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Contributors

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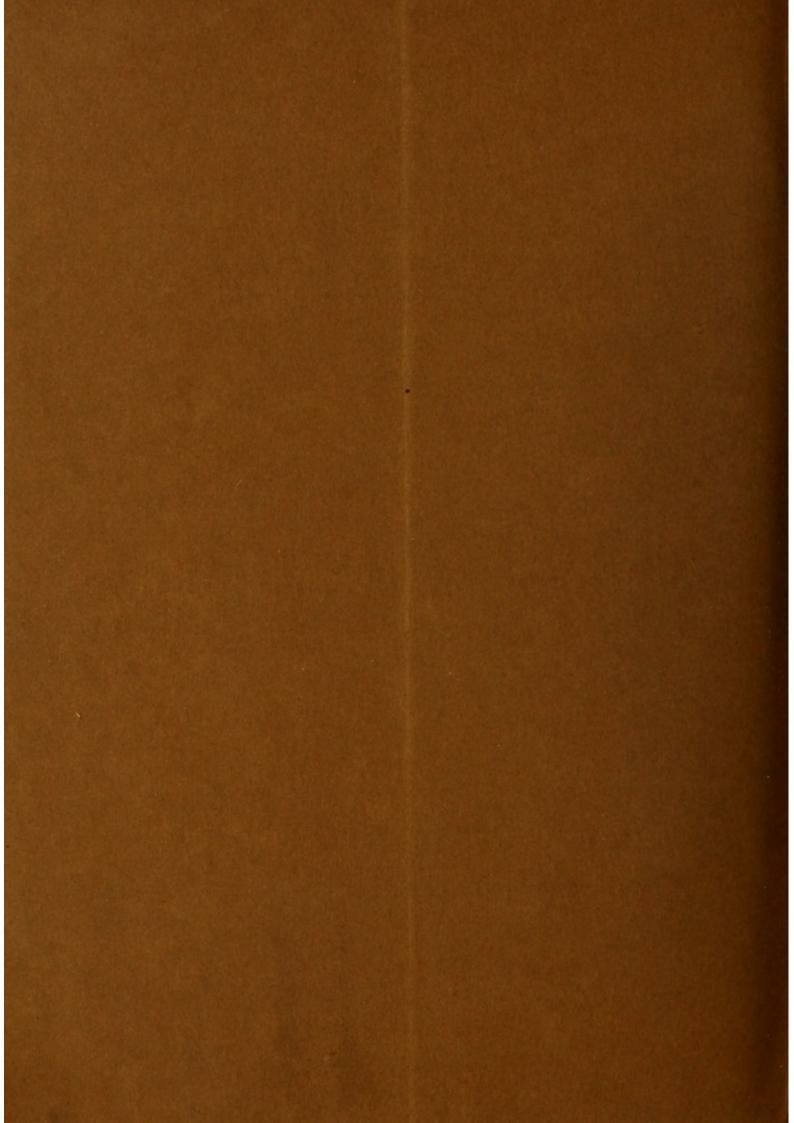
THE LISTER INSTITUTE OF . PREVENTIVE MEDICINE.

Report of the Governing Body, 1912.



CHELSEA GARDENS,

LONDON, S.W.



THE LISTER INSTITUTE OF MEDICINE.

Report of the Governing Body, 1912.



CHELSEA GARDENS, LONDON, S.W.

The Lister Institute of Preventive Medicine,

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W., and ELSTREE, HERTS.

THE GOVERNING BODY.

THE RIGHT HON. SIR HENRY E. ROSCOE, P.C., D.C.L., F.R.S., Chairman.
THE VISCOUNT IVEAGH, K.P., G.C.V.O., F.R.S.
SIR JOHN ROSE BRADFORD, K.C.M.G., M.D., F.R.S.
J. LUARD PATTISSON, C.B., Hon. Treasurer.
SIR WILLIAM OSLER, BART., M.D., F.R.S.
PROFESSOR ERNEST H. STARLING, M.D., F.R.S.
LIEUT. COLONEL SIR WILLIAM B. LEISHMANN, M.B., F.R.S.

THE COUNCIL.

THE COUNC	
MEMBERS SIR WILLIAM WATSON CHEYNE, BART., C.B., F.R.S.	REPRESENTING THE Royal Society.
PROFESSOR A. C. O'SULLIVAN, M.B	Royal Irish Academy.
RICKMAN J. GODLEE, M.B. (PRESIDENT)	Royal College of Surgeons, England.
SIR THOMAS BARLOW, BART, K.C.V.O. (PRESIDENT)	Royal College of Physicians, London.
F. W. Andrewes, M.A., M.D	Royal College of Physicians, London.
PROFESSOR A. E. METTAM, B.Sc. (PRESIDENT)	Royal College of Veterinary Surgeons.
THE EARL OF FEVERSHAM	Royal Agricultural Society.
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PROFESSOR JAMES LITTLE, M.D	University of Dublin.
SIR JOHN FLETCHER MOULTON, P.C., F.R.S	University of London.
SIR HENRY E. ROSCOE, P.C., F.R.S	Victoria University.
Frank Pownall, Esq	Worshipful Company of Grocers.
Bainbridge Browning, Esq	Worshipful Company of Grocers.
DAWSON WILLIAMS, M.D	British Medical Association.
COLONEL G. W. ADDISON, R.E	Members of the Institute.
SIR JOHN ROSE BRADFORD, K.C.M.G., M.D., F.R.S.	,, ,,
SIR ARTHUR BRANFOOT, K.C.I.E	"
HORACE T. BROWN, F.R.S	,,
Professor George Dean, M.B	,, ,,
ARTHUR HARDEN, Ph.D., F.R.S	"
SIR VICTOR HORSLEY, F.R.C.S., F.R.S	
Warning Hamman FDCVC	"
Con Province Day Lawrence VOD DDC	" "
I C C I DOWN M D D Co	" "
	" "
CHARLES J. MARTIN, M.B., D.Sc., F.R.S	" "
H. DE REIMER MORGAN, M.R.C.S	"
J. LUARD PATTISSON, C.B	"
SAMUEL G. SHATTOCK, F.R.C.S	" "
Professor W. J. Simpson, C.M.G., M.D	n n

J. SIDNEY TURNER, M.R.C.S.

THE STAFF.

Director:

*C. J. MARTIN, M.B., D.Sc., F.R.S.

Department of Bacteriology:

*J. C. G. LEDINGHAM, M.A., M.B., D.Sc., Bacteriologist-in-Chief at Chelsea.

*G. F. PETRIE, M.D.,

Assistant Bacteriologist.

*J. HENDERSON SMITH, M.B., CH.B.,

J. A. ARKWRIGHT, M.A., M.D., B.Sc.

H. R. DEAN, M.A., M.D., CH.B., M.R.C.P.,

G. H. K. MACALISTER, M.A., M.D., D.P.H.

E. E. ATKIN, M.B., B.A.

W. RAY, M.B., B.Sc.

Department of Bio-Chemistry:

*A. HARDEN, D.Sc., Ph.D., F.R.S., Chemist-in-Chief.

*H. MACLEAN, M.D., CH.B., Assistant.

W. J. Young, D.Sc.,

Department of Protozoology:

*E. A. MINCHIN, M.A., F.R.S., Professor of Protozoology in the University of London.

H. M. WOODCOCK, D.Sc., Assistant.

MURIEL ROBERTSON, M.A.,

Department of Statistics:

G. UDNY YULE, Honorary Consulting Statistician to the Institute.

*M. GREENWOOD, JUNE., M.R.C.S., L.R.C.P., Statistician to the Institute.

J. W. BROWN, Assistant.

Antitoxin Department:

A. T. MACCONKEY, M.B., B.C., D.P.H., Bacteriologist in charge of Serum Laboratories.

Vaccine Department:

Alan B. Green, M.A., M.D., B.C., Bacteriologist in charge of Calf Vaccine Laboratories.

Director's Laboratory:

THE DIRECTOR.

HARRIETTE CHICK, D.Sc.,

Assistant.

SYDNEY ROWLAND, M.A., M.R.C.S.,

Entomological Department:

A. W. BACOT, F.E.S., Entomologist to the Institute.

Librarian:

FLORENCE WILSON.

Chief Clerk:

Artist:

A. L. WHITE.

MABEL RHODES.

Assistant Secretary and Accountant:

GEORGE COOPER.

^{*} A recognised Teacher of the University of London.

ANNUAL GENERAL MEETING

. OF .

The Lister Institute of Preventive Medicine,

May 8th, 1912.

REPORT OF THE GOVERNING BODY.

In presenting the 18th Annual Report, the first duty of the Governing Body is to refer to the great loss the Institute has to deplore in the death of Lord Lister.

They need not enlarge on the far-reaching effect of his work and discoveries, as these have met with a world-wide acknowledgment culminating in the impressive funeral service at Westminster Abbey, when representatives not only of Science and Medicine, but of all that stands for the progress of civilisation met from many countries to present their last homage to his memory. They desire rather to record their appreciation of the debt which the Institute owes to him in its foundation, its aims, its guidance and, not least, in the example of his unselfishness and of the imagination, patience and accuracy which characterised his researches.

Joining with others quick to appreciate the importance of the work of Pasteur and Koch, Lister helped to establish this Institute in the firm confidence that it would aid in the great work of carrying those discoveries still further. He undertook the duties of the first Chairman of its Governing Body, holding that post from 1891 to 1903, when advancing age led him to accept the Honorary position of President of the Institute. He spared no efforts to secure adequate financial support for the establishment of the Institute on a firm foundation, and great was his satisfaction when the munificent donation of a friend to Science made that support assured.

His interest in the Institute continued to the last, and his approval of its work, founded on long experience, has been shown by the generous bequest of £20,000 to its general funds.

The Royal Society have nominated Sir William Leishmann, F.R.S., to a seat upon the Governing Body during the absence of Colonel Sir David Bruce, who has been appointed to command an expedition to Nyassaland for the further study of Sleeping Sickness in that colony. It is anticipated that Sir David Bruce will be absent from this country for two or three years. At the same time the Royal Society nominated Sir William Watson Cheyne, Bart., C.B., F.R.S., to be the representative of the Society on the General Council of the Institute.

Mr. G. Udny Yule, the distinguished Statistician, has consented to accept an honorary post on the staff of the Statistical Department, whereby his great experience will be at the service of the department.

Several changes in the Scientific Staff have also occurred. Dr. F. A. Bainbridge having been appointed Professor of Physiology in the University of Durham, has resigned his position in the Bacteriological Department of the Institute. The services of Dr. G. F. Petrie have been temporarily lent to the Government of Egypt to undertake an investigation into the epidemiology of Plague in Upper Egypt.

Dr. E. E. Atkin, formerly a Beit Scholar, and Dr. W. Ray, formerly a Rhodes Scholar, have been elected to fill the vacancies in the Bacteriological Staff caused by these appointments.

The services of Mr. Sydney Rowland are still placed at the disposal of the Advisory Committee for the Investigation of Plague in India.

The importance of Entomological Science in relation to Public Health and Preventive Medicine has led the Governing Body to appoint Mr. A. W. Bacot, a distinguished student of Insect Bionomics, as entomologist on their staff. Mr. Bacot will devote himself principally to research in connection with the medical aspect of his subject, but it is also proposed that he should give at the Institute from time to time a short course of lectures in Medical Entomology.

Mr. R. V. Norris, Mr. E. A. Cooper and Dr. Casimir Funk have during the year held the Grocers', Jenner Memorial and the Institute Scholarships respectively.

Turning to the current work of the past year, the Governing Body are glad to be able to report continued development and progress in all the activities of the Institute. Individual researches as well as special or organised investigations have both increased in number and importance. In addition to the researches which have been conducted in the various laboratories, the general scope of which may be gathered from the list of scientific papers published during the year which is appended to this report, certain organised inquiries with which the Institute has been concerned deserve mention.

By arrangement with the Local Government Board, the Institute continues to co-operate with the Medical Inspectors of the Board in the investigation of suspected typhoid carriers in this country.

The Bacteriological Department has also undertaken an investigation into the Anaerobic Flora of the Child's Intestine. The work is being carried out by Dr. H. R. Dean, and the expenses of the research are defrayed by a special grant from the Local Government Board.

During the year the Commission for the Investigation of Plague in India has continued its inquiries both in India and at the special plague laboratories of the Institute at Elstree, which were placed at the disposal of the Advisory Committee. In December this Committee issued a further volume of reports including (a) a detailed account of experimental inquiries conducted in the Institute's laboratories as to the toxic and immunising properties of the various constituents of the plague bacillus and the application of the result to the immunisation of horses with a view to the production of curative sera and to the preparation of prophylactic vaccines capable of standardisation, and (b) a minute analysis of the factors influencing the prevalence of Plague in the Punjab, carried out in the Institute's Statis ical Laboratory.

In 1911, 3,246 samples of milk were examined for the presence of Tubercle Bacilli for the London County Council, an increase of 296 over the number tested in 1910.

In addition to the General Scientific Staff and the holders of the Institute's research Scholarships, the following ladies and gentlemen have carried out researches at the Institute during the year: Mesdames Norris, Parsons and Wood; Misses Hole, Lane-Claypon, Pixell, and Smedley (Beit Scholar); Drs. Bayon (Beit Scholar), Bosanquet, Brooks (British Medical Association Scholar), Cunningham, Funk, Martinez, Nicoll (Ernest Hart Scholar, B.M.A.), Penfold, Priestley (Beit Scholar), Tarapurvalla, Tebbutt, Thomson, Valladares, Visentini; Messrs. Cooper (Beit Scholar), Cropper, Davies, Dunkerley, Harding, Hort, Kirkpatrick, Lanchester, Martin, Morgan, Norris (Beit Scholar), E. H. Ross, H. C. Ross, Wingate.

The growing demand from holders of research scholarships and other private workers for opportunities to work in the Institute's laboratories is gratifying. The Governing Body recognise that, although such hospitality, including in many instances the provision by the Institute free of cost of all facilities necessary for the investigations, involves enhanced expenditure and greater demands upon the time of the staff, it is a direction in which the general usefulness of the Institute has been increased.

The Governing Body have long felt that the expansion of the Institute's activities rendered it desirable to relieve the Director of some of the supervision of administrative and financial details, and they decided to appoint another member of the Scientific Staff to assist him in this work. Mr. M. Greenwood, Junr., has been selected to perform these duties and will, in addition to his scientific work as head of the Statistical Laboratory, act as Secretary to the Governing Body. The new arrangement is working successfully.

The progress of the Institute has also induced the Governing Body to take advantage of an offer to acquire by purchase from the Executors of the late Sir Charles Lawes-Wittewronge, Bart., the freehold and leasehold premises known as the "Studios," adjoining the Institute's building at Chelsea. Though there is no immediate necessity for adding to their laboratories, the Governing Body feel that in all probability it will not be long before they may be glad of the power of expansion which the control of these premises will afford.

At Elstree, the new Stables referred to in the last annual report are in use, giving loose box accommodation for 20 additional horses. New laboratories for the preparation of calf-lymph were commenced in 1911, and are now occupied. The buildings are of one story with lofts above affording accommodation for general storage. They include a large general laboratory, an operating room with top light, a private laboratory for the bacteriologist in charge, a small room containing a gas engine to supply power, a service room and a small photographic laboratory. Separated from the laboratory building by a few yards is a calf stable capable of accommodating 12 animals. This is warmed from the main building. The old calf stable and operating room has been converted into a quarantine stable for the calves prior to their employment for the preparation of vaccine.

Owing to the increased output of the Elstree departments the Governing Body will shortly proceed to the appointment of an Assistant Bacteriologist on the staff there.

The Governing Body also desire to mention that the Rev. C. N. R. Burrows having generously offered to the Institute his collection of acari and insect parasites, they have gratefully accepted the gift, and the specimens are now available for study in the Entomological Department.

The Balance Sheet of the Institute for the year ending December 31st, 1911, is attached and shows a satisfactory position, the excess of income over expenditure being at Elstree £4,671 5s. 4d., at Chelsea £1,861 18s. 9d. During the year £2,475 6s. 6d. has been expended on the additions to the Stabling and the new Laboratories at Elstree. The total sum of £393 13s. 5d. has been placed to the credit of the Sinking Fund in the Chelsea and Elstree accounts.

The Governing Body desire, in conclusion, to acknowledge the effective and cordial co-operation of the Director and all members of the Staff in the research work of the Institute.

HENRY E. ROSCOE.

Chairman.

Che Lister Institute

Dr.

BALANCE SHEET,

								£	s. d.	£	8.	d.
To CREDITORS										814	5	7
To LOAN from Bankers agains	t Securi	ties per (Contra							9,500	0	0
To Sinking Fund										3,366	3	2
To CAPITAL FUND-												
Including Donations, &c. re	ceived fr	om the f	ollowing-	_								
Dr. Ludwig Mond						£2,000	0 0					
The Berridge Trustees						46,379	10 1					
Tho Grocers' Company						10,000	0 0					
Lord Iveagh						250,000	0 0					
Other Donations						20,120	8 3					
Jenner Memorial Fund		***				5,768	0 11					
							_	370,890	2 1			
Add												
Balance of Chelsea Garden	s Depar	tment In	come and	Expend	diture							
Account, being excess	s of Inc	ome ove	r Expend	diture, fo	or the							
year ending 31st Dece	mber, 19	911				1,861	18 9					
Balance of Elstree Departs	ment In	come and	Expendi	iture Acc	count,							
being excess of Incom	e over E	Expenditu	are for th	e year e	nding							
31st December, 1911						4,671	5 4					
								6,533	4 1			
								Parameter.		377,423	6	2

HENRY E. ROSCOE, Chairman.

J. L. PATTISSON,

Hon. Treasurer.

£391 103 14 11

REPORT OF THE AUDITORS

We have audited the above Balance Sheet. We have obtained all the information and explanations we have required, of the Institute's affairs, according to the best of our information and the explanations given to us and as shown by the books of London, 12th April, 1912.

of Preventive Medicine.

31st DECEMBER, 1911.

Cr.

															-
D	- Cross											4	0		,
ь	y Cash— At Bankers									319	s. 1			s.	a.
	In hand										13				
										-	-	_	345	15	3
В	Y INVESTMENTS (2	t Daham	turns Otto	ale			4 500		0			
	£5,000 Great N £5,000 Lancash								ence	4,570	11	U			
	Stock				-					4,520	3	6			
	£4,900 London	and Nort	th Weste	ern Railw	ay 4 per	cent. C	onsolidat	ed Prefer	ence		9955				
	Stock			D			***			5,940	5	0			
	£5,000 Great Guarantee	Central a	nd Mid	land Kai	ilway Jo					5,123	10	3			
	£2,900 New So	uth Wale	s 31 per	cent. Sto	ck. 1918					2,897		-			
	£1,000 Cape of	Good Ho	pe 31 pe	r cent. St	tock					1,000					
	£1,500 City of	Sydney 4	per cent	. Bonds		***				1,500					
	£353 North Ea	stern Rai	Iway 4 p	er cent.	Guarante	eed Stoc	k		***	499	11	0	96.059	K	0
B	y INVESTMENTS, I	LORD IVE	AGH'S D	ONATION	(at cost)—							26,052	5	0
	£25,006 2s. 6d.	New Ze	aland Go	overnmen	t 3 per o	cent. Ins				24,117	17	6			
	£25,000 Victori									23,875		0			
	£25,000 Natal 3 £25,000 New So								***	24,484 24,937	-				
	£26,100 South									24,860					
	£25,000 Cape of	Good Ho	ope 3 per	cent. In	scribed 8	Stock, 19	933-1943			23,850					
	£25,000 Londo							ed Conve	rted	00.000					
	£25,000 Great 1	Jorthann	Dailman	2 nov oo	nt Drofo	ranga Q	took 1906			32,000 26,000					
	£25,000 Midlan	d Railway	v 24 per	cent. Pr	eferred	Convert	ed Ordina	rv Stock		20,375	-	(5)			
	£25,000 East In	idian Rai	lway 3 p	er cent. 1	New Deb	enture	Stock			25,500					
											-	_	250,000	0	0
B	£2,650 South	ENNER M	Vanzha	I Water	Ca 3 no	r cant	Dahantur	Stock '	(B"	2,756	10	0			
	£2,660 South									2,740					
	£300 11s.	Liverpool	Corpora	tion 3 pe	r cent. S	Stock	***			271					
D.	- T C.											-	5,768	0	11
D,	£3,421 3s.				ls								2,972	9	9
_	(The above I	Investment	s, at the n	narket valu	ie, 31st De	cember, 1	911, show a		ion.)						-
By	y DEBTORS		M	A Army D		- V	orma ha		***				4,427	-	5
	STOCK OF TUBE FURNITURE, FIT							***	***				426	6	0
-	As per accou								***				2,746	17	2
By	EXPENDITURE O	N INSTIT	OTE BUI	ILDING A'	r CHELS	EA-							-		
D.	As per accoun	nt, 31st D	ecember	, 1910, in	eluding p	urchase	of freeho	ld site, £6	,000				70,916	3	1
D	QUEENSBERRY Purchase of	freehold	land and	d buildin	gs and l	Expendi	ture on n	ew buildi	ngs.						
		ccount, 3								17,053	1	10			
	Add addition	is during	the year	r						2,475	6	6		-	
	Stock of Ani	imale and	Fores							603	17	0	19,528	8	4
	Stock of Ant									6,496					
	Stable Utens	ils, Farm	Implem	nents and	Sheds,	as per ac	count, 31	st Dec., 1	1903	138	1	4			
	Laboratory A	Apparatus	, as per	account	, 31st D	ecember	, 1903			466					
	Furniture, as	s per acc	ount, 31	st Decen	noer, 190	03	***			215	8	0	7,919	15	2
													£391,103	14	11
													No.		

TO THE MEMBERS.

In our opinion, such Balance Sheet is full and fair, and properly drawn up so as to exhibit a true and correct view of the state the Institute.

Che Lister Institute

Dr.	Chelsea	Gardens .	Depar	tment	.—11	NCOME	A	AND	E	XPE
121		INCO	ME.					£	s.	d.
To Interest and Dividends	s on Investments							8,713	13	0
To Investigation, Diagnosi	s and Analysis F	Pees, &c						4,808	17	0
To Sales of Tuberculin, M						£1,462 1	2			
Add Stock of T	uberculin, Malle	in, Anti-Bacter	rial Vaccine	es, &c.,	31st					
December,	1911		•••			426 6	0			
						1,888 7	2			
Deduct Stock of	Puberculin, Malle	ein, &c., 31st I	ecember, 19	010		369 19	0			
							-	1,518	8	2

£15,040 18 2

Dr. El:	stree	Depar	rtmen	t.—IN	COM	E Al	ND)	EXPE	NI	DITU
		INCOM	E.			£	s.	d.	£	s.	d.
To Sale of Antitoxins, &c						8,733	5	2			
Add Stock, 31st December, 1911						6,257	3	1			
						14,990	8	3			
Deduct Stock, 31st December, 193	10					5,459	7	0			
									9,531	1	3

Preventive Medicine.

ACCOUNT for the Year en	nding	31St	Dece	mber,	191	1.		CI
	EXI	PENDIT	URE.					£ s. d
By Rates, Taxes and Insurance		***				***	***	686 12 10
By Salaries and Wages of Staff				***	***	***		7,924 5
By Stationery, Printing, Postage and Adver	tising	***						296 18
By Office Expenses and Sundries By Travelling Expenses	***	***	***	***		***		211 15 (
By Law Charges						***	***	5 5
By Auditors' Fee		***		***				21 0
By Gas and Water								273 19
By Electric Light and Power		***						173 1
By Fuel								139 10
By Director's Laboratory Expenses, includi-	ng Gener	al Appar	atus					290 11
By Bacteriological Laboratory Expenses, in	cluding A	pparatus	3	***		***	***	404 13
By Water and Bio-chemical Laboratory Ex	penses, i	ncluding	Apparatu	18			***	301 15
By Furniture	***	***	***				•••	29 19 114 11
By Culture Media	***	***	***		***	***	***	560 18
By Animal Hausa Evnances	***	***	***		***	***		372 10
By Repairs and Alterations to Buildings and	d Appara	tus			***			232 13 10
By Library Expenses	a reppara							150 9
By General Stores								125 6 1
By Protozoological Expenses, including App								100 17
By Bad Debts								4 5
By Interest on Loan from Bankers By Sinking Fund (½% per annum on £64,9							***	422 10 324 11
Sheet)	***		***					1,861 18
						nalls		£15,040 18
UNT for the Year ending		Dece	mber,	1911.		Madde		
By Rent, Taxes and Insurance			mber,	1911.	***			£15,040 18 £ s. 124 4
By Rent, Taxes and Insurance By Salaries and Wages		PENDIT	mber,					£15,040 18
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910	EXI	PENDIT	mber,			£536	19 9	£15,040 18 £ s. 124 4
By Rent, Taxes and Insurance By Salaries and Wages	EXI	PENDIT	mber,		11.0	£536 431		£15,040 18 £ s. 124 4
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year en	EXI	PENDIT t Decem	ure ber, 1911			£536 431	 19 9 11 7	£15,040 18 £ s. 124 4
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year en	EXI	PENDIT t Decem	ure ber, 1911			£536 431	 19 9 11 7 11 4	£15,040 18 £ s. 124 4
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year en	EXI	PENDIT t December, 19	ure ber, 1911	 £70 15		£536 431	 19 9 11 7	£ s. 124 4 2,078 16
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 8 Deduct—Sales during the year ending 8 Stock, 31st December, 1911	EXI	PENDIT t December, 19	ure ber, 1911	 £70 15		£536 431 968	 19 9 11 7 11 4	£ 5,040 18 £ 5. 124 4 2,078 16
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage	EXI	PENDIT t December, 19	ure ber, 1911	£70 15 548 7		£536 431 968 619	 19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses	EXI	PENDIT t December, 19	ure ber, 1911	£70 15 548 7	 2 3	£536 431 968 619	 19 9 11 7 11 4 2 5	£15,040 18 £ s. 124 4 2,078 16
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture an	EXI	PENDIT t December, 19	omber, URE ber, 1911	£70 15 548 7	2 3	£536 431 968 619	 19 9 11 7 11 4 2 5	£15,040 18 £ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 11 27 14
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel	EXI	PENDIT t December, 19	omber, URE ber, 1911	£70 15 548 7	2 3	£536 431 968 619	 19 9 11 7 11 4 2 5	£ 15,040 18 £ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 1 27 14 180 5
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By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of	EXI	pendit t December, 19 nents Chemica	omber, URE ber, 1911	£70 15 548 7	2 3	£536 431 968 619	 19 9 11 7 11 4 2 5	£ 15,040 18 £ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 1 27 14 180 5
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of By Travelling Expenses By Farm General Stores	EXI	pendit t December, 19 nents Chemica	omber, URE ber, 1911	£70 15 548 7	2 3	£536 431 968 619	 19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 11 27 14 180 5 36 16 677 7
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of By Travelling Expenses By Farm General Stores By Farm Office Expenses and Printing	EXI	pendit t December, 19 nents Chemica	omber, URE ber, 1911	£70 15 548 7	2 3 	£536 431 968 619	 19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16 349 8 11 1,127 9 13 12 11 27 14 180 5 36 16 677 7 22 2 1
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of By Travelling Expenses By Farm General Stores By Farm Office Expenses and Printing By Repairs and Alterations	EXI	pendit t December, 19 nents Chemica	omber, URE ber, 1911	£70 15 548 7	2 3 3	£536 431 968 619	19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 11 27 14 180 5 36 16 677 7 22 2 1 47 1 29 12 76 0 5
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of By Travelling Expenses By Farm General Stores By Farm Office Expenses and Printing	EXI	pendit t December, 19 nents Chemica	omber, URE ber, 1911	£70 15 548 7	2 3 3	£536 431 968 619	19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16 349 8 1 1,127 9 1 1 27 14 180 5 6 16 677 7 22 2 1 47 1 29 12 3
By Rent, Taxes and Insurance By Salaries and Wages By Animals—Stock 31st December, 1910 Purchased during the year ending 3 Stock, 31st December, 1911 By Forage By Stables and other Expenses By Farm Expenses, including Furniture and By Gas, Water and Fuel By Postages and Telegrams By Laboratory Expenses, including Cost of By Travelling Expenses By Farm General Stores By Farm Office Expenses and Printing By Repairs and Alterations	EXI	PENDIT t December, 19 mber, 19 Chemica t of Bui	omber, URE ber, 1911	£70 15 548 7	2 3 	£536 431 968 619 	19 9 11 7 11 4 2 5	£ s. 124 4 2,078 16 349 8 1 1,127 9 13 12 11 27 14 180 5 36 16 677 7 22 2 1 47 1 29 12 76 0 5

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