to those who have exhibited Microscopes.

The ordinary Monthly Meetings have been numerous attended, and the Papers introduced and the discussions upon them have been of a very interesting character.

The following are the subjects which have been introduced :—

1864.	
Sept.	A Microscopical Meeting.
Oct.	Electricity in Plants and Animals.....Dr. Hallifax.
Nov.	Vegetable Parasites .....Mr Wonfor.
Dec.	Ferns .....Dr. Dawson.
1865.	
Feb.	Animal Parasites .....Mr Hollis.
March.	Adaptation of Structure in Cetacea and Fishes for sustentation, defence, &c. ...Mr Peek.
April.	Discussion on Mr Hollis's Paper "Animal Parasites."
May.	A Microscopical Meeting.
June.	Conversazione.
July.	On the Excursion.....Mr Wonfor.
August.	Sirex gigas.....Mr Dowsett.

The Annual Excursion took place to Fletching and Sheffield Park on the 22nd June.

Your Committee deeply regret the loss sustained by the Society during the last year, by the death of Dr. Foreman, who always took an interest in its welfare, and

actively supported it by reading papers on scientific subjects and taking part in discussions.

In concluding their Report, your Committee beg to request the Members to endeavour, not only to promote the prosperity of the Society by bringing its merits to the notice of their friends, and by contributing or lending duplicate copies of works on Natural History, but also to read papers during the ensuing year.

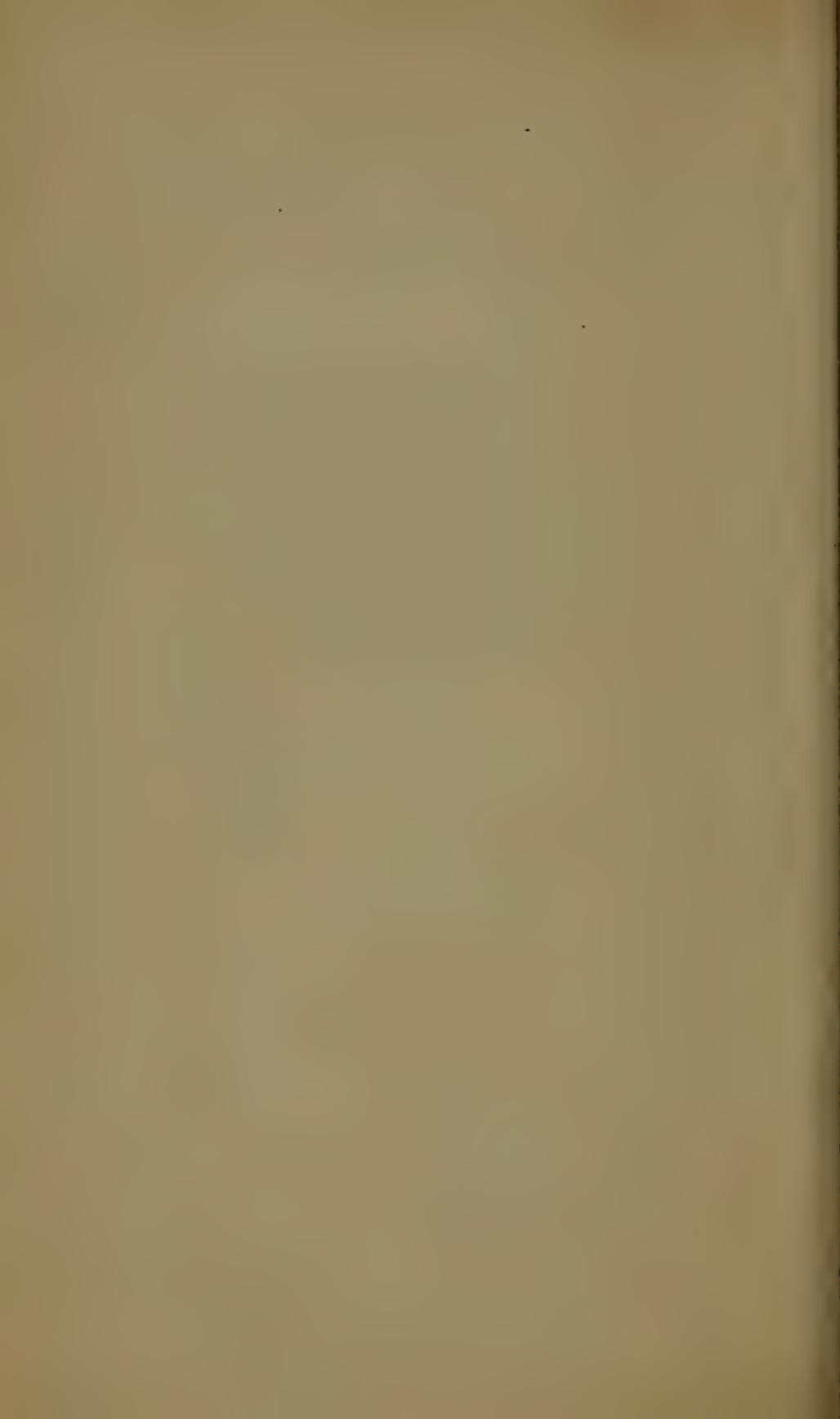
TREASURER'S ACCOUNT,  
FOR THE YEAR ENDING SEPT. 1, 1865.

	£	s.	d.	£	s.	d.
<i>Dr.</i>						
To balance of 1863-4 .....	8	13	8			
“ Subscriptions in arrear on 1st September, 1864, since received .....	5	10	0			
“ Subscriptions due on 1st September, 1864, since received .....	33	0	0			
“ Entrance fees .....	1	10	0			
“ Share of profit from Insurance .....	0	0	5			
				£48	14	1
<i>Cr.</i>						
By one year's Subscription to Palaontographical Society, 1865 .....				1	1	0
“ One year's ditto to Ray Society, 1865..				1	1	0
“ Fire Insurance of Books to 29th September, 1865 .....				0	11	0
“ Printing and Stationery .....				5	3	0
“ Salary to Assistant Secretary .....				1	10	0
“ Tea and Coffee .....				3	5	0
“ Commission on Subscriptions received by the Collector .....				0	17	6
“ Messenger for delivering Notices .....				2	2	0
“ New Books and Periodicals .....				32	15	2
“ Lamps, Candles, Postage, &c. ....				0	5	5
“ Balance .....				0	3	0
				£48	14	1

Balance in hand ..... £0 3s. 0d.

24 SEP 1867













P. 19

THE TWELFTH

ANNUAL REPORT

OF THE

BRIGHTON AND SUSSEX

NATURAL HISTORY SOCIETY

ADOPTED AT A MEETING HELD

SEPTEMBER 14TH, 1865.



BRIGHTON:

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

---

1865.



THE TWELFTH  
ANNUAL REPORT  
OF THE  
BRIGHTON AND SUSSEX  
NATURAL HISTORY SOCIETY

ADOPTED AT A MEETING HELD

SEPTEMBER 14th, 1865.

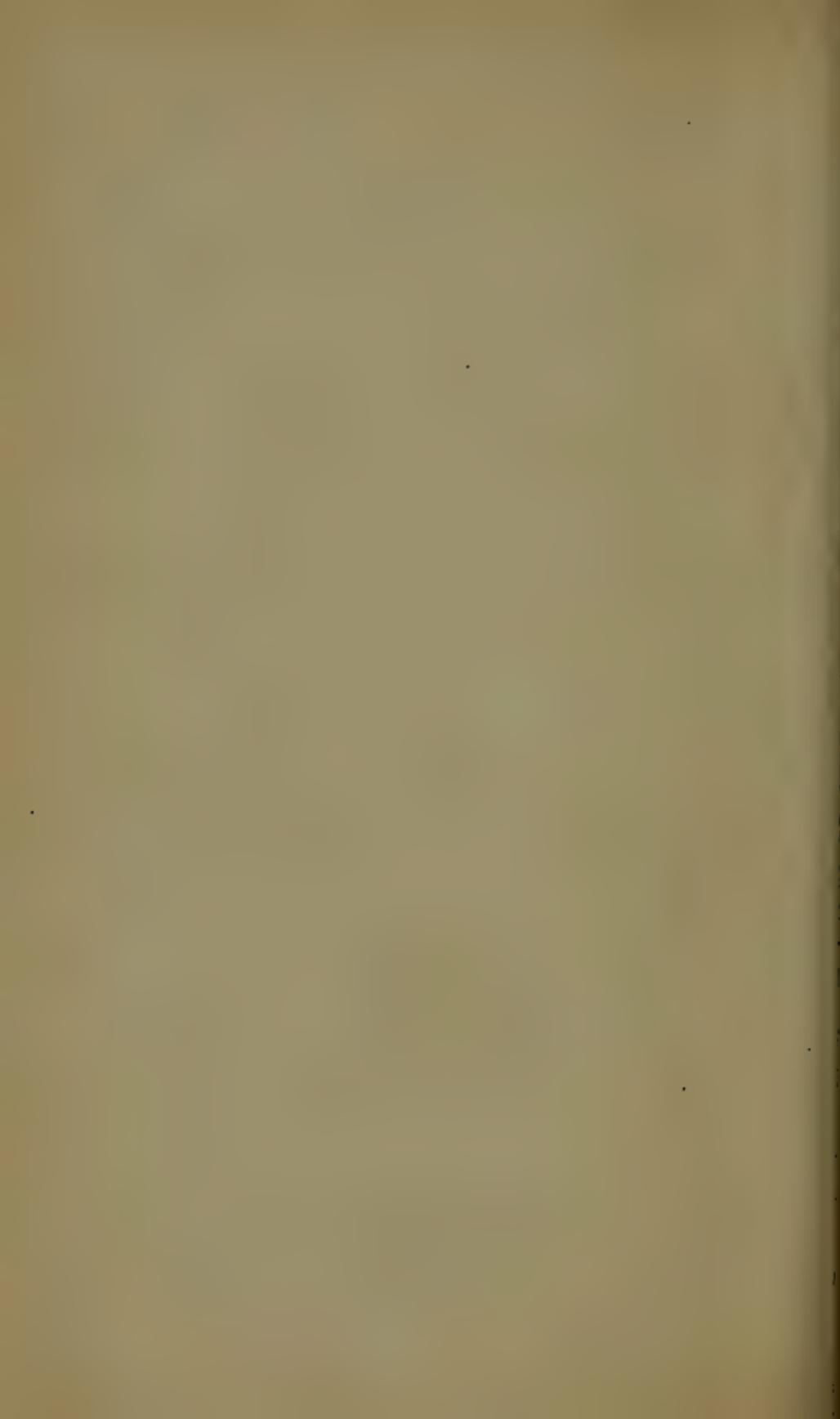


*BRIGHTON:*

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

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1865.



President:

MR. J. CORDY BURROWS.

Vice-Presidents:

DR. KING.	MR. SIMONDS.	MR. GWATKIN.
MR. HOLLIS.	MR. LOWDELL.	MR. PETO.
MR. A. BIGGE.	MR. PENLEY.	MR. W. E. C. NOURSE.
DR. HALLIFAX.	MR. EDEN.	

Treasurer:

MR. T. B. HORNE.

Committee:

MR. R. GLAISYER.	MR. SEWELL.
MR. NOAKES.	MR. JOHN SCOTT.
MR. PEEK.	MR. TURNER.

Honorary Secretaries:

MR. T. W. WONEFOR, 53, Buckingham Place.	MR. J. C. ONIONS, 56, Middle Street.
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Honorary Librarian

MR. GWATKIN,  
49, Grand Parade.

At the Twelfth Annual Meeting of the Brighton and Sussex Natural History Society, held at the Dispensary, September 14th, 1865.

IT WAS RESOLVED,—

“That the following Report be received, approved, and entered on the minutes; and that it be printed and circulated among the Members.”

W. E. C. NOURSE,

PRESIDENT.

## REPORT.

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In presenting the Twelfth Annual Report, your Committee have the pleasure of recording the continued prosperity of the Society.

The number of Members remains about the same as at the date of the last Report.

The state of the finances is still satisfactory, there being a balance of 3s. in the hands of the Treasurer, after expending £32 15s. 2d. in the purchase of new Books and Periodicals.

The following Books have been purchased during the year :—The last volume of Sowerby's British Botany, the Quarterly Journal of Science, the Transactions of the Linnean Society (5 vols.), Proceedings of the Zoological Society (1 vol.), Beale on the Microscope, Henfrey's Botany, Sowerby's Conchology, and Lovell Reeves' Elements of Conchology.

The Library is much used, and continues to give general satisfaction. The number of volumes in the Library at the date of the last Report was 382, which has since been increased to 394. A new catalogue is in the course of publication.

The thanks of the Society are due to those Gentlemen who have read Papers before the Society, and also to those who have exhibited Microscopes.

The ordinary Monthly Meetings have been numerous attended, and the Papers introduced and the discussions upon them have been of a very interesting character.

The following are the subjects which have been introduced :—

1864.		
Sept.	A Microscopical Meeting.	
Oct.	Electricity in Plants and Animals.....	Dr. Hallifax.
Nov.	Vegetable Parasites .....	Mr Wonfor.
Dec.	Ferns .....	Dr. Dawson.
1865.		
Feb.	Animal Parasites .....	Mr Hollis.
March.	Adaptation of Structure in Cetacea and Fishes for sustentation, defence, &c. ...	Mr Peek.
April.	Discussion on Mr Hollis's Paper "Animal Parasites."	
May.	A Microscopical Meeting.	
June.	Conversazione.	
July.	On the Excursion.....	Mr Wonfor.
August.	Sirex gigas.....	Mr Dowsett.

The Annual Excursion took place to Fletching and Sheffield Park on the 22nd June.

Your Committee deeply regret the loss sustained by the Society during the last year, by the death of Dr. Foreman, who always took an interest in its welfare, and

actively supported it by reading papers on scientific subjects and taking part in discussions.

In concluding their Report, your Committee beg to request the Members to endeavour, not only to promote the prosperity of the Society by bringing its merits to the notice of their friends, and by contributing or lending duplicate copies of works on Natural History, but also to read papers during the ensuing year.

TREASURER'S ACCOUNT,  
FOR THE YEAR ENDING SEPT. 1, 1865.

	<i>Dr.</i>	<i>Cr.</i>	<i>£ s. d.</i>
To balance of 1863-4 .....	8 13 8		
“ Subscriptions in arrear on 1st September, 1864, since received .....	5 10 0	By one year's Subscription to Paleontographical Society, 1865 .....	1 1 0
“ Subscriptions due on 1st September, 1864, since received .....	33 0 0	“ One year's ditto to Ray Society, 1865..	1 1 0
“ Entrance fees .....	1 10 0	“ Fire Insurance of Books to 29th September, 1865 .....	0 11 0
“ Share of profit from Insurance .....	0 0 5	“ Printing and Stationery .....	5 3 0
		“ Salary to Assistant Secretary .....	1 10 0
		“ Tea and Coffee .....	3 5 0
		“ Commission on Subscriptions received by the Collector .....	0 17 6
		“ Messenger for delivering Notices .....	2 2 0
		“ New Books and Periodicals .....	32 15 2
		“ Lamps, Candles, Postage, &c. ....	0 5 5
		Balance .....	0 3 0
	£48 14 1		£48 14 1

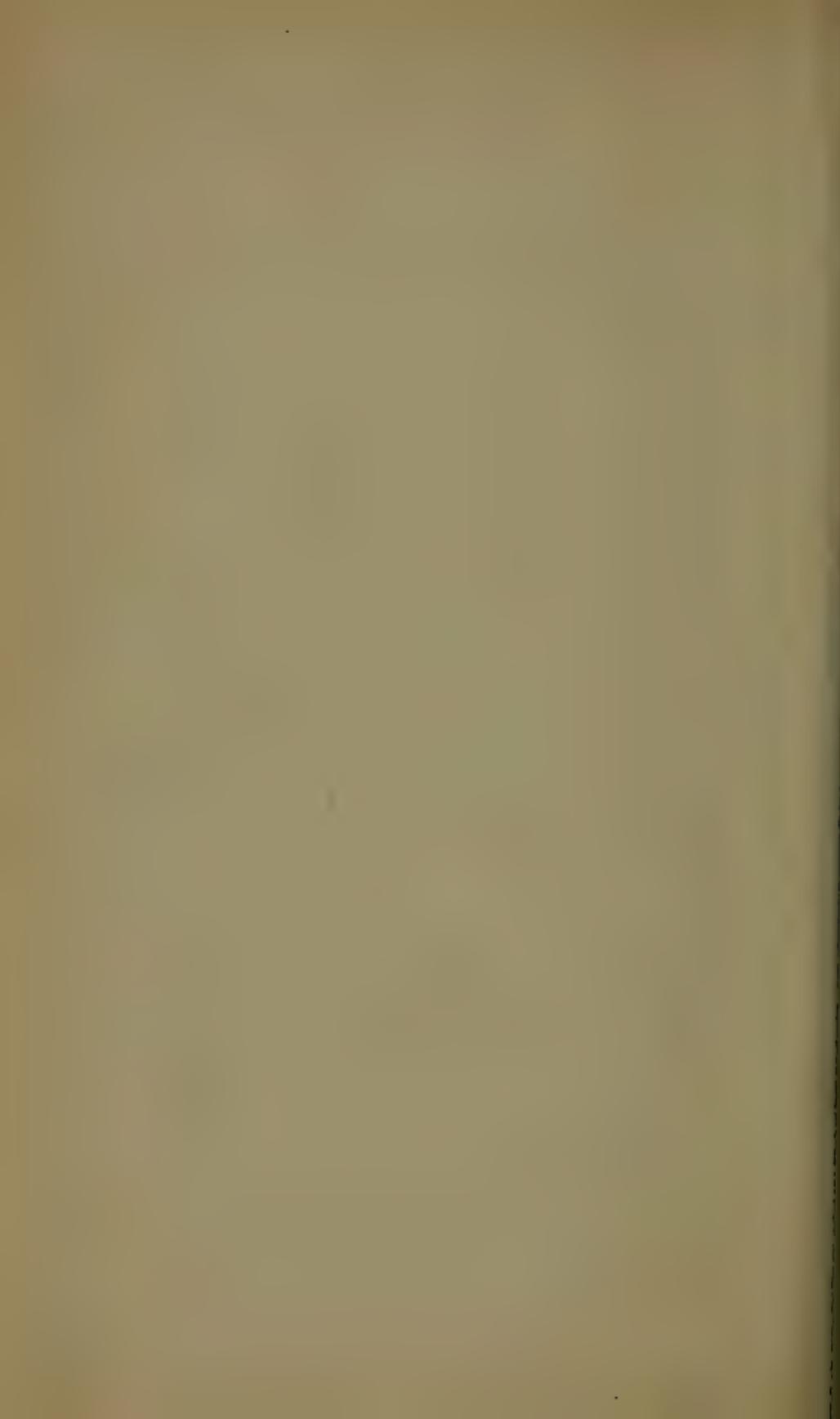
Balance in hand ..... £0 3s. 0d.

24 SEP 1867













THE FOURTEENTH  
ANNUAL REPORT

OF THE

BRIGHTON & SUSSEX

Natural History Society,

ADOPTED AT A MEETING HELD

SEPTEMBER 12TH, 1867.

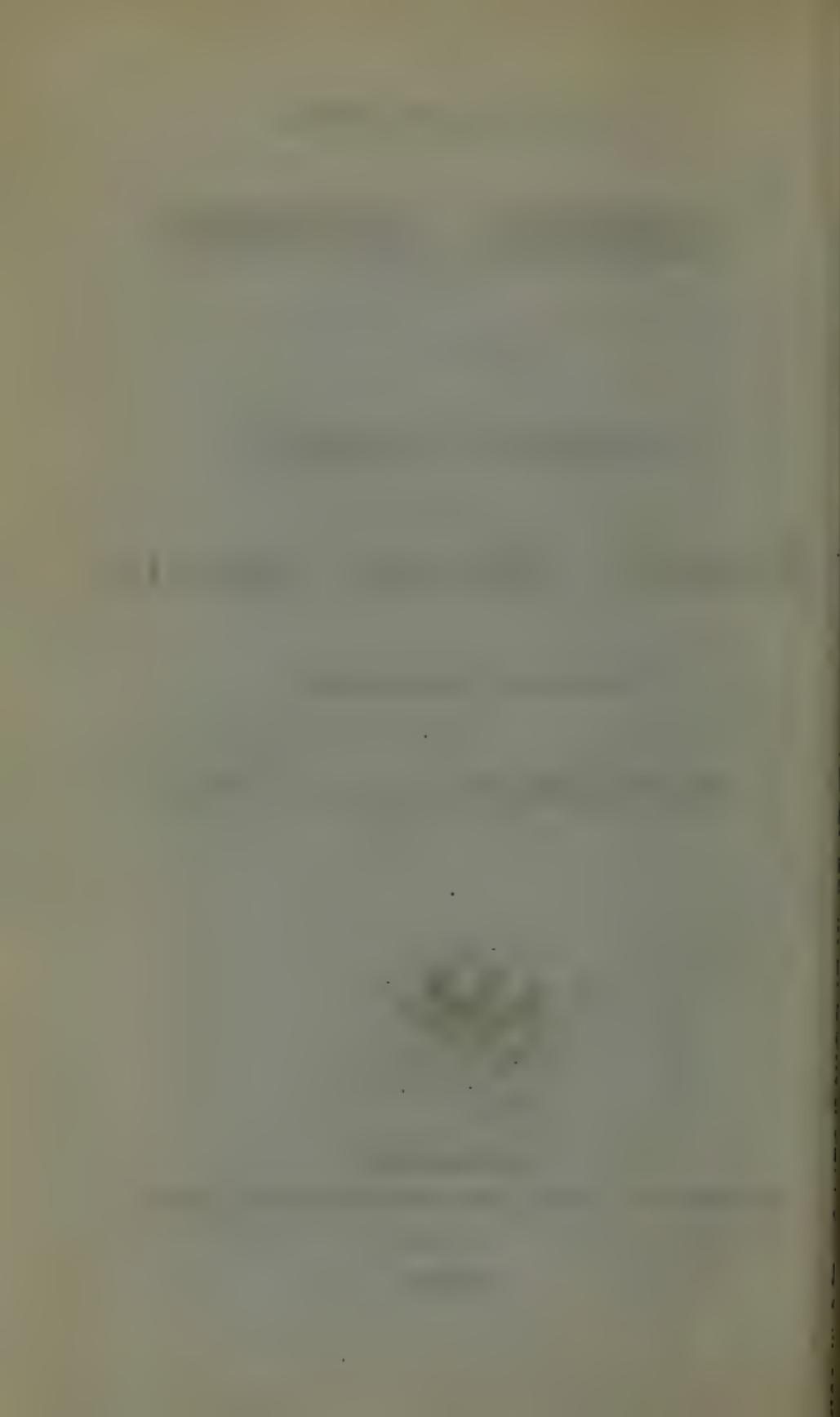


BRIGHTON.

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

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1867.



THE FOURTEENTH  
ANNUAL REPORT

OF THE

BRIGHTON & SUSSEX

Natural History Society,

ADOPTED AT A MEETING HELD

SEPTEMBER 12TH, 1867.



BRIGHTON.

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

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1867.

At the Fourteenth Annual Meeting of the  
Brighton and Sussex Natural History Society, held  
at the Dispensary, September 12th, 1867,

IT WAS RESOLVED,

“That the following Report be received, approved, and  
entered on the minutes; and that it be printed and  
circulated among the Members.”

ALFRED HALL,

PRESIDENT.

President.

MR. SEWELL.

Vice-Presidents.

MR. HOLLIS.

MR. LOWDELL.

MR. PETO.

MR. A. BIGGE.

MR. PENLEY.

MR. W. E. C. NOURSE.

DR. HALLIFAX.

MR. EDEN.

MR. J. CORDY BUBBOWS

MR. SIMONDS.

MR. GWATKIN.

DR. HALL.

Treasurer.

MR. T. B. HORNE.

Committee.

MR. COOPER.

MR. NOAKES.

DR. DAWSON.

MR. HENNAH.

MR. SHAFT.

MR. R. GLAISTER.

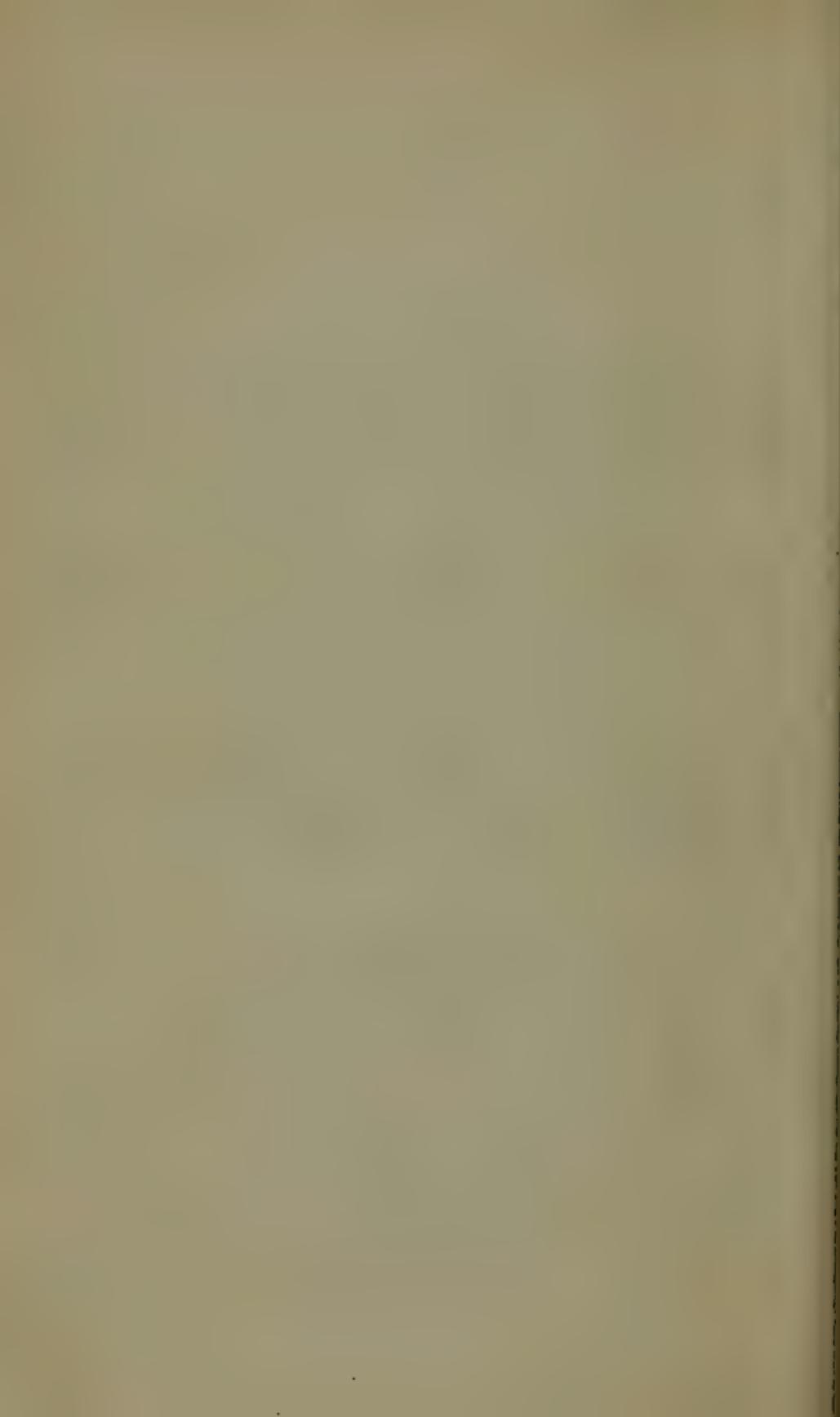
Honorary Secretaries.

MR. T. W. WONFOR,  
53, Buckingham Place.

MR. J. C. ONIONS,  
56, Middle Street.

Honorary Librarian.

MR. GWATKIN,  
49, Grand Parade.



## REPORT.

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In presenting the FOURTEENTH ANNUAL REPORT, your Committee have the pleasure of recording the continued prosperity of the Society.

The state of the finances continues to be satisfactory, there being a balance of 14s. in the hands of the Treasurer, after expending £24 1s. 8d. in the purchase of new Books and Periodicals.

The following Books have been purchased during the year:—Comparative Anatomy and Physiology of Vertebrates, by Owen, 2 vols.; Curiosities of Natural History, second series, 1 vol.; Curiosities of Natural History, third series, 2 vols.; Homes Without Hands, Wood, 1 vol.; sixth vol. of Sowerby's British Botany; Palæontographical Society's volume for 1865; Memoirs of Hugh Edwin Strickland, 1 vol.; Kolliker's Manual of Human Microscopic Anatomy, 1 vol.; Johnson's British Sponges, &c.,

1 vol. ; Nitzsch's Pterylography Ray Society, 1867, 1 vol. ; Album ; Owen's Odontography, 2 vols. ; Westwood and Humphrey's British Moths and Butterflies, 3 vols.

The Library is much used and continues to give general satisfaction. The number of volumes in the Library at the date of the last report was 421, which has since been increased to 505.

The following Books have been presented by the Rev. Thomas Moseley, being a third donation by that gentleman to the Society :—Kenrick's Phœnicia, 1 vol. ; Kenrick's Ancient Egypt, 2 vols. ; Monumental History of Egypt, 2 vols. ; Pritchard's Natural History of Man, 2 vols. ; Archæology and Prehistoric Annals of Scotland, by D. Wilson, 1 vol. ; Indigenous Races of the Earth, by Nott and Gliddon, 1 vol. ; The Lost Tribes, by Moore, 1 vol. ; The Celt, the Roman, the Saxon, by Wright, 1 vol. ; Races of Men, by Pickering, 1 vol. ; Oersted's Soul in Nature, 1 vol. ; Darwin's Naturalist's Voyage, 1 vol. ; Our Garden Friends and Foes, by Wood, 1 vol. ; The First Man and his place in Creation, Moore, 1 vol. ; The Testimony of the Rocks, Miller, 1 vol. ; Scripture and Geology, Pye Smith, 1 vol. ; Charles Waterton and his Home, &c., 1 vol. ; Medals of Creation, Mantell, 2 vols. ; Wonders of

Geology, Mantell, 2 vols; Treatise on Geology, Phillips, 2 vols.; Observations on Natural History, Jenyns, 1 vol.; Religion of Geology, Hitchcock, 1 vol.; The Ancient World, Ansted, 1 vol.; Connexion of the Physical Sciences, Somerville, 1 vol.; General Structure of Animal Kingdom, Rymer Jones, 1 vol.; Bridgewater Treatise, Animal and Vegetable Physiology, by Roget, 2 vols.; Bridgewater Treatise, Habits and Instincts of Animals, Kirby, 2 vols.; Entomologist's Text Book, Westwood, 1 vol.; Fishes and Mollusks, Cuvier, 2 vols.; Turton's British Shells, 1 vol.; Biographical Sketches of Animals, 1 vol.; Wood's British Song Birds, 1 vol.; Swainson's Habits and Instincts of Animals, 1 vol.; Bagster's Management of Bees, 1 vol.; The Honey Bee, 1 vol.; The Earthworm and Fly, 1 vol.

The following books have also been presented to the Society during the year, viz. :—Microscope made Easy, by Henry Baker, 1744, presented by Mr Nourse; L'Exercice du Microscope par François Watkins, 1754, presented by Mr Wonfor; Entomologist's Monthly Magazine, from 1864, 3 vols., presented by Mr Winter; Catalogue of works on the Microscope, Roper, presented by Mr Roper; Reports of British Association, 6 vols., presented by Dr. Bryce.

The thanks of the Society are also due to those gentlemen who have read Papers, and also to those who have exhibited Microscopes and Specimens; and your Committtee earnestly request the Members to give their assistance to the Society by reading Papers and exhibiting objects of interest.

In consideration of the great increase in the value of the Society's Library, the books in which are estimated to be worth nearly £800, the Committee recommend that the entrance fee be 10s. instead of 5s., as heretofore.

The following are the subjects which have been introduced:—

1866.

*Sept.* A Microscopical Meeting, at which the chief objects exhibited were by Messrs. Smith and Sewell, who showed injections; Mr Cooper, circulation in frog's foot; Dr. Hallifax, sections of eyes of insects, in which the several layers of the cornea and the nerves proceeding to the optic nerve were displayed; Mr Gwatkin, diatoms from guano and foraminiferæ, from chalk, and the post Pleocene, Niocene, and Eocene formations; Mr Wonfor, Oak Spangles and Coccus producing them, parasites of water rat, larvæ of crab, seeds of ragged robin, &c.

- Oct.* A paper on "Ozone," by Mr Peto. The history, nature, and properties of ozone, together with the experiments of Schonbein, Hunt, Daubeny, &c., were fully described. Test papers shewed its presence in the air in great quantities by the sea coast, and among the hills and valleys against which sea winds blow; blast furnaces, friction, electricity, water in comminuted particles produced ozone. Some considered oxygen alone could not support life, and that there are two forms of ozone found—ozone and ant-ozone.
- Nor.* A *Conversazione*, at which a clock and cabinet for microscopic objects were presented to Mr Wonfor. Mr Smith exhibited a drawing of the pollen of *Monstera deliciosa*. Mr Wonfor read an account of a (so-called) viviparous fish, *Ditrema Argenteum*, which is said to carry its young in an ovarian sac or membrane, similar to the placental membrane of mammals. Diversity of opinion arose among the members, some considering the case not clearly made out; whilst others thought it might be analogous to the pouch of Marsupials, as the kangaroo.
- Dec.* On Animal Coverings, by Mr Wonfor. The coverings described and illustrated under the microscope were the scales of insects and fish, the shells of mollusks and crustacea, and the calcareous spicules of *Doris*, *Gorgonia*, *Synapta*, and *Cheirodota*. It was shown that the scales of insects consist of two parts—a superficial lamina and an interior membrane. Though in some cases the colour

seemed inherent, it oftener happened, as in the diamond beetles, that it was an optical effect produced by the way in which the light fell on them. Many also exhibited peculiar striæ, or markings, rendering them tests for the higher objectives. The scales of fish are not considered epidermic formations, as they are developed in the true skin: in some cases, as the common eel, they are beneath the superficial layer. The shells of mollusks are epidermic, being found on the surface of the mantle, which answers to the true skin of other animals. Each shell consists of animal and calcareous matter arranged in cells, prisms, laminæ, &c.

1867.

*Jan.*

A second paper on "Animal Coverings" by Mr Wonfor. According to some authorities the hair, fur, wool, spines, horns, and bristles of mammals and the feathers of birds are all of the same nature, and consist of a horny tubular substance and a medullary interior, generally of softer structure. They also show striæ, which, when acted upon by acids, resolve themselves into scales, more or less packed. The medullary cells, under the microscope, present more or less of beauty. Hairs differ slightly in the different orders; some are especially interesting, either from the grouping of the scales, as in the bats and moles, or from the peculiar arrangements of the air cells, as in the rodents. The paper was illustrated by examples of each order of mammals under ordinary and polarized light.

*Feb.* On the causes regulating the abundance of insects at different times and places, Mr F. Merrifield. At the tropics and on Continents, species are more numerous than in islands, because there was more space, and the food plants, and heat and moisture were more varied. In England there was greater variety in the number of individuals than of species. In some seasons, and at some places, great numbers of particular species of butterflies or moths appeared, and under apparently similar conditions of food, scarcely any of the same kind were found for years afterwards. Hence arose the enquiry, why? In the case of butterflies, some only appear during a short period of the year and a part of the day; if then, the weather were unfavourable or wet, it would prevent their coming out, especially as five-sixths of the butterflies appeared only in sunshine. This could not be said of moths in the same degree, for the greater number came out at night; but then they only appeared for a few hours during a period of 10 to 14 days. It could be understood that if the weather were cold or unfavourable at their time of coming out, but few would be encountered. The enemies of insects fluctuated. Cold winters killed off large numbers of birds which preyed on insects; this might account for greater numbers in some years. At present we knew but little of the diseases of insects. There was a provision made to keep up species, both by the great number of eggs and the power by which pupæ are able to wait over a season. It was considered insect existence

was regulated too by the minimum of heat of the summer temperature, hence a cold and wet summer would be unfavourable to them.

*March.* A Microscopical Meeting, at which Mr Gwatkin exhibited circulation in nitella hyalina and living infusoria; Mr Nash, volvox globator; Mr Cooper, parasites, pinna shell, &c.; Dr. Hallifax, sections of insects and spiders, shewing nervous system; Mr Wonfor, auguillula tritici (wheat eels), soundings from Atlantic taken during the survey prior to laying the cable; ooze from the recovered cable, &c.

*April.* An evening for Specimens, at which Mr Nourse exhibited a number of specimens collected by him in Egypt, in 1851, among which were portions of chameleons; a very interesting account of these animals, from notes made at the time in a Nile boat, was also given, and a number of facts of a novel character brought forward; some lizards, a skull of a bat, &c., &c. A very interesting discussion followed. Mr Gwatkin exhibited two specimens of flying lizard, Draco Voluas, brought home by Dr. Livingstone on his first return from Africa, and a rare fish, Blenius Galloringine, caught by a boy with hook and line, at the head of the Chain Pier; Mr Dennant shewed the skull of a bottle-nosed whale, and Mr Wonfor a curious malformation in the willow, and the sea-mouse aphrodita hispida.

*May.* On Rock Crystal, by Mr Bigge. Attention

was first called to the ideas of the Ancients respecting crystal; they thought it was ice, or water congealed by intense cold. This error prevailed until Dr Browne refuted it in his book on vulgar errors. While the term crystal is now applied to an almost endless variety of substances, rock crystal is understood to mean one form of quartz which is found in one of three forms:—I. A hexagonal prism, with a pyramid at each end; II. A double pyramid, with no prism; III. A prism, with a single pyramid, the other end being fixed to some other substance. Its chemical constituents and properties, the places where found in the greatest purity and abundance, its employment in the arts in ancient and modern times, its application for optical purposes, and the superstitions attached to it and other forms of precious stones, were described and illustrated by a very fine collection of specimens.

*June.* On the Recent Ornithology of the District, by Mr Dennant, who gave an account of a number of rare birds which had been recently seen or shot in the vicinity of Brighton, among which were the golden oriole; the very rare wood shrike (in the collection of the Bishop of Oxford); the Peregrine falcon, seen between Brighton and Rottingdean; a young osprey, killed near the tide mills; the very rare grey-headed wagtail, shot near Cliftonville Station; the little sand-piper, shot the same morning; Tennick's shrike; the grey phalarope; the hoopoe, shot in the spring—a very unusual time; the pied fly-

catcher, shot at Preston. Specimens of most were exhibited, and their peculiarities of plumage, &c., pointed out. In the opinion of those present the indiscriminate slaughter of rare visitors was much to be deplored.

*July.* A paper on the Annual Excursion, by Mr Wonfor, in which the incidents of the day, and the objects seen and obtained, were described.

*Aug.* On the organ of hearing in Man and Animals, by Mr Hollis. In animals having the lowest manifestation of the organ, it is characterized by great simplicity, the essential part being a nerve to receive and convey impressions to the sensorium. Insects hear, but there is no trace of an especial nerve, the antennæ are conjectured by some to be the organs of hearing. Cephalopods possess ear bones as in fishes. Air breathing animals have a tympanum and eustachian tube. In fish an external ear is not necessary. The higher orders have solid calcareous bodies called otoliths. Mr Higgins, of Bath, has examined 37,000 fishes, and in only five cases has not found three otoliths on each side, and considers them most certain means of distinguishing species. Amphibia and Reptilia have a labyrinth; crocodiles, a moveable membrane, which covers the tympanic membrane when under water. Birds are without an external ear, but have an eustachian tube to the mouth; Mammals possess an external ear, the inner parts are especially hard, there is also a membranous chamber filled with fluid, over which a nerve

is spread, and there are four osciluli instead of one as in birds. Whales have a small external ear with the custachian tube opening into the blow-hole.

The Annual Excursion took place to The Rocks, at West Hoathly, on the 20th of June, by the kind permission of Mr Hill.\*

In concluding their Report, your Committee beg to request the Members to endeavour to promote the prosperity of the Society, not only by bringing its merits to the notice of their friends and by contributing copies of works on Natural History, but also by reading papers during the ensuing year.

Contributions to the Society's Album of Photographs, or Drawings of objects of Natural History, are also solicited by your Committee.

\* Drawings of "Great upon Little," and Ardingley Church, taken during the day by Mr Penley, have been presented for the Society's Album.

# TREASURER'S ACCOUNT

FOR THE YEAR ENDING SEPT. 1, 1867.

	£	s.	d.		£	s.	d.
<i>Dr.</i>				<i>Cr.</i>			
To balance from 1866 .....	1	7	1	By one year's subscription to the Ray Society .....	1	1	0
" Subscriptions in arrear on 1st September, 1866, since received .....	5	0	0	" Two years' subscription to the Paleontographical Society .....	2	2	0
" Subscriptions due on 1st September, 1866, since received .....	35	0	0	" Fire Insurance of books to 29th September, 1867 .....	0	8	0
" Entrance fees .....	1	0	0	" Printing .....	4	19	0
				" Stationery and bookbinding .....	0	19	10
				" Salary to Assistant Secretary .....	1	10	0
				" Tea and Coffee .....	3	4	4
				" Commission on subscriptions received by the Collector .....	1	2	6
				" Messengers for delivering notices .....	1	18	6
				" New Books and Periodicals .....	24	1	8
				" Postage Stamps and Sundries .....	0	6	3
				Balance .....	0	14	0
					£42	7	1







THE FIFTEENTH

# Annual Report

OF THE

BRIGHTON & SUSSEX

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 10TH, 1868,



BRIGHTON:

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

1868.



THE FIFTEENTH

Annual Report

OF THE

BRIGHTON & SUSSEX

NATURAL HISTORY SOCIETY,

ADOPTED AT A MEETING HELD

SEPTEMBER 10TH, 1868,



BRIGHTON:

PRINTED BY CURTIS AND SON, GAZETTE OFFICE.

1868.

At the Fifteenth Annual Meeting of the  
Brighton and Sussex Natural History Society, held  
at the Dispensary, September 10th, 1868,

IT WAS RESOLVED—

“That the following Report be received, approved, and  
entered on the Minutes; and that it be printed and  
circulated among the Members.”

J. J. SEWELL,

PRESIDENT.

PRESIDENT.

MR GLAISYER.

VICE-PRESIDENTS.

MR HOLLIS.	MR PENLEY.	MR W. E. C. NOURSE.
MR A. BIGGE.	MR EDEN.	MR J. CORDY BURROWS.
DR. HALLIFAX.	MR GWATKIN.	DR. HALL.
MR SIMONDS.	MR PETO.	MR. SEWELL.
MR LOWDELL.		

TREASURER.

MR T. B. HORNE.

COMMTTEE.

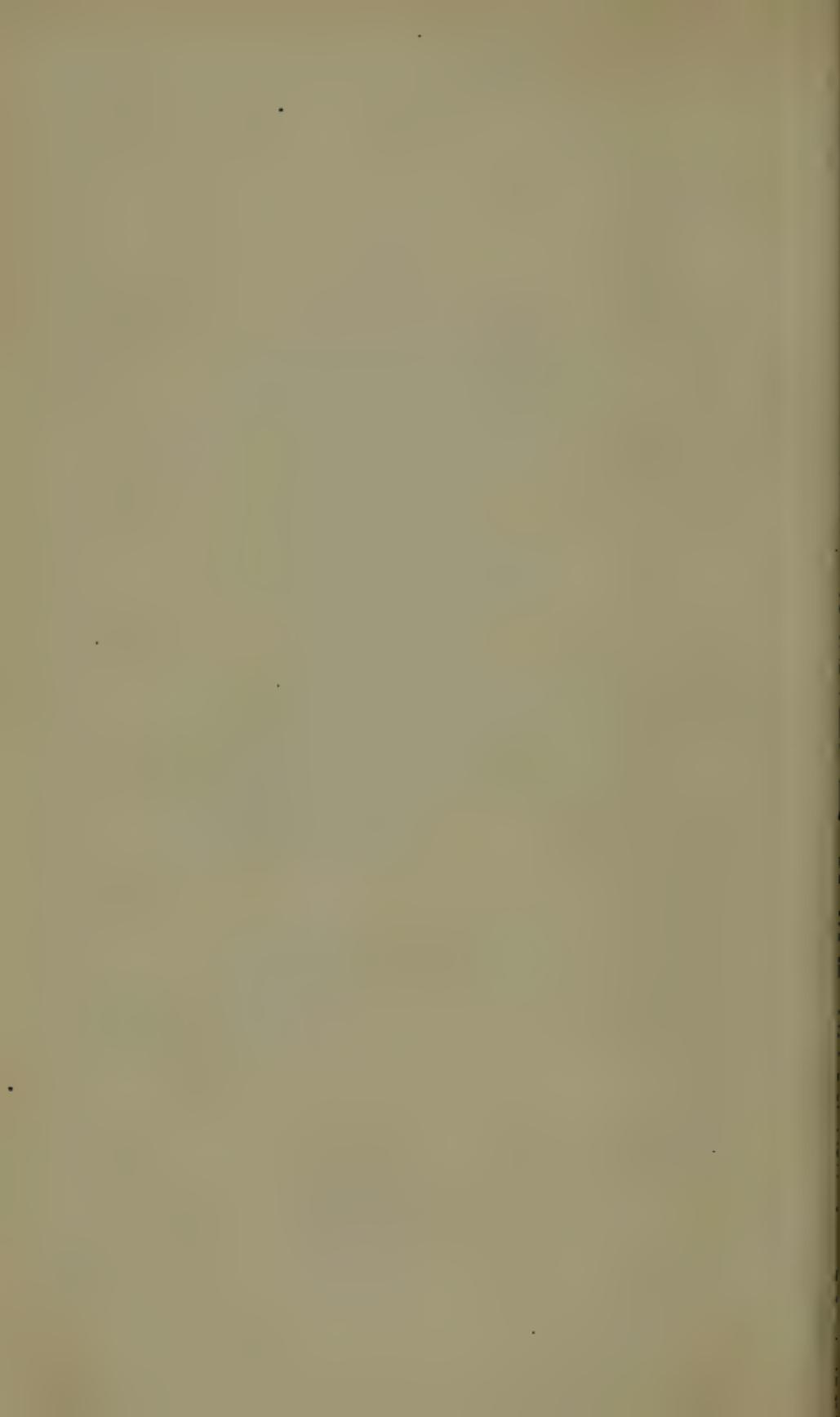
MR SHAFT.	MR R. GLAISYER.
MR NOAKES.	MR J. DENNANT.
MR HENNAH.	REV. J. H. CROSS.

HONORARY SECRETARIES.

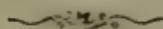
MR T. W. WONFOR, 53, Buckingham Place.	MR J. C. ONIONS, 56, Middle Street.
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HONORARY LIBRARIAN.

MR GWATKIN,  
49, Grand Parade.



## REPORT.



In presenting the FIFTEENTH ANNUAL REPORT, your Committee have the pleasure of recording the continued prosperity of the Society.

The state of the finances continues to be satisfactory, there being a balance of 8s. 6d. in the hands of the Treasurer, after expending £29 16s. 3d. in the purchase of new Books and Periodicals.

The following Books have been presented to the Society during the year, viz. :—Anniversary Address, delivered before the Anthropological Society of London, January 3rd, 1865, by James Hunt (pamphlet), by W. E. C. Nourse, Esq.; General System of Nature, by Linnè, 7 vols., by Mr. Smith; List of Linnean Society of London (pamphlet), by the Society; Newman's Essay on the Employment of Physiological characters in the Classification of Animals (pamphlet), by W. E. C. Nourse, Esq.; certain Butterfly Scales, Characteristic of Sex (pamphlet), by T. W. Woufor, Esq.

The following Books have been purchased during the year:—Sowerby's Botany, vols. 7 and 8; Darwin's Plants and Animals under Domestication, 2 vols.; Brown's Botanical Works, 2nd vol., Ray Society; Berkeley's Cryptogamic Botany, 1 vol.; Monograph of the Structure and Development of the Shoulder Girdle and Sternum of the Vertebrata, Parker, 1 vol., Ray Society; Monographia Anoplurorum Britanniae, or an Essay on the British Species of Parasitic Insects, Henry Denny, 1 vol.; Quekett's Practical Treatise on the Use of the Microscope, 1 vol.; Quekett's Lectures on Histology, 1 vol.; Walker's Insecta Britannica Diptera, 3 vols.: Part 1, vol. 26, Linnean Society's Transactions; General Index to the Transactions of the Linnean Society, 1 to 25; Transactions of Ethnological Society, 3 vols.; Palaeontographical Society, vols. 20 and 21; Transactions of the Linnean Society from 1788 to 1847, 20 vols. (these, with the volumes already in the library, complete the work to the present year); Carpenter on the Microscope, new edition, 1 vol.; Ormerod's Wasps, 1 vol.; Serials; Student, 2 vols.; Microscopical Journal, 1 vol.; Geological Magazine, 1 vol.; Zoologist, 1 vol.; Quarterly Journal of Science, 1 vol.; Popular Science Review, 1 vol.; Entomologist, 1 vol.; Entomologists' Monthly Magazine, 1 vol.; Science Gossip, 1 vol.

The Library is much used, and continues to give general satisfaction. The number of volumes in the Library, which at the date of the last report was 505, has since been increased to 566.

The thanks of the Society are due to those gentlemen who have presented Books to the Library, or Photographs and Drawings to the Society's Album.

The thanks of the Society are also due to those gentlemen who have read Papers, and also to those who have exhibited Microscopes and Specimens; and your Committee earnestly request the Members to give their assistance to the Society by reading Papers and exhibiting objects of interest.

The following are the subjects which have been introduced:—

1867.

*Sept.* A microscopical meeting, at which Mr Cooper exhibited foraminiferae from ooze attached to Atlantic Cable, parasite of water rat, and sarcoptes scabæi; Mr Sewell, scolex of tape worm, tænia, and other entozoic preparations; Dr. Hallifax, some admirable entomological sections, notably: fang of spider, shewing poison gland, and common flea containing eggs; Mr Gwatkin, rotation of cell contents in nitella hyalina and fresh water algæ; Mr Smith, tongue of blowfly, &c., under Baker's sea-side microscope,—a very portable and handy microscope; Mr Wonfor, *anguillula tritici* (wheat eels), alive, eggs of harvest bug, and a portable microscope contrived by himself

for travelling in the pocket, under which was shown soundings from the Mediterranean, &c.

*Oct.* An evening for Specimens, when Mr Onions distributed a large number of cherry galls from the oak, and exhibited a piece of granite chipped off a mass, some tons weight, turned up in Herts by a steam plough. There were also exhibited by Mr Noakes, *Nitella Hyalina*, in very healthy condition, growing in a closed jar, where it was planted 14 months before; by Dr. Hallifax, some very good microphotographs taken by himself; by Mr Hennah, some very beautiful microphotographs taken by him with magnesium and oxycalcium lights; by Mr Demant, some Australian trap-door spiders with their burrows,—the beautiful hinge and lining of the crypts was much admired; by Dr. Humby (displayed under the microscope), some *Cristatella mucedo*, in great activity; by Mr Wonfor, several humming-bird hawk moths (*macroglossa stellatarum*) taken by him a few days before, and a collection of beekites forwarded from Torquay to him, by Mr Horne, of which he gave some account: *Beekites*, named after their discoverer, Dr. Beek, are a peculiar form of pebble found in the Torbay conglomerates and vary in size, from  $\frac{1}{2}$  an inch to a foot in diameter. Their surfaces are covered with *Chalcedony*, arranged in tubercles, around which are generally one or more rings. The tubercles vary in size, from a pin's head to a small pea. When a beekite is broken its interior is found to be *calcareous*. The nucleus is generally found decomposing, sometimes

it is partially attached to the crust of chalcedony, at other times only a few grains of the nucleus remain, in such cases the beekite will float on water. The nucleus which is always some organic substance, as coral, sponge, or shell is occasionally silicified. It is thought that after the formation of the Triassic conglomerates, some of the calcareous pebbles in them underwent decomposition, and that water, holding chalcedony in solution, deposited it on a nucleus. This it would do more readily from the fact of the nucleus being in a state of decomposition. It is found that in whatever surface chalcedony is deposited, it is in tubercles, hence the tubercles on the beekite. If decomposition commenced in various points, the chalcedony deposited at these points would be in central tubercles, around which, as the decomposition proceeded, rings would be found. Beekites could only be expected in conglomerate rocks, which contained decomposing calcareous pebbles, and through which water, charged with chalcedony passed, a state of things not frequent, hence the comparative infrequency of beekites in any but the Torbay deposit; by Mr R. Glaisyer, a tooth, 10 feet long of (*Monodon Monoceros*) the Narwhal, or Sea Unicorn, taken in the North Sea. The number of the teeth is two, one generally undeveloped, the other stretching in a line with the body, and spirally twisted, they are usually about six feet long; Mr Hennah presented, as mementoes of the day, to those gentlemen who had been present at the Annual Excursion, some exquisite

photographic fac-similes of two drawings, of "Great-upon-Little," at West Hoathly, and Ardingly Church, taken and presented by Mr Penley, for the Society's album on that occasion.

*Nov.* A paper was read by Mr Wonfor on certain Butterfly scales characteristic of sex, in which he stated that while endeavouring in 1864 to obtain the battledore scales from the common blues, and the tasseled scales from the whites, in the position described in Microscopic Manuals, namely, the *under* surface of the wings, he had made three discoveries: first, that the said scales were always on the *upper* surface; secondly, in rows under the ordinary scales, and at the intervals; and thirdly, that these particular scales were confined to the males. Hence that they were characteristic marks of sex, as far as he had been able to carry his observations, through the three families of *Polyommatus*, *Pieris*, and *Hipparchia*. In examining the blues, he had found the battledores differed in size, shape, length of blade or handle, according to the particular species, while among the *Pieridæ* the differences were well and distinctly seen; the same applied also to the *Hipparchia* family. Whether they served any purpose in the economy of the insect he could not say, their analogues seemed to be in the beard of man, the mane of the lion, and the plumage of some birds. Directions were given how to obtain the scales, and the paper was illustrated by drawings, the microscope, and the insects themselves, from which the scales were taken. (This

paper has since been published in the Journal of the Royal Microscopical Society of London.\*)

*Dec.* On the Work of the Natural History Society, by Mr W. E. C. Nourse. This was a review of the work of the Society from its commencement, as gathered from the annual reports, with suggestions respecting points omitted, and hints as to hitherto untrodden paths. The work of the Society when examined in the animal and vegetable kingdoms, and the mineral in its relation to organic life, shewed that on Natural History in general one paper had been read; one on the Biography of Naturalists; on the Natural History of Places and Countries 18 papers; seven evenings had been devoted to general Conversation on Natural History; two evenings in the present year had been set apart for the exhibition of objects not microscopical, a plan which seemed to answer well. Regarding the properties of natural objects, the investigation of their *mechanical* properties had not been set forth otherwise than by 16 microscopical meetings; the *chemical* properties by only one paper. On certain differences in isomeric compounds not recognisable by chemical analysis. Of the other properties of natural objects, one paper on Electricity in Plants and Animals; on Biology and general Physiology, seven papers, viz., On Reproduction, the Vitality of Plants and Animals, the Longevity of Plants and Animals, Darwin's Origin of Species (2), Unity and Analogies of Animal Life, and the Extinction

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\* Members of the Society wishing for a reprint can have copies upon application to Mr Wonfor.

of Species. In the animal kingdom: 15 papers, and one evening of discussion have been devoted to animal physiology. In the class Mammalia: four papers on Ethnology, and seven on the Comparative Anatomy of various members of the class. In the class Aves: three papers have been read, one on Edible Birds' Nests, one on Wingless Birds, and one on the Recent Ornithology of the District. In the class Reptilia: one paper on the Teeth of Reptiles. In the class Pisces: two papers have been read. Among the Mollusca in the division *Concifeva*: two papers. Among the Articulata, in the class Anellida: one paper. Crustacea: one paper. On Spiders: two papers. On Insecta: 15 papers. Among the Radiata: one paper on the Entozoa, and an evening's discussion on the same subject. One paper on Diatomaceæ, and one on Red Snow. On Seaweed only one paper has been read, viz., on *Codium Bursa*; one on Fungi; and three on Ferns. Four papers have been read on Exogenous Plants; one on the Vegetable Kingdom in General; three on the Cultivation of Plants; one on Local Flora; four on Vegetable Physiology; two on Vegetable Chemistry; and one on the Preservation of Specimens. In the mineral kingdom: seven papers have been read on Geology and Mineralogy; five on Organic Deposits in various formations: two papers on Meteorology; and one on the Physical Constitution of the Sun, completes the papers read before the Society during the thirteen years of its existence. Various branches of Natural History on which nothing at present has been done were indicated, and suggestions were

thrown out as to the way in which the interests of the Society and of Natural History in general might be advanced. Mr Wonfor pointed out that the annual reports, until the last year, gave but an incomplete idea of the work done, for many other subjects had been introduced, but not coming under the denomination of papers read, they had not appeared in the annual reports. Various suggestions were made in the course of a discussion, which ended in a request to the Committee to organize Field Excursions for the summer months.

1868.

*Jan.* A paper by Mr John Robertson, on Flying, was read by Mr Wonfor. After an inductive examination of all the different types of flying animals, the result arrived at may be stated in the following terms:—"Flying consists of two things, buoyancy and waftage; and without saying that wings have nothing to do with buoyancy and lightness nothing to do with waftage, it may be submitted that buoyancy depends on gaseous structure, and waftage on the mechanism of wings, flying being the combination of the two as guided by the instinct or will of the animal."

*Feb.* A Microscopical Meeting, at which the principal objects exhibited were sections of fossil teeth, the crane fly, &c., by Mr Dennant; sections of spider's fang, shewing the poison ducts and poison glands, by Dr. Hallifax; anatomical preparations, tape worm and male itch insect (*Sarcoptes Scabæi*) by Mr Sewell; hair worm (*Gordius aquaticus*), &c., by Mr Whately;

Mr Whately; scales of fish and foraminifera, by Mr Peak; sections of coco, pylorus of cricket and infusoria, by Mr Gwatkin; chalk washings, parasite of canary and insect preparations, by Mr Cooper; butterfly scales, illustrative of paper on that subject, a series of insect eggs, disintegrated glass, and sections of oak stained green by fungus (*Helotium Æruginosum*) and known as Tunbridge Wells oak, and American aloe showing raphides, by Mr Wonfor, who had three microscopes at work, and also exhibited Curtis' growing slide and pocket cabinet.

*March.* Two papers by Mr J. Robertson, one on the male gall-fly, and another on Perforating Gastrochena, Saxicava, &c. was read by Mr Wonfor. In the first, Mr Robertson claimed to have found in a gall at Bognor in 1865, two crypts, one in the centre, which contained a female and another much smaller and at the side which held a male fly, smaller and more nimble than the female, and which escaped before means could be taken to secure it. In the second he claimed to have discovered the method by which, Gastrochena, Saxicava, &c., which, without rasps like the pholades, perform their perforations in rocks and timber. Deshayes considered the smooth-valved shell fish accomplished the perforations by means of a "chemical solvent," while Hancock considered they were effected by "the thickened anterior margins of the mantle:" by watching the mollusks in spring and early summer at the rocks at Rottingdean, he had caught them at work and discovered the means by

which they perforated. "It was by the whole mantle. The mantle folds out of the lower end of the two valves and encloses them as a finger-glove does the finger. The sides of the mantle are thus pressed against the sides of the crypt, which are worn away as the rock is under the foot of the limpet. The lime absorbed by the mantle is no doubt used in secreting and renewing the valves." He had observed the perforations of the univalves by keeping them in sea water and the bivalves by splitting open their crypts with a chisel and hammer.

*April.* A paper on Vegetable Physiology was read by Dr. Hallifax. After a general survey of the whole question, Dr. Hallifax remarked that he would confine himself to the general facts of the ascent and diffusion of the sap or nutritive fluid of plants. All were familiar with the ascent of the sap, but when one enquired as to how the ascent was made, great diversity of opinion was found among the authorities, the main points asserted by all being that most of the fluid was taken up by root absorption, in large quantities and with great force. Some Physiologists accounted for the process by what is called endosmose, the delicate cell covering acting as a membrane. The root itself was found to be similar in structure to the stem, a prolongation of which it really was, and consisted of various tissues arranged around the pith. The question then arose, which of these tissues took up sap. Experiments had shewn that the ascent was by means of the

*prosenchymatous* tissue. The quantity absorbed was enormous, thus the common cabbage, in 12 hours, gives out from its leaves 15 to 25 oz. of water. A sun flower 3ft. high and weighing little over 3lbs., in summer gave from 16 to 20oz. in 12 hours. Schleiden says the fluid is transmitted from cell to cell of the *prosenchymatous* tissue. He thought also that the *prosenchymatous* tissue was the means of its diffusion. To determine this, experiments had been made. Hoffmann put roots in a solution of ferro-cyanide of potash, made sections which he exposed to a salt of lime, and obtained a Prussian blue in the *prosenchymatous* tissue. A vegetable color, the juice of the berries of a *Phytolacca* was also tried, and gave a crimson color in the same tissues. At first he had himself tried similar experiments with cuttings of plants, in water tinged with carmine, and as in the case of a wall-flower, both stems and leaves were penetrated by the fluid, but as this might have been by capillary attraction, he had tried to get carmine taken up by the root, and in the course of a few days had found the color in the stem, the leaf-stalks, and leaves, the flower-stalk, and the floral envelopes. He had also tried the ferro-cyanide, but not knowing the strength to apply had killed the plants. The ascending fluid was unfit for the economy of the plant, and had to be elaborated, both to build up the plant and to produce the secretions: this great change was made in the leaf where exhalation took place, and in which were the stomata, most numerous in those

plants which exhaled most, and the guard cells, which closed, if, while the plant was exhaling, it was removed from the sun into the dark. The next puzzle was the mode of descent, the course of which was by the *Cambrian* layer, some thought by endosmose from cell to cell.

*May.* An evening for specimens, when there were exhibited, by Dr. Hallifax, a collection of insects from Ceylon, among the most remarkable of which were *Mautis religiosa*, which, from the peculiar appearance of its formidable prehensile organs, with which it mangles the bodies of its insect prey, has, in all countries where found, been regarded by the inhabitants as a pious insect; *Phasma fragilis*, phantom or walking stick insect, which exactly resembles the dried twig of a tree, and some very brilliant beetles. A peculiar palate, said to be of a sea horse (?) by Mr Penley, skull of a dolphin by Mr Dennant, larvæ of hornet, clear wing moth (*specia apiformis*) at work in some willow stumps, and a cherry gall, from which had come, the day before, an insect which, while it resembled the gall-fly in appearance, was certainly not a female. In activity and position in the gall, near the surface, it seemed like the case given by Mr Robertson, and curiously, in the centre, was still to be seen a fully-formed grub of a gall-fly. He pronounced no opinion upon it, but wished the members to see it alive, and then to examine it under the microscope. Upon examination it proved to be a male *ichneumon*, and strange to relate,

the very next day, from the same gall, a second male came forth, leaving the grub still alive in the centre.

Mr Noakes read an account of Texan ants, forwarded by a nephew, who has resided for some years in that country, in answer to an enquiry respecting the so-called agricultural ant. As to Texas being a great country for ants, a residence of but a few hours would convince any one, for nature seems to have created them in such innumerable sizes, colors, shapes, appetites, and habits, that they managed to creep into anything that it was possible for an ant to enter, and to eat anything that an ant could possibly devour. For what one sort or size cannot eat or creep into, another is sure to be able to accomplish. While a detachment of one kind is making a *raid* into the sugar-basin in the safe, another, of a different kind, is marching up the sides of the house and under the roof to attack a piece of meat suspended therefrom, another regiment of very minute black ones has chosen the butter-bowl as more congenial to their taste, while a mixed-medley of red ones have suddenly issued from the ground and climbed to a piece of bacon hanging on a nail to a beam; this they are covering with their bodies, and unless disturbed, will leave nothing behind but the rind. While this is going on in-doors, an army of ants is doing its best in the garden, by sending some of their number up the fruit trees, where they cut off the leaves, which, as they fall, are carried away to their homes by those below; in the meantime another party is delving in

a freshly-sown piece of ground, and, no matter what the seed, carrying it away one by one to their nests. This approaches the nearest to the ant described as the agricultural ant, said to sow grass seeds; perhaps from this the idea was taken, but this ant deposits all kinds of seeds. When the heavy rain penetrates to their stowage and wets the seeds, they bring them out and dry them, some few they allow to sprout, but do not permit them to attain any size. Another kind eat fruit; one light red kind roams about singly, picking up anything it can find, making itself as it were generally useful; some say they catch fleas, but the fleas must be very lazy ones. Another looks like a connecting link between the ant and the wasp; another, commonly called a ground-louse, constructs out of earth covered passages up the stalk and stems of plants and trees. One circumstance is eminently illustrative of the instinct of the ant. An oil stone, generally kept well oiled, was constantly getting dry; this was the more surprising, as nothing was ever seen near it on the bench upon which it lay but a few ants, and as they were never suspected of possessing any means of carrying away the oil, they were not thought to be the culprits, until one day, after being well oiled, the oil stone was watched, when first one and then another ant was seen to approach with a small chip of wood, which it pushed on to the stone, and which, when well saturated, was removed and carried away; by this means the oil was removed from the stone.

Mr. Sewell exhibited and described a fine specimen of the Venus's Flower-Basket (*Euplectella speciosa*) of the Philippines, a siliceous sponge attached by its expanded base to some marine body, and supported by a skeleton of tubular form, composed of numerous bundles of fibres crossed by similar ones, so forming a square net-work of exquisite beauty, the summit crowned by a net-work lid. Sometimes small crabs are found imprisoned in the glass-like cage.

Mr R. Glaisyer exhibited the fruit of *Trapa bicornis*, water nut. This plant grows very abundantly on the canals and shallow lakes of China, clothing the whole surface in the morning with a dense carpet of green. As the sun rises, the colour is gradually, from the opening of the flowers, changed to a fine expanse of white. After a few months, the singularly-shaped nuts, resembling the head of a bull,—whence its name,—become ripe, and when roasted, form a supply of sustenance to myriads of the inhabitants of that densely-populated country. As the seeds are shed, and the plant grows on the water, no trouble is required in its cultivation.

*June.* A paper on Animal Coverings, Feathers, &c., by Mr. Womfor, in which the structure of feathers, their mode of growth, their several parts, their resemblance to the hair of mammals, their variety of form and nature, according to the birds to which they belonged, together with the nature of down, were each and all described and illustrated under the

microscopes. The horns of animals, whether consisting of bone, epidermic formations, or those in which both were present, were next described and exhibited.

*July.* A paper on the Annual Excursion was read by Mr. Wonfor, in which the different incidents of the day, the places visited, the objects obtained and seen, were in turn described. Mr. Wonfor exhibited a number of insects taken on the day, as well as specimens of the eggs, larvæ, pupæ, and perfect insects of the puss moth, the larvæ of which were very abundant on the poplars in and about Brighton.

*Aug.* An evening for specimens, at which there were exhibited, by Mr Peto, leaves cut by the leaf-cutting bees, which had been very abundant this summer, and then described the method which the bee employs in cutting the circular or other pieces she requires; by Mr Gwatkin, some very fine examples of the reddish moss-like excrescences, wholly dissimilar to the leaves of the wild rose, the plant on which they are formed by a *Cynips*, and which the old naturalists deemed a valuable medical substance, to which they gave the name *Bedguar*; Mr Wonfor, who had just returned from Derbyshire, exhibited a large collection of geological specimens, illustrative of the geology of that county, and gave a short sketch of the rocks, which are of two kinds, *limestone* and *gritstone*, the former is divided in the *lowest*, or hard, a compact, and partially crystalline limestone, with-

out fossils, much used in repairing roofs and building hedges; the *middle*, hard, yellowish, and porous, containing fossils, plants, and shells; the *upper*, of varied colors, and abounding in fossils, this yields the many varieties of Derbyshire marble, which takes a high polish; associated with these limestones were barium, spars, crystals, stalactites, and the numerous natural caverns and petrifying wells for which Derbyshire was famous. The *gritstones* were four in number, the *Argillaceous* grit, found in thin beds, which easily split, and was used for roofing. The *ferruginous*, of various colours and durability, some soon perishing on exposure to the weather, others available only for road-making, whilst some formed excellent building stone, stone troughs, and mill-stones; the *variegated*, a compact stone employed for building purposes, and of which Chatsworth House is built, and the *grey stone*, an excellent building stone, a famous quarry of which is at Darley Dale; Mr Wonfor also exhibited limestone covered with the eggs of the stone mite, which were so abundant that he could not pick up a piece of stone without finding it covered; the President, exhibited some insects forwarded to him by Mr Robertson, of Shoreham, and believed by him to be mosquitoes.

Your Committee have had great pleasure in carrying out a resolution of the Society, recommending the trial of Field Excursions. These were commenced in April, and have been so far successful that they recommend their continuance

during the autumn of this and the summer of next year. The dates and places visited have been—

<i>April 4th.</i>	Hassock's Gate.
<i>May 9th.</i>	Balcombe and Tilgate Forest.
<i>June 6th.</i>	Uckfield and Buxted Park.
<i>July 4th.</i>	Shoreham for Bramber.
<i>August 8th.</i>	The Black Rock, Kemp Town.

A brief account of the principal objects obtained has been given by one of the Honorary Secretaries at the commencement of the ordinary meeting following the Excursions.

The Annual Excursion took place on June 24th, to Worth and Tilgate Forest, upon which occasion the Members and friends were hospitably entertained at Luncheon by J. Ellis, Esq. A Drawing of Worth Church, from a Sketch taken in the day by Mr. Penley, has been presented for the Society's Album by that gentleman.

In concluding their Report, your Committee beg to request the Members to endeavour to promote the prosperity of the Society, not only by bringing its merits to the notice of their friends and by contributing copies of Works on Natural History, but also by reading Papers during the ensuing year.

Contributions to the Society's Album of Photographs, or Drawings of objects of Natural History, are also solicited by your Committee.

# TREASURER'S ACCOUNT

FOR THE YEAR ENDING SEPT. 1, 1868

<i>Dr.</i>	£ s. d.	<i>Cr.</i>	£ s. d.
To Balance from 1866-67 .....	0 14 0	By one year's Subscription to the Ray Society .....	1 1 0
" Subscriptions in arrear on 1st September, 1867, since received .....	9 5 0	" One year's Subscription to the Palaeontographical Society .....	1 1 0
" Subscriptions due on 1st September, 1867, since received .....	37 0 0	" Fire Insurance of Books to 29th September, 1868 .....	0 16 0
" Entrance Fees .....	2 15 0	" Printing .....	6 12 0
		" Stationery and bookbinding .....	1 14 4
		" Salary to Assistant Secretary .....	1 10 0
		" Tea and Coffee .....	3 7 4
		" Commission on Subscriptions received by the Collector .....	0 18 6
		" Messengers for delivering Notices .....	2 2 0
		" New Books and Periodicals .....	29 16 3
		" Postage Stamps and Sundries .....	0 7 1
		Balance .....	0 8 6
	<u>£49 14 0</u>		<u>£49 14 0</u>

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THE SIXTEENTH  
ANNUAL REPORT

OF THE

Brighton and Sussex

Natural History Society,

ADOPTED AT A MEETING HELD

SEPTEMBER 9TH, 1869.



BRIGHTON:

PRINTED BY FLEET AND CO., "HERALD"-OFFICE.

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1869,

At the Sixteenth Annual Meeting of the  
BRIGHTON AND SUSSEX NATURAL HISTORY SOCIETY,  
held at the Dispensary, September 9th, 1869,

IT WAS RESOLVED—

“That the following Report be received, approved, and  
entered on the Minutes; and that it be printed  
and circulated among the Members.”

IT WAS ALSO RESOLVED—

“That the thanks of the Society are especially due to  
MR. GWATKIN, for his kindness and courtesy in the  
discharge of his duties as Hon. Librarian.”

T. GLAISYER,

PRESIDENT.

President.

MR. T. H. HENNAH. *T. H. Henna*

Vice-Presidents.

MR. HOLLIS.  
MR. A. BIGGE.  
DR. HALLIFAX.  
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MR. PENLEY.  
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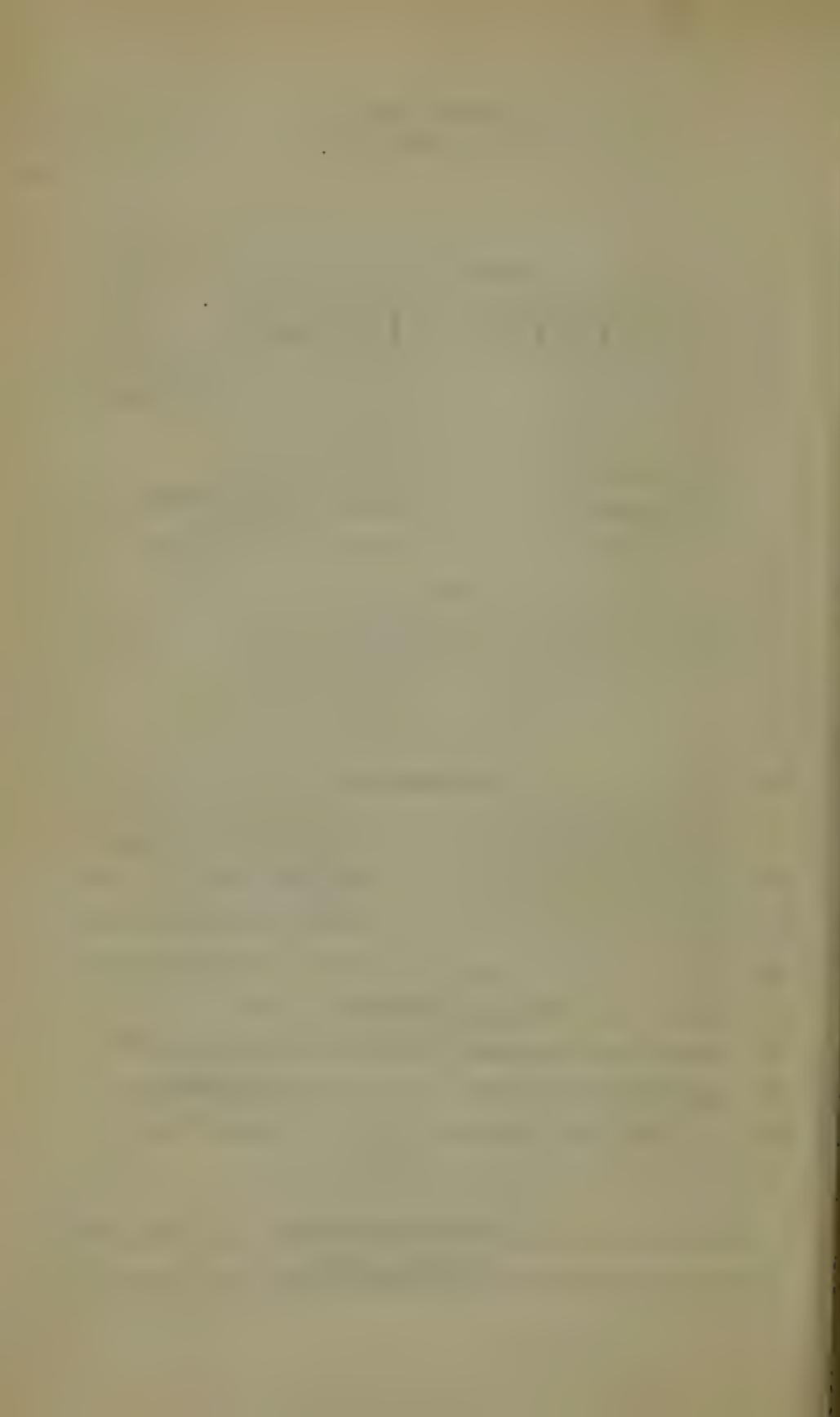
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MR. T. W. WONFOR,  
38, Buckingham-place.

MR. J. C. ONIONS,  
56, Middle-street.

Honorary Librarian.

MR. GWATKIN,  
49, Grand-parade.



# REPORT.



In presenting the SIXTEENTH ANNUAL REPORT, your Committee have the pleasure of recording the continued prosperity of the Society.

The state of the finances continues to be satisfactory, there being a balance of £1 1s. 4d. in the hands of the Treasurer, after expending £29 5s. 9d. in the purchase of new Books and Periodicals.

The following Books have been presented to the Society during the year:—Bradbury, on Nature Printing, 1 vol., presented by T. H. Hennah, Esq.; *Recherches Scientifiques en Orient*, Albert Gaurdy, presented by Thomas Davidson, Esq., 1 vol.; Spallanzani on Animals, 2 vols., presented by T. H. Hennah, Esq., on certain Butterfly Scales, Characteristic of Sex; 2nd Series by T. W. Wonfor, Esq., from the same; *Scientific Opinion*, presented by the Editor.

The following Books have been purchased during the year:—*Transactions of the Ethnological Society*, 1869,

1 vol.; Linnean Transactions, parts 2 and 3, vol. 26; Brown's Botanical Works (Atlas), 1 vol.; and Master's Vegetable Tetratology, 1 vol., Ray Society; the Palæontographical Society's volume for 1868, 1 vol.; Sowerby's Botany, 9th vol.; Pratt's Flowering Plants of Great Britain, 4 vols.; Bentham's Illustrated Handbook of the British Flora, 2 vols.; Cobbold's Entozoa (supplement) 1 vol.; Bate and Westwood's History of the Sessile-Eyed Crustacea, 2 vols.; The Malay Archipelago (Wallace), 2 vols.; Hinck's History of British Hydroid Zoophytes, 2 vols.; Newman's History of British Moths, 1 vol. Bentley's Botany, 1 vol.; Morris's British Birds, 4 vols.; Ramsay's Lectures to Working Men, 1 vol.; Tyndal, on Sound, 1 vol.; Moquin Tandon's Medical Zoology, 1 vol.; Sowerby's Wild Flowers, 1 vol.

SERIALS.—Entomologist, 1 vol.; Entomologist's Monthly Magazine, 1 vol.; Geological Magazine, 1 vol.; Popular Science Review, 1 vol.; Quarterly Journal of Microscopical Society, 1 vol.; Quarterly Journal of Science, 1 vol.; Science Gossip, 1 vol.; Student, 2 vols.; Zoologist, 1 vol.

The number of volumes in the Library, which at the date of the last Report was 566, has since been increased to 611. Although the Library is much used and appreciated by some of the Members, your Com-

mittee regret that more do not avail themselves of the opportunity of studying the valuable works which it contains, and they beg to remind Members that Books may be obtained from Mr Gwatkin, the Honorary Librarian, at any time and taken home.

The thanks of the Society are due to those gentlemen who have read papers, and also to those who have exhibited microscopes and specimens; and your Committee earnestly request the Members to give their assistance to the Society by reading papers and exhibiting objects of interest.

The following are the subjects which have been introduced:—

1868.

Sept. 10.—A Microscopical Meeting, at which Mr. Seymour Burrows exhibited crystals of acetate of copper, manganese, &c.; the Rev. J. Cross, squirrel flea and other entomological preparations; Mr. Whateley, sting of wasp, proboscis of humming-bird moth, tongues of blow and common fly, and anchors of synapta; Mr. Gwatkin, crystals of native silver and gold and arseniate of copper; Dr. Hallifax, sections of oak, showing the mycelium of the fungus *Helotium ærugineum*; Mr. Dennant, feathers of humming-bird, eyes of drone-fly, and head of crane-fly; Mr. Hennah, leaf of *Begonia Sandersii*, showing peculiar groupings of stomata;

Mr. Wonfor, harvest-bug and eggs, Trombidium, eggs of insects, and a new Ceylon hemipterous insect, at present unnamed\*; Mr. Cooper, sections of wood and seeds of plants.

Oct. 8.—On “Sea-Weeds,” by Mr. Wonfor.—The chief reason for introducing the subject was to try and induce some members of the Society to take up a branch of study often neglected by residents at the sea-side. At Brighton might be collected over 180 varieties of plants, which for a long time lay under the ban as being noxious and useless; while, perhaps, no class of plants affords more products than sea-weeds. Thus food, fuel, medicine, and many substances employed in the arts were obtained from them. Among other examples might be mentioned Irish moss, abundant on our shores; laver, esteemed a delicious sauce; kelp, a substance formerly used in glass making; iodine, so valuable as a medical agent, as well as serviceable to the photographer; a gum almost equal to gum Arabic; mannite, &c. The Chinese make jellies, sweetmeats, and glue from some kinds; and there is little doubt that many sea-weeds, not yet utilized, might be made to produce nutritious food. The structure and growth were next described, as well as the modes of reproduction, while it was pointed out that many sea-weeds appeared to be most luxuriant during the winter months. A collection of dried sea-weeds and microscopic preparations were exhibited to illustrate the paper.

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\* Since named *Tingis Hystricellus*,

Nov. 12.—“An Evening for Specimens.”—Mr. Hennah exhibited plates to illustrate, and explained the processes by which the Nature printing is produced.—The Rev. J. Walter exhibited a collection of African ferns, made by the Bishop of Sierra Leone.—Mr. Wonfor exhibited a specimen of the white-tailed eagle (*Haliaetus albicella*), shot at Firle, near Lewes, the seat of Viscount Gage, on the 8th; fruit of the Trinidad cucumber (*Luffa fatida*) or sponge gourd; and the scarce angle-shade moth (*Trigonophra Empyræa*), which had been abundant during the autumn. A few years since, this moth was considered so rare and local, that fabulous sums were given for it; whereas, now, specimens were obtainable at a merely nominal price. In 1858, near Lewes, as many as forty lanterns were counted one night at the spot where it was supposed to be local.—Mr. Penley exhibited a collection of New Zealand ferns and sea-weeds.—Mr. Glaisyer exhibited ambergris, containing beaks of the cuttle-fish; a *phasma*, taken near Hurst; and a collection of Abyssinian plants, among which was the vermifuge the *Kossoo*.

Dec. 10.—“On the Maigre” (*Sciæna Aquila*, Cuvier), by Mr. Peek.—The subject of the memoir was washed ashore at Brighton on the morning of the 22nd November, secured by some boatmen, and sold to Mr. Peek, who supposed that at the time of capture it was partially paralysed by the cold, while in pursuit of pilchards. The *Sciæna aquila* is common in the Mediterranean, and occasionally visits our shores. They have been

taken as far north as Sweden; but only three cases are on record of their capture off our coasts. They are held in great repute for their flesh, which is fine-flavoured; the head and shoulders were anciently considered the finest parts, and presented by Roman fishermen to the Chief Magistrate as a tribute. The "ear-stones," which are of large size, were said to prevent and cure colic, and for that purpose were worn in a gold setting as lockets. It has been observed that, when swimming in shoals, they make a kind of grunting or purring noise. In form they resemble the bass, but are more bulky: the head rather short, body moderately compressed, becoming more slender towards the tail. They are of great strength, and, when captured, wield the tail with such rapidity and force as to fell a man with a blow. The specimen taken at Brighton was five feet long, and weighed nearly 70lbs. The flesh was firm, the stomach empty, but the liver weighed only 4oz. The colours were scarcely so brilliant as in those described as frequenting the Mediterranean. The scales were large, some being nearly an inch in length, and similar in their characteristics to those of the white bass. The flesh, by all who tasted it, was pronounced excellent. A photograph of the fish was exhibited, and scales distributed amongst the members present.

1869.

*Jan. 14.*—On "Flint," by Mr. W. Wonfor.—After describing the position of flint in the chalk, as arranged in regular layers, Mr. Wonfor pointed out the fact that, in every case, flints

contained either some organism, or had been formed on some organic substances, such as sponge, coral, wood, shell, &c. Occasionally they were found hollow; in such cases, the organic substance had decomposed, and its place had become partially occupied by agate, chalcedony, or crystalized quartz. The microscopic examination of thin sections, or chippings of flints, revealed the presence of foraminifera, sponge spicules, *xanthidia* (believed by some to be Sporangia of Desmidiæ), and other minute forms of organic life. Several theories have been promulgated respecting the way in which flint was formed: some leaning to the opinion that soluble silicates infiltrated or deposited themselves on organisms; while others considered that silex was simply held in solution, and then deposited. Analogues of flint formation were seen in the Beekites of the Torbay conglomerate, the so-called potato-stones of Bristol, &c. That silica could be held in solution was proved by the Geysers of Iceland and the waters of the Danube; while the fluid glass of the chemist showed the readiness with which silex combined with an alkali, and became soluble. Some thought that, at the bottom of the Atlantic Ocean, flint was being formed at the present time. Animals and plants possessed the power of taking up silex, as seen in the spicules of sponges, the lovely *Hyalonema* and *Euplectella*, the cuticles of many plants, the Diatomaceæ, &c. The application of flint to economic purposes in the past and present was also pointed out, while the paper was illustrated by a large collection of flints, contributed by the President, Mr. Glaisyer, and Messrs. Wonfor, Peto, and Scott.

*Feb.* 11.—A discussion on Mr. Wónfor's paper on "Flint." After which, a number of objects, illustrative of the various ways in which silex presents itself in nature, was exhibited, under microscopes, by the following gentlemen:—Mr. R. Smith exhibited thin sections of flints, containing *xanthidia*, corals, sponge spicules and dendritic oxides (commonly called *moss agates*), and *chert*, containing *Pixidularia* and other organisms.—Mr. J. Dennant showed a mass of silex found among the ashes of a wheat-stack destroyed by fire, and silicious cuticles of wheat, Indian corn, and equisetum.—Mr. R. Glaisyer exhibited polycistina, from Barbadoes deposit; stellate hairs of *Deutzia scabra* and *D. gracilis*, on young leaves, in which the hairs were packed close together; disintegrated glass, showing markings similar to those on some diatoms; and sections of silicified coniferous wood.—Mr. Hennah showed sections of flint containing a sponge siphonia pyriformis and seed vessels; sections of quartz, through the optic axis, by which the coloured rings were shown; and artificial diatoms, obtained from a gaseous condition of silex by the process described by Max Schultze, in which markings similar to those on real diatoms were seen. These objects were exhibited under one of R. and J. Beck's new large microscopes, with concentric rotating stage, and iris diaphragm, which was kindly lent by Mr. J. Beck for the occasion. There was an especial interest attached to the iris diaphragm, as it was the invention of Mr. J. Brown, a member of the Society.—Mr. T. Cooper exhibited recent and fossil sponge spi-

cules and gemmules.—Mr. Wonfor showed foraminiferæ in flint; foraminiferæ and portions of corals found in a hollow flint nodule; and Möller's diatom type slide, very kindly lent for the occasion by Mr. T. Curteis, of Holborn, and which was pronounced a marvellous example of human ingenuity, arrangement, and clean preparation.

*March 11.*—On “Microscopic Fungi,” by Dr. Hallifax.—After remarking on the difficulty of presenting the subject in such a manner as to convey new information, Dr. Hallifax pointed out there were many peculiarities belonging to fungi which scarcely presented a favourable aspect. Thus, many were of an evanescent nature, others were offensive either by their appearance or odour, while the poisonous qualities of some were calculated to produce aversion or disgust; yet there were many points which entitled them to consideration and earnest study, though they were not generally taken up by botanists. In the first place, they were no unimportant group, but occupied a very wide range. Since the microscope had become a more perfect instrument, the number of species had been increased from about 400 to 4,000, and still many were unknown, as many regions remained unexplored. They existed under all circumstances, presenting great variety of form, colour, structure, and character. Another consideration entitled them to the serious attention of the botanist, viz., their destructive ravages among the crops on which man and animals depend, destroying, as was well known, wheat,

potatoes, hops, vines, silkworms, &c. To the scientific botanist they offered an illustration of the unity which pervaded all organised forms of life. Thus, though so diverse in their character, their elemental tissue was the same. While among flowering plants the simple leaf was differentiated into bracts, calyx, corolla, &c., so, too, fungi were resolvable into delicate threads, called *mycelia*, sometimes filamentous, at others felted and consolidated into a leathery substance. Another inducement for their study was the fact that many problems respecting their form, propagation, and influence in diseases were unsolved: and thus they opened to the microscopical student a road to fame and reputation. Fungi had been defined as hystero-phytal, or epiphytal mycetsals, deriving nourishment by means of a mycelium from the matrix on which they grow, and never producing from their component threads green bodies resembling chlorophyl. Some might object that the terms were dry and uninviting: yet they gave an idea of their true characters. Thus the hystero-phytal grew on dead or dying matter, while the epiphytal were true parasites, growing on and at the expense of living matter. Two grand divisions, of a perfectly natural character, had been devised, viz.: the *Sporiferi*, or those producing bare or naked spores; and *Sporidiferi*, in which the sporidia were contained in sacks, called *asci*. These, again, were subdivided into six great orders, four of which belonged to the sporiferi and two to the sporidiferi: *Hyphomycetes*—thread or filament fungi—in which a thread-like filament was the predominating fea-

ture; *Conionycetes*—dust fungi—where, as in the smut of wheat, dust was a leading point; *Gasteromycetes*—so called from being contained in a pouch or uterus; *Hymenomycetes*—membrane fungi—in which the threads were condensed into a membrane, as seen in mushrooms; *Ascomycetes*—sack-bearing fungi—because the sporidia were contained in cylindrical or sausage-shaped sacks; and *Physomycetes*—bladder fungi. Attention was then directed to several forms of fungi, whose ravages had been productive of considerable injury, such as that which, since the year 1845, has almost yearly been so destructive to our potato crops, and in connection with which, though much had been done, much more still remained unsettled. Another, attacking our cereals, presented great difficulties, known as it was under the names of smut, bunt, mildew, &c. Each being distinct in appearance, specific names were given to each, until it was proved they were different stages of the same fungus. Other forms were described, and the paper illustrated by microscopic preparations, among which were *Peronospora infestans*, on potato-leaf; *Cladosporium herbarum*, on stone-crop; *Stilbum aurantiacum*, on stem of sage; *Aspergillus glaucus*, on thyme leaves; section of mushroom, and *Peziza aeruginosa*, in oak, and exhibiting the germination of the spores.

April 8.—“An Evening for Specimens.”—Mr. Sewell exhibited a young saw-fish and the saw of an adult, from the Coromandel coast, where they are very numerous. In their habits they are

said to be very courageous, attacking whales and fighting with sharks, black-fish, &c. Their food consists of mullets, and other small fish. The saw, or, as sailors call it, the sword, is a prolongation of the upper jaw, and is armed on each side by serrations of teeth; a parrot-fish, from the same coast, so named from the mouth and teeth presenting a fancied resemblance to the beak of a parrot; the body, which is well protected by spiny scales, is said, during life, to be very resplendent in colour.—Mr. Whately exhibited a curious piece of landscape marble, having the appearance of a city—with towers, houses, and steeples—brought from Florence many years ago by Mr. Anderson, travelling tutor to the celebrated Wortley Montagu.—Mr. Geere showed some well-preserved Roman coins, obtained a few years since near Pulborough, Sussex, by a man in cleaning a dipping-hole. From the circumstance of their being found in large numbers (nearly a barrow-load), and being near a Roman Station, it was considered, at the time, they formed part of a military chest.—Mr. Wonfor exhibited a curious variety of the common jay, in which the three central feathers on each wing were white. This bird was shot at Oving, near Chichester, on March 14th; moths of this year, among others an Emperor (*Saturnia pavonia-minor*) which had emerged on the 17th February; and a hemipterous insect (*Tingis hystricellus*), new to science, from Ceylon, where it was found, on the under side of the leaves of the Bringall plant, by Mr. Staniforth Green, and forwarded by him to Mr. Curties, of Hclborn. Under the micro-

scope it presents the appearance of an insect porcupine: the clytra, head, and thorax being covered by a complete armature of spines, each of which is terminated by a projecting seta. This insect was afterwards shown under Beck and Beck's popular microscope, provided with their new glass stage, which affords a very delicate and smooth motion.—The President laid on the table a number of geological specimens, but there was not time to describe them.

*May* 13.—“A Microscopical Meeting.”—Mr. Wonfor read notes, by Mr. T. B. Horne, on a series of Anthozoa and Polyzoa, collected during the preceding two months by that gentleman and a daughter of the President, at the Isle of Wight. These were afterwards exhibited by the President, Mr. Glaisyer, the most noticeable being *Sertularia operculata* (from the resemblance of the vesicles in this species to the urns of some mosses, botanists were at one time led to claim them for the vegetable kingdom); *Plumularia cristata*, *Notamia bursaria*, and *Bugula calathea*, with bird's-head processes.—The Rev. J. Cross exhibited an interesting series of sections of forest and tropical trees, entomological preparations, and diatoms.—Mr. Gorringer showed foraminifera, Australian diatoms, butterflies' wings, feathers, and hairs.—Mr. T. Cooper exhibited sections of cedar wood, textile fibres, and human hair.—Mr. Simonds exhibited antheridia and zoospores of sea-weed, *fucus serratus*, jungermania, sphagnum, polystomella from Shoreham Harbour, spicules of Gorgonia, and palates of mollusca.—Mr. Peto showed, under polarized

light, sections of rocks of igneous origin, among which were granite, serpentine, jasper, pitchstone (a very peculiar crystallization), quartz, lava from Mount Hecla: the two last containing fluid cavities and a very fine crystallization of agate, called, from its arrangement and gorgeous play of colours, ribbon agate.—Mr. R. Glaisyer showed ova of the toad, a curious fungus, one of the Physo-mycetals, found inside a lump of Turkey opium, various seeds, and live recently-hatched larvæ of the poplar hawk-moth. These last were shown under a very cheap, but remarkably good, four-inch objective, by Norman, of the City-road, London.—Mr. Wonfor exhibited various salts crystallized at high temperatures, in which either radiating or spiral forms were seen: the most remarkable being aniline, hippuric acid, phloridzine, santonine, and sulphate of copper. In the copper the spirals were as true as if mathematically ruled; plumules and battledore scales from the males of various families of butterflies, in which they are characteristic of sex, *i.e.*, only found on the males. These were illustrative of two papers on “Certain Butterfly Scales characteristic of Sex,” published in the *Quarterly Journal of Microscopical Science*. Also drawings and engravings of the same, and the insect porcupine (*Tingis hystricellus*), which attracted attention at the preceding Meeting of the Society.

June 10.—“A Narrative of a Recent Visit to the Volcano in Barren Land, near the Andaman Islands,” by Mr. J. Robertson.—This had been communicated to him by a physician, a native of Brighton, stationed in the Andaman Islands, and

who had recently, under favourable circumstances, visited the Volcano. Barren Island, which is only a mile in diameter, rises abruptly from the sea, which is so deep around it that anchorage is impossible. The island can only be approached when the wind is from the N.E. Near the shore the water is quite warm, from a spring, which at low-water is so hot as to render an approach to it dangerous. On landing, they entered a valley about half a mile long, down which the lava had flowed to the sea. This lava, which had a black coke-like appearance, and varied in size from that of a Dutch cheese to some twenty times that size, was lying on a bed of cinders. Walking along the edge of the lava they came to the crater, from which smoke was issuing. The original rock seemed to have been riven asunder and to have left a circular amphitheatre, half a mile across and 700 feet high. The lava and cinders poured out had formed a symmetrical cone, with a slope of an angle  $45^{\circ}$ , and 1,000 feet above the sea level. At first an ascent seemed impossible, owing to the slippery nature of the large stones which lay upon a substratum of cinders. It was only by climbing on hands and knees that any progress was made. When they reached the ravines worn by the rains, the ascent became better and firmer. They next reached a portion, white with burnt sulphur, which was full of holes, and seemed to shake under their feet. Here sulphurous vapour was rising, and the impression made on the mind was that the crust would give way and they should fall into the furnace beneath them. This state of things continued until six out of a party of

eight reached the top of the crater, an oblong, 20ft. across, 50ft. long, and 30ft. deep. One end of the crater was formed of solid shining lava; the other of rubbish. The edge was so narrow that they could only stand by placing one foot on the side of the slope. The north end, though not smoking, was quite hot, and had cracks and fissures in it a foot wide. They were not able to pass round to the east side of the crater which was smoking. The sides of the interior of the crater were covered with pure sulphur, which had been deposited from the vapour, and which could easily be detached in silvery white cakes. After spending some time on the summit and getting views of the adjacent islands, they commenced their descent, which was both difficult and dangerous.

*July 8.*—On “The Annual Excursion,” by Mr. Wotton.—The district visited on the occasion of the 15th annual excursion was Rotherfield and Crowborough, returning to Uckfield to dinner. The objects seen and obtained, the points of interest visited, and the chief incidents of the day were duly described. Incidentally, it was urged that the Society should take steps, in conjunction with the Town Authorities, to invite the British Association to Brighton; and a tabulated list of the various Societies in and about Brighton; the points of interest to the geologist, naturalist, archæologist, &c.; the various collections in the town and county; the magnificent accommodation for meetings and visitors; the proximity to London; the Railway facilities, and many other induce-

ments, were laid before the meeting. It was resolved that the Hon. Secretaries be instructed to communicate with the Town Authorities, and find out in what way their co-operation would be most effective to induce the British Association to visit Brighton.—Mr. J. Robertson then read a paper on “Professor Owen’s General Conclusions,” in which his views respecting species and the origin of life were criticised. Owen had lived so long among dead animals that, if it were possible to describe life by them, no man was better qualified. He had been taught by renowned teachers, had been stimulated by rivals, and urged on by the applause of the public, and yet, while he complained of being misrepresented and misconceived, he had less reason of complaint against others than against himself. As a pupil of Cuvier, he ought to have known Cuvier’s views, and yet he misrepresented him as saying that species were mutable: the very opposite of his published opinions. In his third and concluding volume on the Vertebrates, he asserts that species were mutable prior to the *pleistocene*, and since that period all those co-existent with *homo* were mutable or immutable only as he was. At other times, he speaks of species being predestined for man, and of an innate tendency to change, and yet scoffs at Darwin and his theory. His ideas respecting the origin of life were equally contradictory and unsatisfactory. While he described what was under his dissecting knife he was trustworthy, but when he theorized he was not to be followed.

August 12.—On “Certain Facts in the Life-History of Moths and Butterflies,” by Mr. T. W. Wonfor. In rearing *Lepidoptera*, for the purpose of determining the possession of a distinctive scale by the males, several facts, some well known, others opposed to generally-received opinions, and others of a novel character had forced themselves on his notice. As was well known, the *Lepidoptera*, in passing from the egg to the mature state, underwent the several changes of *larva*, *pupa*, and *imago*. In two, and in some cases in only one of them, did the insect partake of food. For while all were voracious in the larval state, and while many possessed a proboscis of great length, other species did not possess any suctorial apparatus, and, therefore, could not take food. The parent, as a rule, laid the eggs on or near the food-substance of the larvæ, the gradual development of which, in many transparent eggs, can be watched under the microscope. While the changes are taking place, the colour of the egg also changes. As soon as the larva is ready to escape, it eats its way out very seldom at the apex or *macropyle*, where some writers assert it always escapes, but generally below and at one side. The eggs of many are very beautiful objects for the microscope. The larvæ of various,—and some of peculiar forms and habits, spend their time in eating and changing their skins. In fact, the chief aim of their existence at this stage is storing up vitality to enable them to undergo their further changes; for, when supplied with insufficient food or alternately starved and fed, the imago stage is either not reached or a

mutilated or deformed insect results. When the time arrives for the change to the pupa state, some construct elaborate cocoons, others suspend themselves from twigs, &c., others burrow, all casting the last larval coat when they become chrysalides. Just before the final change, the colour of the chrysalis alters, and through the pupa case the several parts of the future insect may be made out. At last the pupa case bursts, and the *fully*-fledged insect emerges, with wings of minute size; these expand as air and fluid are forced through them. The scales at the time of emerging are all of full size. This is an important fact, for some assert that the scales expand together with the wing membranè itself, the air breathed in, entering between the laminæ of each scale; others maintain that the scales are few in number and small in newly-developed insects, but larger and more numerous as the insect advances in age. Both these theories are contrary to fact. If either that portion of the pupa case which covers the wings be removed a few days before the insect emerges, or a wing of a newly-emerged insect be taken, it will be seen that the scales are *all of full size*, but closely packed together longitudinally and laterally. As the wing membrane expands, they are drawn wider and further apart, until they present the appearance seen in a fully-expanded wing. Experiments made with the puss moth and females of the oak egg-moth,—to determine, in the first case, by what means the insect dissolved its hard cocoon; and, in the second, to find out how the males were attracted,—were next described. Several cases of *partheno-*

*genesis*, in which none of the larvæ reached the third moult, and examples of a second copulation were next mentioned. The females possessed a greater vitality than males, and made *in articulo mortis* efforts to lay their eggs, which, in some cases, were extruded for days after death. While such varied colours were seen in lepidoptera, the scales themselves, when viewed by transmitted light, were either colourless or of a dull yellowish tint. As regarded a distinctive scale on the males, there was not a doubt that in many families the males possessed scales of a peculiar type, known as the "battledore" or "tasselled" scale. Further researches might reveal other types. It could be very safely laid down that no female possessed a battledore or tasselled scale; hence, whenever found, they were indicative of sex. Several other points were advanced, and the life-history of different moths and butterflies described; and the paper illustrated by a collection of insects in their several stages, and by microscopical preparations.—It was resolved that a letter of invitation from the Society to the British Association, requesting the honour of a visit to Brighton, be forwarded through Mr. Mayall, who had consented to represent the Society at Exeter.

The Field Excursions were this year commenced in the month of May, and, though not very numerously attended, have been so far successful that your Committee recommend their continuance during the

Autumn of this and the Summer of next year. The dates and places visited since the last report have been—

<i>Sept. 6th,</i> 1868.	Shoreham and Lancing.
<i>Oct. 3rd.</i>	Lewes.
<i>May 8th,</i> 1869.	Hassock's Gate.
<i>June 5th.</i>	Balcombe.
<i>July 3rd.</i>	Bramber.
<i>August 7th.</i>	Balcombe and Tilgate Forest.
<i>Sept. 3rd.</i>	Findon, by invitation from H. Willett, Esq.

In concluding their Report, your Committee beg to request the Members to enleavour to promote the prosperity of the Society, not only by bringing its merits to the notice of their friends and by contributing copies of Works on Natural History, but also by reading papers during the ensuing year.

The Annual Excursion took place on the 1st of July to Rotherfield and Crowborough: after which the Members and their friends dined at Uckfield. The locality proved very interesting, and the day was spent very satisfactorily.

Contributions to the Society's Album of Photographs, or Drawings of objects of Natural History, are also solicited by your Committee.

# Treasurer's Account

FOR THE YEAR ENDING SEPT. 1ST, 1869.

	£	s.	d.		£	s.	d.
<i>Cr.</i>				<i>Dr.</i>			
By one year's Subscription to the Ray Society.....	1	1	0	To Balance from 1867-8.....	0	8	6
" One year's Subscription to the Palæontographical Society .....	1	1	0	" Subscriptions in arrear on 1st September, 1868, since received .....	3	0	0
" Fire Insurance on Books to 29th September, 1869 .....	0	16	0	" Subscriptions due on 1st September, 1868, since received .....	43	10	0
" Printing .....	7	18	0	" Entrance Fees .....	6	10	0
" Stationery and Bookbinding .....	2	16	0	" Share of Profit of Insurance, allowed by Norwich Union Office .....	0	2	2
" Salary to Assistant Secretary .....	1	10	0				
" Tea and Coffee .....	4	1	8				
" Commission on Subscriptions received by Collector .....	1	4	6				
" Messenger for delivering Notices .....	1	19	0				
" New Books and Periodicals .....	29	5	9				
" Postage Stamps, Lamp Oil, and Sundries .....	0	16	5				
Balance .....	1	1	4				
	£53 10 8				£53 10 8		

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