Telegraphic Address "Bacteriology, London."

All letters, &c., to be addressed to the Director.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.

(With which is amalgamated the College of State Medicine.)

Chairman of Council:-SIR JOSEPH LISTER, Bart., F.R.S.

Hon.Treasurer:-SIR HENRY ROSCOE, M.P., F.R.S.

Hon. Secretary and Director: -- MARC ARMAND RUFFER, M.A., M.D.

Office hours:-11 a.m. to 3 p.m. Temporary Premises 
101. Gt. Russell Street,

L o n d o n,

W. C.

# DIRECTOR'S REPORT

During the last three months, the preparation of horses for the "antitoxic" serum has been proceeded with.

21 herses are now under treatment and all of them, three excepted, are now ready for bleeding. Their serum is of such strength that .0001cc. mixed with a quantity of toxine fatal to a guinea-pig in 24 hours will prevent the occurrence of any symptoms.

Dr.B.Hunt has now taken charge of the diphtheria cultures and the preparation of the serum, and the laboratory at the Institute's farm is now ready and in working order.

The greatest difficulty we have had to contend with was the obtaining of an absolutely aseptic serum. During the necessary manipulations it is almost impossible not to expose the serum for a short time to unfiltered air. In order to avoid all risks a special room is now being fitted up at the farm, which will be specially devoted to all the necessary manipulations.

Experiments on the concentration of the curative substanting in the serum have been in progress. Mr. Nolan and I have been able to concentrate the serum to perfect dryness without its losing any of its properties. The dried serum can then be

re-dissolved in a very small quantity of distilled and sterilised water. We are also at work on the isolation of this curative substance.

The Metropolitan Asylums Board have been using the serum in the hospitals under their control. The results have been satisfactory.

Thus Dr. Mathews (Fountain Hospital, Grove Road, Lower Tooting) writes:-

1. Cases of diphtheria admitted during October and November 1894 not treated by antitoxin -

No. of cases. Deaths. Mortality per cent. 38.

- 2. Cases treated during December-January with antitoxin:
  - (a) 61 cases clinically 10 deaths Mortality per cent. diphtheria. 16.3.
  - (b) 55 cases diphtheria 10 deaths. Mortality per cent. proved by bacteriol-ogical examination. 18.1.

With few exceptions the treatment was applied to children under 10 years of age only.

Dr. MacCombie; at the South-Eastern Hospital states that since November last, when he first began to treat Diphtheria cases by antitoxin serum, 102 cases of diphtheria have been admitted and 15 have died - calculated on admissions and deaths the mortality amounts to 14.7%. From January 1, 194, to Nov. 26, '94, his average diphtheria mortality was 25:6% It varied in different months, the highest being 38%, and the lowest Dr. MacCombie does not feel justified in ex-18.7% in August. pressing an opinion as to the value of the treatment, but he is favourably impressed with its apparently beneficial action in cases in which the treatment begins before the 4th day of ill-He also draws attention to the unpleasant effects which in his opinion occasionally accompany the use of the remedy.

Dr.Gayton, Medical Superintendent at the North-Western Hospital, has treated 43 cases of which 2 died, Mortality 4.6%. I attach little importance to these statistics as Dr.Gayton informs me that out of these 43 cases, 7 only were really severe.

Dr.Caiger, the Medical Superintendent of the S.W.Hospital, writes as follows:-

The Metropolitan Asylum District, Stockwell Fever Hospital, STOCKWELL, S.W. Jan. 25, 1895.

Gentlemen,

Owing to the facilities which you have been good enough to provide, I have been enabled to treat all severe cases of Diphtheria admitted into this Hospital with Antitoxin for the past two months.

I am pleased to be able to state my conviction that its use has been attended with most satisfactory results, results which my experience justifies me in asserting could not have been expected with previous methods of treatment.

Not only does the reduction in mortality imply the saving of a considerable number of lives, but the treatment if commenced at a sufficiently early date, is successful in warding off the necessity for tracheotomy, and thus by averting suffocation, effects a reduction of the pain and terrors of a most distressing disease; while the painlessness of the treatment, and the absence of any serious after-effects is to my mind as striking as the success of the remedy itself. Although to ensure a favourable result in grave attacks of the disease, it is of the first importance that the patient should be brought under treatment at an early date, if possible not later than the third day; in a certain number of cases the most marked benefit has followed when the inoculations have not been commenced until two or three days later.

It is my intention, when the number of serum-treated cases has become somewhat larger, to bring the results obtained at this Hospital before the Medical Profession, and I desire to express my indebtedness to the Council, and to Dr.Ruffer, from whom I have received the kindest consideration, for affording me the opportunity of using the serum at such an early date.

I am, Gentlemen,
Your obedient Servant,
(Sgd.) FRED FOORD CAIGER,
To the Council of the Medical Superintendent.
BRITISH INSTITUTE OF .
PREVENTIVE MEDICINE.

A large number of medical men have sent specimens of membrane and other specimens to be examined by the Staff of the Institute. I hope that the Council will see their way to extending this important and useful work.

Dr.Plimmer and Mr.Nolan have gone on with their investigations and Mr.Robertson has done valuable work in looking after our horses.

Mr.Lunt has continued his investigations on the bacteriology of water and sewage and has examined several samples of water sent to the laboratory for examination.

Dr.Bruce of the Western Hospital writes as follows:Dear Sir,

In reply to your letter of the 24th inst., I send you herewith (1) a table shewing results obtained in 68 cases of Diphtheria admitted to this Hospital from Nov<sup>r</sup>.26th, 1894, and Jan.25th, 1895, and treated with antitoxic serum kindly supplied by you; (2) a table shewing the Diphtheria death-rate at this Hospital during each of the last four years; (3) a table giving the Diphtheria admissions and deaths from Nov.26th, 1893, to Jan.25th, 1894, a period corresponding with that during which the cases treated with antitoxin were admitted.

It is seen that from Jan.lst. to Nov.26th, 1894, 507 cases of Diphtheria were admitted and 176 died, giving a mortality of 34.7 per cent., that from Nov.26th,1893, to Jan.25th, 1894, 58 cases were admitted and 19 died, giving a mortality of 32.75 per cent. and that from Nov.26th, 1894, to Jan. 25th in the present year, there were treated with antitoxin 68 cases, of which 10 died, giving a mortality of 14.7 per cent.

Four of these cases are, however, still in a critical state.

During this period there were also admitted 28 Diphtheria cases which were not treated with the serum.

With the exception of one which died, all these were cases of a mild or moderately severe type. Thus the total number treated from Nov.26th., 1894, to Jan.25th, 1895, was 96, with 11 deaths, a mortality of 11-4 per cent.

In all the cases which relate to this period, the clinical diagnosis was confirmed bacteriologically, but the diagnosis of the cases referred to in Tables II. & III.rested mainly on clinical evidence, bacteriological examination having been made in only a small number.

The 68 antitoxin treated cases have been classified in Table I. according to their relative severity. The severe cases, 32 in number, were those in which the toxic effects of the disease were present at the time of admission, and in which a doubtful or unfavourable prognosis was given. Of these, 7 required operative interference. Tracheotomy was performed in 3 cases, of which 2 died, one from toxoemia, and the other from asphyxia due to infraction of membrane.

Intubation was performed in 4 cases, of which one, a Haemorrhagic case, died.

I was impressed with the results obtained in the intubation cases, and especially so because of the non-success which had hitherto attended the operation at this Hospital.

Of the 7 remaining deaths, 6 were due to the toxic effects of the disease, 3 cases being of the Haemorrhagic type, and 3 suffering from cardio-gastric crises. One death was due to the combined effects of Diphtheria and General Tuberculosis.

The dose of antitoxin administered has been regulated according to the severity of the case. In a mild case the amount injected has been from 10 to 15 cc. in one or two doses. In a moderately severe case, 20 to 30 cc. in two or more doses, and in a severe case, 40 to 90 cc. in three or more doses, commencing with one of 20 to 30 cc.

In all cases the treatment was commenced immediately after admission, and was supplemented by syringing of the fauces with warm water, or some mild antiseptic. Stimulants, either Brandy or Champagne, were administered in such cases as it was deemed necessary and Digitalis and Strychnia when carriac failure threatened.

The effects of the remedy observed during the acute stage of the disease have been (1) a more rapid disappearance of membrane than in cases treated without it; (2) a rapid diminution or cessation of nasal discharge; (3) diminished restlessness;

(4) improvement in general condition; (5) in some cases a rapid subsidence of swelling of the neck and cervical glands.

The beneficial effects of the serum have been observed to occur earlier in the mild than in the severe cases. In some, a temporary rise of temperature has followed an injection.

I am at present unable to give information as to the effect of the remedy on the complications of Diphtheria, the majority of the cases being still under treatment. Where paralysis has supervened, it has with one exception been apparently confined to the palate.

Twenty cases developed a rash, in nearly all with transient pyrexia and slight malaise.

Joint pains have been noticed in 4 cases, in 2 of which a rash was present, and in all of which there was pyrexia, in one case, marked pyrexia lasting from the 10th to the 19th day after the treatment was commenced, the temperature reaching 104-6 on one occasion. The quantities injected in these cases were 15 cc, 26 cc, 40 cc, 78 cc.

No other effects have so far been observed which could not be attributed to the disease itself.

The number of cases treated with antitoxin at this Hospital is comparatively small on which to base a conclusion as to the efficacy of the remedy. The results, judged from a clinical standpoint, have, however, so far been extremely favourable, sufficiently so, I think, to justify me in expressing a very high opinion of the value of the remedy in the treatment of Diphtheria. The statistical evidence furnished herewith, points to a like conclusion.

Yours faithfully,

R. M. BRUCE.

ARMAND RUFFER, Esq., M.D.

# WESTERN HOSPITAL

## CASES OF DIPHTHERIA TREATED WITH ANTITOXIN

TABLE I.

From November 26th. 1894 to Jany 25th. 1895.

				Type	of Disease	٠. د	Compli	cations
Age	Periods	Admis- sions.	Deaths	Severe	Moderate	Mila	Rashes	Arthritis
0	- 5 yrs.	40	5	15	18	7	<b>1</b> 0	1
5	- 10 yrs.	22	5	13	7	2	6	1
10	- 15 yrs.	4	-	2	2	-	3	2
Upv	vards	2	_	2		-	1	4
TOT	ral	×68	10	32	27	9	20	4

<sup>\*</sup> Four of these cases are still in a critical condition.

# TABLE I (A).

# DAY OF DISEASE ON ADMISSION (ACCORDING TO STATEMENT OF FRIENDS)

Day of Disease	Number of admissions	Number of Deaths.
lst.Day	5	-
2nd. "	12	i
3rd. "	23	3
4th.	15	4
5th. "	9 -	-
Later	3	2
Indefinite	1	-
TGTAL	. 68	10

TABLE II.

## CASE MORTALITY FROM DIPHTHERIA AT WESTERN HOSPITAL

Year.	Admissions	Deaths	Mortality
1891	141	54	38· <i>3</i> %
1892	247	78	31.5
1893	256	94	36.7
( To ) 1894 (Nov:26th)	507	176	34.7
		*	*
Total	1,151	402	Average = 34.9

TABLE III.

# ADMISSIONS &c. from Novr. 26th 1893 to Jany. 25th, 1894.

Age Periods	Admissions	Deaths	Percentage
0 - 5 yrs.	20	12.	60
5 - 10 "	21	6	28.57
10 - 15 "	7		
& upwards	10	1	10
Total	58	19	<b>32·</b> 85

10 Cases complicated by Laryngitis: with 6 Deaths. Tracheotomy in 5 cases with one recovery. Intubation in one case, which was fatal.

## BACTERIOLOGICAL DEPARTHENT.

#### Dr. HACFADYEN'S REPORT.

During the past year (1894) there were twenty-five workers in the Laboratory.

The numbers have increased this year. An Evening Class in Bacteriology has been started, and is attended by twelve students. There are six workers during the day, and two more are about to commence. This will raise the total to twenty students. The number of those engaged in research has also increased. The investigations they are engaged upon are shortly stated, as follows:-

Mr. Barnard is investigating some points connected with the biology of Phosphorescent bacteria.

Dr. Hobson has completed the first stage of his investigation regarding the Croydon Sewage Farm, and has furnished a report upon his results.

Dr. Renner is repeating the experiments of Drs. Ruete and Enoch upon the supposed Toxin, "Vaccinni". He has isolated from Vaccine lymph the diptococcus described by those writers, Voigt and others, and will make some further experiments as to its action.

Dr. Foulerton has, in the course of experiments with the pancreatic ferment, come across some interesting points connecte with the production of bile pigments. They have led him to continue the investigation upon the artificial production of bile pigments from blood pigments.

Dr. Hewlett's services as Assistant bacteriologist have

been of great value. Dr. Hewlett is continuing the preparation of the Tetanus Antitoxin, and is assisting Dr. Macfadyen in investigating the nature of the Toxines produced by the Bacillus of Symptomatic Anthrax.

Dr. Macfadyen has, with the assistance of Dr. Hewlett, prepared Mallein and Tuberculin. These substances will be immediately tested on animals, and if the results are satisfactory, there will soon be an adequate supply for general use.

The preparation of the toxines of Erysipelas has also been undertaken. When ready these toxines will be tested in cases of sarcoma.

Dr. Macfadyen's paper on the Ringworm organism will appear in the next number of the Journal of Pathology.

Mr. Colwell has just finished his chemical analyses of various samples of Ice creams. The chemical results and the bacteriological will form the subject of an early report by him and Dr. Macfadyen.

An inquiry is being made for the County Council of Derbyshire with regard to a supposed outbreak of Hydrophobia.

about to commence work in the laboratory. Dr. Thomson, who will investigate the Bacteriology of the nose, and Dr.Russell Wells, who will investigate the bactericidal action of extracts from various organs of the body. Mr. Barnard has undertaken to give instruction in Microphotography to the students in the Laboratory.

Telegraphic Address: "Bacteriology, London"



#### BRITISH INSTITUTE OF PREVENTIVE MEDICINE

(With which is amalgamated the College of State Medicine)

Chairman of Council:-SIR JOSEPH LISTER, BART., P.R.S.

Hon: Treasurer:-SIR HENRY ROSCOE, F.R.S. Temporary Premises, 101, Gt.RUSSELL ST.,

London, W.C.

Hon.Secretary and Director: - MARC ARMAND RUFFER, M.A., M.D.

Office Hours: - 11 A.M. to 3 P.M.

DIRECTOR'S REPORT

presented to the Council

- on -

January 15th, 1896.

Gentlemen,

I beg to report that since December 12th, 1895 I have returned to my duties as Director of the Institute. The report which I herewith present to the Council has reference to the work of others and not to my own, as I have been absent from duty since June 20th, 1895.

Dr. Bullock has been in charge of the Institute's farm at Sudbury and has done the following work:

1. Diphtheria. He has continued the immunisation of the horses for the preparation of anti-diphtheritic serum. He has moreover prepared and bottled the serum and has sent out several thousand bottles. With regard to this, I may mention that the aseptic machine designed by Mr.Nolan at my suggestion, is now finished and may be seen in the west room.

It will be described in an early number of the British Medical Journal.

J wo

- 2. Tetanus. Five new horses are now being immunised against tetanus.
- 3. Streptococcus. This work has been continued and 6 horses have been immunised, two of them being now ready for bleeding. The tests have shown that 0.01° of serum injected after a rabbit has been infected intraveinously with a virulent culture of Streptococcus is sufficient to save the animal's life 0.001° prolongs the life for several days.

Two horses are now immune both against the streptococcus and diphtheria.

Dr. Bulloch will publish the results of these investigations in an early number of the British Medical Journal.

4. Dr. Bullock has also continued investigations with regard to serum-therapeutics of other diseases.

Mr.Robertson has remained in charge of the stables, horses and inoculations and has done his work with care and diligence.

Dr. Macfadyen and Dr. Hewlett have been fully occupied in teaching and in investigations.

It is satisfactory to see that the classes are increasing. During the last term 23 students attended the classes and of these 8 are now engaged in laboratory work.

A post graduate course "On the diagnosis of disease by bacteriological and chemical examination" has been arranged and will commence on February 1st.

The Council will remember that at the beginning of last year, the staff of the Institute announced that they were prepared to undertake the bacteriological examination of suspected diphtheria cases. The number of medical men who availed themselves of this opportunity was small at first but gradually increased, and about 1,500 diagnoses have been made by Dr.

Hewlett and Mr.Nolan. Se ral medical officers of health take advantage of the opportunities now offered by the Institute.

Seven diagnoses for rabies have also been undertaken, 5 of which gave positive results.

Mr.Lunt has remained in charge of the water laboratory and at his suggestion a special report is appended to this report.

Mr.Harold Nolan has finished the bottling machine designed by him. He has also concluded his work on modifications of the Hermite system and will shortly publish it. He has also been busy in isolating or at any rate concentrating the diphtheria antitoxin.

Lastly I may be allowed to offer my best thanks to Dr.Macfadyen for so kindly undertaking my duties during my enforced absence.

M.ARMAND RUFFER,

Director.

## ANNUAL GENERAL MEETING

OF THE

# British Institute of Preventive Medicine

(With which is amalgamated the College of State Medicine).

JUNE 29th, 1897.

## REPORT OF THE COUNCIL.

The Council have the honour to report that during the year the work of the Institute has continued to be successful, and is expanding.

The new building on the Chelsea Embankment is now nearly completed, and will be, in all respects, well adapted for the purposes of the Institute. The designs for the internal fittings, to which a large amount of time and attention has been devoted, are in the hands of the Architect; and there can be no doubt that the new Laboratories will be in operation early next year.

The Council regret the loss of a most valued member through the decease of Sir Spencer Wells, who represented the Royal College of Surgeons. The College has decided that for the future their President shall represent them on the Council.

Dr. Alfred Salter has been appointed Assistant Bacteriologist at Sudbury in place of Dr. St. Clair Symmers, who has been elected Professor of Bacteriology at Cairo.

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Both in research and in teaching the work of the Institute in its various departments has made considerable progress, and there has been an increased number both of original investigators and of students. The Council have decided to publish a volume of transactions recording the principal results of researches conducted in the Institute. This volume is now in the press.

The quality of the Diphtheria Serum has been greatly improved by Dr. Bulloch in the course of the last year, the therapeutic dose of 1,500 units being now contained in 3 instead of 10 cubic centimetres of fluid.

The Anti-Streptococcic Serum has been supplied to the profession in increasing quantities during the last year.

The Anti-Pneumococcic Serum prepared by Dr. Washbourn as the result of his work at Sudbury is now being supplied to medical men who wish to test it clinically.

At the suggestion of the Chairman, a Committee representing the Institute and the Conjoint Laboratories of the Colleges of Physicians and Surgeons, was appointed to inquire into the methods of testing serum. Valuable work has already been done by this Committee, which is likely soon to present a final report.

LISTER.

Chairman.

#### TREASURER'S REPORT.

I beg to report that during the year ending 31st May last the following amounts have been received by the Institute, viz.:—

Donations and Annual Subscription	ons	 	 £42	11	0
Interest on Investments	***	 • • •	 1,515	9	0
Income Tax recovered	100	 ***	 133	5	I
Profit on Sales of Investments	***	 	 1,062	6	0
Students' and other Fees	***	 •••	 625	2	0
Sales of Anti-Toxins, Mallein, and	Tuberculin	 •••	 1,268	0	4
		TOTAL	 £4,646	13	5

At 101, Great Russell Street, the total expenditure for the year charged to Income and Expenditure Account amounts to £2,126 16s. 5d., including £99 4s. 3d. written off for depreciation of Lease, Furniture and Apparatus.

At "The Poplars" Farm, Sudbury, the expenditure for the year has been £2,220 17s. 9d., and the net receipts of Anti-Toxins made there, plus the value of the stock of Serum on hand on 31st May, amount to £1,516 18s. 8d. This shows a considerable improvement over the figures of last year, both in receipts and expenditure.

The New Building is now approaching completion, and during the year £8,930 14s. od. has been expended on it. It is estimated that after it is finished and fitted up the amount of liquid assets available will be about £33,68o.

The total expenditure for the year in all Departments has been £13,330 os. 8d., of which £797 18s. 2d. was still owing on June 1st.

The Accounts have been audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statements of Accounts are correct.

HENRY E. ROSCOE.

Hon. Treasurer.

# BALANCE - SHEET,

I897.

# The British Institute

(With which is amalgamated

Registered 25th July, 1891, under the Companies Acts,

Dr.

## BALANCE SHEET,

			£	s.	d.	£	s.	d.
To Creditors						797	18	2
To Water Laboratory Fund— Amount received from the Trustees of the late I for building and endowing a Water Laborator that not more than £8,000 shall be spent up of the Water Laboratory	ry, conditi	ionally				26,352		10
	***					20,352	13	10
To Capital Fund—								
Balance as per last account, 31st May, 1896	•••		46,249	3	8			
Add—								
Balance of Income and Expenditure account								
for the year ending 31st May, 1897 (folio 3)	1,320	18 4						
Less Balance of Sudbury Farm Account for the								
year ending 31st May, 1897 (folio 4)	703	19 1						
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HENRY E. ROSCOE,

HON. TREASURER.

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# of Preventive Medicine.

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1862 to 1890, as an Association Limited by Guarantee.

31st MAY, 189	97.
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opinion it is a full and fair Balance Sheet, properly drawn up, so as to exhibit a true and correct view of the

# The British Institute of

(With which is amalgamated the

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## INCOME AND EXPENDITURE ACCOUNT

		***	INCO	ME.		411	4.0			15	
		***	107 1	400			-61-	£	s.	d.	
To Donations	*** ***				***	***		34	3	٥	
To Annual Subscrip	otions				111	•••		8	8	0	17
To Interest on Inves	stments							1,515	9	0	1
To Income Tax ded	ucted from Int	erest on	Investmen	nts refund	ded	***	•••	133	5	I	
To Profit on Sale of	Investments							1,062	6	0	
To Students and La	boratory Fees		***					388	10	0	
To Diagnosis Fees								236		0	
To Sales of Tubercu	lin and Mallein	***			0 17	• • • •	11.	51	I	8	
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£3,447 14

## Dr. SUDBURY FARM INCOME AND EXPENDITURE

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		-0.1						£	s.	d.
To Sale of Antitoxins							1	1,216	18	8
To Stock of Antitoxins,	gist May	, 1897		16.1	·			300	0	0
To Balance, being excess	of Exp	enditure	over Inco	ome dedu	icted from	Capital	Fund			
(see Balance Sh	eet, folio	1)						703	19	1

# Preventive Medicine.

College of State Medicine).

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			-				
	EXF	ENDIT	URE.				C
By Rent, Rates, and Taxes					2.5		
By Salaries, Wages, and Fees to Scientific S	entific Sta	ff		4			1,325
By Stationery, Printing, Postage, and						4	93
•				•••			45
By Office Expenses and Sundries							3
By Bank Charges					***		35
By 'Travelling Expenses	Charman	144	****	***	111	,,,	26
By Auditors' Fee and Accountants' ( By Gas and Water	Charges	***	***		3.0		73
By Balance of Cost of Lease of 101	Creat F	Znegell S		•••			15
By Expenses of Patients to Institut		Kussell S					27
By Newcastle-on-Tyne Exhibition Ex			***				13
		***	***	•••	22.0		
By Bacteriological Laboratory Expenses		***	***		7.65	•••	112
By Water Laboratory Expenses By Research Laboratory Expenses	2	***	***	***	**	• • •	22
	•••	***		***			27
By Hygiene Laboratory Expenses	***	***	***	***		•••	5-4
By Repairs of Premises	•••			***	•••		20
By Collectors' Commission		•••	The			•••	13
By Amount written off for Deprecia	ition on F	urniture	, Fittings,	and Scien	ntine Appa		84
and Dooks					•••	***	
							£2,126
By Balance, being Excess of Incor	me over	Expendi	ture trans	sferred to	Capital 1	Fund,	1,320
see Balance Sheet, folio 1							-,3
							£3,447
							-
CCOUNT for the Year	Endi	ng 31	st Ma	ıy, 189	97.		£3,447
COUNT for the Year	- 18	ng 31		ıy, 189	97.		C1
CCOUNT for the Year  By Rent, Rates, and Taxes	- 18				97· 	***	£ 178
	EX	PENDI	TURE.		97· 	•••	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals –	EX	PENDI	TURE.	***			£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18	EX	PENDI	TURE.	***		 o 6	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals –	EX	PENDI	TURE.	:::		 o 6	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18	EX	PENDI	TURE.			o 6	¢,
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18th Additions during the year  **Deduct*—Sales during the year**	EX	::: ::: :::	TURE		 101 70	o 6	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18t Additions during the year  Peduct—Sales during the year Value of Stock on 31st M	EX	::: ::: :::	TURE 28		 101 70	o 6	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18th Additions during the year  **Deduct*—Sales during the year**	EX	::: ::: :::	TURE 28		101 70 171	o 6 10 2 10 8	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18th Additions during the year  Peduct—Sales during the year Value of Stock on 31st M Balance Sheet, folio 1	EX	::: ::: :::	TURE 28		 101 70	o 6 10 2 10 8	£ 178
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Value of Stock 1st June, 18t Additions during the year  Peduct—Sales during the year Value of Stock on 31st M Balance Sheet, folio 1	EX	::: ::: :::	TURE 28		101 70 171	o 6 10 2 10 8	£ 178 773
By Rent, Rates, and Taxes By Salaries and Wages By Animals — Value of Stock 1st June, 18t Additions during the year  **Preduct**—Sales during the year Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses	EX	PENDI	TURE 28	  3 14 0	101 70 171	o 6 10 2 10 8	£ 178 773
By Rent, Rates, and Taxes By Salaries and Wages By Animals — Value of Stock 1st June, 18t Additions during the year  Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses By Farm Expenses	EX   fay, 1896	PENDI	TURE 28	3 14 0 2 16 8	 101 70 171	o 6 10 2 10 8	£ 178 773
By Rent, Rates, and Taxes By Salaries and Wages By Animals — Value of Stock 1st June, 18t Additions during the year  Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water	EX	  , carried	TURE.	3 14 0 2 16 8	101 70 171 171	o 6 to 2 to 8	£ 178 773
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By Rent, Rates, and Taxes By Salaries and Wages By Animals —  Value of Stock 1st June, 18th Additions during the year  Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to By Repairs and Alterations By Laboratory Expenses By Travelling Expenses	EX	carried	TURE 28 to 142 "The Pop	3 14 0 2 16 8	101 70 171 171 	0 6 10 2 10 8 10 8	£ 178 773 773 773 773 773 773 773 773 773 7
By Rent, Rates, and Taxes By Salaries and Wages By Animals —  Value of Stock 1st June, 18th Additions during the year  Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to By Repairs and Alterations By Laboratory Expenses By Travelling Expenses By Amount written off for Deprecience	EX	carried	TURE 28 to 142 "The Pop	3 14 0 2 16 8	101 70 171 171 	0 6 10 2 10 8 10 8	£ 178 773 522 95 578 77 66
By Rent, Rates, and Taxes By Salaries and Wages By Animals —  Value of Stock 1st June, 18th Additions during the year  Value of Stock on 31st M Balance Sheet, folio 1  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to By Repairs and Alterations By Laboratory Expenses	EX	carried	TURE 28 to 142 "The Pop	3 14 0 2 16 8	101 70 171 171 	0 6 10 2 10 8 10 8	£ 17: 77. 77. 77. 6 30 1

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AND THE STATE OF STREET

## REPORTS OF THE SCIENTIFIC STAFF.

# I: — DR. MACFADYEN'S REPORT ON THE WORK DONE AT GREAT RUSSELL STREET.

I beg to present the following report upon the year's work at Gt. Russell Street. There have been eleven research workers, viz.:—

Dr. Louis Jenner-Capsulated and Non-capsulated Organisms of the B. Coli Group.

Dr. Lack-Membranous Rhinitis.

Dr. Tew-Diphtheria in Cats.

Dr. Childs-Mycoproteins and Tissue Nucleins.

Dr. Lawson-Trachoma.

Dr. Kirton-Widal's Reaction.

Dr. Barkly-Excretion of Phosphates in Urine.

Miss Knight—Pseudo-Diphtheria Bacillus.

Mr. Barnard-Phosphorescence.

Dr. Duggan-Malaria.

Dr. St. Clair Thomson-Bacteriology of Nose and Ear.

A volume of Transactions is going through the Press, and will contain the subjoined papers :-

- "Contribution to the Study of Streptococcus Pyogenes."-Dr. Bulloch.
- "The Gonococcus."---Mr. Foulerton.
- "The Plague Bacillus."-Dr. Hewlett.
- "Pseudo-Diphtheria Bacillus."-Drs. Hewlett and Knight.
- "Sterilisation of Water by Filtration."-Mr. Lunt.
- "A Convenient Method of Preserving Water Bacteria and upon their Multiplication in Water."—Mr. Lunt.
- "A Hitherto Undescribed Phenomenon in Yeasts."-Dr. Symmers.
- "Pasteurisation of Milk."-Drs. Hewlett and Macfadyen.
- "Dust Counting."-Dr. Macfadyen and Mr. Lunt.

The following papers have been published:-

- "The Separation of Proteid and Proteid-like Bodies in Urine."-Mr. Foulerton.
- "Serum Diagnosis."-Mr. Foulerton.
- "Bacteriology of Infantile Diarrhœa,"-Dr. Macfadyen.
- "Micro-Organisms in the Healthy Nose."-Drs. Hewlett and Thomson.

Dr. Hewlett's prolonged illness has delayed the progress of his researches on the plague and other subjects. Mr. Foulerton has completed an investigation upon a new pathogenic organism isolated by him from meat. His investigations upon the preparation of a vaccine for Glanders and upon pathogenic yeasts will be resumed as soon as he recovers from his present regrettable illness.

Since last June there have been 80 workers at the Institute, i.e., 60 per cent. more than during the whole of the previous year. We have had as many workers as could comfortably be accommodated in the present premises.

The total number of Chemical, Pathological and Bacteriological Reports sent out is 1,800. The work has been undertaken at the request of Hospitals, Medical Practitioners, and Health Officers.

The demand for Tuberculin and Mallein has doubled during this year.

Four patients have been sent to the Institut Pasteur with the aid of this Institute's funds.

A number of laboratories at home and abroad were visited before the designs for the internal fittings of the Chelsea building were made. Ample provision is being made for purposes of research, and for the training of advanced students.

The general conduct of the affairs of the Institute in its present stage of evolution has compelled me to put research work on one side for the time being.

The work of the Water Laboratory is being carried on by Mr. Lunt, who has conducted the chemical and bacteriological analysis of a number of samples of water sent to the Institute for Examination. Mr. Lunt has contributed two original papers to the volume of Transactions, and has published an account of a new Potato-Bacillus (B. Mesentericus Niger).

I have to thank the members of the staff for the indispensable help they have given, and to acknowledge the aid rendered by Mr. Cooper in the business management of the Institute.

ALLAN MACFADYEN.

#### II.-DR. BULLOCH'S REPORT ON THE WORK DONE AT SUDBURY.

I beg to report that the following work has been carried out in the Serum Department of the Institute during the past year:—

Anti-Diphtheria Serum.—Much time has been spent in determining the conditions under which animals yield the most potent antitoxins, and by the use of new methods, which we have worked out, we have been able to maintain serums of a very high antitoxic value. Through the kindness of Professor Ehrlich, of Berlin, to whom we are indebted for much help and advice, we have been able to work out his method for the standardisation of diphtheria antitoxin, and the Institute has thus been able to supply the profession and the public with serum, the strength of which was accurately known. In June, 1896, the serum sent out contained 80-100 units per cubic centimetre. Towards the end of the year this was increased to 250 units. In March of the present year it was raised to 300 units, in April to 400 units, and in May the serum sent out contained 500 units per c.c., the therapeutic dose of 1,500 units being thus contained in three cubic centimetres of fluid. The serum, therefore, is more than six times as strong as at the corresponding period of last year. Altogether, over 10,000 doses have been sent from the laboratory at Sudbury.

Anti-Streptococcus Serum.—Three horses are in active use for the supply of this serum, of which over 4,000 doses have been sent out. On account of the extreme variability of the organism, and of the animals used for experimentation, we have not yet been able to define with accuracy the exact antitoxic value of the serum, as is possible in the case of diphtheria antitoxin. Clinical experience of cases in which the exact bacteriological diagnosis has been made, is, however, strongly in favour of this serum, from the use of which some remarkable results have been obtained in several of the great London hospitals.

Tetanus.—From the work done by Dr. Symmers and Mr. Nolan, on the cultivation of the bacillus of this disease, it has been possible to obtain very potent serum against Tetanus, although considerable difficulty has been experienced in obtaining a constant standard test on account of the instability of the toxin. Experiments are still in progress to get a fixed standard.

Pneumonia.—The horse which has been immunised by Dr. Washbourn has furnished serum, and it has been distributed gratis for the the treatment of cases of pneumococcic infection. The published results lead one to believe that the serum has a very beneficial effect. Dr. Washbourn has worked out a method for testing the strength of this serum.

Continued experiments by Dr. Symmers, Mr. Nolan and Mr. Cheatle on the serum of the horses which were immunised against Typhoid, Cholera, and Staphylococcic infections have shown that, although Widal's reaction occurs in all three, no specific antitoxin appears to be formed.

In addition a number of experiments have been completed on the durability of the passive immunity obtained from the inoculation of Diphtheria Antitoxin and its passage into the secretions.

I have to express my indebtedness to Dr. Symmers and to Mr. Harold Nolan for their valuable assistance throughout the entire work.

ALLEY MACLASSEE.

The gign rel conduct of the abairs of the lantitude in its present stage of evolution has compelled me to put re bare a cite on one side for the time tend and adjust the first the

with it will be to a first the total

Inc work of the Water Laboratory is being craied on by Mr. Lung who has obdected the chemical and bacteriological margin of a country of country out rater sent to the institute for Examination blant has combined two or half poors to the volume of Transactions and has published an account of a new Political Collect (I. Med attributed by).

I have togthank the members of the half for the indifferentia help they have given, rel nowledge the rid rendered by Lie Corper a the heithers methylement it the institute. In Salar Salar Salar the second

The state of the s D OUT DANK AT SUPRURY. II.—DR. BULLOCH'S REPORT OF Z D enset to report that the following with his Medicine.

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State Medicine.

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Continued ever ments by Da Springer his Moins and Mr. Chaptie on the server of the bones which were to munical against. If sphold, Chalou, on these holocust have shown that this the house Will I's new tion occurs in all threes no specific antice in apparer to be for seed. 10000

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I have to begrees my indebtedance to the Symmostad to be Marold Nobe (extelnated as

Institute

## ANNUAL GENERAL MEETING

OF THE

# British Institute of Preventive Medicine

(With which is amalgamated the College of State Medicine).

JUNE 24th, 1898.

## REPORT OF THE COUNCIL.

The Council have the honour to report that during the year the work of the Institute has been marked by progression and expansion.

The temporary premises occupied at Great Russell Street during the past four years have been vacated and the work of the Institute transferred to the new building on the Chelsea Embankment.

The internal fittings of the new building are in an advanced state, some departments are already in full operation, and it is confidently anticipated that all will be fully equipped in the early autumn.

The Council much regret the loss of one of its most valued members through the decease of Surgeon-General W. R. Cornish.

Dr. George Dean has been appointed Bacteriologist at Sudbury in place of Dr. Bulloch, who has been elected Lecturer on Bacteriology to the London Hospital.

Mr. A. G. R. Foulerton, F.R.C.S., has been appointed an Assistant Bacteriologist to the Institute.

Dr. Arthur Harden has been elected Chemist to the Institute in place of Mr. Joseph Lunt, B.Sc., now an Assistant to the Astronomer Royal at the Cape.

The Institute has published during the year a volume of "Transactions," which has been favourably received.

The demand for the Diphtheria and the Streptococcus serum has increased, and there has also been an increased demand for Tuberculin and Mallein.

The Institute has rented Laboratory accommodation to the Local Government Board for the purpose of preparing glycerinated calf lymph, and the Board will commence this work at Chelsea at an early date.

The Institute will require a considerable addition to its funds to enable it to carry out adequately the objects for which it was founded.

LISTER.

Chairman.

#### GROSVENOR ROAD,

CHELSEA BRIDGE,

LONDON, S.W.

#### TREASURER'S REPORT.

I beg to report that the Accounts of the Institute have been made up to the 31st May, 1898, and show an excess of Expenditure over Income of £209 15s. 3d.

Since the last Audit the following amounts have been received:-

				£251	18	I
***	***	***		1,285	5	10
***	100	***		621	13	5
				634	ĭ	0
erculin				2,164	2	7
***	***			14	10	a
						_
				£4,971	10	11
	  erculin	erculin	erculin		1,285 621 634 erculin 2,164	1,285 5 621 13 634 1 erculin 2,164 2 14 10

At 101, Great Russell Street the total expenditure for the year charged to Income and Expenditure Accounts amounts to £2,936 11s. 7d., including £459 16s. 6d., written off for depreciation of Furniture, Fittings and Apparatus, and a claim of £231 18s. 8d., for dilapidations. The Lease of the Building has now expired and the Furniture and Fittings have been removed to the new Building.

At "The Poplars" Farm at Sudbury the expenditure has been £2,356 14s. 7d. The demand for the Antitoxins prepared there has greatly increased and the receipts from their sale amount to £2,058 10s. 11d.

During the year £7,291 7s. od. has been spent on the New Building, which is now nearly complete.

The total expenditure for the year in all departments has been £12,808 7s. 4d., of which £1,035 19s. 2d. was still owing on June 1st.

The accounts have been Audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statement of Accounts are correct.

HENRY E. ROSCOE.

Hon. Treasurer.

# BALANCE - SHEET,

I898.

# The British Institute

(With which is amalgamated

Registered 25th July, 1891, under the Companies Acts,

Dr.

## BALANCE SHEET,

							£	S. 4	i. £		
10	Creditors	•••		***	***				1,053	19	2
То	WATER LABORATORY I Amount received from for building and e	m the Trus									
	that not more that	n £8,000 :	shall be	spent upo	on the bu	ilding					
	of the Water Labo	ratory			***				26,352	13	10
То	CAPITAL FUND										
	Balance as per last ac	count, 31st	Мау, 189	7	***	***	46,866	2 11			
	Balance of Income	and Evnan	ditura A								
	for the year ending	_			11 1	11 7					
	Balance of Sudbury year ending 31st M		count fo	r the	198	3 8					
							209	15 3			
									46,656	7	8

HENRY E. ROSCOE,

HON. TREASURER.

£74,063 0 8

# of Preventive Medicine.

the College of State Medicine.)

1862 to 1890, as an Association Limited by Guarantee.

31st	MAY,	1898,		Cr.
	<del></del>		· · · · · · · · · · · · · · · · · · ·	

							£	s.	d.	£	5.
By Cash—											
At Bankers	***						764	10	8		
In hand	***	***			**	***	14	4	10		
BY INVESTMENTS	_								_	778	15
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•	y of Sydney 4 South Wal	-			***		1,500				
	w South Wale			-	***		2,897				
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	eat Western	Railway 5	per cer	nt. Rent	Charge :		2,276				
	uth Eastern 1						-,-,-	,			
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	from 101, G					ga Oii	459	16	6		
By Expenditur	e on New 1	Building-	_							470	٥
As per last A	Account, 31st	May, 186	97				27,083	5	6		
Add Expend	_	-					7,291	7		21.201.	
By Sudbury Fai	DAT ACCOUNT	т—.								34,374	12
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Stock of Ant						***	400		٥		
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	A	As per las	t Accou	mt arct							
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Laboratory A May, 18	397		***		222	7 8					
Laboratory A	397				222	7 8 4 9	454	•			
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opinion it is a full and fair Balance Sheet, properly drawn up, so as to exhibit a true and correct view of the

# The British Institute of

(With which is amalgamated the

## Dr.

## INCOME AND EXPENDITURE ACCOUNT

		INC	COME.					c		,
To Donations		•••	***	***				 £ 237		d.
To Annual Subscriptions	***								14	
To Interest on Investments				- 444		***		 1,285		10
To Profit on Sale of Investments	cen-	•••		***				 621	13	5
To Students' Fees		• • • •		***				 136	10	0
To Diagnosis Fees			144					 497	ΙI	0
To Sales of Tuberculin and Malle	in		***		105	II	8			
Add Stock, 31st May, 1898	***		•••		30	0	٥			
					135	11	8			
Deduct Stock, 31st May, 1897	***		•••	•••	18	0	0			
				-				117	11	8
To Sale of "Transactions"	**	4,000	***					14	10	٥
To Deleves being success of Fran		owen Tu		المعددال				2925	٥	•
To Balance being excess of Exp from Capital Fund (see Balan	ce Sheet	)	de	auctea				11	11	7

£2,936 11

## Dr. SUDBURY FARM INCOME AND EXPENDITURE

	II.	ICOME.			
				£ s. d.	£ s. d.
To Sale of Antitoxins				2,058 10 11	
Add Stock, 31st May, 1898	***	***	•••	400 0 0	
			•	2,458 10 11	
Deduct Stock, 31st May, 1897	***	***	***	300 0 0	
			-		2,158 10 11
To Balance, being excess of Expenditure	e over It	ncome de	ducted		
from Capital Fund (see Balance She	et)	***	•••		198 3 8
				/	

# Preventive Medicine.

College of State Medicine).

									=
	EX	PENDI	TURE.						
By Rent, Rates, and Taxes							£ 125	s. 5	
By Salaries, Wages, and Fees to S	cientific S	toff	***	***	•••	.,,	135	_	
By Stationery, Printing, Postage, a			***			***	1,515	4	
*	ilid Advell	ginen		***				3	
By Office Expenses and Sundries	***	***	•••	111	***	***	57	-	
By Bank Charges	***	***	•••	***		***	3	18	
By Law Charges	***	***	***	•••	•••	- ***	18		
By Travelling Expenses	. (1)	***	***	***	••••	***	12	1	
By Auditors' Fee and Accountant's	s Charges	•••	***	***	111	•••	26	5	
By Gas and Water	***	***	•••	127	• 6.5	•••	86	2	
By Expenses of Patients to Institu		***	***	***	***		18	13	;
By Bacteriological Laboratory Exp	enses	***	•••	***	••••	•••	78	4	ļ
By Water Laboratory Expenses	***	***	***	***	-4	***	50	13	5
By Research Laboratory Expenses		***	•••	•••	•••	•••	4	7	•
By Hygiene Laboratory Expenses		***		•••		***	44	9	)
By Repairs and Claim for Dilapida	ations on	expiration	on of Lea	se of 101	, Great	Russell			
Street		***	•••	***	•••	***	231		
By Cost of Publication of "Trans			***	10.	***		76	16	)
By Amount written off for Depreci	iation on 1	urniture,	Fittings,	and Scie	ntine Ap	paratus	459	- 4	
							£2,936		
COUNT for the Year	Endi	ng 31:	st Ma	y, 189	)8.		£2,936		
COUNT for the Year		ng 31:		y, 189	)8.		<u> </u>	•	
CCOUNT for the Year  By Rent, Rates, and Taxes				y, 189	98.			5.	
By Rent, Rates, and Taxes By Salaries and Wages	EX	PENDI	rure.		98 <b>.</b>		Cr	5.	
By Rent, Rates, and Taxes By Salaries and Wages By Animals —	EX	PENDI	rure.				£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897	EX	PENDI	rure.		142	16 8	£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals —	EX	PENDI	FURE.		142		£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897	 	PENDIT	ΓURE.		142	16 8	£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year	 	PENDIT	ΓURE.		142	16 8	£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals — Stock 1st June, 1897 Additions during the year	EX	PENDIT	rure.  		142 80 223	16 8 11 3 7 11	£ 181	s. 19	)
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year	EX	PENDIT	FURE 28		142	16 8 11 3 7 11	£ 181 826	s. 19	3
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898	 	PENDIT	PURE 28 162		142 80 223	16 8 11 3 7 11	£ 181 826	s. 19	3
By Rent, Rates, and Taxes By Salaries and Wages By Animals – Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage	EX		PURE.		142 80 223	16 8 11 3 7 11 6 8	£ 181 826	s. 19	3
By Rent, Rates, and Taxes By Salaries and Wages By Animals — Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses	 	PENDIT	PURE 28 162	  6 8	142 80 223	16 8 11 3 7 11	£ 181 826	s. 19 8	93
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses	EX		PURE 28 162		142 80 223	16 8 11 3 7 11 6 8	£ 181 826	s. 1988 8 8 7 7 7	3
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams	EX		PURE 28 162		142 80 223	16 8 11 3 7 11 6 8	## 181 826	s. 198 8 8 8 7 7 7 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	377
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to	EX		PURE 28 162		142 80 223	16 8 11 3 7 11 6 8	## 181 826	s. 1988 8 8 7 7 7	377
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings	EX	CPENDIT	PURE 28 162		142 80 223	16 8 11 3 7 11 6 8	33 245 57 67 110 1	s. 198 8 8 8 7 7 7 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations	EX	CPENDIT	28 162 	 0 0 6 8   	142 80 223 190	16 8 9 11 3 7 11 6 8 	33 245 57 67	s. 1988 8 8 11 3 7 7 7 1 2 1 3 1 3	
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, includ	erm of Le	ase of "I	rure.  28 162  The Popla  es, Corks	 0 0 6 8      	142 80 223 190	16 8 7 11 3 7 11 6 8 8	33 245 57 67 110 1	s. 198 8 8 8 7 7 7 12 13 4 6	
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, includ Apparatus	erm of Le	ase of "I	rure.  28 162  The Popla	 0 0 6 8      s, Chemi	142 80 223 190	16 8 11 3 7 11 6 8 8	33 245 57 67 110 1 99 195 482	3. 198 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
By Rent, Rates, and Taxes By Salaries and Wages By Animals— Stock 1st June, 1897 Additions during the year  Deduct—Sales during the year Stock 31st May, 1898  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, includ	erm of Le	ase of "I	rure.  28 162  The Popla	 0 0 6 8       	142 80 223 190 	16 8 7 11 3 7 11 6 8 8	33 245 57 67 110 1	5. 198 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	

#### REPORTS OF THE SCIENTIFIC STAFF.

#### I.—DIRECTORS' REPORT.

I beg to report that during the year the work of the Institute has been of a satisfactory character.

(1) Bacteriological Department:-

The following investigations were published by members of the staff.

- "A Contribution to the Study of Streptococcus Pyogenes."—Dr. Bulloch.
- "The Gonococcus."-Mr. Foulerton.
- "The Plague Bacillus."-Dr. Hewlett.
- "The Pseudo-Diphtheria Bacillus,"-Drs. Hewlett and Knight.
- "Sterilisation of Water by Filtration."-Mr. Lunt.
- "A Convenient Method of Preserving Water Bacteria."-Mr. Lunt.
- "A Hitherto Undescribed Phenomenon in Yeasts."-Dr. Symmers.
- "Pasteurisation of Milk."-Drs. Hewlett and Macfadyen.
- "Bacteria and Dust in Air."-Dr. Macfadyen and Mr. Lunt.

The above papers were embodied in a volume of "Transactions," which was issued last autumn by Messrs. Macmillan and Co., on behalf of the Institute. The volume, to which Lord Lister contributed an Introduction, has met with a favourable reception, and its sale has been greater than was anticipated. A number of copies were sent to institutions and individuals at home and abroad, and the volume has served to make the work of the Institute widely known.

A series of fresh investigations have been conducted and completed during the year—some of these are published and others are on the eve of publication. The following are the subjects dealt with:—

- "Capsulated and Non-capsulated Organisms of the Coli Group."-Dr. Jenner.
- "Widal's Reaction."-- Dr. Tew.
- "Membranous Rhinitis."-Dr. Lack.
- "Etiology of Trachoma."-Dr. Lawson.
- "Diphtheria in Cats."-Dr. Tew.
- "Widal's Reaction."-Dr. Kirton.
- "Bacteriology of the Normal Conjunctiva."-Dr. Lawson.
- "A New Septicaemic Organism,"-Mr. Foulerton.
- "Neisser's Stain for B. Diphtheriæ."-Dr. Hewlett.
- "Conveyance of Diphtheria by apparently Healthy Individuals."—Dr. Williams and Mr. Foulerton.
- "Pathology of some infective Granulomata in Horses and Cattle."-Mr. Foulerton.
- "Pathogenic Yeasts" (first communication).—Mr. Foulerton.

There are also other researches at present in progress.

The courses of instruction given by the staff during the year have been well attended.

The demand for Tuberculin and Mallein continues to increase, and a considerable quantity was sent to India and the Colonies.

Three patients have been sent to the Institut Pasteur with the aid of the Institute's funds.

The total number of reports sent out from the Institute is 1,800, and of these 67 were examinations of samples of Waters. The Institute has endeavoured to encourage the periodical examination of water and water supplies, and several Local Authorities during the year have requested the Institute to undertake this systematic examination on their behalf.

Bacteriological work has also been undertaken for several additional sanitary authorities.

Some of the reports sent out dealt with matters of special interest, and an account is being prepared for publication, viz., upon an Anthrax Outbreak, Prodigiosus Infection of Meat, Streptococci in Milk, &c.

I am indebted to Mr. Foulerton for the following particulars :-

"At the request of the Maidstone Rural Sanitary Authority, the Institute undertook the examination of the public water supply in connection with the disastrous epidemic of Enteric Fever in that district last autumn. The result of the bacteriological examination afforded distinct evidence of pollution by fæcal matter, and thus confirmed the opinion formed on general grounds by the Medical Officer of Health, that a contaminated water supply was the cause of the outbreak. In the case of another apparently water-borne epidemic of Enteric Fever which occurred this year, samples from three separate sources of water supply were submitted to the Institute for bacteriological investigation. And, again, the result of the examination was of material assistance to the Medical Officer of Health, in so far that it showed that whilst two of the sources of supply were of excellent quality from the bacteriological point of view, the sample from the third source contained strong evidence of organic pollution. An attack of Enteric Fever in Gloucestershire early this year was the means of illustrating the value of Widal's blood reaction in relation to Public health work. The examination by this method of the blood of several patients at the commencement of the outbreak revealed the true nature of the epidemic, which had been previously believed to be one of Influenza. An investigation was made last summer in the case of a man who died at Windsor with symptoms typical of Asiatic Cholera. The Institute was, however, able to advise the Medical Officer of Health that the case was not one of true Cholera."

#### (2) Chemical Department:-

Dr. Harden reports as follows on the work done in the Chemical Laboratory since his appointment in October, 1897.

"Water analysis:—38 samples of water have been chemically examined, all of them having been sent for a joint chemical and bacteriological examination.

"Students:—Six students have attended the course in Chemistry and Physics for the Diploma in Public Health. Three of these have presented themselves for the examination and have satisfied the examiners. Two students have attended special courses in water analysis.

"Research work:—In conjunction with Dr. Macfadyen a research has been prosecuted on the products of the fermentation of Glucose by bacilli of the Coli group. A large number of organisms has been examined under varying conditions and some interesting results obtained.

"A. HARDEN."

On May 2nd the work of the Institute was transferred from Great Russell Street to the Chelsea Building, and the equipment of the new Laboratories is making rapid progress.

On June 15th the Local Government Board took possession of the rooms which have been fitted up by the Institute for the preparation of glycerinated Calf Lymph.

The Home Secretary has granted a licence under the Vivisection Act to the new building.

The constant supervision required of the fitting up of the Laboratories at Chelsea, and the large amount of business detail that had to be overtaken during the past year, left me little time for scientific work.

I have to thank my colleagues, Dr. Hewlett, Mr. Foulerton, and Dr. Harden, for their cordial co-operation in furthering the work of the Institute, and Mr. Cooper, who has been unremitting in his attention to the transaction of business during an exceptionally heavy year.

The present staff is inadequate to carry out the work of the Institute in its various branches. The investigation, for example, of the biological questions connected with water and sewage, which has been made one of the objects of the Institute, alone requires the services of an additional assistant

The resources of the new building will allow of a prominent position being given to researches dealing with Immunity, and if further financial support were obtained much valuable work could be initiated.

ALLAN MACFADYEN.

#### II .- DR. DEAN'S REPORT ON THE WORK DONE AT SUDBURY.

I beg to present the following report on the work that has been carried out in the Serum Department of the Institute during the past year:—

Anti-Diphtheria Serum.—Many experiments have been made with the object of increasing the strength of the toxins used in immunising the animals. We have recently, through the kindness of Dr. L. Martin of the Pasteur Institute, obtained a culture, the toxin from which is four to five times as powerful as that hitherto produced in the laboratory at Sudbury. By using these stronger toxins, we hope to still further increase the strength of the antitoxin. Most of the serum sent out recently has contained 1,500 units in 5 c.c. Occasionally it could have been supplied in smaller quantities, but by doing so the great demand on the serum could not have been met.

Much time has been given to the study of Ehrlich's new method of testing the strength of the antitoxin, and the value of all the serum since last June has been estimated by this method. During the year 11,505 doses of Diphtheria antitoxin have been sent out from the department.

Anti-Streptococcus Serum.—In view of the opinion held by many authorities, that the serum prepared by immunising with one strain of streptococcus does not afford protection against certain other races of the organism; a horse has been immunised with streptococci obtained from several different sources and of different degrees of virulence.

A number of experiments has been made on various species of animals with the organism and its products, with the object of obtaining a more accurate test of the protective and curative properties of the serum.

Over 5,500 doses of this serum have been sent out.

Tetanus.—The serum of the horse immunised to Tetanus shows no diminution in protective power. This is fully in accord with the results obtained at other similar Institutions. Nine hundred and fitty doses have been sent from the laboratory.

Pneumonia.—The serum of the horse immunised by Dr. Washbourn, having lost its protective power, a second animal is in process of immunisation by Dr. Salter, under Dr. Washbourn's direction.

Dr. Salter has been engaged on a number of researches.

- (1) On the Toxic substances in urine and the possibility of immunising large animals thereto.
- (2) On the virulence of different races of the Diphtheria bacillus, and the relation of the pseudo to the genuine organism.
- (3) On certain products of the Tetanus bacillus capable of exciting convulsions without the usual incubation period.
- (4) On the action of normal serum on the animal economy, and on the carrying out, under certain conditions, of hypodermic alimentation.

I wish to express my thanks to the staff at "The Poplars" for their valuable help in carrying on the work of the department.

GEORGE DEAN.

1214 01-1

119 110

# British Institute of Preventive Medicine.

(With which is amalgamated the College of State Medicine.)

of the Assert Charles of States

BALANCE ANNUAL REPORT SHEE

## ANNUAL GENERAL MEETING

OF THE

# Zenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine).

JUNE 23rd, 1899.

## REPORT OF THE COUNCIL.

The Council have the honour to report that during the year the work of the Institute has continued to make satisfactory progress.

The internal fittings of the Chelsea building are now completed with the exception of the Museum, and the various departments are fully equipped and at work.

The details of the year's work will be found in the annexed Report of the Director. A second volume of the Transactions of the Institute will appear at an early date.

Dr. Horace T. Brown, F.R.S., has been elected a Member of Council in succession to the late Surgeon-General W. R. Cornish.

A notable addition has been made to the departments of the Institute by the foundation of the Hansen Laboratory for the study of the practical application of Bacteriology to industrial and technical processes. Dr. G. Harris Morris has been placed in charge of this department with the title of Lecturer on Technical Mycology.

Dr. Joseph Priestley has been elected Teacher in Hygiene, and Mr. Sydney Rowland, M.R.C.S., an Assistant-Bacteriologist to the Institute.

The large demand for the antitoxins prepared at Sudbury has placed the finances of this Department on a satisfactory basis.

The Local Government Board has commenced the preparation of Glycerinated Calf Lymph in the Laboratories rented from the Institute at Chelsea.

The Jenner Memorial Committee having decided to transfer the funds in its possession to the Institute, steps were taken to ensure an adequate fulfilment of the laudable object of the fund, viz., to perpetuate the memory of Jenner and his work. With this intention the Members of the Institute, at a Special General Meeting, unanimously resolved that the Institute be in future termed the "Jenner Institute of Preventive Medicine." This change in title was duly effected under a License from the Board of Trade, dated 6th December, 1898.

The Council have next to report an event of far-reaching import as regards the future development of the Institute—namely, the public announcement of Lord Iveagh's intention to devote the sum of £250,000 to the promotion of the objects for which the Institute was founded.

Certain conditions were attached by Lord Iveagh to the above gift. These were carefully considered by the Council and accepted by the Members of the Institute. The new Articles of Association, which are in the hands of the Members of the Institute, give full details of the proposed re-organization.

The Articles provide that the affairs of the Institute shall in future be controlled by a Governing Body consisting of seven Members, one of such Members to be appointed by the Royal Society, three of such Members by the Council of the Institute, and the remaining three Members by Lord Iveagh or his representatives.

The new Articles of Association were accepted at a specially convened General Meeting of the Institute, and it was expected that the consent of the Court to the reconstructed constitution would already have been obtained. The Court, however, decided that certain legal requirements had not been completely fulfilled, and held that fresh meetings of the Institute must be summoned. These meetings have been duly summoned, and the matter will then doubtless reach the final stage.

The Council has elected Sir Henry E. Roscoe, Sir John Burdon Sanderson, and Professor J. Rose Bradford as its first representatives on the new Governing Body. Lord Lister has consented to act as Chairman.

LISTER,

Chairman.

#### CHELSEA GARDENS.

GROSVENOR ROAD,

LONDON, S.W.

June 20, 1899.

#### TREASURER'S REPORT.

I beg to report that the Accounts of the Institute have been made up to the 31st May, 1899, and show an excess of Income over Expenditure of £16 5s. 8d.

In August last the "Jenner Memorial Fund" amounting to £5,768 os. 11d., was made over to the Institute and during the year receipts from other sources have been as follows:—

Donations and A	Annual Subsc	riptions					£120	15	0
Interest on Inves	tments	***	4+4	***			1,311	8	5
Profit on Sale of	f Investments		444	13	7.00	233	133	3	7
Students' and ot	her Fees	***	***		***		1,152	18	8
Antitoxins, Malle	in and Tube	rculin	111	***	***	• • •	3,116	٥	7
Rent of Laborate	ories on the	second	floor	***	444	201	229	3	4
Transactions	***	981		***				13	9
									_
							£6,064	3	4
						-			

The Expenditure at Chelsea for the year charged to Income and Expenditure Accounts has been £3,698 14s. 1d., and at the Poplars Farm, Sudbury £2,349 3s. 7d., making £6,047 17s. 8d., in all.

I am glad to be able to state that the Farm at Sudbury is now more than paying its way.

The Expenditure during the same period on Building, Furniture, Fittings and Apparatus, charged to Capital Account has been £5.955 15s. 2d., at Chelsea, and £23 17s. 6d. at Sudbury.

The accounts have been Audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statement of Accounts are correct.

HENRY E. ROSCOE,

Hon. Treasurer.

# The Jenner Institute

Registered 25th July, 1891, as the British Institute of 1890, as an Association

Name changed 6th

## Dr.

# BALANCE SHEET,

To Creditors	£	s.	ď.	$f_{s}$ s. d.
				3,058 1 4
To Water Laboratory Fund-				
Amount received from the Trustees of the late Richard Berridge,				
for building and endowing a Water Laboratory, conditionally				
that not more than £8,000 shall be spent upon the building				
of the Water Laboratory				26,352 13 10
To Jenner Memorial Fund-				
Amount received from the Committee of the Jenner Memorial Fund				5,768 0 11
To Capital Fund-				
		_	o	
	46,656	7	٥	
Add—Balance of Sudbury Farm Account, being				
excess of Income over Expenditure, for				
the year ending 31st May, 1899 598 15 0				
Less-Balance of Income and Expenditure				
Account, being excess of Expenditure				
over Income, for the year ending 31st				
May, 1899 582 9 4				
	16	5	8	
			_	46,672 13 4
To Difference in the Books				0 10 6
- 10 OA - 10 - 110				/

HENRY E. ROSCOE,

HON. TREASURER,

June 20th, 1899.

£81,851 19 11

We have examined the above Balance Sheet with the Books and Vouchers of the Institute, and, in our State of the Affairs of the Institute. We have also verified the Bankers' Balances and the Investments.

# of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to Limited by Guarantee.

December, 1898.

31st MAY, 1899.

Cr.

							_
		£	5.	ď.	£	s.	ď.
B	CASH						
	At Bankers—						
	Current Account £385 13 8						
	Jenner Memorial Fund 271 5 11						
		656	19	7			
	In hand	12	13	9			
T) a	. T			_	669	13	4
D	INVESTMENTS—						
	£1,500 City of Sydney 4 per cent. Bonds	1,500	٥	0			
	£2,900 New South Wales 31 per cent. Stock 1918	2,897	<b>16</b>	0			
	£1,000 Cape of Good Hope, 3½ per cent. Stock	1,000	0	0			
	£1,800 North Eastern Railway 4 per cent. Guaranteed	-,					
		0 5 4 5	_	_			
		2,547	5	9			
	£1,760 South Eastern Railway, 5 per cent. Perpetual Debenture		- 0				
	Stock	3,169					
	Mortgage on Freehold Property, Liscombe Estate, at 3 per cent.	20,000	0	0			
_					31,115	0	7
Bı	INVESTMENTS (JENNER MEMORIAL FUND)—						
	£2,650 Southwark and Vauxhall 3 per cent. Debenture Stock	2,756	10	0			
	\$2,660 South Eastern Railway 3 per cent. Preference Stock, 1898	2,740					
	22,000 South Eastern Rankay & per cent. Therefore Stock, 1090	2,740	,	_	5,496	1 5	۰
R	SUNDRY DEBTORS				1,377		_
	3.5				11311	.,	5
	FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND BOOKS, 2S				20	0	٠
Di				1			
	per last Account, 31st May, 1898	470	0	C			
	Add Additions during the year	913	6	9			
		1,383	6	_			
	Less Written off for Depreciation	138		9			
	263 Witten on for Depreciation	*30			1,245	٥	I
By	Expenditure on New Building-				-,-43	•	-
				_	-		
	As per last Account, 31st May, 1898	34,374		6			
	Add Expenditure during the year	5,042	8	5			
ъ.	Canada Para Assaura				39,417	0	11
D	SUDBURY FARM ACCOUNT—						
	Stock of Animals and Forage	417	14	0			
	Stock of Anti-Toxins	855	0	0			
	Stable Utensils and Farm Implements	108					
	Laboratory Apparatus—As per last Account, 31st						
	May, 1898 200 2 11						
	Add Additions during the year 23 17 6						
	224 0 5						
	Less Written off for Depreciation 22 8 0			_			
	There's a second and May 1909	201	12	5			
	Furniture—As per last Account, 31st May, 1898 101 1 7						
	Less Written off for depreciation 15 3 3	85	τŔ				
	A 1 Maria and A Duildings on non	-2	10	4			
	Additions and Improvements to Buildings, as per						
	last Account, 31st May, 1898 225 0 0						
	Less written off 30 0 0	195	0	0			
	Unexpired Term of Lease of "The Poplars" Farm,	195	9				
	as per last Account, 31st May, 1898 536 o o						
	Less Proportion written off 73 ° °	463	٥	0			
		7-3		_	2,326	14	Io
By	RATES paid in respect of the Premises at Chelsea pending the	+			-0	•	
-	decision of the Court as to the liability of the Institute				183	17	9
							_
				- 2	€81,851	19	II
_				-			_

opinion it is a full and fair Balance Sheet, properly drawn up, so as to exhibit a true and correct view of the

# The Jenner Institute of

(Formerly the British Institute

_	
770	٠
23.7	

## INCOME AND EXPENDITURE ACCOUNT

			INC	OME.					_		
									£	s.	d.
To Donations	***	***							 106	6	0
To Annual Subscriptions	***								 14	9	0
To Interest and Dividends	on Inves	tments	• *						 1,311	8	5
To Profit on Sale of Inves	tments								 133	3	7
To Students' Fees				***					 495	19	o
To Diagnosis Fees			***						 656	19	8
To Sales of Tuberculin and	d Mallein			***		178	2	0	_	Ī	
Add Stock, 31st May,	1899			, , ,		20	0	0			
						198	2	_			
Deduct Stock, 31st Ma	ıy, 1898					30	0	0			
								_	168	2	0
To Sale of "Transactions"			40.4						٥	13	9
To Rent of Laboratories			***	***	•				229	3	4
									3,116	4	
To Balance being excess				come de	ducted				.0		Í
from Capital Fund (se	e Balance	oneet)	***	****	***				582	9	4

£3,698 14 1

#### Dr.

## SUDBURY FARM INCOME AND EXPENDITURE

	13	NCOME.		£	5.	ď,		£	ς,	d.
To Sale of Antitoxins	414	***		2,492						
Add Stock, 31st May, 1899		***		855	0	0				
				3,347	18	7				
Deduct Stock, 31st May, 1898	444	***	***	400	0	٥				
					_	_	.0	2,947	18	7
							/			

# Preventive Medicine.

OF PREVENTIVE MEDICINE).

	Year Ending 31st Ma	·/ · · · · · · · · · · · · · · · · · ·			<u></u>			Cr.	
		EX	CPENDIT	rure.					
	7. D D			. 0 1121				£	5.
	By Rent, Taxes, and Insurance			***	.,,	***	•••	101	
	By Salaries, Wages, and Fees to			•••		***	***	2,175	
	By Stationery, Printing, Postage By Office Expenses and Sundrie		_	Cleaning	and Cost			158	٥
	from Great Russell Street		willdow	Cleaning	and Cost		ciiiovai	197	18
	By Bank Charges								τ8
	By Law Charges			•••	***			52	c
	By Travelling Expenses			•••	***			Ĭ 2	10
	By Auditors' Fee and Accountage	nt's Charges					***	26	
	By Gas and Water	411		***	444			112	I.
	By Electric Light and Power		***	•••		•••	***	45	18
	By Fuel		44		***			63	4
	By Bacteriological Laboratory E	xpenses		•••				228	12
	By Water Laboratory Expenses	***	***		***	**		117	5
	By Hygiene Laboratory Expense				711	***		28	c
	By Hansen Laboratory Expense		***	•••	***			66	,
	By Photographic Laboratory Ex	penses	***		***			38	17
	By Ice	***	***	•••	***	***		15	8
	By Culture Media	***	***	***	***	***	***	48	
	By Animals		•••	***	***	***	,	38	1
	By Animal House Expenses	***		•••	***	***		14	
	By Cost of Publication of "Tra		***	***	***	***		15	(
	By Amount written off for Depre and Books	eciation on	Furniture,	Fittings,	and Scient	ific Ap	paratus	138	(
CO	UNT for the Year I	Ending	aist N	Aav. 1	800			£3,698	
CO	UNT for the Year I	Ending	31st N	Лау, 1	899			Cr	
CO	UNT for the Year I		31st N		899				
CO		EX	PENDIT	URE.				Cr	s.
CO	By Rent, Taxes, and Insurance	EX	PENDIT	URE.			***	£ 178	s.
CO	By Rent, Taxes, and Insurance By Salaries and Wages	EX	PENDIT	URE.			***	Cr	s.
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals	EX	PENDIT	URE.				£ 178	s.
CO	By Rent, Taxes, and Insurance By Salaries and Wages	EX	PENDIT	URE.		***	6 8	£ 178	s.
Co	By Rent, Taxes, and Insurance By Salaries and Wages By Animals - Stock 31st May, 1898	EX	PENDIT	URE.		162 80	6 8 13 6	£ 178	s.
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals - Stock 31st May, 1898 Additions during the year	EX	PENDIT	URE		162	6 8 13 6	£ 178	s.
Co	By Rent, Taxes, and Insurance By Salaries and Wages By Animals - Stock 31st May, 1898	EX	  	URE.		162 80 243	6 8 13 6	£ 178	s.
000	By Rent, Taxes, and Insurance By Salaries and Wages  By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year	EX	  	URE		162 80	6 8 13 6	£ 178 866	S. 11
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899	EX	  	TURE	17 0	162 80 243 231	6 8 13 6	£ 178 866	<i>S.</i> . 11 22
CO	By Rent, Taxes, and Insurance By Salaries and Wages  By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year	EX	  	URE		162 80 243	6 8 13 6	£ 178 866	s. 1
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses	EX	  	TURE	 17 0 14 0	162 80 243 231	6 8 13 6	£ 178 866	S. 1
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals — Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water	EX	 	TURE	  17 0 14 0	162 80 243 231	6 8 13 6 0 2	£ 178 866	s. 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals — Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams	EX	PENDIT	TURE	 17 0 14 0	162 80 243 231	6 8 13 6 0 2	£ 178 866	\$. 1 2 3 10
Co	By Rent, Taxes, and Insurance By Salaries and Wages  By Animals — Stock 31st May, 1898 Additions during the year  Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired	EX	PENDIT	13 217	 17 0 14 0	162 80 243 231	6 8 13 6 0 2	£ 178 866	s
CO	By Rent, Taxes, and Insurance By Salaries and Wages  By Animals — Stock 31st May, 1898 Additions during the year  Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations	EX	PENDIT	13 217	    s" Farm a	162 80 243 231 	6 8 13 6 0 2 11 0 ditions	£ 178 866	s
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, includes	EX	PENDIT	TURE.  13 217   the Poplar cs, Corks,	i7 o 14 o s" Farm a	243 231 and Add	6 8 13 6 0 2 11 0	£ 178 866 866 81 11 398 81 37 79 1 103 27	5. 10 22 10 10 8 13
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, included Apparatus	EX	PENDIT ase of "T of Bottle	TURE.  13 217  The Poplars, Corks,	i7 0 14 0 s" Farm at Chemical	243 231 and Add	6 8 13 6 0 2 11 0 ditions Glass	£ 178 866 866 81 37 79 1 103 27 503	\$. 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, including Expenses By Travelling Expenses	EX	PENDIT	TURE.  13 217	s" Farm at	243 231 and Add s and	6 8 13 6 0 2 11 0	£ 178 866 866 811 398 81 37 79 1 103 27 503 13	5. 11. 2. 2. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, included Apparatus	EX	PENDIT	TURE.  13 217	s" Farm at	243 231 and Add s and	6 8 13 6 0 2 11 0 ditions Glass	£ 178 866 866 81 37 79 1 103 27 503 13 37	5. 11 2 2 3 10 19 8 8 13 0 9
CO	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, including Expenses By Travelling Expenses By Amount written off for Depre	EX	PENDIT ase of "T of Bottle	TURE.  13 217	s" Farm at	243 231 and Add s and	6 8 13 6 0 2 11 0	£ 178 8666 8666 813 37 79 1 1 1 0 3 27 5 0 3 13 37 9	5. 1 2 3 10 19 8 13 10 9 14 11 17
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st May, 1898 Additions during the year  Deduct—Sales during the year Stock 31st May, 1899  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired to Buildings By Repairs and Alterations By Laboratory Expenses, including Expenses By Travelling Expenses By Amount written off for Depre	EX	ase of "T	TURE.  13 217  The Poplar and Labor	s" Farm and the control of the contr	243 231 and Add	6 8 13 6 0 2 11 0 ditions Glass	£ 178 866 866 81 37 79 1 103 27 503 13 37	5. 1 2 3 10 19 8 13 10 9 14 11 17

#### REPORTS OF THE SCIENTIFIC STAFF.

#### I.—DIRECTORS' REPORT.

I beg to submit the following report upon the work of the Institute during the past year.

The internal fittings of the Chelsea Buildings are practically completed. After the announcement of Lord Iveagh's donation, it was decided to proceed with the equipment of the rooms that had been left unfinished on the second floor of the Institute. This has been done by the Architect on the basis of the plans I had already furnished to him. The original contractor proved so dilatory that I suggested to Mr. Waterhouse that a new man be employed. The contract was accordingly transferred to Mr. Worsley, with great advantage to the progress of the work.

The Electric fittings over the whole building are now completed, the experimental main is in working order and the electric motor to drive the centrifugal and cold storage machines is in position. Through the kindness of Mr. Sterne, of Messrs. Sterne & Co., the Institute has obtained a Cold Storage apparatus at about one-half of the ordinary price. The Photographic Department is fully equipped. The Photomicrographic apparatus has been specially designed by Mr. Barnard for the work of the Institute, and I have to thank him for the valuable services he has voluntarily rendered in this and other directions. A cabinet of photographic slides is in process of formation, and the necessary illustrations to scientific papers will in future be prepared in this Laboratory. During the year the organisation of work in the main Laboratories of the Institute was completed, and valuable additions made to the stock of scientific apparatus. All waste material from the Laboratories, animal litter, etc., are collected in sacks and destroyed in the Crematorium. The Institute has been placed on the Central Telephone Exchange.

The work of the Vaccine Department of the Local Government Board has increased to such an extent that the present accommodation at the Institute has become inadequate for its requirements. It was deemed advisable by the Executive under these circumstances to grant the Local Government Board the use of an additional room on the second floor at a rent of £50 per annum. A room on the same floor has also been placed at the disposal of the Medical School of St. George's Hospital, in accordance with a resolution of the Council.

The Architect has been instructed, with the approval of the Executive, to proceed with the completion of the foundations of the new wing, in order to save valuable time. The contractor has started work, and has erected a hoarding which will ensure the privacy of the animal house and the adjoining portions of the yard.

The Hansen Laboratory has commenced its work under the superintendence of Dr. G. Harris Morris. A knowledge of the Biology of Fermentation is of great importance to the brewer, the chemist, and agriculturist, and little or no encouragement has hitherto been given to this branch of investigation in this country. In a report to the Council in 1896, I ventured to point out the useful work the Institute might do in this direction, and I feel sure that the Hansen Laboratory will justify its existence.

The Library is now fitted up, and efforts are being made to obtain a good collection of standard works and periodicals. Sir Henry Roscoe, Dr. Dawson Williams and others have sent valuable contributions.

A commencement has also been made with a series of Museum specimens intended to illustrate the work of the Institute.

An effort is being made to obtain remission of the heavy local taxes on the building, and a case has been prepared by Messrs. Hunters & Haynes for submission to the Courts.

Investigation at Great Russell Street was seriously handicapped by a lack of adequate accommodation for experimental work. The new Animal House at Chelsea has enabled the staff to undertake research work that was impossible under the old conditions. It is gratifying to be able to report that at no period has there been a greater body of research work in progress than at the present moment.

Investigations in connection with the production of Immunity to diseases such as Tuberculosis, Enteric Fever, etc., are being prosecuted, in addition to others on Bacterial Toxins and certain fermentative processes. A systematic description of the biological and cultural peculiarities of the most important types of bacteria is likewise in progress, which will it is hoped, be of service to workers generally when completed. Experiments are also being made with the view of introducing uniform methods for the preparation of standard culture media, and data are being collected with a view to establishing if possible a standard method for the bacteriological examination of water.

A number of investigations of public importance have been carried out at the Institute, e.g., upon Ice-creams for Paddington Vestry, the East London Water supply for the Shoreditch Vestry, the Milk Supply of Islington and Hackney, an outbreak of Colitis at Derby Asylum, the Milk and Water supply of Redhill Asylum, the doubtful cases of Typhoid Fever amongst the Guards on their return from Egypt, etc.

The question of a Central Municipal Laboratory for London is solving itself in a simple fashion, judging by our own experience at Chelsea. The Institute is conducting the bacteriological examination of specimens for the following Public Health authorities:—Fulham, Islington, St. Pancras, Marylebone, Holborn, Clerkenwell, Lambeth, Wandsworth, Kensington, Paddington, St. George's, Hanover Square, Poplar, Finchley, Lee, Eltham. Similar arrangements are about to be made for Chelsea, and probably Battersea. About 2,500 reports have been sent out during the year. The bacteriological diagnosis of Tuberculosis has been undertaken at the request of several Sanitary authorities, e.g., Islington, Lambeth, &c.

There is an increasing demand for Tuberculin and Mallein. The Veterinary Officer to the Egyptian Government informs me that the Institute's Mallein is being used with good results in that country, and that it has been decided to use also the Institute's Tuberculin. We have sent large supplies of these substances to India and to the Colonies, including 500 doses of Mallein to Rhodesia. Since last June about 10,700 doses have been sent out by the Institute.

I attended the Sanitary Congress at Birmingham with Sir Joseph Fayrer; the Tuberculosis Conference at Lord Vernon's seat, and the Committee upon Tropical Diseases at the Colonial Office on behalf of the Institute.

Papers embodying work carried out in the Institute's Laboratories have been published by Drs. Hewlett, Harden, Kirton, Foulerton, Jenner, Bulloch, Lawson and Lack. There is also sufficient material for the immediate publication of a second volume of the Transactions of the Institute.

A syllabus of the work of the Institute has been published embodying the recommendations of the Committee appointed by the Council to consider the organisation of Departments at Chelsea A Meeting of the House Committee was summoned but no member was able to attend.

As regards the Courses of Instruction, which have been well attended, the aim has been to train the advanced student, as is done in foreign laboratories, with a view to subsequent research work

I have once more to acknowledge the cordial co-operation of the members of the staff in furthering the work of the Institute. The administrative and business work connected with the Institute has been exceptionally heavy this year, and has occupied much of my time. The reports of Doctors Morris, Harden and Dean follow.

ALLAN MACFADYEN.

#### II.—THE HANSEN LABORATORY.

This department of the Institute was opened for work early in December last. Since that time five students have availed themselves of the course of instruction in the Bacteriology of Fermentation and Pure Yeast Culture, and there is every reason to believe that as the existence of the Laboratory becomes more widely known, students who now go to the Continent for instruction will avail themselves of the advantages offered of studying the question under conditions applicable to the English systems of fermentation.

The laboratory is furnished with the requisite apparatus, &c., for instruction and research in Technical Bacteriology, and through the kindness of Mr. S. Briggs, of Burton-on-Trent, will shortly be provided with a working model of the apparatus used in practical operations for the cultivation of pure yeast on an industrial scale.

Investigations are being carried on in the department in connection with the Diastase of Barley, and its variations under different conditions; on the possible application of the Symbiotic Fermentation of Moulds and Yeasts to the determination of starch in cereals; and on the nature of the organisms contained in a preparation used by the natives of India for the production of alcohol, but at present the results are not sufficiently advanced for publication.

#### III.—THE WATER LABORATORY.

During the past year the classes in Chemistry and Physics applied to Hygiene have been well attended by students, most of whom propose to present themselves for the examination for the Diploma in Public Health.

During the year a number of samples of water, air and milk have been received for analysis.

The research on the Fermentation of Sugars by Bacteria of the Coli group has been continued, and a portion of the results obtained will be published in the forthcoming volume of the Transactions of the Institute. A number of experiments on the reactions and estimation of Formaldehyde have also been carried out. The results of these have been embodied in a paper read by me before the Chemical Society, and will also appear in the Transaction of the Institute.

A. HARDEN.

#### IV....THE ANTI-TOXIN DEPARTMENT.

I beg to submit the following statement of the work that has been carried out in the Serum Department of the Institute during the past year:—

Diphtheria Anti-toxin.—In last year's report it was stated that we had obtained a race of Diphtheria Bacillus, which enabled us to prepare toxins of four to five times the strength of those previously produced in the laboratory. The hope was expressed that, by using these stronger toxins, anti-toxins of a higher value might be obtained. This hope has been so far fulfilled that we have been enabled to raise the number of units per dose from 1,500 to 2,000, the average dose containing about 5 c.c.

As stated in the Quarterly Report recently submitted by me, the anti-toxin obtained from one animal was found to be of very high value. Professor Ehrlich kindly controlled the testing of this serum and he reported that it was of quite exceptional quality and of a strength which had been hitherto rarely reached

The serum of only one other animal has during the year come near this high value, but the average strength of the serum of most of the animals has been increased.

During the year 16,195 doses of Diphtheria Antitoxin have been sent out from the Department.

Anti-Streptococcus Serum.—During the year two new horses have been immunised against the Streptococcus Pyogenes. No high degree of protective power can be claimed for this serum in spite of the use of highly virulent Streptococci. The experiments on different races of Streptococcus and on the products of the growth of this organism have been continued during the year. 5,498 doses of this serum have been sent out.

Tetanus Antitoxin.—The serum of the horse immunised against Tetanus has continued of excellent quality, and the quantity is sufficient to meet the demand, but in view of the risk of depending on a single animal a second horse has been immunised, and by the help in the early stages of the antitoxin from the first animal, has passed safely through the dangerous stages of the process, and now tolerates large injections of highly virulent living cultures. 1,133 doses of Tetanus Antitoxin have been sent out.

Pneumonia.—Attempts have been made to immunise two horses against the Pneumococcus, but with negative results. One animal was profoundly affected by the treatment and got into such a bad state of health that it was necessary to slaughter it. The second horse behaved like a naturally immune animal, receiving very large doses of highly virulent living cultures, without marked reaction, but its serum was found, both by Dr. Salter and Dr. Washbourn, to possess no protective power.

In view of the statements of favourable results of other workers, a donkey is now in process of immunisation.

Coley's Fluid.-538 Tubes of this substance have been supplied on demand.

We have thus sent out from the department during the year 23,364 doses in all.

Demonstrations.—A number of demonstrations have been given to medical men, among others to the Students at the Institute, to the D.P.H. Students at Guy's Hospital, and at University College.

Research Work.—In addition to the problems already referred to in this report, Dr. Salter and I have investigated several questions that have arisen in relation to the work of the Department.

Dr. Salter has completed a research on the relation of the Pseudo-diphtheria bacillus to the Klebs Löffler Bacillus.

I have investigated a new Streptothrix obtained from the horse. Both these researches are in course of publication in the new volume of the Transactions of the Institute.

A convenient method for easily obtaining large quantities of Tetanus Toxin has occupied my attention for some time.

I have also been conducting a number of experiments on the duration of active immunity and anti-toxin production in the case of animals immunned by Diphtheria Toxin. Dr. Salter has been occupied with the same problem in relation to Tetanus.

The present operating room is, owing to its small size and construction, of no use for that purpose, and all the work connected with the horses has to be carried out, summer and winter, in the open yard. We have in stock at present antitoxins of the value of at least  $\mathcal{L}_{1,000}$ , and owing to the defective condition of storage this valuable material is depreciating to a great extent more rapidly than would be the case under better conditions. Storage of more material with the present accommodation is practically impossible. The present room for the preparation of culture media is little more than a cupboard, and the limited space adds greatly to the difficulty of keeping up the necessary supply of media for the routine work of the Department.

As most of the processes involved in the work have to be carried out in one room an additional Laboratory for undisturbed research work seems to me to be highly desirable.

These are a few of the most obvious needs of the Antitoxin Department, but a number of other improvements are necessary to bring the department into a well equipped condition.

I desire to express my thanks to the Staff at the "Poplars" for their continued help in carrying out the work of this department.

GEORGE DEAN.

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date durates a rate 1 1 edition and solution to the

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ANNUAL REPORT

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British Institute of Preventive Medicine.)

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## ANNUAL GENERAL MEETING

OF THE

# Jenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine).

JUNE 29th, 1900.

#### REPORT OF THE GOVERNING BODY.

The Governing Body have to report that during the year the work of the Institute has continued to afford valuable results.

The transference of Lord Iveagh's gift for the promotion of the objects for which the Institute was founded has been effected.

The finances of the Institute are now placed on a satisfactory basis, and the expansion of its influence and usefulness assured.

The new Articles of Association received, after some delay, the consent of the Court. Copies of the approved Articles have been sent to the Members of the Institute.

The Governing Body, which will in future control the affairs of the Institute, has been constituted, and held its first Meeting in November. The three representatives of the Council on the Governing Body are subject to annual election. The present representatives were re-elected for a further term of office in December, 1899.

The Governing Body is engaged in the consideration of the steps to be taken for extending the work of the Institute.

An account of the Scientific and other work of the Institute will be found in the annexed reports. A second volume of the Transactions was published in the autumn.

The Institute has lost a valued supporter through the death of His Grace the Duke of Westminster.

LISTER,

Chairman.

#### CHELSEA GARDENS,

GROSVENOR ROAD,

LONDON, S.W.

June 25th, 1900.

#### TREASURER'S REPORT.

I beg to report that the Accounts of the Institute have been made up to the 31st May, 1900, and show an excess of Income over Expenditure of £1,645 14s. 2d.

The Capital Account has been increased during the year by Lord Iveagh's gift of £250,000.

The receipts from other sources during the same period have been as follows:—

Interest on Investments	***	***		- 00-			£4,962	5	8
Annual Subscriptions		***		I 2	7	0			
Students' and other Fees				830 1	4	6			
Sales of Antitoxins, Mallein	and	Tuberculin	***	3,385 1	2	0			
Rent of Laboratories on se	econd	floor		295 1	6	8			
Sale of Transactions				2	8	5			
						-	4,526 1	8	7
									_
							£9,489	4	3

The Expenditure at Chelsea for the year charged to Income and Expenditure Account has been £5.039 5s. od., and at "The Poplars" Farm, Sudbury £2,804 5s. 1d., making a total Expenditure of £7.843 tos. 1d., towards which amount £4,526 18s. 7d. has been earned from Fees, Sales of Antitoxins, &c.

The amount spent during the year on Building, Furniture, Fittings and Apparatus at Chelsea charged to Capital Account has been £4,056 18s. 3d., and at Sudbury, £26 11s. 11d.

The accounts have been Audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statements of Accounts are correct.

HENRY E. ROSCOE.

Hon. Treasurer.

BALANCE SHEET.

# The Jenner Institute

Registered 25th July, 1891, as the British Institute of 1890, as an Association

Dr.

## BALANCE SHEET,

~~··			
		£s.	d. £, s. d.
To Creditors		Σ, "	872 7 5
To Water Laboratory Fund-	***		0/4 / 5
Amount received from the Trustees of the late R	_		
for building and endowing a Water Laborato	• •		
that not more than $£8,000$ shall be spent up	oon the building		
of the Water Laboratory			26,352 13 10
FO JENNER MEMORIAL FUND—			
Amount received from the Committee of the Jenne	er Memorial Fund	1	5,768 o 11
Fo Capital Fund—			
Balance as per last account, 31st May, 1899	46,672 13 4		
	250,000 0 0		
		296,672 13 4	
422 Delegan of Lagrange and Danier disease		290,072 13 2	
Add—Balance of Income and Expenditure			
Account, being excess of Income over			
Expenditure, for the year ending 31st			
May, 1900	1,213 6 9		
Balance of Sudbury Farm Account,			
being excess of Income over Expendi-			
ture, for the year ending 31st May,			
1900	432 7 5		
		1,645 14 2	
			- 298,318 7 6
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-00			
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HENRY E. ROSCOE,	/		
HON. TREASURER,	/		
	1		
June 25th, 1900.	/		

We have examined the above Balance Sheet with the Books and Vouchers of the Institute, and, in our State of the Affairs of the Institute. We have also verified the Bankers' Balances and the Investments.

£331,311

# of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to Limited by Guarantee.

# 31st MAY, 1900.

Cr.

														_
	Ву	Cash—							£	s.	d.	£	S.	d.
		At Bankers, Current Accou	int			£1,78	<	9 0				~		
		Jenner Memorial Fund		411		27		3 11						
		Jennet Memorial Land				- 7	•	3	2,056		Q			
		To bond												
	ъ.	In hand	***	***	•••				13	10	4			
	RA	Investments—									_	2,070	4	0
		£2,900 New South Wales	31 per cent	. Stock 19	18				2,897	16	0			
		£1,000 Cape of Good Hop	pe. 3½ per c	ent. Stock	2				1,000		0			
		£1,500 City of Sydney 4	per cent. Bo	nde			.,		1,500					
		4959 Marth Fastern Daily	ou A non ac	nt Cuara					, .					
		£353 North Eastern Railw							499					
		<ul> <li>Mortgage on Freehold Prop</li> </ul>	erty, Liscon	nbe Estate	, at <b>3</b> j	per cen	t.		20,000	0	0			
	Вy	INVESTMENTS (LORD IVEAU	зн's Donat	лои)—							_	25,897	7	0
		£25,000 New Zealand C	Government	3 per ce	nt. Ir	iscribe	d					• •		
			***	-					24,112	10	0			
		£25,000 Victorian Govern							+4,++		•			
		•	_			d Stoc	r.		0					
			***						23,875	٥	0			
		£25,000 Natal 3 per cent.	Inscribed 8	Stock 1929	9 - 194	49 .			24,484	7	6			
		£25,000 New South Wales	s Governme	nt 3 per c	ent. Ir	scribe	d							
									24,937	τo	٥			
		POC 100 South Australian	2 per cent	Incoribo	d Star	ole tox	6							
		£26,100 South Australian							24,860	- 5	0			
		<b>£25,000</b> Cape of Good H					K							
			***						23,850	0	O,			
		£25,000 London and Sc					t.		_					
		Preferred Converted C							32,000	0	0			
		£25,000 Great Northern F							26,000					
		OR OOM Midland Dailman	α 91 κα- Δ-	at Deafaire	ad C	INTERPE	A		20,000	U	0			
		£25,000 Midland Railway					u							
		Ordinary Stock							20,375		0			
		£25,000 East Indian Railw	vay 3 per cen	it. New De	bentu	re Stoc	k		25,500	0	0			
		Cash at Bank	***						5	7	6			
	Rv	INVESTMENTS (JENNER ME	MORIAL FU	ND)							_	250,000	0	0
		£2,650 Southwark and V	Janyhall W	later Co	3 ne	er con	,					-3-,	_	
		Debenture Stock "B"	danan ,	atti co.	O pe						_			
									2,756					
		£2,660 South Eastern Rail	way & per ce	nt. Preiere	ince Si	OCK 19	98		2,740	- 5	0			
												5,496	15	0
	Ву	SUNDRY DEBTORS										947	7	11
	By	STOCK OF TUBERCULIN AND	D MALLEIN									10	0	O.
		FURNITURE, FITTINGS, AND			SAND									
		as per last Account, 31st M							7.045	_				
					***				1,245		1			
		Add Additions during the y	ear	***					506	13	6			
											_			
									1,751	13	7			
		Less Written off for Depreci	iation	***	***				175	3	4			
	By	EXPENDITURE ON NEW BU	ILDING					-			_	1,576	10	3
		As per last Account, 31st N							39,417	0	11	-01		
_		Add Expenditure during th	A Potr		3.0					_	_			
	D.			•••					3,550	4	9		_	0
	BA	SUDBURY FARM ACCOUNT-									_	42,967	5	8.
		Stock of Animals and Fora	ge	***	***				455	_	0			
		Stock of Anti-Toxins	***						960	0	0			
		Stable Utensils and Farm I	mplements			-			•	13	I			
		Laboratory Apparatus-As							,,	•				
			- Iver wane 1			201	т 2	E						
		May, 1899	***	***				5						
		Add Additions during the y	year	***	***	11	17	6						
						213	9	ΙI						
		Less Written off for Deprec	iation	***		2 I	7	۰						
							_	_	192	2	11			
		Furniture—As per last Acc	count, 21st 1	May. 1800		85	18	4						
		Add Additions during the y				14		5						
		And Additions during the y	Cat		***	-4	~~	3						
						100	12	9						
		Less Written off for depreci				15	1	II						
		Additions and Improvement		ldings, as	per		_	_	85	10	10			
		last Account, 31st May				195	0	0						
			100				0	٥						
		Less written off	of timbe D	anle == 21 V2	***	30			-4-		_			
		Unexpired Term of Lease			arm,	-			165	J	0			
		as per last Account, 31		99	***	463	0	0						
		Less Proportion written off		***		73	0	0						
								_	390	0	0			
												2,345	10	10
												7575		
											1	331,311	^	Q
											7	,331,511	9	8

opinion it is a full and fair Balance Sheet, properly drawn up, so as to exhibit a true and correct view of the

# The Jenner Institute of

(Formerly the BRITISH INSTITUTE

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7	•	•
•		1

## INCOME AND EXPENDITURE ACCOUNT

		INC	OME.						
			E				£	s.	đ.
To Annual Subscriptions							 I 2	7	0
To Interest and Dividends on Inv	estments		-41.		***		 4,962	5	8
To Students' Fees			***				 122	3	0
To Diagnosis Fees					***		 708	11	6
To Sales of Tuberculin and Malle	in				158 19	6			
Add Stock, 31st May, 1900	•••	• • • •	14.4		10 0	0			
				_		_			
					168 19	6			
Deduct Stock, 31st May, 1899		150			20 0	0			
				_			148	19	6
To Sale of "Transactions"		***					2		
To Rent of Laboratories							295	16	8

£6,252 11 9

## Dr.

## SUDBURY FARM INCOME AND EXPENDITURE

	IN	COME.		C		J	C		,
To Sale of Antitoxins  Add Stock, 31st May, 1900				£ 3,131 960	12	6	£	s.	a.
				4,091					
Deduct Stock, 31st May, 1899	***			855	_	_	3,236	I 2	6
						/			
				/	/				
		100							
	14.5		/						
		/							
	/								
	/								

# Preventive Medicine.

OF PREVENTIVE MEDICINE).

Year Ending 31st May,	1900.						Cr.
<del></del>			WILD F				
	EX	CPENDI	TURE.				C
By Rent, Taxes, and Insurance, incl	luding Re	ites paid i	for the ver	r ending	erst May	T800	£ 516
By Salaries, Wages, and Fees to So			ioi the jet				
By Stationery, Printing, Postage, and	A Adver	tieina					2,219 146
By Office Expenses and Sundries, i	includina	Window	Cleaning	,	***	***	
Du Daula Chausan	incidating	TT III do	Cicaming			***	152
By Law Charges including the C	ost relati	ing to th	e Alterati			ndum	3
and Articles of Association							684
By Travelling Expenses		***					01
By Auditors' Fee and Accountant's	Charges			***	***		31
By Gas and Water		***				•••	177
By Electric Light and Power			***	***	***		98
By Fuel	***	- 11			***	***	84
By Bacteriological Laboratory Expe	ense <b>s</b>	***			***	•••	124
By Water Laboratory Expenses	***		***	***	**		45
By Hygiene Laboratory Expenses	• • •	• • •	144	•••	***	***	9
By Hansen Laboratory Expenses	***		***	***	***		98
By Photographic Laboratory Exper	nses	•••	•••	***	151	•••	I
By Physiological Laboratory Exper	ises	1.15	***	***	***	***	8
By Ice, Rent of Cold Storage Mach	ninery, ar	na Expen	ses	***	***	***	31
By Culture Media	***	•••	•••	***	***	•••	66
By Animals	***	***	• • • • • • • • • • • • • • • • • • • •	•••	***	***	46
By Animal House Expenses			***	***	•••	***	00
By Cost of Publication of "Transz	actions		***	***	***		183
By Repairs By Amount written off for Deprecia	tion on	Furnitura	Eittingen	and Sais	ntific An	navatua	30
1.15 - 1 -	mon on a	ı armıtarç	, Tricings,	and Scie			7 ** ~
By Loss on Sale of Investments			***				175
By Balance being Excess of Incom	ne over	Expendit	ure Trans	sferred to	Capital	Fund	5,039
(see Balance Sheet)	***	***	***		***		1,213
							£6,252
UNT for the Year En	iding	31st	Mav	1000			Cı
			intuy,	1900.			91
		(PENDI					<u> </u>
Do Done Tana and Y							£
By Rent, Taxes, and Insurance						***	£ 196
By Salaries and Wages							£
By Salaries and Wages By Animals	EX						£ 196
By Salaries and Wages	EX				217		£ 196
By Salaries and Wages By Animals	EX	 	rure.			14 0	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899	EX	 	rure.		217	14 0	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year	EX	 	rure.		217	14 0	£ 196
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year	EX	 	rure.  		217	14 0	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year	EX	 	rure.		217 128 346	14 0 14 5 8 5	£ 196
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year	EX	 	rure.  		217	14 0 14 5 8 5	£ 196
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900	EX	 	rure.  		217 128 346	14 0 14 5 8 5	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage	EX	 	rure.  		217 128 346	14 0 14 5 8 5	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900	EX	  	rure.  	  12 6 13 0	217 128 346	14 0 14 5 8 5	£ 196
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage	EX	  	rure.  	  12 6 13 0	217 128 346	14 ° 14 5 8 5	£ 196 914
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses	EX	  	rure.  	  12 6 13 0	217 128 346	8 5 5 6	£196 914 101 494 116 58
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water	EX	  	PURE 9 235	  12 6 13 0	217 128 346	14 ° 14 5 8 5	£196 914 101 494 116 58
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams	EX	  	PURE	  12 6 13 0	217 128 346 245 	14 ° 14 5 8 5	£196 914 101 494 116 58
By Salaries and Wages  By Animals — Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te	EX	CPENDI'	PURE 9 235	12 6 13 0	217 128 346 245 	14 0 14 5 8 5 5 6	£196 914 101 494 116 58 90
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings	EX		PURE 9 235	12 6 13 0	217 128 346 245 	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations	EX		PURE 9 235	12 6 13 0	217 128 346 245 	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90
By Salaries and Wages By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including	EX	cPENDI'	PURE 9 235	12 6 13 0 s, Chemi	217 128 346 245  1 and Ad	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus	EX		PURE 9 235	12 6 13 0 s, Chemi	217 128 346 245  a and Ad	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses	EX	cPENDI' of Bottl	PURE.  9 235   The Popla es, Corks	12 6 13 0	217 128 346 245  a and Ad 	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2 103 20
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses By Amount written off or Deprecia	EX	cPENDI' of Bottl	PURE.  9 235   The Popla es, Corks	12 6 13 0	217 128 346 245  a and Ad 	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses	EX	cPENDI' of Bottl	PURE.  9 235   The Popla es, Corks	12 6 13 0	217 128 346 245  a and Ad 	14 0 14 5 8 5 5 6   ditions	£196 914 101 494 116 58 90 2 103 20
By Salaries and Wages By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses By Amount written off for Deprecia	EX	cPENDI'	TURE.	12 6 13 0	217 128 346 245  a and Ad 	14 0 14 5 8 5 5 6   ditions  Glass	£196 914 101 494 116 58 90 2 103 20 647 15 36
By Salaries and Wages  By Animals—  Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year  Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses By Amount written off for Deprecia By Bad Debts	EX	crniture	rure.  9 235  The Popla	12 6 13 0 s, Chemi	217 128 346  245 and Ad cals and pparatus	14 0 14 5 8 5 5 6   ditions  Glass	101 914 101 494 116 58 90 2 103 20 647 15
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses By Amount written off for Deprecia	EX	crniture	rure.  9 235  The Popla	12 6 13 0 s, Chemi	217 128 346  245 and Ad cals and pparatus	14 0 14 5 8 5 5 6   ditions  Glass	£196 914 101 494 116 58 90 2 103 20 647 15 36
By Salaries and Wages  By Animals— Stock 31st May, 1899 Purchased during the year  Deduct—Sales during the year Stock 31st May, 1900  By Forage By Stable and other Expenses By Farm Expenses By Gas and Water By Postages and Telegrams By Amount written off unexpired te to Buildings By Repairs and Alterations By Laboratory Expenses, including Apparatus By Travelling Expenses By Amount written off for Deprecia By Bad Debts  By Balance being excess of Income	EX	crniture	rure.  9 235  The Popla	12 6 13 0 s, Chemi	217 128 346  245 and Ad cals and pparatus	14 0 14 5 8 5 5 6 ditions Glass	101 914 914 116 58 90 2 103 20 647 15 36 7

## JENNER INSTITUTE OF PREVENTIVE MEDICINE.

#### DIRECTOR'S ANNUAL REPORT

For the Year ending May 31st, 1900.

#### I.-GENERAL.

I have the honour to report that during the past year the work of the various departments of the Institute has continued to be of a satisfactory character. There have been no changes in or additions to the personnel of the scientific staff. I regret that during a period of three months I was unable to perform any duties at the Institute. The fitting up of the Chelsea Building, which has occupied a great deal of my time during the past three years, is now completed with the exception of the Museum. A certain number of Museum specimens have in the meanwhile been prepared, and it would be of advantage to know, before going further, whether this is to be regarded as a permanent feature of the Institute. The foundations and footings on the vacant portion of the building site have been laid down, and this will facilitate building operations in the event of its being decided to proceed with the erection of the new wing. Messrs. A. Waterhouse & Son, the Architects, have concluded their duties, and the Clerk of the Works has been released. Amongst new features added during the year may be mentioned: (1) a room fitted up for purposes of physiological experiment, (2) a room for incubating purposes, which has proved of great convenience, (3) a laundry, in which all washing operations are now conducted, (4) a workshop, with a complete set of tools-the engagement of a handy man has lessened expenses in connection with the minor repairs of the Institute—(5) a Cold Storage Room, which has proved a success and has lessened the ice bill.

Mr. Briggs has been good enough to present to the Institute a small Hansen apparatus for pure yeast culture, and it will prove of service in researches at present in progress.

Considerable additions have been made to the Library, including complete sets of important periodicals, as well as donations from Sir Henry Roscoe, Dr. Dawson Williams, and others.

The first Laboratory Meeting of the Pathological Society was held at the Institute. I have been asked to join the Tuberculosis Congress, and to take part in the Malaria Conference as a representative of the Institute. The Society of Chemical Industry will visit the Institute in July, and a suitable demonstration has been arranged for the Members.

During the year I have visited the Laboratories of Professors Behring and Ehrlich and those of Meister Lucius and Brunig at Höchst, and received every facility for observing the methods of work. In the course of the visit to Professor Ehrlich an arrangement was made whereby the Institute will obtain in future a regular supply of Diphtheria test serum.

The business affairs of the Institute have claimed a large amount of my time, as well as general inquiries addressed to the Institute upon matters of Public Health interest.

The Rating Appeal has been decided against the Institute. The Government officials state that the present Laboratory accommodation is inadequate for the growing requirements of the Lymph Department. The Institute has not been recognised as a teaching body by the new London University.

#### II.-INSTRUCTION.

The number of students has decreased, as no effort was made during the year to attract students to the Institute. The workers were mainly senior men who wished to utilise the resources of the Institute to advance their knowledge. Their presence has not, therefore, interfered with the research of the staff, as the duties in this respect were mainly of an advisory character. There has been no requirement for the services of the Teacher of Hygiene. It would, no doubt, be advisable to inform the Teacher now whether his services are required in the future or not.

#### III.-RESEARCH.

In the course of the year a second series of the Institute's Transactions was published. The volume contained nineteen contributions and included a paper by Professor Ehrlich. The volume otherwise consisted of researches from the Institute's Laboratories. The volume is in the hands of the Members of the Governing Body and Council, and copies have been sent to the leading foreign Institutes. It has been the means of receiving valuable exchanges. A German abstract of the papers has been prepared for the "Bacteriologische Centralblatt." It may be of interest to give an excerpt from a letter received from Professor Welch of the John Hopkins University:—"I congratulate you upon the excellence of the scientific work recorded. Every paper is a genuine contribution of real value, and the whole impression made by the volume is of good clean scientific research. The Institute is a splendid success, and all English-speaking physicians have reason to be proud of it."

With regard to current research work, I have devoted my energies to the development of research in the various departments. Three papers have been communicated to the Royal Society upon the influence of the temperature of liquid air and hydrogen upon bacterial life. The experiments were conducted with the kind co-operation of Professor Dewar, and the remarkable results have led us to contemplate a further series of experiments upon life at low temperatures. In conjunction with Drs. Morris and Rowland, a paper has been sent to the Royal Society on "Expressed Yeastcell Plasma" (Buchner's "Zymase"). The subject presented so many features not only of special but of general biological interest that we were led to its investigation. The investigation had the further advantage (and this was one of the special reasons for carrying it out) that it enabled us to test on the larger yeast cell the best methods to be employed for triturating disease organisms for the purpose of experiments now in progress. The research has been the means of giving us an entirely new and practical method. It was gratifying to find that Professor Ehrlich considered that a promising line of research had thereby been opened out with regard to certain infectious diseases. We are working in the first instance at enteric fever, with the view of possibly obtaining immunising bodies. The results, whatever their character, may have a bearing on the methods of treatment employed in cholera and plague. Tubercle bacilli are being treated in the same way. The method devised for obtaining fresh cell juices has enabled us to commence a series of experiments on the Etiology of Cancer. These researches must necessarily be of a prolonged character. The elaboration of methods meant many failures, as well as consumption of time. I have to thank Dr. Hewlett and Mr. Rowland for their co-operation in the work. To Mr. Rowland I am greatly indebted, as without his experimental skill it would have been difficult to have reached the present stage.

Amongst other researches in progress, mention may be made of one upon the Cellulose Fermentation in the soil and Digestive Tract. The chemical side of this question is being studied by Dr. Harden.

Various investigations of minor importance, though of scientific interest, have been published or are in progress, e.g. the following have appeared:—"Diphtheria-like Organisms in Pigeons" (Macfadyen and Hewlett); "A new Method for the Widal Test" (Hewlett and Rowland); "The Indal Reaction" (Hewlett), etc.—whilst investigations upon "Distemper," the "Thermal Death Point of the Tubercle Bacillus," etc., are in progress.

A pleasant feature has been the the cordial co-operation of the Staff in furthering researches, which it would have been impossible for any one individual to carry out fully. In this respect, Dr. Harden's chemical knowledge has been of considerable assistance.

I am anxious to set on foot at the Institute a systematic inquiry into the nature and origin of Food Poisons, and I venture to lay the matter before the Governing Body as the subject could not be adequately investigated with the present resources at one's command.

#### IV.—RESEARCH WORKERS.

The following workers have utilised the Laboratories for research purposes:—(1) Dr. Moore: The Detection of the Typhoid Bacillus. (2) Dr. Peters: Function of the Suprarenals in Disease. (3) Dr. Bokenham: The Action of Liver on Toxins. (4) Dr. Fremlin: Nitrifying Organisms. (5) Dr. Barton: Digestive Tract of the Salmon. (6) Dr. Copeman: Vaccinia. (7) Dr. Latham: Tuberculosis. (8) Dr. Renner: Vaccine Lymph. (9) Dr. Lack: Malignant Diseases. (10) Dr. Barton: Standard Culture Media.

#### V.—CLINICAL AND SANITARY INVESTIGATIONS.

The number of bacterial diagnoses made during the year was 3,424, being an increase of about 900 over the previous year. This work, therefore, continues to form a valuable asset in the finances of the Institute.

Special investigations were carried out for Islington, Hackney, Fulham, Wandsworth, and Paddington (Tubercle in Milk); Newport (Glanders): Derbyshire and Worcestershire (Anthrax); Victoria Hospital for Children (Water Supply), etc.

#### VI.-PHOTOGRAPHIC DEPARTMENT.

The illustrations for the *Transactions* were prepared by Mr. Barnard in this laboratory, and a cabinet of reference slides is at present being formed. At the request of the Editor, a paper has been prepared for "Nature" upon the types of micro-organisms, with illustrative photographs.

The reports of Drs. Dean, Harden and Morris follow.

In closing this, my Fifth Annual Report, the last that I shall have the honour to present under the organisation hitherto existing, I may be allowed to take the opportunity of offering my thanks to those colleagues who have helped to further the work of the Institute during a somewhat trying and responsible period in the history of its affairs.

June, 1900.

ALLAN MACFADYEN, Director.

#### DR. HARDEN'S REPORT.

No classes for instruction have been held during the past year. The samples of milk and water received for analysis were about equal in number to those received during the preceding year.

The research on the Fermentation of Sugar by Bacteria of the coli group, a portion of the results of which appeared in the last volume of the Transactions of the Institute, has been continued and has yielded results of considerable interest which I hope to publish early in the autumn. The experiments have been extended to certain important pathogenic organisms such as Typhoid and Yellow Fever.

ARTHUR HARDEN.

#### THE HANSEN LABORATORY.

The number of students who have attended the Hansen Laboratory during the past year has been less than during the preceding Session, but some interesting work has nevertheless been done.

A chemist connected with the sugar and rum manufacture in Demerara attended a course of instruction in pure yeast culture and commenced an investigation of yeasts connected with the rum fermentation. It is hoped that the results of the preliminary work will be published and the research will be followed up at the seat of the industry.

An investigation respecting mould infection on the malting floors was commenced in the laboratory and had made considerable progress when the student who had charge of the work went to South Africa.

The greater part of the chemical work connected with an examination of the expressed yeast—cell plasma—the zymase of E. Buchner—was carried out in the Hansen Laboratory. The results of this work which are of considerable importance have been communicated to the Royal Society.

Other investigations on matters connected with the secondary yeasts of English beers, the diastases of Barley and Malt, &c., are at present in progress.

The working model of the Hansen apparatus, for the cultivation of pure yeast cultures on a large scale, presented to the Institute by Mr. S. Briggs, has been fitted up and is now in working order. It should prove of great use in many directions.

G. HARRIS MORRIS.

#### REPORT OF THE WORK IN THE ANTITOXIN DEPARTMENT.

I beg to submit the following statement of the work that has been carried out in the Serum Department of the Institute during the past year:—

Diphtheria Antitoxin.—In connection with this subject many experiments have been made with the view of ascertaining the best conditions for obtaining powerful toxins and antitoxins and in testing the

results claimed for the methods of other workers. The improvement in the strength of the toxins and in the method of immunising the animals has resulted in a higher average of antitoxic value being reached, so that the increased demand for this antitoxin has been successfully met.

The most powerful antitoxin obtained during the year had a value of 1,000 units per C.C., the highest we have yet obtained as tested by Ehrlich's newer method.

Such questions as the rapidity, extent and nature of the depreciation in the value of antitoxins which occurs on keeping, have been studied.

During the year 21,096 doses, each containing 2,000 units of Diphtheria Antitoxin, have been sent out from the Department.

Anti-Streptococcic Serum.—Several races of Streptococcus Pyogenes have been used in immunising the horses with the view of obtaining a polyvalent serum. We now possess two races exalted by passage to a very high degree of virulence. Attempts to obtain from those powerful toxins have not succeeded.

As stated in last year's report no high degree of protective power can be claimed for this serum. Reports of the clinical results are, however, in many cases favourable. 5,582 doses of this serum have been sent out.

Tetanus Antitoxin.—This antitoxin continues of good quality. The War Office and several of the Consulting Surgeons who have gone to S. Africa have been supplied with this and other antitoxins, a fact which accounts for the increase in the demand for this substance. 2,004 doses of this antitoxin have been sent out.

Preumococcus.—Dr. Salter has continued his work on this subject by attempting to obtain on the line of Pane's work a protective serum from the donkey. The results have so far been negative.

Staphylococcus.—Attempts made by me on similar lines to obtain an anti-staphylococcic serum have been unsuccessful.

Coley's Fluid.—367 doses of this substance have been supplied on demand.

We have thus sent out from the department during this year 29,049 doses in all, as compared with 23,364 doses during last year, the bulk of the increase being in Diphtheria Antitoxin.

Demonstrations.—During the year a number of demonstrations on the methods employed in the department have been given to medical men, among others to students from the Institute at Chelsea, to the D.P.H. Students from Guy's Hospital, University and King's Colleges, and to the Students of the School of Tropical Medicine.

Research.—Many of the questions dealt with under the subjects already mentioned might come under this heading.

Dr. Salter and I have conjointly carried out some work on the hæmolytic action of bacterial toxins. The work on the duration of diphtheria immunity and antitoxin production has been continued and I have published some of the results obtained. Some work has been begun on certain ferments and their antibodies which promises to give interesting results.

During the year the following papers have been published from the department.

The Pathogenicity of the Pseudo-Diphtheria Bacillus and its Relation to the Klebs-Loeffler Organism: A. Salter, Transactions, Jenner Institute.

On a new Pathogenic Streptothrix. G. Dean. Transactions of Jenner Institute.

Problems of Diphtheria Immunity. Transactions Path. Society, London. G. Dean.

#### REQUIREMENTS OF THE DEPARTMENT.

For the requirements of the Antitoxin Department I beg to refer to last year's report.

As the work has further increased during the year, the need of greater accommodation has been more than ever felt.

I desire to express my thanks to the Staff at the Poplars for their continued help in carrying out the work of the Department.

George Dean.

# Zenner Institute of Preventive

(Late British Institute of Preventive Medicine.)

Annual Report

BALANCE SHEET.

June 29th, 1900.

## ANNUAL GENERAL MEETING

OF THE

# Jenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine)

JUNE 28th, 1901.

#### REPORT OF THE GOVERNING BODY.

During the past year certain changes have been made in the organization of the Institute.

The department for the study of Bacteriology in relation to industrial and technical processes has been suspended.

The courses of Laboratory instruction hitherto given in Bacteriology and Hygiene have been terminated.

It has been decided to dispense with the office of Director, the head of each department being made directly responsible to the Governing Body, whilst the head of the Bacteriological department will, in the capacity of Secretary, exercise supervision and control over the administrative work of the Institute.

A new department of Pathological Chemistry has been established. The charge of this department was offered to and accepted by Dr. S. G. Hedin, of the University of Lund, Sweden.

Three Studentships of the value of £150 per annum have been instituted, and the first appointments made.

The Government Lymph department continues to occupy the Laboratories rented from the Institute.

The Great Central Railway having given notice to acquire the premises at Sudbury, inquiries are being made with a view to finding another suitable site for the Antitoxin department. Arrangements have been agreed to for the transfer of this property on favourable terms.

An account of the scientific work of the Institute will be found in the appended reports.

LISTER,

Chairman.

#### CHELSEA GARDENS,

#### GROSVENOR ROAD,

LONDON, S.W.

June 28 1901

#### HON. TREASURERS' REPORT.

We beg to report that the Accounts of the Institute have been made up to the 31st May, 1901, and show an excess of Income over Expenditure of £2.971 4s. 2d.

The receipts during the year have been as follows:---

Annual Subscriptions £7 7 0  Students' and Diagnosis Fees 896 16 0  Sales of Antitoxius, Maltein and Tuberculin 3,590 13 11  Rent of Laboratories on second floor 615 10 8  Sale of Transactions 4 2 11	5,114	10		6
Annual Subscriptions £7 7 0 Students' and Diagnosis Fees 896 16 0 Sales of Antitoxins, Mallein and Tuberculin 3,590 13 11				
Annual Subscriptions $£7$ 7 0 Students' and Diagnosis Fees 896 $t$ 6 0				
interest on investments				
Interest on Investments	£8,614	12	2	4

The Expenditure at Chelsea for the year charged to Income and Expenditure Account has been £7,387 13s. 2d. and at "The Poplars" Farm, Sudbury, £3,370 5s. 6d., making a total Expenditure of £10,757 18s. 8d., towards which amount £5,114 10s. 6d. has been earned from Fees, Sales of Antitoxins, &c.

The amount spent during the year on Furniture, Fittings and Apparatus at Chelsea charged to Capital Account has been £457 os. 9d., and on apparatus at Sudbury, £29 12s. 11d.

The Accounts have been Audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statements of Accounts are correct.

HENRY E. ROSCOE, J. L. PATTISSON,

Hon. Treasurers.

BALANCE SHEET.

# The Jenner Institute

Registered 25th July, 1891, as the British Institute of 1890, as an Association

## Dr.

# BALANCE SHEET,

	£	5.	d.	£ 536	s.	d.	
To Creditors				536	5	4	
To Water Laboratory Fund-					_		
Amount received from the Trustees of the late Richard Berridge,							
for building and endowing a Water Laboratory, conditionally							
that not more than £8,000 shall be spent upon the building							
of the Water Laboratory				26,352	13	10	
To JENNER MEMORIAL FUND-							
Amount received from the Committee of the Jenner Memorial Fund				5,768	٥	11	
To Sinking Fund				185			
To Capital Fund-				J			
Balance as per last account, 31st May, 1900	298,318	7	6				
Add-Balance of Income and Expenditure	7 /3	•					
Account, being excess of Income over							
Expenditure, for the year ending 31st							
May, 1901 2,979 19 3							
Les-Balance of Sudbury Farm Account,							
being excess of Expenditure over Income,							
for the year ending 31st May, 1901 8 15 1							
	2,971	4	,				
	-,91.		_	301,289	11	8	
					,	/	
					/		

HENRY E. ROSCOE, J. L. PATTISSON,

HON. TREASURERS.

Tune 25th, 1901.

£334,131 11 9

In accordance with the provisions of the Companies Act, 1900, we certify that all our requirements as Sheet, and, in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true and

# of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to Limited by Guarantee.

# 31st MAY, 1901.

Cr.

										-
By Cash					£	s.	d.	£	5.	d
At Bankers, Current Accour	ıt			€3,800 €	0 4	~		~	••	
Jenner Memorial Fund	***	444			11					
•					4,071	13	3			
In hand		444	44	***	34	18	10			
By Investments—								4,106	12	τ
£2,900 New South Wales 3	$rac{1}{2}$ per cer	it. Stock i	918	***	2,897	16	0			
£1,000 Cape of Good Hope	e, <b>3</b> } per	cent. Stoc	ck	***	1,000	0	٥			
£1,500 City of Sydney 4 pe	er cent. I	Bonds			1,500	0	0			
Mortgage on Freehold Prope	rty, Lisco	imbe Estai	te, at <b>3</b> p	er cent.	20,000	0	0			
£353 North Eastern Railwa	y 4 per o	ent. Guar	anteed S	Stock	499	11	0			
By Investments (LORD IVEAGE							—	25,897	7	٥
£25,000 New Zealand Go										
Stock 1945	111	***		144	24,112	10	0			
£25,000 Victorian Govern										
1929 - 1949	***		***		23,875	0	0			
£25,000 Natal 3 per cent.	Inscribed	l Stock 19	29 - 194	9	24,484	7	6			
£25,000 New South Wales	Governm	ient 3 per	cent. In	scribed						
Stock 1935					24,937		٥			
£26,100 South Australian	3 per cer	nt. Inscrib	ed Stoc	k 1916	24,860	5	0			
£25,000 Cape of Good Ho	ъре 3 ре	r cent. I	nscribed	l Stock						
1933 - 1943	110	***	227	***	23,850	0	٥			
£25,000 London and Sot										
Preferred Converted Or					32,000		0			
\$25,000 Great Northern Ra					26,000	٥	0			
£25,000 Midland Railway										
Ordinary Stock	***		200	222	20,375	0	٥			
£25,000 East Indian Rail					25,500		0			
		***		***	5	7	6			
By Investments (Jenner Men	MORIAL F	(מאט)					_	250,000	0	0
£2,650 Southwark and Va	auxhall	Water Co	. <b>3</b> pe	r cent.						
Debenture Stock "B"	444		111	***	2,756	to	٥			
£2,660 South Eastern Railw	vay 3 per c	cent. Prefe	rence St	ock 1898	2,740		0			
							_	5,496	15	0
By Debtors		344	4	244				1,450	17	5
BY STOCK OF TUBERCULIN AND	MALLE	N		212				11	0	0
BY FURNITURE, FITTINGS, AND S			TIO AMIN							
as per last Account, 31st Ma			USAND		1 596	10	,			
Additions during the year	цу, 1900			***	1,576		3			
ridditions during the year	****	***		***	457		9			
					2,033	11	0			
Less Written off for Deprecia	ition				203		1			
BY EXPENDITURE ON INSTITUTE				_				1,830	,	11
As per last Account, 31st M							_	1,030	3,	11.18
4 1 11 1		, moradii	P bare					42,967	5	8
								4-17-1	,	Ī
By Sudbury Farm Account—					-50	_				
Stock of Animals and Forage		elen ***	***		369		2			
Stock of Anti-Toxins, Bottles			111	***	1,087	17	3			
Stable Utensils and Farm In Laboratory Apparatus—As			2161	111	01	-/	9			
				192 2						
May, 1900	***	***	***	29 12						
Additions during the year	***		***	29 12	<u></u>					
				221 15	10					
Less Written off for Deprecia	ition				7					
						12	3			
Furniture—As per last Acco	ount, 31st	May, 196	o	85 10	10					
Less Written off for deprecia			***	12 16						
Additions and Improvemer	its to Bu				•	14	3			
last Account, 31st May,	1900		***		165	0	ō			
Unexpired Term of Lease	of "The I	Poplars"	Farm,							
as per last Account, 3	sist May	, 1900 (	to be							
taken over by the Great										
pany for £1,500)	***	****	***		390	0	0			
								2,371	10	8
										-
							£	334,131	11	9

Auditors have been complied with, and we report to the Members that we have audited the above Balance correct view of the state of affairs of the Institute as shown by the Books of the Institute.

# The Jenner Institute of

(Formerly the British Institute

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71.	
77 7	

#### INCOME AND EXPENDITURE ACCOUNT

		INC	OME.								
									£	S.	ď.
To Annual Subscriptions	***							***	7	7	0
To Interest and Dividends on Inves	tments								8,614	12	4
To Students' Fees		1.00							35	17	6
To Diagnosis Fees								340	865	18	6
To Sales of Tuberculin and Mallein	**1				228	3	6				
And Stock, 31st May, 1901	4.7	***			Ιť		0				
					239	3	6				
Deduct Stock, 31st May, 1900		***	***		10	0	0				
				_					229	3	6
To Sale of "Transactions"	44	(4)							4	2	Ι :
To Rent of Laboratories		1941		444					615	10	8

£10,367 12 5

#### Dr.

## SUDBURY FARM INCOME AND EXPENDITURE

	13	NCOME.								
				£	5.	d.		£	s.	d.
To Sale of Antitoxins		***		3,258	7	11				
Add Stock, 31st May, 1901	***	***	•••	1,063	2	6				
Deduct Stock, 31st May, 1900	·		***	4,321 960		•				
								3,361	10	5
To Balance, being excess of Expend Balance Sheet)		come tran		to Car		Fund	(see	8	15	1

# Preventive Medicine.

OF PREVENTIVE MEDICINE).

he Year E	Ending 31st	: Мау, 1	901,						Cr.	
			T. X	(PENDI	THID IS					
			E	CPENDI.	IUKE.				£	s,
By Rates,	Taxes, and Insur	rance .			***					ı
	es, Wages, and F				•••		• • •	•••	4,304	5
	nery, Printing, Po Expenses and St		Adver	tising	4	•••	•••	***	151	٥
By Bank (		ununcs						•••	5	(
By Law C		***					•••	***	34-1	
	ling Expenses			***	***		•••		28	(
	ors' Fee and Acco		harges	·	•••	***	•••	•••	31	
By Gas an	ic Light and Pow	ver .			***		•••	•••	240 116	1
By Fuel	to their and 10				***		• • •	***	83	
By Bacter	iological Laborat	tory Expens	ses		111				175	
	Laboratory Expe				***	***		• • • •	68	
	m Laboratory Ex			***	***	777	***	•••	37	
By Priotog	graphic Laborato logical Chemistry	z Denartme	nt Exc	enses	244	***	•••	***	12 207	
By Cultur			**	***			***	•••	76	
By Anima	ıls				***		•••		- 8o	2
By Anima	l House Expens	ses .			***			•••	78	
By Repair	rs and Alteration nt written off for	Depreciation	ng on of	Furnitura	Fittings :	and Scie	entific An	 Daratus	472	
	Books	Depreciation		1 drineure	, rittings,		muc rip	···	203	
By Sinkin	g Fund (1 °/o or	n Cost of I	Buildin	ıg)		***			185	
By Balanc	ce, being Excess	of Income	over	Expendit	ure Transi	erred to	o Capital	Fund	7,387	1,
(see	e Balance Sheet)		•••		***	***	****	***	2,979	1
									£10,367	12
OUNT 1	for the Ye	ar End	ing	31st ]	Мау, 1	901.		· · · · · ·	Cr	•
OUNT 1	for the Ye	ar End	ing	31st ]	Мау, 1	901.			Cr	•
OUNT 1	for the Ye	ar End		31st		901.		E		
			EX	(PENDI	TURE.			¥	£	s
By Rent,	Taxes, and Insur	rance .	EX	CPENDI'	rure.	***		*	£ 194	S
By Rent, By Salaries	Taxes, and Insur s and Wages	rance .	EX	(PENDI	TURE.				£	S
By Rent,	Taxes, and Insur s and Wages	rance .	EX	CPENDI'	rure.	***			£ 194	S
By Rent, 'By Salaries' By Animal	Taxes, and Insur s and Wages	rance .	EX	CPENDI'	rure.	***	235	•••	£ 194	S
By Rent, By Salaries By Animal Sto	Taxes, and Insur s and Wages ls	rance .	EX	CPENDI'	rure.			13 0	£ 194	s
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By Rent, By Salaries By Animal Sto Pur  Deduct—S S  By Forage By Stable By Farm I	Taxes, and Insurs and Wages ls—  ck 31st May, 19  rchased during the yellock 31st May,  and other Experences and Fu	rance  goo he year  1901  nses	EX	 	TURE.		235 141 377	13 0 13 2 6 2 2 8	£ 194 1,421	S. 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
By Rent, By Salaries By Animal Sto Pur  Deduct—S S  By Forage By Stable By Farm I By Gas an	Taxes, and Insurs and Wages ls lck 31st May, 19 rchased during the yeales during the yeales during the yeales are May, and other Experence and Fund Water	rance  goo he year  year  1901	EX		TURE.		235 141 377	13 0 13 2 6 2 2 8	£ 194 1,421  116 578 80 77 117	
By Rent, By Salaries By Animal Sto Pur  Deduct—S S  By Forage By Stable By Farm I By Gas an By Postage	Taxes, and Insurs and Wages Is— ck 31st May, 19 rchased during the yeales during the yeales during the year and other Experences and Furd Water es and Telegrams	goo he year	EX		TURE.	 17 6 5 2	235 141 377 261 	13 0 13 2 6 2 2 8	£ 194 1,421  116 578 80 77 117 2	
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By Rent, By Salaries By Animal Sto Pur  Deduct—S S  By Forage By Stable By Farm I By Gas an By Postage By Repairs By Labora	Taxes, and Insurs and Wages Is— sek 31st May, 19 rehased during the ales during the yellock 31st May, and other Experexpenses and Fundamental Telegrams and Alterations atory Expenses,	rance  goo he year  1901  nses iel	EX		TURE.  11 249 es, Corks,	17 6 5 2	235 141 377 261 icals and	13 0 13 2 6 2 2 8 Glass	£ 194 1,421  116 578 80 77 117 2 35	
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By Rent, By Salaries By Animal Sto Pur  Deduct—S S  By Forage By Stable By Farm I By Gas an By Postage By Repairs By Labors App By Travell	Taxes, and Insurs and Wages Is— ck 31st May, 19 rehased during the ales during the yellock 31st May, and other Experences and Fund Water es and Telegrams and Alterations atory Expenses, paratus ling Expenses at written off for	pance  goo he year  year  1901  nses including	EX	CPENDIT	TURE.  11 249 es, Corks,	17 6 5 2	235 141 377 261 icals and	13 0 13 2 6 2 2 8 Glass	£ 194 1,421  116 578 80 77 117 2 35 688 15	S. 13

## JENNER INSTITUTE OF PREVENTIVE MEDICINE.

#### ANNUAL REPORTS OF SCIENTIFIC STAFF

For the Year ending May 31st, 1901.

#### I.—BACTERIOLOGICAL DEPARTMENT.

I regret my enforced absence through illness during a considerable portion of the past year.

Dr. Hewlett was good enough to take charge of the Department, and to undertake the Secretarial duties of the Institute during my absence.

The paramount line of research work of the Department consists in the study of the causation and the possible means of prevention and cure of important infective diseases, and in this connection Enteric Fever and Tuberculosis have formed the main subjects of investigation. The research already published in the proceedings of the Royal Society Vol. 67, upon Buchner's "Zymase" was undertaken not only to control his important work, but also to gain experience in methods of cell disintegration with a view to the closer study of intracellular products in their bearing on Immunity and Disease. The elaboration of the methods for this purpose is being carried out by Mr. Rowland. Preliminary experiments on the Typhoid Bacillus have been carried out. My absence has unfortunately delayed the progress of these and cognate investigations, but they are now being actively prosecuted.

A number of experiments have been carried out by Dr. Hewlett with the view to obtaining a suitable soil for the cultivation of large quantities of virulent Tubercle Bacilli. This preliminary work has taken considerable time, but it was essential for the proper study of this organism, and is now completed.

Dr. Hewlett has likewise conducted the following investigations:—(1) The presence of diphtheria bacilli in the healthy throat; (2) Achalme's bacillus of acute rheumatism; (3) The value of the Danysz Rat Virus; (4) Distemper.

Research Students.—(1) Dr. Moore commenced work on January 1st. Dr. Moore has been engaged in devising a method for the isolation of the Typhoid Bacillus, and is now engaged in a research upon some of the factors in immunity to disease. (2) Dr. Petrie commenced work in February, and is carrying out an investigation upon the Bacteriolytic enzymes and their relation to Immunity in Infectious Diseases.

The following workers have used the Laboratories for purposes of research: Dr. Lack, Dr. Peters, Dr. Blaikie.

The Department has continued to carry out the Diagnosis work on behalf of the Institute, as well as the preparation of Mallein and Tuberculin; the number of bacterial diagnoses made during the year was 3,882 being an increase of about 450 over the previous year; the number of water analysis was 64.

I have once more to acknowledge the assistance rendered by Mr. Cooper in the business affairs of the Institute.

ALLAN MACFADYEN.

#### II.—PATHOLOGICAL CHEMISTRY DEPARTMENT.

I beg to submit the following report :---

From October to January I worked on the juice pressed from yeast cells by Mr. Rowland. I found that this contained a nucleoproteid which had not previously been observed. This work, however, I have not yet finished, because in January I started other investigations, on proteolytic enzymes in the juice pressed from various organs, the results of which seemed to be of more importance, and the prosecution of which has taken my whole time since then.

For these investigations Mr. Rowland has prepared the juice pressed from the various organs, and this juice I have submitted to chemical examination for the detection of enzymes. Up to the present time I have found strong proteolytic enzymes in the spleen, lymphatic glands and kidneys, weaker ones however also in heart, muscle, and mammary gland. In every case the enzyme acted most strongly in acid solution, though there was apparently some action also if the reaction was neutral or even alkaline. This I have found to apply also to the proteolytic enzyme obtained previously by Salkowski and Jacoby from liver cells.

In the skeletal muscles I have obtained evidence that the enzyme which is there to be found acts equally in alkaline and acid fluids, though in neither case is the action a strong one.

Dr. Leathes, on his appointment in January, was engaged in the examination of the urine from a case of acute yellow atrophy of the liver, in which, though, from scantiness of the material, the proof could not be made complete, some evidence was found of the presence of hexone bases. Since then he has undertaken the examination of the products of the digestive action of the spleen juice on fibrin. Several pounds of fibrin have been submitted to the prolonged action of this juice, and the resulting fluid is being investigated. Although the work is not yet complete it is clear that Proteids are broken up under the action of this ferment as completely as in tryptic digestion, many of the substances found being common to both processes.

For four or five weeks in December and January Dr. Thunberg, of Upsala, was working in the laboratory on the permeability of the shell membrane of hens' eggs. His experiments showed that the statements that this membrane possesses different degrees of permeability in the different directions is not correct. This point may have an important bearing on the permeability of membranes generally in the animal body.

S. G. HEDIN.

#### III.-CHEMICAL DEPARTMENT.

#### CHEMICAL AND WATER LABORATORY.

- 1. Analytical Work.—During this period 47 samples of water and one of milk have been analysed and reported on, the number during the corresponding period in 1899-1900 being 29 samples of water and 4 of milk.
- 2. Research Work.—(1). The researchon the Fermentative Action of B. Coli Communis and allied organisms, some of the preliminary results of which were described in the Transactions of the Institute published at the close of 1899, has been continued, the experiments having been extended to several allied organisms, including B. Typhosus, B. Icteroides and several abnormal varieties of B. Coli Communis. The results so far obtained have formed the subject of two papers (1) The products of fermentation of glucose by B. Icteroides, read before the Pathological Society on March 5th; and (2) The chemical action of B. Coli Communis and similar organisms on the Carbo-hydrates and allied Compounds, read before the Chemical Society on March 21st and published in the Journal of the Society for May.

Since that date the experiments have been continued and further extended to the action of these organisms on the proteids and to the study of the general type of fermentation characteristic of various lactic acid producing organisms, such as B. Acidi Latici and V. Cholerae.

- (2) In January of this year experiments were commenced in conjunction with Mr. Rowland on the phenomena accompanying the Autoplasmolysis of Yeast. A number of interesting results were obtained and are now being embodied in a paper on this subject.
- (3). In February, Mr. W. J. Young, B.Sc., was appointed assistant in the Chemical Department, and commenced work on the 18th. Experiments were then begun on the extraction of glycogen from yeast, and the examination of its properties. A convenient method has already been found for the preparation and purification of this substance and the investigation of its properties commenced.
- (4). Experiments have also been started (a) In conjunction with Mr. Rowland, on the functions of glycogen in the fermentation produced both by living yeast and expressed yeast juice; (b) In conjunction with Dr. Macfadyen and Mr. Rowland, in continuance of the work previously published by Messrs. Macfadyen, Morris and Rowland, on expressed yeast juice, with special reference to the criticisms of Buchner on this work.
- (5). On February 7th, Dr. A. McKenzie, who had been appointed as Grocers' Company's Research Student of the Jenner Institute, commenced work on the subject which he had suggested to the Governors in his application: The resolution of Hydroxybutyric Acid into its optically active constituents. The preliminary experiments on this subject have yielded favourable results and quantitative experiments are being commenced. Dr. McKenzie has also commenced, in conjunction with myself, a research on the general question of the resolution of racemic acids into their optically active constituents by microscopic organisms (moulds and bacteria), which it is hoped will yield interesting results as to the biological and chemical relations of such organisms to optically asymmetric substances.

ARTHUR HARDEN.

#### IV.-ANTITOXIN DEPARTMENT, SUDBURY.

I beg to submit the following report of the work carried out in the Serum Department of the Institute during the past year.

Diphtheria Antitoxin.—We have now worked out in the department accurate and certain methods of preparing powerful toxins, and of safely and rapidly immunising the horses, thus enabling us to obtain antitoxins of excellent quality. The increase in the number of doses sent out is maintained. 23,927 doses have been sent out as compared with 19,678 last year. The increase in the last six months has been especially large, from 11,274 last year to 14,543 this year.

Antistreptococcic Serum.—Doses sent out this year, 4,400; last year, 5,221.

Tetanus Antitoxin.—Doses sent out this year, 926; last year, 1,668.

The unusual number of doses required in November and December, 1899, and January, 1900, at the outbreak of the war probably partly accounts for the apparent decrease in the demand for these substances. At the same time the general experience is that Tetanus Antitoxin, although almost perfect in its preventive action is, owing to the late diagnosis of the disease, much less satisfactory than diphtheria antitoxin as a curative agent.

Coley's Fluid.-369 doses of this substance have been supplied on demand.

We have thus sent out from the department 29,622 doses of antitoxins of all kinds.

Demonstrations have been given to a number of medical men, medical officers of health, and among others to classes from the School of Tropical Medicine, from the London Hospital, from Guy's Hospital, and University College.

Acting on instructions from the Governing Body, Dr. Hewlett and I paid a visit to the Pasteur Institutes at Paris and Lille to enquire into and report on the question of Anti-Plague Serum with special reference to its value and the methods of preparation.

Research Work.—In all the main subjects of routine work of the department research work is being carried on.

A number of experiments have been performed to elucidate the question as to whether the alexin of the blood serum plays any part in the defence of the organism in diphtheria infection and intoxication.

The curative power of Diphtheria Antitoxins obtained under different conditions of immunity has been compared with the neutralising or preventive power, as tested by Ehrlich's method. Interesting observations have been made on the relation of the different pathogenic cocci to the red blood-corpuscles in vitro. The antitryptic property of the normal sera of different animals has been investigated, and the possibility of obtaining by immunisation an increase of this action has been demonstrated. Starting from Metchnikoff's Work on cell Toxins, toxic sera have been obtained by injections with the liver and pancreas cells of other species. Dr. Todd has carried out some work on Hæmolysins. He has begun a research on the Typhoid Bacillus with special reference to its toxins. He has also done some preliminary work on the pathology of Scarlet Fever.

I desire to express my thanks to the Staff at The Poplars for their help in carrying out the work of the department.

GEORGE DEAN.

Zenner Institute of Preventive

(Late British Institute of Preventive Medicine.

ANNUAL REPORT

AND

BALANCE SHEET.

June 28th, 1901.

#### JUNE, 1902.

# The Jenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine)

CHELSEA GARDENS, GROSVENOR ROAD

LONDON, S.W.

#### THE GOVERNING BODY.

THE LORD LISTER, F.R.S., Chairman.

THE LORD IVEAGH, K.P.

SIR HENRY E. ROSCOE, F.R.S.

Hon.

SIR JOHN BURDON-SANDERSON, BART., F.R.S. J. LUARD PATTISSON, C.B.

Treasurers.

SIR MICHAEL FOSTER, K.C.B., M.P., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

DR. ALLAN MACFADYEN, B.Sc., Secretary. MR. GEORGE COOPER, Assist. Secretary and Accountant.

#### THE SCIENTIFIC STAFF.

Chelsea:-

Bacteriological Department: -ALLAN MACFADYEN, M.D., B.Sc.

Assistants: -- SYDNEY ROWLAND, M.R.C.S., L.R.C.P.

A. MACCONKEY, M.B., B,CH.

Research Students :- G. PETRIE, M.B.

J. O. WAKELIN BARRATT, M.D.

Pathological Chemistry Department: -S. G. HEDIN, M.D.

Assistant:-J. B. LEATHES, M.B., B.CH.

Research Student: - L. JENNER, M.B., B.CH.

Chemical Department:—A. HARDEN, M.Sc., Ph.D.

Assistant: -W. J. YOUNG, B.Sc.

Grocers' Research Student: -A. McKENZIE, D.Sc., Ph.D.

Photographic Laboratory: - J. E. BARNARD, F.R.M.S.

Sudbury:—

Antitoxin Department: -GEORGE DEAN, M.B.

Assistant :- C. TODD, M.B.

## ANNUAL GENERAL MEETING

OF THE

# Jenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine)

JUNE 30th, 1902.

#### REPORT OF THE GOVERNING BODY.

The Governing Body are glad to be able to report favourably of the work that has been carried on during the year, both at the Institute at Chelsea and also at "The Poplars," Sudbury.

Sir Michael Foster, K.C.B., M.P., F R.S., has been nominated by Lord Iveagh, a member of the Governing Body, in succession to Lord Rayleigh, resigned.

As mentioned in the Report of last year, the Governing Body were compelled to look about for new premises to take the place of the Farm at Sudbury, which had been compulsorily acquired by the Great Central Railway Company. They have succeeded in acquiring at Aldenham, in Herts, a Freehold property known as "Queensberry Lodge," including about 28 acres of land. The excellent buildings already on the property include two good residences, a foreman's house, another cottage for stablemen, and several fine ranges of loose boxes and stabling of the best modern construction. The Governing Body have set apart the principal residence as the headquarters of the establishment, and the second has been assigned to Dr. Dean, the Chief of the Department. They have further built from the plans of Mr. Paul Waterhouse several new and detached laboratories which will render the establishment very complete, not only for the purposes of preparation of Antitoxins but also for the research work undertaken by the Institute. The new buildings will be open in August next, when the establishment from Sudbury will be transferred to them, and "The Poplar's" Farm will be finally surrendered on 29th September.

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At Chelsea additions have been made to the mechanical plant in the Basement, and the facilities for research greatly increased by the additional power and new machinery now available.

The Library has been augmented by the purchase of a number of standard works of reference, and transferred to the top rooms of the building. This has provided additional Laboratory accommodation on the Third Floor, and the vacated rooms are being equipped for research purposes.

The Governing Body offered an appointment to Major Ronald Ross, F.R.S., as Head of a Department in the Institute, but regret to state that though Major Ross had at first accepted, be finally decided to withdraw from the appointment

The Government Vaccine Lymph Department, owing to an unexpected increase in work, applied for, and have been granted, the temporary use of two additional rooms in the Institute at Chelsea. They at present occupy the whole of the second floor, but their tenancy will expire on 31st December, 1903, when the rooms will be available for the purposes of the Institute.

A Fourth Studentship has been instituted in connection with the Department of Pathological Chemistry.

The finances of the Institute, as will be seen from the Report of the Hon. Treasurers and the Balance Sheet attached, are on a satisfactory basis.

An account of the Scientific work of the Institute is contained in the appended Reports.

LISTER.

Chairman.

LONDON, S.W.

#### HON. TREASURERS' REPORT.

We beg to report that the Accounts of the Institute have been made up to the 31st May, 1902, the Income and Expenditure Account showing a credit balance of £3,532 14s. 1cd., exclusive of £905 12s. od. received on the Sale of the Lease of the Sudbury Farm, and of £134 17s. 3d. expenses incurred at Queensberry Lodge.

The receipts during the year have been as follows:---

Interest on Investments		***		***			€8,627 18	2
Annual Subscriptions				£2	2	٥		
Diagnosis Fees			***	859	17	٥		
Sales of Antitoxins, Mallein	n and Tul	berculin		4,696				
Rent of Laboratories let to	Local Go	overnmen	t Board	691	10	10		
Sale of Transactions	***			2	0	9		
Sale of Lease of "The Pop	lars" Far	m after w	riting				-	
off the Balance of cost of	f Lease an	d additio	ns to					
Buildings and Expenses	of Sale		-03	905	I 2	٥	7,157 18 1	0
							£.15,785 17	10

The Expenditure at Chelsea for the year charged to Income and Expenditure Account has been £7,799 125. od.; at "The Poplars" Farm, Sudbury, £3,547 18s. 2d., and at "Queensberry Lodge" Aldenham, £134 17s. 3d., making a total Expenditure of £11,482 7s. 5d., towards which amount £7,157 18s. 10d. has been earned from Fees, Sales of Antitoxins and Sale of Lease of "The Poplars."

The amount spent during the year on Furniture, Fittings and Apparatus at Chelsea charged to Capital Account has been £950 14s. 8d., including £459 for New Machinery in the Basement, and £294 for Standard Works of Reference for the Library; and at Sudbury, £30 16s. od.

The purchase price of the "Queensberry Lodge," Aldenham Freehold Estate, including costs, was £8,234. The new Laboratories, Alterations, &c., have cost to date £2,957. With the exception of £2,500 temporarily borrowed from the Bankers of the Institute these amounts will have been met out of savings of income. There is, however, a further estimated expenditure to be incurred in completion of the new Laboratories, &c., of about £1,500.

The sum of £185 has been added to the Sinking Fund Investment, which now stands at £373 17s. 6d.

The Accounts have been audited by Messrs. Cooper Brothers & Co., Chartered Accountants, and they have certified that the following Balance Sheet and Statements of Accounts are correct.

HENRY E. ROSCOE, J. L. PATTISSON,

Hon. Treasurers.

BALANCE SHEET.

# The Jenner Institute

Registered 25th July, 1891, as the British Institute of 1890, as an Association

#### Dr.

# BALANCE SHEET,

			£	s. d.	£	5,	đ.
To Creditors	***				2,045		
To Loan from Bankers against Securities per co	NTRA				2,500	0	0
To WATER LABORATORY FUND— Amount received from the Trustees of the late for building and endowing a Water Laborate that not more than £8,000 shall be spent upof the Water Laboratory	ory, conditio	nally			26,352	13	10
To Jenner Memorial Fund-						_	
Amount received from the Committee of the Jenn	er Memorial	Fund			5,768	•	ΙΙ
To Sinking Fund	***	***			373	17	6
To CAPITAL FUND							
Balance as per last account, 31st May, 1901  Add—  Balance of Chelsea Gardens Institute Income and Expenditure Account, being excess of Income over Expenditure, for the year			301,289	11 8			
ending 31st May, 1902 Balance of Sudbury Farm Income and Expen-	2,587 14	5					
diture Account, being excess of Income over Expenditure for the year ending 31st May, 1902	945	o 5					
Sale of Lease of "The Poplars"	,	•					
Farm 1500 0 0  Less-Balance of Cost of Lease, Additions and Improvements to Buildings and							
Expenses of Sale 594 8 0	905 1	2 0					
	4,438	6.10					
Less—Expenditure at Queensberry Lodge Farm to the 31st May, 1902:—  Rates, Taxes and Insurance 33 15 5  Wages 60 0 0  Sundry Expenses 41 1 10		17 3	4,303				
				3	05,593	1	3
			/				
HENRY E. ROSCOE,		/					
J. L. PATTISSON,	/						
HON. TREASURERS.  June 24th, 1902.							
				£3	342,633	12	8

In accordance with the provisions of the Companies Act, 1900, we certify that all our requirements as Sheet, and, in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true and

# of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to Limited by Guarantee.

31st MAY, 1902.

Cr.

### 225,000 New Zealand Government 3 per cent. Inscribed Stock 1945 ### 225,000 Netrotian Government 3 per cent. Inscribed Stock 1920 - 1949 ### 225,000 New South Wales Government 3 per cent. Inscribed Stock 1920 - 1949 ### 225,000 New South Wales Government 3 per cent. Inscribed Stock 1930 - 225,000 South Australian 3 per cent. Inscribed Stock 1933 - 1943	At Bankers, Current Account In hand In hand String 19 9  By INVESTMENTS  82,900 New South Wales 3½ per cent. Stock 1918 82,900 New South Wales 3½ per cent. Stock								
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BV INVESTMENTS	BY INVESTMENTS   22,000 New South Wales 3\( \frac{1}{2}\) per cent. Stock 1918   2,807 16 0   1,403 19   2,807 16 0   2,1000 Cape of Good Hope, 3\( \frac{1}{2}\) per cent. Stock   1,000 0 o   0   0   0   0   0   0   0   0		To board						
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### ### ##############################	### ### #### #########################		£1,000 Cape of Good Hope, 3½ per cent. Stock	1,000	0	0			
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By Investments (Lord I Vergat's Donation)	BY INVESTMENTS (JOND IVEACH'S DONATION)								
#225,000 New Zealand Government 3 per cent. Inscribed Stock 1945 #225,000 Net Jostorian Government 3 per cent. Inscribed Stock 1920 - 1949 #225,000 Net South Wales Government 3 per cent. Inscribed Stock 1920 - 1949 #225,000 New South Wales Government 3 per cent. Inscribed Stock 1930 - 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1931 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1943 - 1944 - 1945	### 225,000 New Zealand Government 3 per cent. Inscribed Stock 1945			499	11	٥			
Stock 1945   225,000 Victorian Government 3 per cent. Inscribed Stock 1929 - 1949   225,000 Natal 3 per cent. Inscribed Stock 1920 - 1949   24,837   7 6   225,000 New South Wales Government 3 per cent. Inscribed Stock 1935   24,837   7 6   24,830   7 6   255,000 New South Wales Government 3 per cent. Inscribed Stock 1916   24,830   5 0   24,930   5 0   24,830   5 0   24,930	## Stock 1945 ## 25,000 Victorian Government 3 per cent. Inscribed Stock ## 1929 - 1949 ## 25,000 Natal 3 per cent. Inscribed Stock 1929 - 1949 ## 25,000 Natal 3 per cent. Inscribed Stock 1929 - 1949 ## 25,000 Natal 3 per cent. Inscribed Stock 1916 ## 25,000 Cape of Good Hope 3 per cent. Inscribed Stock ## 25,000 Cape of Good Hope 3 per cent. Inscribed Stock ## 25,000 Loan of Australian 3 per cent. Inscribed Stock ## 25,000 Loan of Good Hope 3 per cent. Inscribed Stock ## 25,000 Loan of Converted Ordinary Stock ## 25,000 Micialan Railway 3 per cent. Preference Stock ## 25,000 East Northern Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Debenture Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock ## 25,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 3 per cent. Preference Stock 1898 ## 20,000 East Indian Railway 190 East 1800 E	Н				_	25,897	7	0
#25,000 (vitorian Government 3 per cent. Inscribed Stock 1929 - 1949	#25,000 New South Wales Government 3 per cent. Inscribed Stock 1929 - 1949 23,875 0 0 24,484 7 6 225,000 Naw South Wales Government 3 per cent. Inscribed Stock 1935 240,337 10 0 24,486 5 0 226,000 Cape of Good Hope 3 per cent. Inscribed Stock 1935 240,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 25,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock 225,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock 25,000 Micland Railway 2 per cent. Preferred Converted Ordinary Stock		£25,000 New Zealand Government 3 per cent. Inscribed						
#25,000 (vitorian Government 3 per cent. Inscribed Stock 1929 - 1949	#25,000 New South Wales Government 3 per cent. Inscribed Stock 1929 - 1949 23,875 0 0 24,484 7 6 225,000 Naw South Wales Government 3 per cent. Inscribed Stock 1935 240,337 10 0 24,486 5 0 226,000 Cape of Good Hope 3 per cent. Inscribed Stock 1935 240,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 25,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock 225,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock 25,000 Micland Railway 2 per cent. Preferred Converted Ordinary Stock		Stock 1045	24.112	10	0			
### 225,000 Natal 3 per cent. Inscribed Stock 1929 - 1949	### 25,000 Natial 3 per cent. Inscribed Stock 1929 - 1949		\$25,000 Victorian Covernment 3 per cent Inscribed Stock	-4,		•			
### 225,000 Natal 3 per cent. Inscribed Stock 1929 - 1949 ### 225,000 New South Wales Government 8 per cent. Inscribed Stock 1935 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1916 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 ### 225,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock ### 225,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock ### 225,000 Midland Railway 3 per cent. Debenture Stock 225,000 Midland Railway 3 per cent. Debenture Stock Cash at Bank ### 225,000 East Indian Railway 3 per cent. Debenture Stock Cash at Bank ### 225,000 East Indian Railway 3 per cent. Debenture Stock Cash at Bank ### 225,000 East Indian Railway 3 per cent. Debenture Stock Cash at Bank ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 225,000 East Indian Railway 3 per cent. Debenture Stock ### 22,660 Southward And East ### 22,660 Southward And East ### 22,660 Southward ### 22,660 Southward ### 22,660 Southward	### ### ### ### ### ### ### ### ### ##			ο					
### 25,000 New South Wales Government 3 per cent. Inscribed Stock 1935 ### 226,100 South Australian 3 per cent. Inscribed Stock 1916 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1916 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 1916 ### 225,000 Cape of Good Hope 3 per cent. Inscribed Stock 235,000 Cape of Good Hope 3 per cent. Preference Stock 225,000 Great Northern Railway 3 per cent. Preference Stock 225,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock ### 225,000 East Indian Railway 2 per cent. Preferred Converted Ordinary Stock ### 25,000 East Indian Railway 3 per cent. Debenture Stock 25,000 o c Cash at Bank  ### Investments (Jenner Memorial Fund) ### 22,650 Southwark and Vauxhall Water Co. 3 per cent. Debenture Stock "B" ### Debenture Stock "B" ### 22,650 Southwark and Vauxhall Water Co. 3 per cent. Debenture Stock "B" ### 22,650 Southwark and Vauxhall Water Co. 3 per cent. Debenture Stock "B" ### 27,740 5 0 5,496 15 0 5	### ### ### ### ### ### ### ### ### ##		1929 - 1949						
Slock 1935	Stock 1935			24,484	7	6			
## \$22,100 South Australian 3 per cent. Inscribed Stock 1916 ## \$25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 23,850 0 0 ## \$25,000 London and South Western Railway 4 per cent. Preferred Converted Ordinary Stock 26,000 Midland Railway 2 per cent. Preference Stock 26,000 Cast Indian Railway 3 per cent. Debenture Stock Cash at Bank 20,375 0 0 ## \$25,000 East Indian Railway 3 per cent. Debenture Stock Cash at Bank	## \$28,100 South Australian 3 per cent. Inscribed Stock 1916		£25,000 New South Wales Government 3 per cent. Inscribed						
## \$22,100 South Australian 3 per cent. Inscribed Stock 1916 ## \$25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933 - 1943 23,850 0 0 ## \$25,000 London and South Western Railway 4 per cent. Preferred Converted Ordinary Stock 26,000 Midland Railway 2 per cent. Preference Stock 26,000 Cast Indian Railway 3 per cent. Debenture Stock Cash at Bank 20,375 0 0 ## \$25,000 East Indian Railway 3 per cent. Debenture Stock Cash at Bank	## \$28,100 South Australian 3 per cent. Inscribed Stock 1916		Stock 1025	24.037	10	0			
### 25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1033 - 1943	### ### ### ### ### ### ### ### ### ##								
### ### ### ### ### ### ### ### ### ##	### ### ##############################		205 000 Cons of Cood Hope 2 non cont. Inscribed Cook	24,000	5	0			
### 225,000 London and South Western Railway 4 per cent. Preferred Converted Ordinary Stock	### ### ### #### #####################			_					
### 225,000 London and South Western Railway 4 per cent. Preferred Converted Ordinary Stock	### ### ### #### #####################		1933 - 1943	23,850	0	0			
### Preferred Converted Ordinary Stock #25,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock #25,000 Midland Railway 2½ per cent. Preferred Converted Ordinary Stock #25,000 Midland Railway 3 per cent. Debenture Stock #25,500 o c	### Preferred Converted Ordinary Stock ### 25,000 Great Northern Railway 3 per cent. Preferred Converted Ordinary Stock ### 25,000 Midland Railway 2½ per cent. Preferred Converted Ordinary Stock ### 25,000 East Indian Railway 3 per cent. Debenture Stock ### 25,000 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,500 % 25,000 % 25,500 % 25,000 % 25,500 % 25,000		£25,000 London and South Western Railway 4 per cent.	-					
### ### ##############################	### \$25,000 Great Northern Railway 2½ per cent. Preference Stock £25,000 Midland Railway 2½ per cent. Preferred Converted Ordinary Stock		Preferred Converted Ordinary Stock	22,000	0	0			
### \$25,000 Midland Railway 23 per cent. Preferred Converted Ordinary Stock	### \$25,000 Midland Railway 2½ per cent. Preferred Converted Ordinary Stock								
Ordinary Stock	Ordinary Stock		205 000 Midland Dailman Ol and and D. C. of C.	20,000	0	0			
## \$25,000 East Indian Railway 8 per cent. Debenture Stock Cash at Bank	## \$25,000 East Indian Railway 8 per cent. Debenture Stock Cash at Bank		#20,000 Angland Kanway Zo per cent. Preferred Converted						
## \$25,000 East Indian Railway 8 per cent. Debenture Stock Cash at Bank	## \$25,000 East Indian Railway 8 per cent. Debenture Stock Cash at Bank		Ordinary Stock	20,375	0	0			
Cash at Bank BY INVESTMENT (JENNER MEMORIAL FUND)— \$2,650 Southwark and Vauxhall Water Co. 3 per cent. Debenture Stock "B" \$2,660 South Eastern Railway 3 per cent. Preference Stock 1898  BY INVESTMENT (SINKING FUND)— \$2393 4s. 5d. 2\frac{3}{4} per cent. Consols BY DEBTORS BY STOCK OF TUBERCULIN AND MALLEIN BY FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND BOOKS, as per last Account, 31st May, 1901 Additions during the year  Less Written off for Depreciation BY EXPENDITURE ON INSTITUTE BUILDING AT CHELSEA— As per last Account, 31st May, 1901, including purchase of freehold site, \$6,000 BY QUEENSERRY LODGE FARM, ALDENHAM— Purchase of freehold land and buildings Expenditure on new buildings  Furniture  Stock of Animals Additions during the year  Less Written off for Depreciation  Less Written off for Depreciation  BY SUDEBURY FARM ACCOUNT— Stock of Animals Stoc	Cash at Bank		£25,000 East Indian Railway 3 per cent. Debenture Stock			0			
By Investments (Jenner Memorial Fund)	BY INVESTMENTS (JENNER MEMORIAL FUND)—  22,000 0   22								
## 22,650 Southwark and Vauxhall Water Co. 8 per cent.  Debenture Stock "B"	## 2.650 Southwark and Vauxhall Water Co. 8 per cent.  Debenture Stock "B"	D		5				_	_
Debenture Stock "B"  \$2,660 South Eastern Railway 3 per cent. Preference Stock 1898  BY INVESTMENT (SINKING FUND)—  \$2393 4s. 5d. 2\frac{3}{4} per cent. Consols  BY DEBTORS	Debenture Stock "B" 2,756 10 0 2,740 5 0  \$2,660 South Eastern Railway 3 per cent. Preference Stock 1898	D					250,000	0	0
### ### ##############################	### ### ##############################		\$2,050 Southwark and vauxnall water Co. & per cent.						
Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Stable Utensils, Farm Implem	Sy   15			2,756	10	٥			
Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Lass Written off for Depreciation   Stable Utensils, Farm Implements and Sheds   Stable Utensils, Farm Implem	Sy   15		£2,660 South Eastern Railway 3 per cent. Preference Stock 1898						
### BY INVESTMENT (SINKING FUND)—  ### 2393 4s. 5d. 24 per cent. Consols  By Debtors	BY INVESTMENT (SINKING FUND)—  2393 4s. 5d. 24 per cent. Consols   927 4   50 0		7-1	-774-	-	_	= 406		_
## 2393 4s. 5d. 2½ per cent. Consols  By Debtons	## 2393 4s. 5d. 2½ per cent. Consols  By Debtors	D	INVESTMENT (SIMPING FIND)				31490		~
By Debtors	By Debtors	ь							
By Stock of Tuberculin and Mallein By Furniture, Fittinos, and Scientific Apparatus and Books, as per last Account, 31st May, 1901	By Stock of Tuberculin and Mallein By Furniture, Fittings, and Scientific Apparatus and Books, as per last Account, 31st May, 1901	_						17	6
By STOCK OF TUBERCULIN AND MALLEIN 50 0 0  By FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND BOOKS, as per last Account, 31st May, 1901	By Stock of Tuberculin and Mallein       550 c         By Furniture, Fittings, and Scientific Apparatus and Books, as per last Account, 31st May, 1901       1,830 3 11         Additions during the year       2,780 18 7         Less Written off for Depreciation       2,780 18 7         By Expenditure on Institute Building at Chelsea—         As per last Account, 31st May, 1901, including purchase of freehold site, ∠6,000         By Queensberry Lodge Farm, Aldenham—         Purchase of freehold land and buildings         Expenditure on new buildings         Expenditure on new buildings         By Suddly Farm Account—         Stock of Animals         Stock of Animals         Stock of Animals         Stock of Anti-Toxins, Bottles and Corks         Stock of Anti-Toxins, Bottles and Corks         May, 1901         Additions during the year         230 8 3         Less Written off for Depreciation         7 5 5         65 8 10         1,738 18	В	DEBTORS				927	4	I
By Furniture, Fittings, and Scientific Apparatus and Books, as per last Account, 31st May, 1901	By Furniture, Fittings, and Scientific Apparatus and Books, as per last Account, 31st May, 1901	В	STOCK OF TUBERCULIN AND MALLEIN					o	0
Additions during the year	As per last Account, 31st May, 1901 Additions during the year	R					3-		-
Additions during the year	Additions during the year			- 0	_				
Less Written off for Depreciation  By Expenditure on Institute Building at Chelsea— As per last Account, 31st May, 1901, including purchase of freehold site, £6,000	Less Written off for Depreciation  By Expenditure on Institute Building at Chelsea— As per last Account, 31st May, 1901, including purchase of freehold site, £6,000								
Less Written off for Depreciation   278   1 to   10	Less Written off for Depreciation   278   1 to		Additions during the year	950	14	8			
Less Written off for Depreciation   278   1 to   10	Less Written off for Depreciation   278   1 to					_			
Less Written off for Depreciation   278   1 to   10	Less Written off for Depreciation   278   1 to			2,780	18	7			
By Expenditure on Institute Building at Chelsea—   As per last Account, 31st May, 1901, including purchase of freehold site, £6,000	By Expenditure on Institute Building at Chelsea—   As per last Account, 31st May, 1901, including purchase of freehold site, £6,000		Less Written off for Depreciation	278	1	10			
As per last Account, 31st May, 1901, including purchase of freehold site, £6,000	As per last Account, 31st May, 1901, including purchase of freehold site, £6,000	R					2 502	16	^
Stock of Animals   Stock of Anti-Toxins, Bottles and Corks   Stable Utensils, Farm Implements and Sheds   Laboratory Apparatus—As per last Account, 31st May, 1901   May, 19	Stock of Animals   Stock of Anti-Toxins, Bottles and Corks   Stable Utensils, Farm Implements and Sheds   Laboratory Apparatus—As per last Account, 31st   May, 1901   May, 1901   May, 1901   May, 1901   May	~					2,502		9
By Queensberry Lodge Farm, Aldenham—   Purchase of freehold land and buildings	By Queensberry Lodge Farm, Aldenham—   Purchase of freehold land and buildings		As per last Account, 31st May, 1901, including purchase of						
Purchase of freehold land and buildings   8,234 8 3 2,957 0 0	Purchase of freehold land and buildings   8,234	_	ireenoid site, £0,000				42,907	5	8
Purchase of freehold land and buildings   8,234 8 3 2,957 0 0	Purchase of freehold land and buildings   8,234	В							
Expenditure on new buildings  Furniture  By Sudbury Farm Account— Stock of Animals	Expenditure on new buildings			8.234	8	3			
Furniture	Furniture					_			
Sude of Animals   Stock of Anti-Toxins, Bottles and Corks   Stable Utensils, Farm Implements and Sheds   Stable Utensils, Stable Utensi	Sudbury Farm Account		embanana on non ouromen	4,957	-				
Sude of Animals   Stock of Anti-Toxins, Bottles and Corks   Stable Utensils, Farm Implements and Sheds   Stable Utensils, Stable Utensi	Sudbury Farm Account				0				
By Sudbury Farm Account—  Stock of Animals   .	Stock of Animals   342 4 8   Stock of Anti-Toxins, Bottles and Corks   1,014 5 6   Stable Utensils, Farm Implements and Sheds   109 11 11   Laboratory Apparatus—As per last Account, 31st   May, 1901   1   10   10   10   10   10   10					_			
By Sudbury Farm Account—  Stock of Animals   342 4 8   1,014 5 6   Stable Utensils, Farm Implements and Sheds   109 11 11   Laboratory Apparatus—As per last Account, 31st   May, 1901   199 12 3   Additions during the year   199 12 3   30 16 0   230 8 3   230 10   207 7 5   Eurniture—As per last Account, 31st May, 1901   72 14 3   Less Written off for depreciation   7 5 5   65 8 10   1,738 18 4	By Sudbury Farm Account—  Stock of Animals   342 4 8   Stock of Anti-Toxins, Bottles and Corks   1,014 5 6   Stable Utensils, Farm Implements and Sheds   109 11 11   Laboratory Apparatus—As per last Account, 31st   May, 1901   199 12 3   Additions during the year   199 12 3   30 16 0      Less Written off for Depreciation   230 8 3   207 7 5		Furniture	84	0	11			
Stock of Animals	Stock of Animals						11,275	9	2
Stock of Animals            342 4 8       1,014 5 6         Stable Utensils, Farm Implements and Sheds	Stock of Animals            342 4 8       8         Stock of Anti-Toxins, Bottles and Corks         1,014 5 6       109 11 11       11         Stable Utensils, Farm Implements and Sheds           109 11 11         Laboratory Apparatus—As per last Account, 31st May, 1901	В	SUDBURY FARM ACCOUNT—				-,-13	,	
Stock of Anti-Toxins, Bottles and Corks	Stock of Anti-Toxins, Bottles and Corks  Stable Utensils, Farm Implements and Sheds Laboratory Apparatus—As per last Account, 31st May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  1,738 18		Stools of Animala			Q			
Stable Utensils, Farm Implements and Sheds	Stable Utensils, Farm Implements and Sheds Laboratory Apparatus—As per last Account, 31st May, 1901			_		-			
Laboratory Apparatus—As per last Account, 31st May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3 Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Laboratory Apparatus—As per last Account, 31st May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18				-				
Laboratory Apparatus—As per last Account, 31st May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3 Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Laboratory Apparatus—As per last Account, 31st May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18			109	11	11			
May, 1901 199 12 3 Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3 Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	May, 1901 199 12 3 Additions during the year 30 16 0   Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18								
Additions during the year 30 16 0  Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Additions during the year 30 16 0  230 8 3  230 10  Eurniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18		3.5						
Less Written off for Depreciation        230 8 3 23 0 10         Furniture—As per last Account, 31st May, 1901        72 14 3 7 5 5         Less Written off for depreciation        7 5 5 5         65 8 10       1,738 18 4	Less Written off for Depreciation        230 8 3 2 3 0 10 23 0 10 20 7 5         Furniture—As per last Account, 31st May, 1901        72 14 3 7 5 5 2 20 7 5 5 5 20 20 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7								
Less Written off for Depreciation        23 0 10         Furniture—As per last Account, 31st May, 1901        72 14 3         Less Written off for depreciation        7 5 5         65 8 10       1,738 18 4	Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18		Additions during the year 30 10 0						
Less Written off for Depreciation        23 0 10         Furniture—As per last Account, 31st May, 1901        72 14 3         Less Written off for depreciation        7 5 5         65 8 10       1,738 18 4	Less Written off for Depreciation 23 0 10  Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18								
Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18		230 8 3						
Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18		Less Written off for Depreciation 23 0 10						
Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18 4	Furniture—As per last Account, 31st May, 1901 72 14 3  Less Written off for depreciation 7 5 5  65 8 10  1,738 18			207	7	5			
Less Written off for depreciation	Less Written off for depreciation 7 5 5 65 8 10 1,738 18		Furniture—As per last Account, 21st May, 1001 22 14 2		•	9			
65 8 10 1,738 18 4	65 8 10 1,738 18		P THE TAX APP A A A A A A A A A A A A A A A A A						
			2635 Whiteh on for depreciation 7 5 5	/.	0				
				65	8	10			
							1,738	18	4
£342,633 12 8	£342,633 12								
	2042/933 **					1	342.622	I 2	8
						70	JT-1"JJ		_

Auditors have been complied with, and we report to the Members that we have audited the above Balance correct view of the state of the Company's affairs as shown by the Books of the Company.

# The Jenner Institute of

(Formerly the BRITISH INSTITUTE

#### Dr. CHELSEA GARDENS INSTITUTE INCOME AND

		INC	OME.						£	s.	ď.	
To Annual Subscriptions	***								2	2	o	
To Interest and Dividends on Inv	estments							***	8,627	18	2	
To Diagnosis Fees								***	859	17	0	
To Sales of Tuberculin and Mallei	in				164	17	8					
Add Stock, 31st May, 1902	***	•••		.,.	50	0	o					
					214	17	8					
Deduct Stock, 31st May, 1901	***				11	0	o					
				_			_		203	17	8	
To Sale of "Transactions"		* # *							2	0	9	
To Rent of Laboratories received	from the I	ocal Go	vernment	Board					691	10	10	

£10,387 6 5

## Dr. SUDBURY FARM INCOME AND EXPENDITURE

		INCOME.	£ s. d.	£ s. d.
l'o Sale of Antitoxins	144		4,562 6 1	
Add Stock, 31st May, 1902			993 15 0	
			5,556 1 1	
Deduct Stock, 31st May, 1901			1,063 2 6	
				4,492 18 7
			/	

# Preventive Medicine.

OF PREVENTIVE MEDICINE).

		E	XPEND	ITURE.				ſ	s
By Rates, Taxes, and	Insurance		***					366	
By Salaries, and Wag						•••		4,605	
By Stationery, Printing						1		126	1
By Office Expenses a						***		144	
By Interest on Loan		rs					11.	68	
By Bank Charges	4.44							3	
By Law Charges	***			***				11	
By Travelling Expens				***		•••	•••	12	
By Auditors' Fee and						•••	•••	42	
By Gas and Water		_		***		•••	•••	7.	
By Electric Light and	1 Power		***	200	0.3		• • •	263	
D 11 1			•••	***		•••	***	163	
By Bacteriological La		rent Evne	n n coc	•••		***	•••	67	
By Water Laboratory				•••		***	•••	150	
Dy Water Laboratory	Current Exp	penses		***	***	••	•••	89	
By Photographic Lab				***	***	***	_***	13	
By Pathological Cher		tment Cur	Tent Ex	penses	***	•••	•••	249	
By Culture Media	111	***		***	***	•••	***	77	
By Animals		- ***	• • •	***	***	•••	***	120	
By Animal House Ex	cpenses	ildings on	d Appen	***		•••	***	82	
By Repairs and Alter	ff for Dorse	nidings and	u Appar	atus	1.0		***	678	
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and Books				***	***	***	***	278	
By Sinking Fund (1/2)	% on Cost	or Pullain	8)	***		• • •	***	185	
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By Rent, Taxes, and By Salaries and Wage By Animals— Stock 31st May	Insurance s y, 1901	EX	PEND	ITURE.	•••	304	5 <sup>2</sup> 0 7	£ 144	
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### JENNER INSTITUTE OF PREVENTIVE MEDICINE.

#### ANNUAL REPORTS OF SCIENTIFIC STAFF

For the Year ending May 31st, 1902.

#### I.—BACTERIOLOGICAL DEPARTMENT.

I beg to submit the following report:-

A communication on the Intracellular constituents of the typhoid bacillus has been published by myself in conjunction with Mr. Rowland (Bacteriologisches Centralblatt, Vol. XXX.) The research is being continued. I have published a note on Yeast agglutination in the above journal. A series of experiments on Tuberculosis are approaching completion. The experiments on Zymase are being continued in conjunction with the Chemical Department, and on Phosphorescence, &c., with Mr. Barnard. The observations on life at low temperatures have been extended, and some experiments on malignant disease have been initiated.

The following investigations have been completed by other workers in the Department:—
Dr. A. Moore, Research Student:—"The Isolation of the Typhoid Bacillus," Brit. Med. Journal,
March 22nd, 1902.

Dr. G. Petrie, Reseach Student:—"Methods of conducting Hæmolytic experiments," Lancet, February 15th, 1902; "Bacteriolytic enzymes" (in course of publication).

Professor L. Aschoff: - "The Source of Albumen in Urine."

- Dr. A. Castellani "On Hæmolysins," Lancet, February 15th, 1902; "The Precipitins" (in course of publication).
- Professor R. T. Hewlett, "On a Common Source of Diphtheria Infection," (with Dr. Montague Murray), British Medical Journal, 1901; "Achalmes Bacillus of Acute Rheumatism," Trans. Path. Socy., vol. 52; "The Indol-like reactions of the Diphtheria and Pseudo-Diphtheria Bacillus," Trans. Path. Socy. vol. 52.

The following gentlemen are likewise working in the Department:—Dr. Brickdale on the Therapeutic Action of Antiseptics; Dr. Lambert Lack on Malignant Disease; Mr. C. Leaf on Carcinoma; Dr. Monckton Copeman on Vaccinia, and Dr. H. Morgan on the Influence of Light on Bacteria.

The diagnosis work and the preparation of Tuberculin and Mallein continue to be carried out. I have to thank Mr. Rowland and Dr. MacConkey for their assistance in the conduct of the above work.

ALLAN MACFADYEN.

#### II.—PATHOLOGICAL CHEMISTRY DEPARTMENT.

Since my last report was produced, I have continued my investigations on proteolytic enzymes in the spleen and other organs of oxen. I have been able to isolate from the spleen and from other organs substances which under certain conditions precipitate the organ enzymes from their solution in water. Thus I have found in the spleen two different substances which precipitate enzymes acting in an acid medium. The precipitates thus obtained seem to be a sort of zymogen and contain both the precipitating substance and the enzyme. Part of these zymogens can be split up by the action of weak acetic acid at blood heat, the enzymes being dissolved and the precipitating substances remaining undissolved. By aid of sodium chloride in case of the one, and of sodium carbonate in the case of the other the precipitating substances can be dissolved, and once in solution they are able again to precipitate the enzymes from their solutions.

Such precipitating substances are present in the kidneys, lymphatic glands, and in the liver as well as in the spleen.

In addition to the enzyme or enzymes acting in an acid medium, the spleen in some cases contains another enzyme, which acts most strongly in alkaline solution.

The work on the products of the activity of the proteolytic enzyme or enzymes of the spleen, carried out by Dr. Leathes, has shown that, just as is the case when the ferments act on fibrin, so too when they act merely on the other cell contents, i.e., the spleen-juice itself, the bases Lysin, Arginin, and Histidin are produced, as well as the monoamido acids, Leucin, Amino-Valerianic Acid, Tyrosin and Aspartic Acid. As products of the autolysis of the spleen cells, these substances then have interest as possibly indicating lines along which splenic metabolism runs, and consequently, too, Dr. Leathes has spent some time in the search for other products which might be peculiar to the specific action of the spleen. Certain preparations from the autolysed spleen juice which are now being investigated or analysed, the exact nature of which has not yet been determined, may prove to be of this kind. The methods of Emil Fischer for isolating amino acids has been tried but has failed to give any new products of enzyme action with the exception of amino-valerianic acid mentioned above.

Dr. Jenner, who started work in this Department in January, has been engaged in investigating the proteolytic enzyme produced by Bacillus Pyocyaneus, of which he has obtained considerable quantities by saturating the filtered culture medium with ammonium sulphate. He is now testing the action of this enzyme on Bacteria of various kinds.

He has also made experiments, which are not yet completed, to determine whether the splenic enzymes have any bactericidal action or not.

S. G. HEDIN.

#### III.—CHEMICAL DEPARTMENT.

#### CHEMICAL AND WATER LABORATORY.

I beg to submit the following summary of the work carried out in the Chemical Department of the Institute during the past year:—

- 1. Analytical Work.—38 samples of water and two of milk have been examined. During the previous year 45 samples of water and one of milk were examined.
- 2. Research Work.—The various branches of work referred to in my last yearly report and enumerated below have been continued, and it is hoped that one or more papers will be ready for publication before the end of July.

In November a paper on the Autofermentation and Liquefaction of Yeast, by Mr. Rowland and myself, embodying results obtained earlier in the year, was published in the Journal of the Chemical Society.

The investigation on the chemical action of bacteria of the colon, typhoid and lactic acid groups on various substances, a paper on which was published in the Journal of the Chemical Society last May, has been continued and extended.

A number of organisms found in sewage and polluted waters are at present being examined, and it is hoped that the results will be of value for the identification and detection of those organisms.

In conjunction with the Bacteriological Department, experiments have been carried out on the properties of zymase and of the serum of animals inoculated with zymase. This work has been much delayed by the lack of motive power, but is now being pushed on more vigorously. In connection with this work an investigation on the glycogen of yeast and its function in fermentation has been commenced; the portion of the work dealing with the extraction, purification and properties of the glycogen is now complete, and the results are being prepared for publication. The diastatic ferment obtainable from yeast juice is now being examined.

In conjunction with Mr. Barnard a short series of experiments has been made on the influence of different media on the light production of photogenic bacteria; a short account of the results has been communicated to the Pathological Society and a more extended account will shortly be published.

Dr. McKenzie, Grocers' Company Research Student, has continued his work on "The Hydroxybutyric Acid of Urine" and has published a preliminary account of his results. The research is now almost complete and a full account of it will shortly be ready for publication.

The experiments on the Resolution of Acids by moulds, to which reference was made in the last report, have been continued and have been extended to a large number of acids, but the work is not yet sufficiently advanced for publication.

ARTHUR HARDEN.

#### IV .-- PHOTOGRAPHIC LABORATORY.

During the year this department has been removed from the basement to a room on the third floor. The arrangements are now complete and convenient in every way.

The work carried out has been the production of photographic records to assist various researches being carried on in the Institute.

Considerable progress has been made with the collection of lantern slides, both pathological and bacteriological.

The experimental work undertaken has been as follows:---

- 1. Action of Light on Bacteria.—Some considerable progress has been made with this work. The object has been to determine the particular radiations that are most actively bactericidal. The method adopted has been to spectroscopically split up the rays emanating from any suitable light source and test the action of each region of the spectrum so obtained.
- 2. Luminous Bacteria.—The further investigation of these organisms has been proceeded with.
- 3. An investigation on the use of isotonic solution in culture media has been completed in conjunction with Dr. Harden, and will shortly be published.

The above work has been carried out with the co-operation of the Bacteriological Department, and under the personal direction of Dr. Macfadyen.

J. E. BARNARD.

#### V.-ANTITOXIN DEPARTMENT, SUDBURY.

I beg to submit the following report of the work done in the Serum Department during the year ending May, 1902.

Diphtheria Antitoxin, &-c.—27,202 bottles, each containing 2,000 units, have been sent out, the average strength being 500 units per c.cm. There have also been sent out of Antistreptococcic Serum, 4844 doses; Tetanus Antitoxin, 1171 doses; Coley's Fluid, 472 doses, in all 33,689 doses, as compared with 31,374 last year.

Demonstrations.—As usual a number of demonstrations have been given.

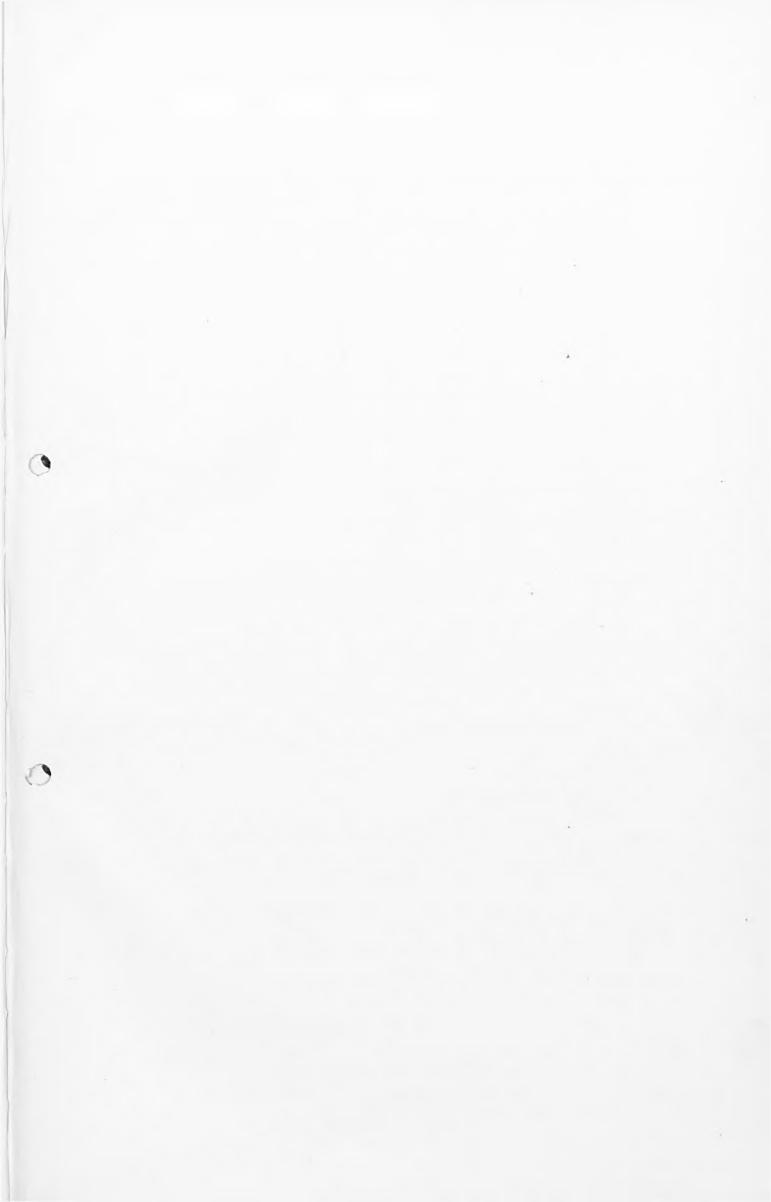
Research Work.—A series of experiments on Tuberculosis has been carried on at the suggestion of Lord Lister, and the results are approaching completion.

Dr. Todd has continued his experiments on Immunity in relation to the Typhoid Bacillis and its products, and on a Haemolytic Toxin obtained from B. Megatherium. On the latter subject he contributed papers to *The Lancet*, Dec. 14, 1901, "On experimental Hæmoglobinuria from Bacterial Toxin," and to the *Pathological Society Trans.*, vol. 53, p. 12. Conjointly we published the result of our "Experiments on the Relation of the Cow to Milk-Diphtheria," in the *Journal of Hygiene*, vol. 2, No. 2 I contributed papers to the Medical Research Club "On the action of Diphtheria Antitoxin on Diphtheria Toxone," and on "Intracerebral Injection of Diphtheric Toxone."

Queensberry Lodge, Aldenham.—The work connected with the purchase by the Institute of Queensberry Lodge and the supervision of the new laboratory buildings there, have occupied a considerable portion of my time, and have entailed the paying of one or two visits a week. The work is progressing satisfactorily, and I have now taken up residence there, as it is hoped that the Sudbury establishment may soon be transferred.

I wish to express my thanks to the staff at "The Poplars," and especially to Dr. Todd for the ever ready assistance afforded me.

GEORGE DEAN.



# Zenner Institute of Preventive Medicine.

Late British Institute of Preventive Medicine.

# ANNUAL REPORT

AND

BALANCE SHEET.

June 30th, 1902.

#### MAY, 1903.

# The Jenner Institute of Preventive Medicine

(Late British Institute of Preventive Medicine)

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.

#### THE GOVERNING BODY.

THE LORD LISTER P.C., O.M., F.R.S., Chairman.

THE LORD IVEAGH, K.P.

SIR HENRY E. ROSCOE, F.R.S.

Hon.

SIR JOHN BURDON-SANDERSON, BART., F.R.S.

J. LUARD PATTISSON, C.B.

Treasurers.

SIR MICHAEL FOSTER, K.C.B., M.P., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

DR. ALLAN MACFADYEN, B.Sc., Secretary. MR. GEORGE COOPER, Assist. Secretary and Accountant.

#### THE SCIENTIFIC STAFF.

#### Chelsea:—

Bacteriological Department: -ALLAN MACFADYEN, M.D., B.Sc.

Assistants: -SYDNEY ROWLAND, M.R.C.S., L.R.C.P.

A. MACCONKEY, M.B., B.CH.

Research Student:-J. O. WAKELIN BARRATT, M.D.

Pathological Chemistry Department:—S. G. HEDIN, M.D.

Assistant: - J. B. LEATHES, M.B., B.CH.

Research Student:-LOUIS JENNER, M.B., B.Ch.

Chemical Department:—A. HARDEN, D.Sc., Ph.D.

Assistant: -W. J. YOUNG, M.Sc.

Grocers' Research Student:-R. H. ADERS PLIMMER, D.Sc.

Cancer Laboratory: -H. G. PLIMMER, M.R.C.S.

Assistant: -A. PAINE, M.B., B.S.

Photographic Laboratory: -J. E. BARNARD, F.R.M.S.

#### Aldenham :—

Antitoxin Department: -GEORGE DEAN, M.B.

Assistants :- C. TODD, M.B.

G. PETRIE, M.B.

#### ANNUAL GENERAL MEETING

OF

## The Jenner Institute of Preventive Medicine

MAY 21st, 1903.

#### REPORT OF THE GOVERNING BODY.

1

In presenting their Annual Report the Governing Body call attention to the fact that the period to which the Report and Statement of Accounts refer is for the seven months ending 31st December, 1902, instead of for a complete year ending at 31st May as hitherto.

The reason for this departure from previous practice is, that under the Articles of Incorporation, the Annual General Meeting of the Institute must be held within the months of April, May, or June. While the annual accounts were closed on the 31st May, but one month was left in which to call in outstanding claims, close the books, make out the Balance Sheet, complete the Audit, and prepare, print, and issue the Report before the Annual Meeting. In view of the growing general development of the Institute and of the financial business involved, it was found impossible to satisfactorily accomplish the necessary work preparatory to the Annual Meeting in this short time. The Governing Body therefore, with the advice and concurrence of the Solicitors and Auditors of the Institute, decided that, in future, the accounts should be annually closed at the more usual commercial date of the 31st December. Future statements will cover the full year commencing on the 1st January and ending on 31st December.

The Governing Body are able to report satisfactorily as to the general progress of the Institute in both its branches. But, consequent upon the same development and the increasing usefulness of the Institute, a corresponding increase in administrative work has arisen, and the Governing Body feel that the time has now

come for adding to their present staff a gentleman of scientific eminence, who shall have the title of Director of the Institute. An advertisement inviting applications for this post has therefore been issued.

A new laboratory has been set apart at Chelsea for special research into Cancer, the expenses being borne partly by the funds of the Institute and partly by a generous benefaction for the purpose, for which the Governing Body have to express their cordial thanks to Lord Iveagh. The Governing Body have felt themselves fortunate in being able to place this laboratory under the charge of Mr. H. G. Plimmer, M.R.C.S., and they have appointed Dr. A. Paine as his assistant in this important research.

At the request of H.M. Government, coupled with an assurance of a reasonable contribution towards the expenses, the Governing Body have undertaken to prepare and keep in readiness Yersin's Serum and Haffkine's Prophylactic Fluid, both as a precautionary measure against any accidental introduction of Bubonic Plague into the United Kingdom, and also to aid the Governments of those Colonies where the disease has obtained a foothold. This undertaking has involved considerable additions to the Institute's new laboratories and stables, &c., at Queensberry Lodge, Aldenham, Herts.

These premises, as explained in the last Annual Report, were acquired by the Governing Body to replace those at the Poplars, Sudbury, which had been compulsorily bought up by the Great Central Railway Company. The Poplars establishment was closed on the 29th September last, and Dr. Dean, the Bacteriologist in charge, and his staff were transferred to Aldenham.

The Governing Body feel that in these new premises they have an establishment worthy of their Institute, and they hope that members interested in the scientific work in progress will find an opportunity during the summer of paying a visit to Aldenham to inspect them.

To cope with the additional work thrown upon Dr. Dean, the Governing Body have promoted Mr. G. F. Petrie, M.B., one of the Research Students at Chelsea, to be an additional Assistant Bacteriologist at Aldenham.

The Local Government Board continue to occupy, under agreement, several of the laboratories of the Institute at Chelsea. The Governing Body are anxious to resume as soon as possible these rooms for their own work, but they have felt compelled in the recent emergency caused by the outbreak of Small Pox in London to temporarily extend to the Government the occupation of most of these rooms until the new premises of the Government Lymph Department are completed.

The accounts for the seven months have been duly audited and certified. They are set forth in the accompanying Balance Sheet and Statements of Income and Expenditure.

The normal Income from Investments, &c., has remained the same; but, owing partly to the interruption caused by the transfer last autumn of the Serum Department from Sudbury to Aldenham, and partly to other causes, the returns from sales of Antitoxin, &c., are less satisfactory than in the previous year, when they were also temporarily increased by an urgent order of an exceptional character.

Steps, however, are being taken to make the preparations of the Institute better known among medical men and chemists, and it is hoped that in the future the new establishment, with its increased capabilities, though involving increased current expenditure, will add considerably to the general income available for research.

The capital expenditure at Aldenham has been rather larger than anticipated in the last report, and is not yet closed. This is owing to the new buildings necessary for the Yersin preparation. On the other hand, the contributions from the Government towards these particular expenses have only begun to take effect, and but one amount on this account was received during the period in question.

The expenditure at Chelsea during the period charged to Capital Account was small, and included the cost of fitting up the new Cancer Laboratories.

The ordinary expenditure at Chelsea increases with the development of the Institute, but is still well within the limits of income.

An account of the Scientific Work of the Institute is contained in the appended Reports.

LISTER,
Chairman of the Governing Body.

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BALANCE SHEET.

# Che Jenner Institute

Registered 25th July, 1891, as the British Institute of as an Association

#### Dr.

# BALANCE SHEET,

	£	8.	d.	£	s.	d.	
To Creditors				3,038	17	0	
To Loan from Bankers against Securities per contra				2,500	0	0	
To Water Laboratory Fund-							
Amount received from the Trustees of the late Richard Berridge,							
for building and endowing a Water Laboratory, conditionally							
that not more than £8,000 shall be spent upon the building							
of the Water Laboratory				26,352	13	10	
To Jenner Memorial Fund—							
Amount received from the Committee of the Jenner Memorial Fund				5,768	0	<b>1</b> 1	
To Amount received in respect of the Yersin Laboratory				333	6	8	
To Sinking Fund				486	17	7	
To Capital Fund—							
Balance as per last account, 31st May, 1902	305,593	1	3				
Add—							
Balance of Chelsea Gardens Department Income and Expenditure							
Account, being excess of Income over Expenditure, for the							
seven months ending 31st December, 1902	842	11	6				
	306,435	12	9				
Deduct—							
Balance of Aldenham Department Income and Expenditure							
Account, being excess of Expenditure over Income for the							
seven months ending 31st December, 1902, including							
Sudbury Farm to the 30th September, 1902	750	19	4				
				305,684	13	5	

HENRY E. ROSCOE,

J. LUARD PATTISSON,

HON. TREASURERS.

£344,164 9 5

# of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to 1890, Limited by Guarantee.

### 31st DECEMBER, 1902.

Cr.

	2202M22N, 1002.					*	
Ву	Cash—	£		d.	£	8.	d.
	At Bankers, Current Account In hand	45 19	$\frac{1}{19}$	2 7			
Ву	Investments—		10		58	0	9
	£2,900 New South Wales 31 per cent. Stock 1918	2,897		0			
	£1,000 Cape of Good Hope 3½ per cent. Stock £1,500 City of Sydney 4 per cent. Bonds	1,000 <b>1</b> ,500		0			
	Mortgage on Freehold Property, Liscombe Estate, at 3 per cent						
	£353 North Eastern Railway 4 per cent. Guaranteed Stock	499		-			
Вч	INVESTMENTS (LORD IVEAGH'S DONATION)—			_	25,897	7	0
	£25,000 New Zealand Government 3 per cent. Inscribed	24,112	10	0			
	Stock 1945 225,000 Victorian Government 3 per cent. Inscribed Stock	24,114	10	U			
	1929-1949	23,875		0			
	£25,000 Natal 3 per cent. Inscribed Stock 1929-1949	24,484	7	6			
	£25,000 New South Wales Government 3 per cent. Inscribed Stock 1935	24,937	10	0			
	£26,100 South Australian 3 per cent. Inscribed Stock 1916	24,860					
	£25,000 Cape of Good Hope 3 per cent. Inscribed Stock						
	1933-1943	23,850	0	0			
	£25,000 London and South Western Railway 4 per cent. Preferred Converted Ordinary Stock	32,000	٥	0			
	£25,000 Great Northern Railway 3 per cent. Preference Stock	26,000		_			
	£25,000 Midland Railway 2½ per cent. Preferred Converted						
	Ordinary Stock New Johnston Stark	20,375					
	£25,000 East India Railway 3 per cent. New Debenture Stock	25,500 5	7	0 6			
$\mathbf{B}\mathbf{y}$	Cash at Bank			_	250,000	0	0
	£2,650 Southwark and Vauxhall Water Co. 3 per cent.	0.50					
	Debenture Stock "B" £2,660 South Eastern Railway 3 per cent. Preference Stock 189	$   \begin{array}{r}     2,756 \\     2,740   \end{array} $	10	0			
	<b>22,000</b> South Pastern Banway 3 per cent. Preference Stock 103	0 2,740	<u> </u>		5,496	15	0
By	INVESTMENT (SINKING FUND)—				-,		
15	£398 14s. 4d., 24 per cent. Consols				378		3
By	DEBTORS STOCK OF TUBERCULIN AND MALLEIN				1,516 70	0	4 0
	FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND				,,,	·	Ü
	Books, as per last Account, 31st May, 1902	2,502					
	Additions during the seven months ending 31st Dec., 1902	566	0	8			
		3,068	17	5			
	Less Written off for Depreciation		Ö				
By	Expenditure on Institute Building at Chelsea—			_	2,889	17	1
	As per Account, 31st May, 1900, including purchase of freehold site, £6,000				42,967	5	8
By	QUEENSBERRY LODGE FARM ALDENHAM—				12,001		Ü
	Purchase of freehold land and buildings and Expenditure						
	on new buildings, as per last Account, 31st May, 1902 Additions during the seven months ending 31st Dec., 1902	11,191 1,931		3 4			
	Additions during the seven months ending 5150 Dec., 1502	1,551		_	13,122	8	7
	Stock of Animals and Forage	479		6			
	Stock of Anti-Toxins, Bottles and Corks	679	3	2			
	Stable Utensils, Farm Implements and Sheds, as per last Account, 31st						
	May, 1902 109 11 11						
	Less Written off for Depreciation 6 7 9	100					
	Laboratory Apparatus, as per last	103	4	2			
	Account, 31st May, 1902 207 7 5						
	Additions during the seven months end-						
	ing 31st December, 1902 141 8 0						
	348 15 5						
	Less Written off for Depreciation 20 6 11						
		328	8	6			
	Furniture, as per last Account, 31st May, 1902 149 9 9						
	Additions during the seven months end-						
	ing 31st December, 1902 38 19 6						
	188 9 3						
	Less Written off for Depreciation 10 19 10						
		177	9	5			
				_	1,767	14	_9
					£344,164	9	5

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Company's affairs as shown by the books of the Company.

# Che Jenner Institute of

(Formerly the British Institute

Dr. Chelsea Gardens Department—INCOME AND EXPENDITU	Dr.	Chelsea	Gardens	Department-	-INCOME	AND	EXPENDITUR
---	-----	---------	---------	-------------	---------	-----	------------

13	NCOM:	E.				£	s.	à.
To Interest and Dividends on Investments	***	4.2	***			4,339	14	11
To Diagnosis and Analysis Fees, &c.		***		***		611	14	2
To Sales of Tuberculin and Mallein		***		241 1	5 0			
Add Stock, 31st December, 1902	100	911	100	70	0 0			
				311 1	5 0			
Deduct Stock, 31st May, 1902				50	0 0			
				····		261	<b>1</b> 5	0
To Rent of Laboratories received from the	Local	Governme	nt Board			461	13	0

£5,674 17 1

Dr.	Hidenham	Department—INCOME	AND	EXPENDITURE	ACCOUNT
					to the 30th

							-			
		I	NCOME.		£	s.	d.	£	8.	d.
To Sale of Antitoxins	-			***	 1,675	15	3			
Add Stock, 31st	December,	1902	***	***	 655	18	6			
					2,331	13	9			
Deduct Stock, 3	1st May, 19	02	***	***	 993	15	0			
							_	1,337	18	9

To Balance, being Excess of	Expenditure	over Income	transferred	to Capital	Fund
(see Balance Sheet)			•• •••	***	

750 19 4

£2,088 18 1

# Preventive Medicine.

OF PREVENTIVE MEDICINE.)

		nding 31st	Decem	ber, 1	902.			Cr
		EXPEN	IDITUR:	<u></u> Е.				£ s.
By	Rates, Taxes, and Insurance		122	***				161 - 1
	Salaries, and Wages of Stat							2,901 - 7
	Stationery, Printing, Postage		ising					92 8
	Office Expenses and Sundr							111 13
	Interest on Loan from Bar							58 (
	Bank Charges	444						$^2$
	Law Charges							12 8
	Travelling Expenses							5 (
By	Auditors' Fee and Accounta	int's Charges						36 18
Ву	Gas and Water	***		.,,				136 18
By	Electric Light and Power	***					•••	71 4
	Fuel	***						33 10
	Bacteriological Laboratory		nses					116 10
	Water Laboratory Current				4.54			47 18
	Photographic Laboratory C			• • •	***		***	5 8
	Pathological Chemistry Dep		rent Exp	enses				133
By	Cancer Laboratory Current	Expenses	***					31 4
Ву	Culture Media					•••	•••	42 8
	Animals	***	***	•••				107 18
	Animal House Expenses		***	***		•••	•••	80 17
	Repairs and Alterations to						***	357
Ву	Amount written off for Depr	eciation of Fu	rniture, E	ittings, a	and Scient	ific App	aratus	4=0
T)	and Books		***	***	***	•••		179 (
Ву	Sinking Fund (½ % per an	num on Cost	of Build	Jung)	***	***	•••	107 18
								4,832
Ву	Balance, being Excess of I (see Balance Sheet)	ncome over I	Expenditu	ire Tran	sferred to	Capital	Fund	4,832 8 842 13
	(see Datanee Breet)	***	***	100	675	***	***	012 1.
								£5,674 1
h.c.	Martha F. Park		<u></u>	1 1				
he 7	Months Ending 31st D	ecember, 1	902, in	cludin	g SUDBU	JRY F	ARM	Cr
he 7 mber,	Months Ending 31st D			·	g <b>S</b> UDBU	JRY F	ARM	Cr
nber,	1902.	EXPEN	902, in	·	g <b>S</b> UDBU	JRY F	ARM	Cr £ s.
nber, By	Rent, Taxes, and Insurance	EXPEN		·		JRY F	ARM	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages	EXPEN		·	g SUDBU	JRY F	ARM	Cr £ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages	EXPEN	IDITUR	E.				£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Animals—Stock 31st May, 1902	EXPEN	NDITUR 	E. 	:::	JRY F	ARM 4 8	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Animals————————————————————————————————————	EXPEN	IDITUR	E 31st De	 ocem-	342	4 8	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Animals—Stock 31st May, 1902	EXPEN	NDITUR 	E. 	:::			£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Animals————————————————————————————————————	EXPEN	IDITUR	E 31st De	 ocem-	342 136	 4 8 1 4	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Stock 31st May, 1902 Purchased during the ber, 1902	EXPEN	NDITUR s ending	E 31st De	 ocem-	342	4 8	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during th	EXPEN seven months	NDITUR s ending nths	E 31st De	ocem-	342 136	 4 8 1 4	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec	EXPEN seven months ne seven more cember, 31st, 1	NDITUR s ending oths	E 31st Do	 ocem- 	342 136	 4 8 1 4	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during th	EXPEN seven months ne seven more cember, 31st, 1	NDITUR s ending nths	E 31st De	 ocem- 	342 136 478	4 8 1 4 6 0	£ s.
nber, By	Rent, Taxes, and Insurance Salaries and Wages Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec	EXPEN seven months ne seven more cember, 31st, 1	NDITUR s ending oths	E 31st Do	 ocem- 	342 136	 4 8 1 4	£ s. 46 10 955 14
By By By	Rent, Taxes, and Insurance Salaries and Wages  Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec	EXPEN	nDITUR s ending nths .902	E 31st Do	 ocem-  18 0 9 6	342 136 478	4 8 1 4 6 0	£ s. 46 10 955 14
By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec	EXPEN  seven months  ne seven mor comber, 31st, 1 ember, 1902	nDITUR s ending nths .902	E 31st Do	 ocem- 	342 136 478	4 8 1 4 6 0	# s. 46 10 955 14 140 18 192 14
By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec	EXPEN  seven months  ne seven mor comber, 31st, 1 ember, 1902	nDITUR s ending nths .902	E 31st Do	18 0 9 6	342 136 478 337	4 8 1 4 6 0	# 8 46 16 955 14 140 18 192 14 52 16
By By By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec	EXPEN	nDITUR s ending nths .902	E 31st Do	18 0 9 6	342 136 478 337	4 8 1 4 6 0	# 8 46 16 955 14 140 18 192 14 52 15 82 15
By By By By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec	EXPEN	nDITUR s ending nths .902	E 31st Do 47 289	18 0 9 6	342 136 478 337	4 8 1 4 6 0	# 8. 46 16 955 14  140 18 192 14 52 15 82 15 77 3
By By By By By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31st Dec Stable and other Expenses Farm Expenses and Fuel Gas and Water Postages and Telegrams	EXPEN	nDITUR s ending oths 902	E 31st Do	00cem	342 136 478 337	4 8 1 4 6 0	# 8 46 16 955 14 140 18 192 14 52 15 82 15
By By By By By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31st Dec Stock 31st Dec Stable and other Expenses Farm Expenses and Fuel Gas and Water Postages and Telegrams Laboratory Expenses, inch	EXPEN  seven months  ne seven mon  comber, 31st, 1  ember, 1902	nDITUR s ending nths .902	E 31st Do 47 289	 ocem-  18 0 9 6	342 136 478 337 	4 8 1 4 6 0 7 6	# 8. 46 16 955 1-  140 18 192 14 52 15 82 15 77 3 2 18
By By By By By By By By By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31s	e seven months  in seve	nDITUR s ending nths 902	E 31st Do 47 289	00cem- 18 0 9 6	342 136 478 337 	4 8 1 4 6 0 7 6	# 8. 46 16 955 1-  140 18 192 14 52 16 82 12 77 3 2 18 494 16
By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31s	EXPEN seven months ne seven months ne seven months ne seven more rember, 31st, 1 ember, 1902	nDITUR s ending nths .902	E 31st Do 47 289	18 0 9 6	342 136 478 337 	4 8 1 4 6 0 7 6 Glass	# 3. 46 16 955 14  140 18 192 14 52 15 82 15 77 3 2 18 494 15 8 8
By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31s	EXPEN  seven months  ne seven more comber, 31st, 1 ember, 1902   uding Cost of	nDITUR s ending nths 902 Bottles	E 31st Do 47 289	ocem- 18 0 9 6	342 136 478 337     Appara	4 8 1 4 6 0 7 6	# 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
By	Rent, Taxes, and Insurance Salaries and Wages Animals— Stock 31st May, 1902 Purchased during the ber, 1902  Deduct—Sales during the ending Dec Stock 31st Dec Stock 31s	EXPEN seven months ne seven months ne seven months ne seven more rember, 31st, 1 ember, 1902	nDITUR s ending nths .902	E 31st Do 47 289	18 0 9 6	342 136 478 337 	4 8 1 4 6 0 7 6 Glass	# 3. 46 16 955 14  140 18 192 14 52 15 82 15 77 3 2 18 494 15 8 8

#### JENNER INSTITUTE OF PREVENTIVE MEDICINE.

#### REPORTS OF SCIENTIFIC STAFF

#### I.—BACTERIOLOGICAL DEPARTMENT.

1st June to 31st December, 1902.

The results of the following investigations have been published:-

- "An Intracellular Toxin of the Typhoid Bacillus," by A. Macfadyen and S. Rowland. Proc. Royal Society. August, 1902.
- "Influence of the Prolonged Action of the Temperature of Liquid Air on Micro-organisms, etc.," by A. Macfadyen. Ibid. August, 1902.
- "Nature of Bacteriolytic Enzymes," by Dr. Petrie. Journal of Pathology, July, 1902.
- "The Origin of Urine Albumen," by Prof. Aschoff. Lancet, September 6th, 1902.
- "The Precipitins," by Dr. Aldo Castellani. Lancet, July, 1902.
- "On Mammary Abscess following Typhoid," by Dr. MacConkey. Brit. Med. Journal. September 13th, 1902.
- "Intravascular Antisepsis," by Dr. Brickdale. Lancet, January 10th, 1903.

Research Students.—Dr. Petrie has completed an investigation upon the Leucocytes, and Dr. Barratt has continued his research upon Rabies.

Other Workers.-Dr. Copeman, Mr. Leaf, Dr. Morgan, and Dr. Scott have been engaged in research work in the Department.

The researches upon Typhoid, Cytolytic Scra, Zymase and Phototherapy in conjunction with Mr. Rowland and Dr. MacConkey, as well as with the Chemical and Photographic Laboratories are still in progress, and will be reported upon in due course.

The diagnosis work and the preparation of Tuberculin and Mallein have been continued as heretofore.

ALLAN MACFADYEN

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#### II.—PATHOLOGICAL CHEMISTRY DEPARTMENT.

1st June to 31st December, 1902.

I have continued my investigations on the proteolytic enzymes of the spleen of the ox, and I have mainly worked with the one acting only in alcaline solution, previously found by myself. The isolation of it has been very difficult owing to the fact that it is readily decomposed, and also possibly to the presence of anti-bodies in the organ. This enzyme is checked in its activity by the presence of ox blood, this effect being due to the albumin and pseudoglobulin. The euglobulin, on the contrary, when isolated and added to the enzyme increases its action without being an enzyme itself, but since the effect of the albumen prevails, the blood as a whole checks the activity of the enzyme.

In September last, Dr. Leathes published his work on the products of the action of the proteolytic spleen enzyme acting in acid solution, and since then he has been investigating the changes in the fats of the cells of organs. Since it is probable that pathological fatty degenerations are not due to the formation of fat from proteid cell substances, it seemed likely that evidence might be found of the consumption of fat in cells under conditions approaching as nearly as possible to the normal, and that this consumption might be arrested by those toxins and other poisons, which are known to cause fatty degenerations. Dr. Leathes has carried out experiments, especially with the heart muscle substance, which bear out this hypothesis. But owing to the imperfections of the technique in common use for extracting and estimating fats in organs, he has been obliged to introduce changes in this and try to effect a more complete and perfect extraction. Till the experiments have been repeated with the more satisfactory methods, which he is now working out, he cannot speak confidently of his conclusions.

Mr. Hildesheim has for the past two months been working together with Dr. Leathes at the kindred subject of the metabolism of fats in the liver.

Dr. Jenner, who has been a research student in this Department for the past year, has been engaged in following work:—

- (a) Investigation on the Pyacyanase, described by Emmerich and Loew. The results so far obtained show that a substance having a marked dissolving action on the "mucoid" produced by the B. Pyocyanlus, can be precipitated from cultures of the organism. Search for other similar acting substances produced by other organisms have so far been without positive results.
- (b) Investigations on the part played by the proteolytic spleen enzymes in cytolysis; results so far negative; investigation still in progress.
- (c) The action of the cytases of pig and ox blood with special reference to the chemical relations of immune bodies and complements. Results: In the case of the pig one complement seems to be, or to be attached to, the parapseudoglobulin. This work is still in progress.

Mr. Dakin, who has been working here since October, is engaged in investigating the products of the activity of the proteolytic kidney-enzyme acting in an acid medium. According to the results so far obtained, these products are in some respects different from the products of the corresponding spleen enzyme as found by Dr. Leathes.

#### III.—CHEMICAL DEPARTMENT.

#### 1st June to December 31st, 1902.

- 1. Analytical Work.—16 samples of water and one of milk have been examined. During the corresponding period of 1901, 21 samples of water and two of milk were examined.
- 2. Research Work.—The various branches of work referred to in my last half-yearly report have been continued, and in addition work has been commenced on the enzymes of cancerous tissues and the composition of the urine of cancer patients.

The following is a list of the various researches in progress:-

- (a) Experiments on the chemical action of Bacteria of the Colon and Lactic Acid groups.
- (b) Experiments on the function of glycogen in the fermentations produced by yeast and expressed yeast juice. In connection with this work a paper was published in September in the Journal of the Chemical Society by Mr. Young and myself on Glycogen from Yeast.
- (c) Experiments on the Serum of animals inoculated with yeast juice.
- (d) Experiments on the enzymes of cancerous tissues.
- Dr. McKenzie resigned the Grocer's Company Research Studentship in October. His work on the B. Hydroxybutyric Acid of Urine was published in November in the Journal of the Chemical Society. A paper on the Biological Resolution of Optically Inactive Acids, by Dr. McKenzie and myself, is now being prepared for publication.
- Dr. Aders Plimmer was appointed to the vacant Studentship, and has commenced work on the composition of the urine of patients suffering from cancer.

ARTHUR HARDEN.

#### IV.—CANCER LABORATORY.

1st October to 31st December, 1902.

On the 1st October I commenced work at the Jenner Institute, and I was joined shortly after by Dr. Paine.

The fitting up of the Laboratory was not finished until the middle of November, when we commenced to study the Cancer cell as a cell from the biological standpoint, and also to make researches upon the various degenerative processes found in Cancer, principally with the view of getting some criterion of the Cancer cell as such.

As the animal house was not finished until the beginning of the year, no experimental work was undertaken.

H. G. PLIMMER.

#### V.—PHOTOGRAPHIC LABORATORY.

1st June to 31st December, 1902.

The work carried out has consisted of the production of photographic records of various researches being carried on in the Institute, as well as illustrations for papers and demonstrations arising from such researches. The collection of lantern slides and negatives, both pathological and bacteriological, have been further added to.

The experimental work in progress has been advanced, and is as follows:-

- 1. Action of Light on Bacteria.—The particular radiations that are most actively bactericidal have been determined, and a preliminary communication on the subject is about to be made to the Pathological Society.
- 2. Luminous Bacteria.—Further experiments on the nutrition of these organisms have been carried out in conjunction with Dr. Harden, and are being proceeded with.
- 3. Experiments on the action of X-rays and allied radiations on Bacteria are about to be commenced.

The experimental work has been carried out with the co-operation of Dr. Macfadyen.

J. E. BARNARD.

#### VI.—ANTITOXIN DEPARTMENT, QUEENSBERRY LODGE, ALDENHAM.

I herewith submit the following report of the work carried out in the Serum Department during the period 1st June to the 31st December, 1902.

The chief event to record is the transfer of the establishment from the Poplars, Sudbury, Harrow, to Queensberry Lodge, Aldenham, Herts.

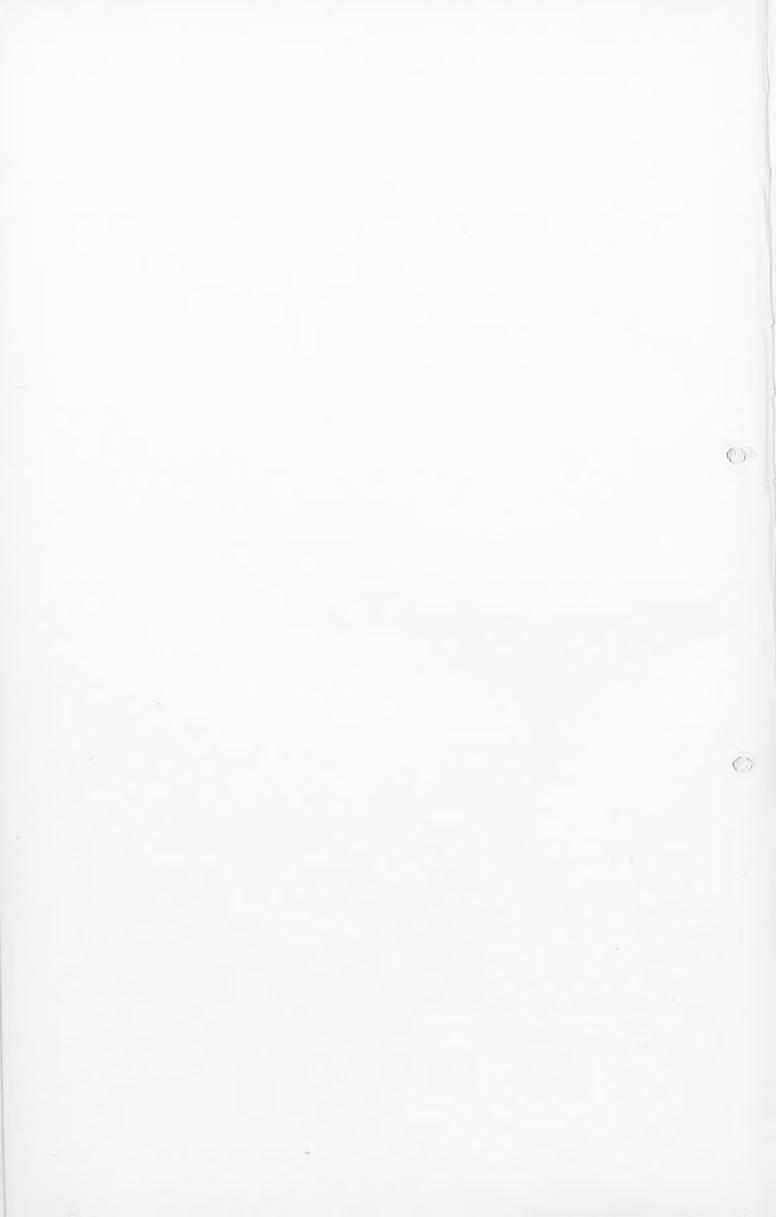
The removal was effected in September, and though the new Laboratories were not completed at that date—several regrettable delays having occurred—it was possible to carry on the routine work and to maintain the supply of Antitoxins without any interruption. The new laboratories, operating rooms, animal houses, and stables are found to be convenient and in every way suitable for the work.

Antitoxins, etc., sent out.—Diphtheria Antitoxin, 12,508 bottles, each containing 2,000 units, the average strength being 500 units per c.cm. Tetanus Antitoxin, 500; Antistreptococcic Serum, 2,471; Coley's Fluid, 144; in all 15,623 bottles.

Research Work.—The experiments on Tuberculosis suggested by Lord Lister, which were begun in August of last year were completed during this year, and the reports by Dr. Todd and myself were, with Lord Lister's approval, forwarded to the Journal of Pathology and Bacteriology, but have not yet appeared. At the same time, a brief abstract of the results was published in the Lancet, and the preparations obtained were demonstrated at the meeting of the Pathological Society at the Jenner Institute. During the year Dr. Todd and I published conjointly a paper on "Experiments on the Relation of the Cow to Milk-Diphtheria," in the Journal of Hygiene (Vol II., No. 2), in which, for the first time, the presence of virulent diphtheria bacilli was demonstrated in a vesicular disease of the cow's udder. Experiments on cows pointed to the conclusion that the bacillus was probably grafted on to a previously existing morbid condition in the cow, the lesions of which proving a suitable nidus, enabled the bacillus to multiply. In this way large quantities of milk might become infected. Several investigations and questions connected with Immunity are in progress in the department.

I wish to express my thanks to the staff of the Department, and especially to Dr. Todd for the help given me in carrying on the work, and for the careful manner in which the transfer was effected.

GEORGE DEAN.





# Jenner Institute of Preventive Medicine.

(Late British Institute of Preventive Medicine.)

CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

May 21st, 1903.

#### APRIL, 1904.

# The Lister Institute of Preventive Medicine,

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.

#### President:

THE LORD LISTER, P.C., O.M., F.R.S.

#### THE GOVERNING BODY.

SIR HENRY E. ROSCOE, F.R.S., Chairman.

THE LORD IVEAGH, K.P.

J. LUARD PATTISSON, C.B., Hon. Treasurer.

SIR JOHN BURDON-SANDERSON, BART., F.R.S. J. ROSE BRADFORD, M.D., F.R.S.

SIR MICHAEL FOSTER, K.C.B., M.P., F.R.S.

COLONEL DAVID BRUCE, R.A.M.C., F.R.S.

#### Director:

DR. C. J. MARTIN, F.R.S.

Assistant Secretary and Accountant:

MR. GEORGE COOPER.

#### THE SCIENTIFIC STAFF.

Chelsea:-

Director's Laboratory: -C. J. MARTIN, M.B., D.Sc., F.R.S.

Assistant: -SYDNEY ROWLAND, M.R.C.S., L.R.C.P.

Bacteriological Laboratory: -- ALLAN MACFADYEN, M.D., B.Sc.

Assistants: -A. MACCONKEY, M.B., B.C., D.P.H. (CAMB.).

J. E. BARNARD (Honorary).

Research Student: - J. ANDERSON CRAW.

Jenner Memorial Student: - A. B. SMALLMAN, M.B., D.P.H., R.A.M.C.

Pathological Chemistry Laboratory: -S. G. HEDIN, M.D.

Assistant: J. B. LEATHES, M.B., B.CH.

Research Student: - E. P. CATHCART, M.B., CH.B.

Chemical Laboratory: -A. HARDEN, D.Sc., Ph.D.

Assistant: -W. J. YOUNG, M.Sc.

Grocers' Research Student: -R. H. ADERS PLIMMER, D.Sc.

Cancer Laboratory: -H. G. PLIMMER, M.R.C.S.

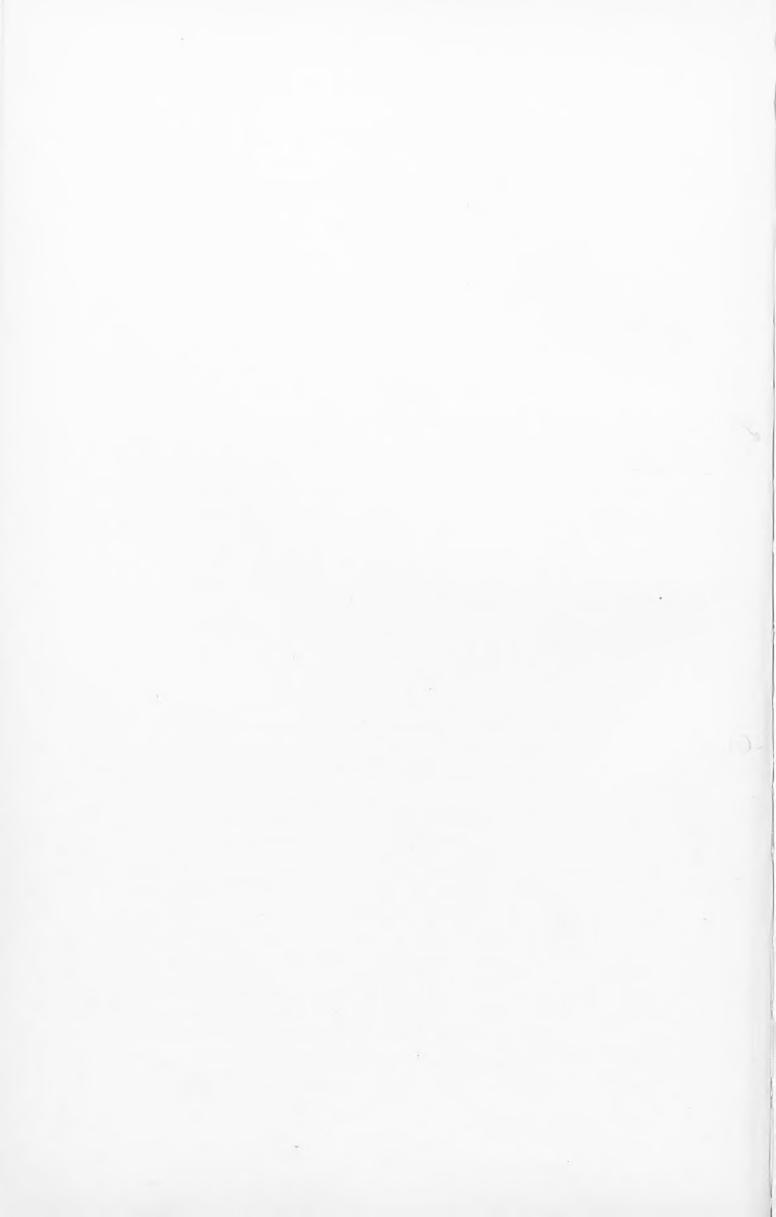
Assistant: --- A. PAINE, M.D., B.S., D.P.H. (LOND.).

Aldenham :-

Antitoxin Department:—GEORGE DEAN, M.B.

Assistants: -C. TODD, M.B.

G. PETRIE, M.B.



#### ANNUAL GENERAL MEETING

OF

# The Lister Institute of Preventive Medicine

APRIL 29TH, 1904.

#### REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and practical work of the Institute.

During the past year several circumstances of special interest to the Institute have occurred; notably the change of name from the Jenner Institute to the Lister Institute; the resignation by Lord Lister (owing to ill-health) of the chairmanship of the Governing Body, which he had held from the beginning; and the appointment of Dr. Charles J. Martin, F.R.S., as Director of the Institute.

The Governing Body were sorry to have to recommend a change of title, and especially to feel obliged to drop the distinguished name of Jenner. But, as explained in the circular to the Members, and at the General Meeting called to consider the subject, the confusion arising from the fact that there was also in London a "Jenner Institute for Calf Lymph" having no connection with the Institute of Preventive Medicine, but with a prior legal title to the name of "Jenner Institute," had become such a source of misunderstanding and inconvenience that they had practically no option, especially as other efforts to overcome the difficulty had failed.

They felt fortunate, however, in being able to submit a new and singularly appropriate designation, which would permanently associate the Institute with the honoured name of Lord Lister. The Members unanimously endorsed the recommendation, and the necessary legal steps having been taken, the Board of Trade certificate to the change was granted. Accordingly the new title of the Lister Institute of Preventive Medicine came into force as from the 1st October, 1903.

At the same time, the Governing Body decided, with the concurrence of the Jenner Memorial Committee, that the substantial donation which the funds of the Institute had

received from that Committee in 1898 should be separately invested as the endowment of a Jenner Memorial Studentship in the Institute for research upon Jenner's own lines into the causes and prevention of disease.

It was with the greatest regret that the Governing Body received from Lord Lister the intimation that the state of his health compelled him to surrender his seat on their Board, and the post of their Chairman. The Institute may be said almost to owe its existence to Lord Lister. From the first he has presided over its administration and development with unceasing interest. He has given to it the advantages of his great experience in the matters it was founded to deal with; while to his colleagues, and to the whole staff of the Institute he has extended that charm of tact and courtesy which rendered all intercourse with him so pleasant and inspiriting. The Governing Body could not allow him to resign without marking in an especial manner their sense of his services. Under their powers, as set forth in the Articles of Association, they created the post of President of the Institute, and begged Lord Lister to accept it. To this he has kindly assented. His advice and counsel will still, therefore, be available on all matters of importance.

To the Chairmanship of the Governing Body his colleagues have called Sir Henry E. Roscoe, who was also one of the Founders of the Institute, and as Honorary Treasurer from the commencement, has especially devoted himself to its welfare.

Lord Lister's seat on the Governing Body has been filled in the appointment by the Royal Society of Colonel David Bruce, R.A.M.C., F.R.S.

During the year the Governing Body gave effect to the intention announced in their last Annual Report of adding a new Officer to their Scientific Staff with the title of Director of the Institute. Dr. Charles J. Martin, F.R.S., late Professor of Physiology in the University of Melbourne was selected for the post. He entered upon his duties in October, and will henceforth, under the Governing Body, be the principal administrator of the Institute.

The special laboratories and stables at Aldenham in connection with the preparation of Yersin's serum entrusted to the Institute by H.M. Government were completed during the year. They are now in full working order, and are dealing with considerable demands from British Colonies for this remedial agent.

During the summer of 1903 the Governing Body invited a large number of Medical and other Scientific men to inspect the Institute's laboratories, stables, &c., at Aldenham. The visit was a pleasant success, the guests showing much interest in the arrangements and in the scientific preparations undertaken by the Institute.

The Local Government Board continue to occupy, temporarily, pending the completion of their own new laboratories for the preparation of calf lymph, several of

the rooms of the Institute at Chelsea. The Institute is therefore still somewhat pressed for accommodation for its own staff.

The research work of the Institute has been carried on during the year with much zeal and care. The results, most of which have been already published through various channels, will be found summarised in the appended Reports from the Heads of Laboratories.

Further applications have been made from Government departments for assistance and accommodation to carry out researches cognate to those undertaken by the Institute. The Governing Body have much satisfaction in being able to co-operate with H.M. Government in this manner. The solution of problems of immediate importance to the health of all classes, whether at home or abroad, and in some cases especially so to our Soldiers and Sailors, is, they consider, entirely within the objects for which the Institute was founded, and they are glad to be able to render all the assistance possible to this end.

The accounts for the year have been duly audited and certified as set forth on the accompanying Balance Sheet and Statement of Income and Expenditure.

There was no capital expenditure during the period on buildings at Chelsea, and that at Aldenham was confined to the new Yersin laboratories and stables. Toward this expenditure and the initial cost of preparation of Yersin's Serum and Haffkine's Prophylactic, three departments of the Government contributed a total sum of £3,500, the Institute agreeing to repay to the Departments (to an aggregate not exceeding the grant) the sums received by the sales of the preparations within a certain time, which expires at the end of the current year (1904).

The normal income from Investments remains the same as in former years. The returns from Diagnosis and Analysis Fees have slightly increased; but the sales of Antitoxins have decreased—partly owing to the lesser prevalence of Diphtheria, and partly to increased competition from other quarters. The returns, too, from the sales of "Yersin" and "Haffkine" referred to above, did not commence to accrue until November last. The working of the Aldenham Branch has therefore resulted in a loss, which the Governing Body are endeavouring to remedy, so that the whole income from the endowment of the Institute may be available for research.

The Chelsea expenditure, as will be seen, left a considerable balance to the good, though this will be mostly absorbed in future by the increased expenditure entailed on this department in the appointment of the Director.

HENRY E. ROSCOE,

Chairman of the Governing Body.

March 18, 1904.

Che Lister Institute
Registered 25th July, 1891, as the British Institute of
as an Association

#### Dr.

#### BALANCE SHEET,

			£	8.	d.	£	s,	d.
To Creditors	.,					2,323	3	1
To Loan from Bankers against Securities per contra						3,500	0	0
TO WATER LABORATORY FUND								
Amount received from the Trustees of the late Richard	l Berrid	ge,						
for building and endowing a Water Laboratory, co	nditiona	lly						
that not more than £8,000 shall be spent upon th	e buildi	ng						
of the Water Laboratory						26,352	13	10
To Jenner Memorial Fund-								
Amount received from the Committee of the Jenner Mem	orial Fu	$\mathbf{nd}$				5,768	0	11
To Amount received from the Government in respect of the	Наргкі	SE						
YERSIN LABORATORIES			3,500	0	0			
Less amount due to the Government in respect of sa	les to 3:	lst						
December, 1903, under agreement with them			430	18	0			
					_	3,069	2	0
To Sinking Fund						744	13	10
To Capital Fund								
Balance as per last account, 31st December, 1902 $Add$	••		305,684	13	5			
Balance of Chelsea Gardens Department Income								
and Expenditure Account, being excess of								
Income over Expenditure, for the year								
ending 31st December, 1903 2,	322 3	5						
Deduct—								
Balance of Aldenham Department Income and								
Expenditure Account, being excess of								
Expenditure over Income for the year								
ending 31st December, 1903 1,	357 19	9						
			964	3	8			
					_	306,648	17	1

J. L. PATTISSON, HON. TREASURER.

£348,406 10 9

of Preventive Medicine.

Preventive Medicine, under the Companies Acts, 1862 to 1890.

Limited by Guarantee.

31st	DECEMBER,	1903.
OISU		Tago.

-	
$\boldsymbol{\Gamma}$	r

, L	DECEMBER, 1903.				Cı	<b>*</b>	
Ву	Cash—	£	s.	d.	£	s.	d.
	At Bankers, Current Account	99		0			
12	In hand	16	12	1	110	0	1
Бұ	INVESTMENTS (at cost)—  \$2,900 New South Wales 3½ per cent. Stock 1918	2,897	16	0	116	3	1
	£1,000 Cape of Good Hope $3\frac{1}{2}$ per cent. Stock	1,000					
	£1,500 City of Sydney 4 per cent. Bonds	1,500	0	0			
	Mortgage on Freehold Property, Liscombe Estate, at 3 per cent.	20,000		0			
Rv	£363 North Eastern Railway 4 per cent. Guaranteed Stock Investments, Lord Iveagn's Donation (at cost)—	499		0	25,897	7	0
101	£25,000 New Zealand Government 3 per cent. Inscribed				20,001	•	Ū
	Stock 1945	24,112	<b>1</b> 0	0			
	£25,000 Victorian Government 3 per cent, Inscribed Stock	00.005					
	1929-1949 £25,000 Natal 3 per cent. Inscribed Stock 1929-1949	23,875		0 6			
	£25,000 New South Wales Government 3 per cent. Inscribed	21,484	•	U			
	Stock 1935	24,937	10	0			
	£26,100 South Australian Government 3 per cent Consoli-						
	dated Stock 1916	24,860	5	0			
	£25,000 Cape of Good Hope 3 per cent. Inscribed Stock 1933-1943	23,850	٥	0			
	£25,000 London and South-Western Railway 4 per cent.	20,000	U	v			
	Preferred Converted Ordinary Stock	32,000		0			
	£25,000 Great Northern Railway 3 per cent. Preference Stock 1898	<b>26,</b> 000	0	0			
	£25,000 Midland Railway 2½ per cent. Preferred Converted Ordinary Stock	20,375	Λ	0			
	£25,000 East India Railway 3 per cent. New Debenture Stock	25,500		ő			
	Cash at Bank		7	6			
Вұ	INVESTMENTS, JENNER MEMORIAL FUND (at cost)—			_	250,000	0	0
	22,650 Southwark and Vauxhall Water Co. 3 per cent.  Debenture Stock "B"	0.756	10	Λ			
	22,660 South Eastern Railway 3 per cent. Preference Stock 1898	2,756 $2,740$					
Вч	Investment, Sinking Fund (at cost)—			_	5,496	15	0
	£527 18s. 5d. 2½ per cent. Consols				499	0	3
Ву	(The above Investments, at the market value, 31st December, 1993, show a depreciation.)  DEBTORS				2,430	- 8	11
	STOCK OF TUBERCULIN AND MALLEIN				50		_
Ву	FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND	<b>5</b> (100		_			
	Books, as per last Account, 31st Dec., 1902 Additions during the year ending 31st Dec., 1903	<b>2,</b> 889 469		$\frac{1}{2}$			
	Additions during the year ending 31st Dec., 1903	409	1,				
		3,359	14	3			
	Less Written off for Depreciation	335	19	5	0.000	7.4	10
By	EXPENDITURE ON INSTITUTE BUILDING AT CHELSEA-				3,023	14	10
	As per Account, 31st May, 1900, including purchase of				10.005	_	
Br	freehold site, £6,000 QUEENSBERRY LODGE FARM, ALDENHAM—				42,967	5	8
Dy	Purchase of freehold land and buildings and Expenditure						
	on new buildings, as per last Account, 31st Dec., 1902	13,122					
	Additions during the year ending 31st Dcc., 1903	2,248	15	-7	15 901		۵
	Stock of Animals and Forage	636	16	4	15,371	4	74
	Stock of Anti-Toxins, Bottles, and Syringes	1,098					
	Stable Utensils, Farm Implements, and						
	Sheds, as per last Account, 31st						
	Dec, 1902 103 4 2 Additions during the year ending 31st						
	Dec., 1903 50 4 0						
	153 8 2						
	Less Written off for Depreciation 15 6 10	138	1	4			
	Laboratory Apparatus, as per last	100	-	-			
	Account, 31st Dec., 1902 328 8 6						
	Additions during the year ending 31st						
	December, 1903 189 8 5						
	517 16 11						
	Less Written off for Depreciation 51 15 8						
	Elizabeth Accept 914 Dec	466	1	3			
	Furniture, as per last Account, 31st Dec., 1902 177 9 5						
	Additions during the year ending 31st						
	December, 1903 61 17 3						
	239 6 8						
	Less Written off for Depreciation 23 18 8						
		215	8	0			
					2,554	11	10
					£348,406	10	9
				-			_

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Company's affairs as shown by the books of the Company. COOPER BROTHERS & Co.

### Chelsea Gardens Department—INCOME AND EXPENDITU Dr. INCOME. s. d.222 0 To Donations and Annual Subscriptions ... 8,626 10 To Interest and Dividends on Investments 1,040 9 3 To Diagnosis and Analysis Fees, &c. ... 141 15 To Sales of Tuberculin and Mallein ... Add Stock, 31st December, 1903 191 15 Deduct Stock, 31st December, 1902 70 121 15 8 To Rent of Laboratories received from the Local Government Board To Sale of Transactions 2 11 3

£10,628 8 7

dr. Ald	enbam	Depa	irtment	—INCC	MC	Е	AND EX	KPEN	NDITURE
	IN	COME.		£	s.	<i>d</i> .	£ s.	d.	
To Sale of Antitoxins, &c			***	2,597	7	0			1
Add Stock, 31st December, 1903	***			975	7	6			0
						_			
				3,572	14	6			ŀ
Deduct Stock, 31st December, 1902	***	***	***	655	18	6			
						_	2,916 16	0	
To Sale of Yersin Serum and Haffkine's	. Fluid, p	payable t	to the						
Government under agreement with	h them		***	430	18	0			
Add Stock on hand at 31st December	r, 1903		***	85	0	0			3
							515 18	0	

To Balance, being Excess of	Expen	diture	over Income	transf	erred to	Capital	Fund		
(see Balance Sheet)		•••	*1*	•••				1,357 19	9

# Preventive Medicine.

AC	CCOUNT for the Year Endi	ng 318	t Decer	nber,	1903.			•	Cr.	
		EXPEND	ITURE.		-			£	s.	-
	By Rates, Taxes, and Insurance							425	4	
	By Salaries, and Wages of Staff	•••						5,249	1	
	By Stationery, Printing and Postage		•••				•••	165	5	
	Die 4 January de 1	•••			•••	***		13	Ğ	
	By Office Expenses and Sundries	•••	***			***	•••	189	7	]
	De Danie Changes	• • • •			•••	•••	***	5	i	•
	By Bank Charges	•••	***	***			•••	57		
	By Law Charges	•••		***	***		• • • •	_		
	By Travelling Expenses	•••		***	***	***	***	7	$\frac{7}{2}$	
	By Auditors' Fee	***	***	***	***	***	•••	21	0	
	By Gas and Water				***	***	• • •	268	9	
	By Electric Light and Power		***		***		,	160		
	By Fuel						• • •	76	4	
	By Bacteriological Laboratory Currer	ıt Expens	ses					168		
	By Water Laboratory Current Expen	ises			***		• • •	74	16	
	By Photographic Laboratory Current		s	121				17	14	
	By Pathological Chemistry Departme			es			111	211	18	
	By Cancer Laboratory Current Exper				•••			17	17	
	15 65 16 34 37						•••	32	8	
	By Animals							168	6	
	By Animal House Expenses						•••	132	6	
	By Repairs and Alterations to Buildir			***			•••	321		
	By Amount written off for Depreciation	n of Prov	nitura 181	ttings on				7.1		
	1 () 1		nivito, Pi	m180, an				335	19	
			Duilding	•••	***		•••	185	0	
	By Sinking Fund (1/2 % per annum on	Cost of 1	bunding)				•••	100		
								8,306	5	
	De Deleses below Been C.	73	724	m	1 4. 0	lanital	Dona	0,000	U	
	By Balance, being Excess of Income	over Ex	penditure	Transie	rrea to C	aproar	runa	0.900	9	
	(see Balance Sheet)	***	***	***	***	***		2,322	3	
								£10,628	-8	
CO	OUNT for the Year ending	31st D	ecember	·, 1903	•				Cr.	
CO				·, 1903	•					_
	I	31St D		·, 1903	•			£	s.	_
	By Rent, Taxes, and Insurance			·, 1903				£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages		OITURE.					£	s.	_
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals—	EXPENI 	DITURE.	·, 1903				£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902.	EXPENE	OITURE.			289	9 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals—	EXPENE	OITURE.			 289 413	 9 6 0 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902.	EXPENE	OITURE.			413	0 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of	EXPEND   ending 31	DITURE.			413		£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of	EXPEND ending 31	DITURE.	 ber, 1903		413	0 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the sales during the 31st December,	EXPEND ending 31 year end	DITURE.	 ber, 1903		413	0 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of	EXPEND ending 31 year end	DITURE st Decem	 ber, 1908		702	0 6	£ 111	s. 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the sales during the 31st December,	EXPEND ending 31 year end	olture st Decem	 ber, 1903		702	0 6	£ 111 2,023	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December	EXPEND ending 31 year end	olture st Decem	 ber, 1903		702	0 6	£ 111	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December	ending 31 year end 1903 r, 1903	olture st Decem	 ber, 1903		413 702 455	0 6 10 0	£ 111 2,023	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December Stock, 31st December Stock 31st December, 1902	ending 31 year end 1903 r, 1903	olture st December	52 16 403 6		413 702 455 190	0 6 10 0 16 4 0 0	£ 111 2,023	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December	ending 31 year end 1903 r, 1903	olture st December	52 16 403 6		413 702 455	0 6 10 0 16 4 0 0	£ 111 2,023	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December Stock, 31st December Stock 31st December, 1902	ending 31 year end 1903 r, 1903	olture st December	52 16 403 6		413 702 455 190 799	0 6 10 0 16 4 0 0 9 6	£ 111 2,023	s. 6 6 8	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of  Deduct—Sales during the 31st December, Stock, 31st December  By Forage— Stock 31st December, 1902 Purchases during the year of	ending 31 year end 1903 r, 1903	olture st December	52 16 403 6		413 702 455 190 799 989	0 6 10 0 16 4 0 0 9 6 9 6	£ 111 2,023	s. 6 6 8	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December Stock, 31st December Stock 31st December, 1902	ending 31 year end 1903 r, 1903	olture st December	52 16 403 6		413 702 455 190 799	0 6 10 0 16 4 0 0 9 6 9 6	£ 111 2,023	s. 6 8	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December Stock, 31st December Purchases during the year of the salar during the year dur	ending 31 year end 1903 r, 1903	st December of Dec	52 10 403 6	0 0 3 4	413 702 455 190 799 989	0 6 10 0 16 4 0 0 9 6 9 6	£ 111 2,023 246	s. 6 8 13	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar during the 31st December, Stock, 31st December, Stock, 31st December By Forage— Stock 31st December, 1902 Purchases during the year of the duct—Stock 31st December By Stable and other Expenses	ending 31 year end 1903 r, 1903	st December of Dec	52 10 403 6	0 0 3 4	413 702 455 190 799 989	0 6 10 0 16 4 0 0 9 6 9 6	£ 111 2,023 246	s. 6 8 8 13 19 6	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar December, Stock, 31st December, Stock, 31st December, Stock 31st December Deduct—Stock 31st December Deduct—Stock 31st December Deduct—Stock 31st December Stock 31st December Deduct—Stock 31st December December Deduct—Stock 31st December December Deduct—Stock 31st December December Deduct—Stock 31st December December December Deduct—Stock 31st December Dece	ending 31 year end 1903 r, 1903	st December of the state of the	52 10 403 6	0 0 3 4	413 702 455 190 799 989	0 6 10 0 16 4 0 0 9 6 10 0	£ 111 2,023  246  755 93 111	s. 6 8 13	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the salar December, Stock, 31st December, Stock, 31st December By Forage— Stock 31st December, 1902 Purchases during the year of the salar December Deduct—Stock 31st December  By Stable and other Expenses By Farm Expenses By Gas, Water, and Fuel	ending 31 year end 1903 r, 1903	st December of the state of the	52 10 403 6	0 0 3 4	413 702 455 190 799 989 233	0 6 10 0 16 4 0 0 9 6 10 0	£ 111 2,023  246  755 93 111 223	s. 6 8 8 13 19 6 4 6	
*	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the stock 31st December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1902 Purchases during the year of the stock 31st December Stable and other Expenses Stock 31st December Stable and Stable 31st December Stable 31st December Stable 31st December Stable 31st December Stock 31st December Stable 31st December	ending 31 year end 1903 r, 1903 r, 1903	olTURE.  st December of the control	52 16 403 6	  	413 702 455 190 799 989 233	0 6 10 0 16 4 0 0 9 6 10 0	£ 111 2,023  246  755 93 111 223 11	s. 6 8 13 19 6 4 6 16	
	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the stock 31st December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1902 Purchases during the year of the stock 31st December Stable and other Expenses Stock 31st December Stable and Stable 31st December Stable 31st December Stable 31st December Stable 31st December Stock 31st December Stable 31st December	ending 31 year end 1903 r. 1903 r. 1903	olTURE.  st December of the control	52 10 403 6	  	413 702 455 190 799 989 233	0 6 10 0 16 4 0 0 9 6 10 0	£ 111 2,023  246  755 93 111 223 11	s. 6 8 8 13 19 6 4 6	
)	By Rent, Taxes, and Insurance By Salaries and Wages By Animals— Stock 31st December, 1902. Purchased during the year of the stock 31st December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1902 Purchases during the year of the stock 31st December Stable and other Expenses Stock 31st December Stable and other Expenses Stock 31st December Stable and Stable 31st December Stable 31st De	ending 31 year end 1903 or, 1903 ending 31	olture.  st December of Decemb	52 10 403 6	  	413 702 455 190 799 989 233 	0 6 10 0 16 4 0 0 9 6 10 0	246 755 93 111 223 11 50	s. 6 8 13 19 6 4 6 16 19	
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# LISTER INSTITUTE OF PREVENTIVE MEDICINE.

# REPORTS OF SCIENTIFIC STAFF.

### I.—BACTERIOLOGICAL LABORATORY.

Report for the Year ending December 31st, 1903.

The Department has continued the investigation of the intracellular constituents of micro-organisms obtained by trituration of the cells at low temperatures. The main object of the inquiry has been to obtain and to study the properties of the intracellular toxins of pathogenic organisms. Experiments have been conducted with the toxic cell juices obtained from the typhoid bacillus, in order to determine how far it is possible to immunise animals against its effects. These experiments are still in progress.

Dr. Petrie having been appointed as Assistant Bacteriologist at Aldenham, and Dr. Wakelin Barratt having resigned his appointment in the course of the year, Mr. J. Anderson Craw and Lieut. A. B. Smallman, R.A.M.C., were elected to the vacant studentships. Mr. Anderson Craw is engaged in a research on the mechanism of agglutination and Lieut. Smallman is investigating the immunising properties of typhoid cell juices.

The diagnosis work has been carried on as heretofore, as well as the preparation of Tuberculin and Mallein.

The following researches have been published during the year:-

- Poikilothermism in Rabies, by J. O. Wakelin Barratt. Journal of Physiology, Vol. XXIX., 1903.
- On the Disintegration of Rabid Brain Substance, by J. O. Wakelin Barratt. Proc Royal Society, Vol. DXXII.
- On the Relation of the Leucocytes to the Bacteriolytic Power of the Blood, by G. F. Petrie. Journal of Pathology, December, 1903.
- Biological Action of Moulds on Arsenical Compounds, by H. de R. Morgan. Lancet, July 4th, 1903.
- Immunising Effect of the Intracellular Contents of the Typhoid Bacillus, by A. Macfadyen. Proc. Royal Society, March 18th, 1903.
- THE INTRACELLULAR CONSTITUENTS OF THE TYPHOID BACILLUS (Second Communication), by A. Macfadyen and S. Rowland. Baktr. Centralblatt, Vol. XXXIX, 1903.
- AN EXPERIMENTAL EXAMINATION OF MESENTERIC GLANDS, ETC., WITH REFERENCE TO THE PRESENCE OF VIRULENT TUBERCLE BACILLI, by A. Macfadyen and A. MacConkey. British Medical Journal, July 18th.
- THE VIRULENCE OF THE BACILLUS OF BOVINE AND HUMAN TUBERCULOSIS FOR MONKEYS, by A. Macfadyen. Lancet, September 12th, 1903.

ALLAN MACFADYEN.

### II.--LABORATORY OF PATHOLOGICAL CHEMISTRY.

Report for the Year ending December 31st, 1903.

I have continued my investigations on the proteolytic enzymes in the spleen and the blood serum, which have been published during the year.

Since that work was published I have been studying the laws which determine the action of trypsin upon proteids and more especially the question whether the ferment combines with the proteid before acting upon it.

Dr. Leathes has been working upon the changes undergone by fats in the cells of different organs. He has found that the liver has the power of synthesizing fats, apparently from carbohydrates, and that this power is destroyed if the cells be first heated so as to destroy their life. The formation of fat from carbohydrates, well known to occur somewhere in the body, has not previously been located in any particular organ. Dr. Leathes is engaged in studying the steps by which this change is effected. He has found evidence, on the other hand, that fat is consumed in the heart, and serves, therefore, during life as a source of energy for this organ.

Mr. Hildesheim was, during the month of February, engaged in helping Dr. Leathes in his work on the liver.

Mr. Jenner was a research student in the Laboratory until the end of February, and continued working in it until the end of the year, mainly upon immune bodies and complements.

Mr Cathcart, who has held a research studentship in the Department since May, has been engaged in studying the power of normal blood serum to resist the action of trypsin. In addition to this, he has investigated the products of the proteolytic action of the enzyme found in the spleen, which acts in an alkaline medium, and also of the proteolytic enzymes found in the urine.

Mr. Dakin was working in the Department up till the end of June, and the results of his work have been published.

The papers published from the laboratory in the course of the year are:-

- Investigations on the Proteclytic Enzymes of the Spleen of the Ox, by S. G. Hedin. Journal of Physiology, pp. 155-175.
- On the Presence of a Proteclytic Enzyme in the Normal Semum of the Ox, by S. G. Hedin. Journal of Physiology, pp. 195-201.
- The Products of the Proteclytic Action of an Enzyme contained in the Cells of the Kidney, by H. G. Dakin Journal of Physiology, pp. 84-96.
- THE HYDROLYSIS OF OPTICALLY INACTIVE ESTERS BY MEANS OF ENZYMES. PART I.: THE ACTION OF LIPASE UPON ESTERS OF MANDELIC ACID. THE RESOLUTION OF INACTIVE MANDELIC ACID. By H. D. Dakin. Journal of Physiology, pp. 253-264.

### III.—CHEMICAL LABORATORY.

Report for the Year ending December 31st, 1903.

The following is a summary of the work carried out in the Chemical Department of the Institute during 1903:—

Analytical Work.—39 samples of water have been examined. During 1902, 37 samples of water and 1 of Milk were examined.

Research Work.—The following is a list of the various researches which have been prosecuted:—

- 1. Experiments on the chemical action of Bacteria of the Colon and Lactic Acid groups. In this connection a large number of experiments have been carried out in conjunction with the Bacteriological Department, on the chemical characteristics of the Colon bacilli of the intestinal tracts of man and various animals, with a view of establishing more definite criteria for the recognition of such organisms of similar properties but different origin.
  - 2. Alcoholic fermentation effected by yeast juice.
    - (a) An extended series of experiments on the alcoholic fermentation effected by yeast juice prepared from top yeasts has been made with special reference to the effect of dilution on the juice and to the chemical actions involved in the fermentation of glucose by the juice. The results have been embodied in a paper which will shortly be published.
    - (b) The effect of various substances on the action of the enzymes of yeast juice has also been studied. A preliminary note on the effect of Horse Serum has already been published.
- 3. A few experiments on the enzymes of cancerous tissues have been made from time to time as material could be obtained. No characteristic difference between these and the enzymes of normal tissues has as yet been found. A short note on the subject, written in conjunction with Dr. Macfadyen, was inserted in the Lancet in July.
- 4. Dr. R. H. Aders Plimmer, Grocer's Company Research Student, was at first engaged on the chemical examination of (a) the Urine of Cancer Patients, (b) Cancerous Tumours, (c) the Fat from a case of Cancer of the Breast, but was unable to establish specific chemical characteristics for any of these materials.

He has further carried out an extended investigation on the production of Hydrocyanic Acid by the oxidation of Proteids. His results are now ready for publication; and, in this connection, a short paper, "A New Method for the Separation and Estimation of Silver Cyanide and Silver Chloride," has been published.

Dr. Plimmer has also investigated the occurrence of Betaine in beet sugar. A paper has been published on this subject in conjunction with Dr. Waller, the chemical part of which was contributed by Dr. Plimmer.

Finally, the work on the "Biological Method of Resolving Inactive Acids into their Optically Active Components," which was completed by Dr. MacKenzie and myself at the end of 1902, has now been published.

## List of Papers published during 1903.

- 1. "Ueber alkoholische Gärung mit Hefe Presssaft (Buchner's Zymase) bei gegenwart von Blutserum." A. Harden. Berichte, 1903. 715.
  - 2. "Enzymes in Tumours." A. HARDEN and ALJAN MACFADYEN. Lancet, July 25th, 1903.
- 3. "Separation and Estimation of Silver Cyanide and Silver Chloride." R. H. Aders Plimmer. Trans. Chem. Soc., 1903. 12.
- 4. "The Physiological Action of Betaine Extracted from Raw Beet Sugar" A. D. Waller and R. H. Aders Plimmer. Proc. Roy. Soc., 1903. 72. 345.
- 5. "The Biological Method for Resolving Inactive Acids into their Optically Active Components.' A. MacKenzie and A. Harden. Trans. Chem. Soc., 1903. 424.

ARTHUR HARDEN.

# IV.—CANCER LABORATORY.

## Report for the Year ending 31st December, 1903.

Routine Work.—During the year 126 cases of Carcinoma and Sarcoma have been examined histologically for diagnostic purposes for the Cancer Hospital, from whence they were obtained. Fifteen tumours from animals, kindly sent by Mr. Sewell, have also been examined.

Research Work.—Investigations have been carried out on the cancer cell as an independent cell, both with regard to its own qualities, and to its relations to the cells from which it arises, and to the cells found in metastases.

Schüller's work on certain bodies which he considers parasitic has been repeated, but I am not able to confirm any of his results. Experiments have been carried on, attempting by various methods to inoculate human cancer into animals and to study the changes cancer undergoes when placed in an animal. These are being continued.

Experiments to determine whether any cytolytic substance is formed after the introduction of cancer cells into an animal are also being carried out; and the effects on animals of the excretions of cancer patients are also being studied.

The effect of Radium Bromide on Cancer has been investigated. 30 milligrammes of Radium Bromide were generously placed at my disposal, and the staff of the Cancer Hospital allowed a trial of the substance to be made on 18 cases. The results, which are not encouraging, will be shortly tabulated and published. Experiments have been started to determine the effect of Radium Bromide on bacterial life, which will be shortly completed.

During the year researches have been continued on the Trypanosoma of Nagana, and on that of Surra (which was sent to the Royal Society from Mauritius), and on those of Sleeping Sickness and Gambia Fever (which Colonel Bruce has kindly given me). These are being investigated on the same lines as Nagana, and in comparison with it.

The following papers have been published:-

ON THE PARASITIC THEORY OF CANCER. British Medical Journal.

ON THE CYCLE OF THE TRYPANOSOMATA IN NAGANA. Pathological Society.

On the Organisms of Monkey Malaria and Sleeping Sickness, by H. G. Plimmer. Pathological Society.

ON A NEW METHOD OF STAINING WITH IRON-HAEMATOXYLIN, by A. Paine. Pathological Society.

H. G. PLIMMER.

### V.—PHOTOGRAPHIC LABORATORY.

Report for the Year ending December 31st, 1903.

Photographs have been produced as required by the various laboratories, and for the general purposes of the Institute.

Experiments on the hactericidal action of light have been continued in conjunction with Dr. Morgan. A further series of experiments on the sensitising action of various aniline dyes are in progress.

Experiments on phosphorescent bacteria have been continued in conjunction with Dr. Harden, and are still in progress. Experiments on methods of microscopic illumination are at present being carried out

The following papers have been published from the Laboratory during the year:-

Upon the Bactericidal Action of Some Ultra Violet Radiations, by Barnard and Morgan. Proc. Royal Society, 1903.

THE PHYSICAL FACTORS IN PHOTO-THERAPY, by Barnard and Morgan. British Medical Journal, November, 1903.

J. E. BARNARD.

## VI.—ANTITOXIN DEPARTMENT, QUEENSBERRY LODGE, ELSTREE, HERTS.

Report for the Year ending December 31st, 1903.

I herewith submit the following report of the work which was carried out in the Serum Department during the period 1st January to 31st December, 1903.

The work of preparing and supplying Antitoxins has proceeded satisfactorily. During the year Haffkine's Prophylactic Fluid and Yersin's Serum have been added to the preparations issued by the Institute.

Antitoxins, etc., sent out.—Diphtheria, 18,676 bottles, each bottle containing 2,000 units, average strength 500 units per c.c.; Streptococcus, 5,152 bottles; Tetanus, 944 bottles; Coley's Fluid, 214 bottles; Yersin's Serum, 596 Bottles; Haffkine's Prophylactic Fluid, 8,834 doses, put up into 1,262 bottles; Normal Serum, 12 bottles.

Research Work.—In connection with the work on Plague, the investigation of a number of points, especially in relation to the toxic substances produced by the B. pestis, has been undertaken. During the examination of rats in connection with this work, a leprous-like infection of the rat—which was shortly afterwards described by Stefansky at Odessa—was independently observed by me here.

Dr. Todd has investigated a number of questions in regard to the B. dysenteriæ of Shiga and Kruse. He has obtained from liquid cultures toxic filtrates, and by immunising horses with these has succeeded in obtaining an antitoxic serum. He has also conducted a series of experiments proving the identity of the Diphtheria Antitoxins obtained from different species of animals.

Dr. Petrie has investigated the relation of the pseudo-diphtheria bacillus to the true diphtheria bacillus with special reference to the question of toxin production. He has observed in rabbits a trypanosomiasis, and as practically nothing has hitherto been known of this parasite in the rabbit, he has carried out a number of observations and experiments, part of which has been published.

A number of investigations on other subjects, including Staphylococcus, Tubercle, and Influenza, and with special reference to immunity, are in progress in the Department.

I wish to thank the staff of the Department for the help given me in carrying on the work.

The following papers have been published from the Department:-

- A DISEASE OF THE RAT CAUSED BY AN ACID-FAST BACILLUS, by G. Dean. Centralblatt für Bakteriologie, Bd. XXXIV.
- ON A DYSENTERY ANTITOXIN, by C. Todd. British Medical Journal, December, 1903.
- On the Occurrence of a Trypanosome in the Rabbit, by G. F. Petrie. Centralblatt für Bakteriologic, Bd. XXXV.

GEORGE DEAN.



# Lister Institute of Preventive Medicine.

CHELSEA GARDENS, LONDON, S.W

ANNUAL REPORT

AND

BALANCE SHEET.

April 29th, 1904.

# APRIL, 1905.

# The Lister Institute of Preventive Medicine,

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.

### President:

THE LORD LISTER, P.C., O.M., F.R.S.

# THE GOVERNING BODY.

SIR HENRY E. ROSCOE, F.R.S., Chairman.

THE LORD IVEAGH, K.P.

SIR JOHN BURDON-SANDERSON, BART., F.R.S. J. ROSE BRADFORD, M.D., F.R.S.

SIR MICHAEL FOSTER, K.C.B., M.P., F.R.S.

J. LUARD PATTISSON, CB., Hon. Treasurer.

COLONEL DAVID BRUCE, R.A.M.C., F.R S.

### Director:

DR. C. J. MARTIN, F.R.S.

Assistant Secretary and Accountant: MR. GEORGE COOPER.

# THE SCIENTIFIC STAFF.

## Chelsea :—

Director's Laboratory: -C. J. MARTIN, M.B., D.Sc., F.R.S.

Assistant: - SYDNEY ROWLAND, M.A., M.R.C.S., L.R.C.P.

Bacteriological Laboratory: -ALLAN MACFADYEN, M.D., B.Sc.

Assistants: A. E. BOYCOTT, M.A., M.D.

E. P. CATHCART, M.D., CH.B.

J. E BARNARD (Honorary).

Jenner Memorial Student:—A. B. SMALLMAN, M.B., D P.H., R.A M.C.

Pathological Chemistry Laboratory:—S. G. HEDIN, M.D.

Assistant: -J. B. LEATHES, M.B., B.CH.

Chemical Laboratory: -A. HARDEN, D.Sc, Ph.D.

Assistant: -W. J. YOUNG, M.Sc.

Grocers' Research Student:-STANLEY WALPOLE, B.Sc.

# Aldenham:-

Antitoxin Department: -GEORGE DEAN, M.B.

Assistants: -A. MACCONKEY, M.B., B.C., D.P.H. (CAMD.)

G. PETRIE, M.D.

Research Student: -J. ANDERSON CRAW.



# ANNUAL GENERAL MEETING

0F

# The Lister Institute of Preventive Medicine

APRIL 14TH, 1905.

# REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and practical work of the Institute.

During the year no changes have taken place in the personel of the Governing Body, but when called to the Chairmanship at the end of 1903, Sir Henry Roscoe expressed a wish to be relieved of the duties of Joint Honorary Treasurer, and his colleague, Mr. J. L. Pattisson, consented to undertake the whole work of the office of Treasurer.

Several changes and re-arrangements have occurred in the Scientific Staff. Dr. Todd resigned his appointment as bacteriologist in the Serum Department on being appointed a bacteriologist to the Sanitary Department of the Egyptian Government, with charge of the installation for the manufacture of curative serum for Rinder-pest at Abassieh, near Cairo, and in consequence, Dr. MacConkey, formerly Assistant in the Bacteriological Laboratory at Chelsea, has been transferred to the Elstree establishment.

Dr. A. E. Boycott, late Gordon Lecturer in Pathology at Guy's Hospital, has been appointed Assistant in the Bacteriological Laboratory at Chelsea, vice Dr. MacConkey.

Mr. Plimmer, who has been in charge of the Laboratories for Cancer Research since October, 1902, has, at his own desire, been relieved from this duty.

Dr. Paine has left the Institute on appointment as Pathologist to the Cancer Hospital.

Towards the end of the year, Dr. Aders Plimmer, Grocers' Research Scholar, was appointed Lecturer in Physiological Chemistry in University College, London. Mr. Stanley Walpole, B.Sc. has since been appointed to the vacant Scholarship.

Lieutenant A. B. Smallman, M.B., R.A.M.C., who held the Jenner Memorial Research Scholarship in Bacteriology was, in November, chosen by the Army Medical Department to proceed to India to continue some investigations undertaken by the military authorities concerning prophylactic injections with Anti-typhoid vaccine. This Scholarship is at present vacant.

In September, the Institute, at the further request of the India Office, submitted for the consideration of the Government of India suggestions regarding the problems urgently requiring solution in view of the continued spread of Plague in India, together with a scheme for a suitable Agency to direct and undertake the necessary investigation. The Institute proposed that the Royal Society in conjunction with the Governing Body should nominate a small Scientific Advisory Committee who should in the first instance appoint four investigators, two from England, and two from the Officers of the Indian Medical Service. The Committee would also be entrusted with the duty of drawing up a plan of campaign, and the general supervision and financial administration of the work of the Commission.

The Royal Society having expressed its willingness to co-operate with the Institute in this way, the scheme was submitted to the Government of India for their approval.

The recommendations put forward have recently received the approval of the Government of India, and the Governing Body has nominated Colonel Bruce, F.R.S. and Dr. C. J. Martin, F.R.S. to co-operate with the representatives of the Royal Society upon the Advisory Committee.

It has been decided by the Governing Body to undertake the preparation of Vaccine Lymph, and henceforth this will form one of the usual products of the Institute's Laboratories. The Institute has secured the services of Dr. Alan B. Green, formerly one of the Scientific Staff of the lymph-laboratories of the Local Government Board, to undertake the control of the manufacture of Vaccine Lymph, and special calf stables and laboratories have been prepared for the purpose.

The research work of the Institute has been carried on with zeal. In addition to the regular staff and the holders of the Institute's Research Studentships, Dr. H. G. Plimmer, Dr. Houston, Dr. Morgan, Dr. Armit, Lieut.-Col. Lyons, I.M.S., Captain Douglas, I.M.S., and Messrs. Dakin and Raper have been conducting researches in the laboratories of the Institute. A list of those results which have been published during the year appears upon the last page of the present Report.

During the past year no expenditure whatever has been charged to Capital Account. Expenses of every kind have been debited to Revenue, including £761 0s. 8d. for new Machinery, Tools, and Furniture, and smaller amounts for Laboratory Apparatus and

Books. A sum of £660 was specially authorised to be spent on advertising the products of the Institute. This outlay has resulted in increased Sales of Antitoxins.

The sales of Yersin & Haffkin's Fluid have been fairly maintained, and the temporary agreement with H.M. Government referred to in the last Report has now been terminated, according to arrangement, by the payment by the Institute to H.M. Treasury of £1,623 17s. in respect of sales during the year 1904.

The receipts for Diagnosis and Analysis Fees, Tuberculin and Mallein has been slightly less than in 1903.

The stocks of Antitoxins on hand at December 31st, 1904, were much larger than in former years, and it is estimated that the expenses of the Farm laboratories will be considerably reduced during the coming year by having so large a supply on hand.

In both the Chelsea and Aldenham Accounts there is a balance to the good which has been carried to the credit of the Capital Account.

HENRY E. ROSCOE,

Chairman.

# Che Lister Institute

# Dr.

# BALANCE SHEET,

To Creditors	
To Water Laboratory Fund—  Amount received from the Trustees of the late Richard Berridge, for building and endowing a Water Laboratory, conditionally that not more than £8,000 shall be spent upon the building of the Water Laboratory	
Amount received from the Trustees of the late Richard Berridge, for building and endowing a Water Laboratory, conditionally that not more than £8,000 shall be spent upon the building of the Water Laboratory	
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of the Water Laboratory	
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Yersin Laboratories 3,500 0 0	
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Amount payable to the Government in final settlement, under	
agreement with them, in respect of Sales—	
To 31st December, 1903 430 18 0	
For the Year ending 31st December, 1904 1,623 17 0	
1,445 5 0	
To Sinking Fund 1,008 3 3	
To Capital Fund-	
Balance as per last account, 31st December, 1903 $\dots$ 306,648 17 1 $Add$	*
Balance of Chelsea Gardens Department Income	
and Expenditure Account, being excess of	
Income over Expenditure, for the year	
ending 31st December, 1904 1,131 8 3	
Balance of Aldenham Department Income and	
Expenditure Account, being excess of	
Income over Expenditure for the year	
ending 31st December, 1904 2,010 17 8	
3,142 5 11	3
309,791 3 0	
J. L. PATTISSON,	
HON. TREASURER.	
£351,584 6 0	

In accordance with the provisions of the Companies' Act, 1900, we certify that all our requirements as Sheet, and in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true London, 20th February, 1906.

31st DECEMBER, 1904.

Cr.

Ву	Савн—					£	s.	d.	£	s.	d.
	·	rent Account				1,610			-		
	In hand					20					
								_	1,631	1	10
Вy	Investments (at	cost)—									
	Mortgage on Fre	ehold Property, I	${f Liscombe}\; {f E}$	state, at	3 per cent.	20,000		0			
	£2,900 New Sou	th Wales 3½ per o	cent. Stock	1918		2,897	16	0			
	£1,000 Cape of (	ith Wales 3½ per o Good Hope 3½ per	r cent. Stoc	k	***	1,000	0	0			
	£1.500 City of S	Sydney 4 per cent.	. Bonds		***	1,500					
	£353 North East	tern Railway 4 pe	er cent. Gua	aranteed	Stock	499	11	0			
									25,897	7	0
By	Investments, L										
	£25,006 2s. 6d	New Zealand (	Governmen	t 3 per	cent.	04.115					
	Inscribed St	tock 1945	***	***	G. 1	24,117	17	6			
	£25,000 Victoria	in Government 3	per cent. 1	nscribed	Stock	00.075					
	1929-1949	Total	- J. Ch J. 10	1045	***	23,875		0			
	220,000 Natai 3	per cent. Inscribe	ed Stock 18	129-1948 Total		24,484	7	6			
	220,000 New 50	uth Wales Govern	ment a per	cent. Ins	seribed	04.097	10	Λ			
	296 400 South A	ustralian Govern	mant 9 man	C		24,937	10	0			
	doted Stock	1016	meur o her	cent. C	onson-	0.1 960	5	0			
	\$25 000 Cane o	1916 of Good Hope <b>3</b>	nor cont I	nearibod	Stook	24,860	U	U			
	1933-1943		per cens, r.	пестием	SIOCK	23,850	۸	0			
	£25,000 Londor	and South-Wes	stern Railw	ov 4 no	r cont	20,000	U	U			
	Preferred C	onverted Ordinary	v Stock	ay ± pc	a cent.	32,000	0	0			
		orthern Railway 3				26,000		_			
	£25,000 Midland	l Railway 2½ per	cent Prefer	rred Cor	verted	20,000	•	•			
	Ordinary St	lock	00110. 1 1010.	iiou coi	17011004	20,375	0	0			
	£25.000 East In	dia Railway 3 per	cent. New I	Dehentu	re Stock	25,500					
	W-1,000 - M20 - M	and and any of Pass							250,000	0	0
Вy	Investments, J	ENNER MEMORIAI	FUND (at	cost)—							
	£2,650 Southwa	ark and Vauxhal	ll Water C	lo. <b>3</b> ne	r cent.						
	Debenture :	Stock "B"		***	***	2,756	10	0			
	£2,660 South Ea	astern Railway <b>3</b> p	ercent. Pre	ference S	Stock 1898	2,740	5	0			
		pool Corporation				271	5	11			
	_								5,768	0	11
By	Investment, Six	sking Fund (at c	cost)—							_	
	£832 2s. 5d. $2\frac{1}{2}$	per cent. Consols ts, at the market value,	5	1004	434				762	9	8
By	DEBTORS	ts, at the market value,	sist December,	1904, show	a depreciation.				1,753	0	7
By	DEBTORS STOCK OF TUBER	ROULIN AND MALI	LEIN		***				30		_
By	FURNITURE, FIT	TINGS, AND SCH	ENTIFIC A	PPARATU	S AND						
		st Account, 31st							3,023	14	10
Вч	EXPENDITURE OF	N INSTITUTE BUI	LDING AT	CHELSE	·						
	As per Account	t, 31st May, 1900	0, including	g purch	ase of						
	freebold site	e, £6,000	***		***				42,967	5	8
By	QUEENSBURY LO										
		ehold land and b									
	on new but	ildings <u>,</u> as per las	t Account,	31st Dec	., 1903		_		15,371	4	2
	Stock of Animal	s and Forage			***	718					
	Stock of Anti-To	oxins, Bottles, and	d Syringes,	če.	***	2,842	9	9			
	otable Utensils,	Farm Implemen			per last	7.00					
	Laboratore A	st Dec., 1903			1000	138	1				
	Eurniture of	aratus, as per last	Account, a	sist Dec	., 1903	466					
	rummure, as pe	r last Account, 31	ist Dec., 19	JU3	121	215	8	0	4 900	4	4
									4,380	1	4
									£351,584	6	0
								-	,,,,,,		

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Company's affairs as shown by the books of the Company.

# Che Lister Institute

# Dr. Chelsea Gardens Department—INCOME AND EXPENDIT

			I	NCOME					£	ε,	d.
To Interest and Dividend	ls on In <b>v</b> e	stments			111				8,469	13	1
To Diagnosis and Analysis	is Fees, &	3	***		***				866	18	1
To Research Fees				***	•••				50	0	0
To Sales of Tuberculin ar	nd Mallein		***		244	106	16	4			
Add Stock, 31st D	ecember,	1904			***	30	0	0			
								_			
						136	16	4			
Deduct Stock, 31st	Decembe	r, 1903				50	0	0			
								_	86	16	4
To Rent of Laboratories	received fr	om the l	Local Go	vernmen	t Board				815	0	0
To Sale of Transactions					***				0	4	1
To Sale of Vaccines									3	2	0
To Sale of Liquid Air									177	13	0

£10,469 6 7

EXPENDITURE

	INC	COME.		£	8.	d.	£	s.	d.	
To Sale of Antitoxins, &c				3,634	2	6				
Add Stock, 31st December, 1904				2,300	0	0				
						_				
				5,934	2	6				(
Deduct Stock, 31st December, 1903				975	7	6				,
						_	4,958	15	0	
To Sale of Yersin Serum and Haffkine's Flui	id (of whic	sh £1,62	23 17s.							
is payable to the Government under ag				2,013	18	0				
Add Stock on hand at 31st December	r, 1904	***	***	470	0	0				
						_				
				2,483	18	0				
Deduct Stock on hand at 31st Decem	ber, 1903	•••		85	0	0				

To Research Fees for work done for the Indian Government

To Rent of rooms to Capt. Douglas ...

Dr.

Hidenbam Department—INCOME AND

2,398 18 0

120 0 0

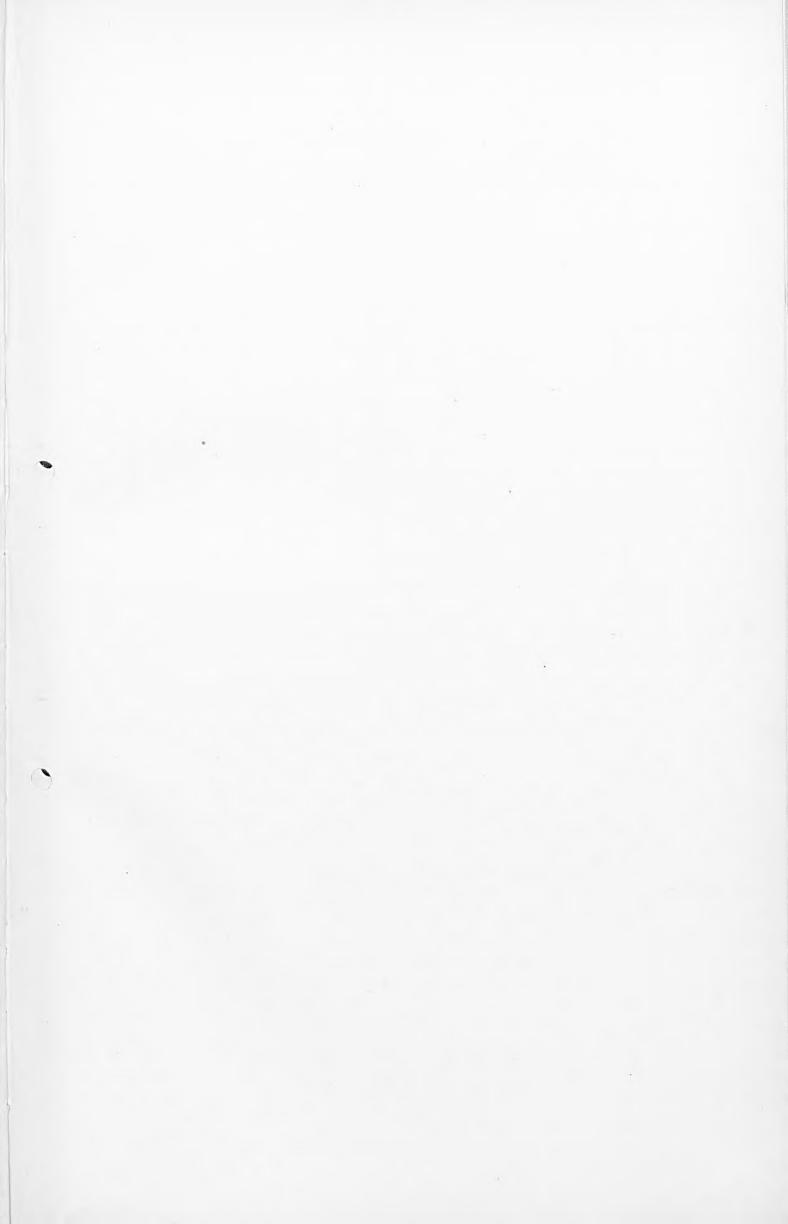
6 0 0

# f Preventive Medicine.

		1g 31	ist Dete	mber, ı	904.				Cr	•
		E.	XPENDIT	URE				£	s.	
	By Rates, Taxes, and Insurance							$4\overline{20}$		
	By Salaries, and Wages of Staff		•••			•••	•••	6,022	9	)
	By Stationery, Printing and Postage		•••	111	***			127	15	í
	By Advertising	• • •			***	***			11	
	By Office Expenses and Sundries	•••	•••			***	•••	153	7	
	By Bank Charges	•••	•••	***	***	•••	•••	4	-9	
	By Law Charges	•••	• • •	***	***	***	•••	6		
	By Travelling Expenses By Auditors' Fee	•••	•••	•••	***	• • • •	•••	20 21	13 0	
	By Gas and Water		***		***		•••	279	_	
	By Electric Light and Power					100			11	
	By Fuel						•••	70	18	
	By Director's Laboratory Expenses in	ocludin	ng Apparatu	18				121	10	١
	By Bacteriological Laboratory Expens			aratus	****		•••	89	3	
	By Water Laboratory Expenses inclu-		pparatus	***	***	***	***	52	1	
	By Photographic Laboratory Expense		***	***	***	444	• • • •	3	18	
	By Pathological Chemistry Department			***		***	•••	126		
	By Cancer Laboratory Expenses including Culture Media	rumg #		****		***	• • •	43	$\frac{14}{8}$	1
	By Animals		***				•••	$\frac{43}{213}$	_	
	By Animal House Expenses						•••		17	
1	By Repairs and Alterations to Buildin	gs and			***			240		
,	By New Machinery, Tools and Furnit			191				761	0	)
	By Library Expenses	***	***	***					17	
	By General Stores		e p	***	***	***	• • • •	19	19	
	By Sinking Fund (½ % per annum on	Cost o	n Building)	•••	***	***	•••	185	0	1
								9,337	18	
	By Balance, being Excess of Income	over	Expenditu	re Transfo	erred to	Capital	Fund	0,007		
	(see Balance Sheet)		****					1,131	8	ì
	,									
								£10,469	6	ò
				r, 1904.		18			Cr	
	By Rent, Taxes, and Insurance		XPENDIT					£ 94	s. 1	
	By Salaries and Wages		XPENDIT					£	s. 1	
	By Salaries and Wages By Animals—	E:	XPENDIT 	URE.				£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903	E:	XPENDIT	URE.	***	403	6 4	£ 94	s. 1	
	By Salaries and Wages By Animals—	E:	XPENDIT	URE.	***	403 331	6 4	£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903	E:	XPENDIT	URE.	***	331	6 4	£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e	E:	XPENDIT 31st Decen	URE.   nber, 1904	##	331	6 4 13 7	£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, 1903	Eending	XPENDIT 31st Decen	URE nber, 1904		331	6 4 13 7	£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e	Eending	XPENDIT 31st Decen	URE.   nber, 1904		734	6 4 13 7 19 11	£ 94	s. 1	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, 1903	Eending	XPENDIT 31st Decen	URE nber, 1904		734	6 4 13 7	£ 94 1,989	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, Stock, 31st December  By Forage—	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE nber, 1904		734	6 4 13 7 19 11	£ 94	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE 1904  35 17 462 17	 7 6 7 11	734	6 4 13 7 19 11 15 5	£ 94 1,989	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, Stock, 31st December	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE 1904  35 17 462 17	 7 6 7 11	331 734 498	6 4 13 7 19 11 15 5	£ 94 1,989	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE 1904  35 17 462 17	 7 6 7 11	331 734 498 233 771	6 4 13 7 19 11 15 5 10 0 11 8	£ 94 1,989	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, 3 Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE 1904  35 17 462 17	 7 6 7 11	331 734 498 233 771 1,005	6 4 13 7 19 11 15 5 10 0 11 8	£ 94 1,989	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903	E ending year 6 1904 r, 1904	XPENDIT 31st Decen	URE 1904  35 17 462 17	 7 6 7 11	331 734 498 233 771	6 4 13 7 19 11 15 5 10 0 11 8	£ 94 1,989	s. 1 13	1
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the y 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December	E	XPENDIT 31st Decen	URE nber, 1904  35 17 462 17	6 111	331 734 498 233 771 1,005	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989 236	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, 3 Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses include	E ending year 6 1904 ending 1904 ting Ut	XPENDIT 31st Decen ending 4 31st Decen	URE nber, 1904  35 17 462 17 nber, 1904	6 111	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989 236	s. 1 13	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses includ By Farm Expenses including Implem	ending year 6 1904 r, 1904 ing Utnents	XPENDIT 31st Decen ending 4 31st Decen	URE 1904  35 17  462 17	6 111	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989 236	s. 1 13	E E E
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Implem	E ending year 6 1904 ending 1904 ting Ut	XPENDIT 31st Decen ending 4 31st Decen	URE nber, 1904  35 17 462 17 nber, 1904	 7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 3 1	£ 94 1,989 236 749 54 62	s. 1 13 13 14 16 16 16 16 16	E 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses includ By Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising	ending year 6 1904 r, 1904 ing Utinents	XPENDIT 31st Decen	URE 1904  35 17 462 17	6 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989 236 749 54 62 255 8 660	s. 13 13 14 16 18 18 18 18 18	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Comparison.	ending year 6 1904 r, 1904 ing Utinents	XPENDIT 31st Decen	URE 1904  35 17 462 17	6 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989 1,989 749 54 62 255 8 660 960	s. 1 13 13 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Capture of the provided in the postage of the provided in the provided	E	XPENDIT 31st Decen	URE 1904  35 17 462 17	6 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	# 94 1,989  749 54 62 255 8 660 960	s. 13 13 13 14 16 16 16 16 16 16 16 16 16 16 16 16 16	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Advertising By Laboratory Expenses, including Casy Travelling Expenses By Interest on Loan from Bankers	ending year 6 1904 anding onding Uting Utinents	31st Decemending  31st Decemending  4  31st Decemending  4  Bottles, Che	95 17 462 17 aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	£ 94 1,989  749 54 62 255 8 660 960	s. 13 13 13 14 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the yalst December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Cast Travelling Expenses By Interest on Loan from Bankers By Bank Charges	ending year 6 1904 r, 1904 ling Ut nents ost of J	XPENDIT   31st Decented and the second s	95 17 462 17 aber, 1904	6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1	# 94 1,989 236 749 54 62 255 8 660 960 8 192	s. 13 13 13 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the yast December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Advertising By Laboratory Expenses, including Cast Travelling Expenses By Interest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing	ending year 6 1904 r, 1904 ling Ut nents ost of J	31st Decemending  31st Decemending  4  31st Decemending  4  Bottles, Che	35 17 462 17 aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 1 8 3 1	# 94 1,989 236 749 54 62 255 8 660 960 8 192	s. 13 13 13 14 14 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the yalst December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses includ By Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Captantory Expenses including Captantory Expenses By Haterest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing Repairs and Alterations By Bad Debts	ending year 6 1904 r, 1904 ing Uting Utinents lost of 1	31st Decemending 4 31st Decemending 5 31st Decemending 6 31st Decemending 7	35 17 462 17 aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1	# 94 1,989 236 749 54 62 255 860 960 960 41 91	s. 13 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Advertising By Laboratory Expenses, including Cast Travelling Expenses By Interest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing By Repairs and Alterations	ending year 6 1904 r, 1904 ing Uting Utinents lost of 1	31st Decemending 4 31st Decemending 5 31st Decemending 6 31st Decemending 7	35 17 462 17 aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1	# 94 1,989 236 749 54 62 255 860 960 960 41 91	s. 13 13 13 14 14 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the yalst December, Stock, 31st December, Stock, 31st December  By Forage— Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses includ By Farm Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Captantory Expenses including Captantory Expenses By Haterest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing Repairs and Alterations By Bad Debts	ending year 6 1904 r, 1904 ing Uting Utinents lost of 1	31st Decemending 4 31st Decemending 5 31st Decemending 6 31st Decemending 7	35 17 462 17 aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1 1	# 94 1,989  749 54 62 255 8 660 960 41 91 4 60	3. 13 13 13 14 14 15 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	E3659E499949
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  Stock, 31st December, 1903 Purchases during the year e  Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Caracteristic Expenses By Interest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing By Repairs and Alterations By Bad Debts By Binking Fund (½ % per annum on	ending year 6 1904 r, 1904 ing Ut nents cost of 1	31st Decemending 4 31st Decemending 4 Bottles, Che	URE 1904  35 17 462 17  aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1	# 94 1,989 236 749 54 62 255 860 960 960 41 91	3. 13 13 13 14 14 15 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	99693897929949-
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  Stock, 31st December, 1903 Purchases during the year e  Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Cast Travelling Expenses By Interest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing By Repairs and Alterations By Bad Debts By Balance being Excess of Income	ending year 6 1904 r, 1904 ing Ut nents cost of 1	31st Decemending 4 31st Decemending 4 Bottles, Che	URE 1904  35 17 462 17  aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 11 8 3 1	# 94 1,989  749 54 62 255 8 660 960 41 91 4 60  5,472	s. 13 13 13 14 14 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	
	By Salaries and Wages By Animals— Stock 31st December, 1903 Purchased during the year e  Deduct—Sales during the year e  Stock, 31st December, 1903 Purchases during the year e  Stock 31st December, 1903 Purchases during the year e  Deduct—Stock 31st December  By Stable and other Expenses including Implem By Gas, Water, and Fuel By Postages and Telegrams By Advertising By Laboratory Expenses, including Caracteristic Expenses By Interest on Loan from Bankers By Bank Charges By Farm Office Expenses and Printing By Repairs and Alterations By Bad Debts By Binking Fund (½ % per annum on	ending year 6 1904 r, 1904 ing Ut nents cost of 1	31st Decemending 4 31st Decemending 4 Bottles, Che	URE 1904  35 17 462 17  aber, 1904	7 6 7 11	331 734 498 233 771 1,005 255	6 4 13 7 19 11 15 5 10 0 0 11 8 3 1	# 94 1,989  749 54 62 255 8 660 960 41 91 4 60	s. 13 13 13 14 14 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	

# SCIENTIFIC PAPERS PUBLISHED FROM THE LABORATORIES OF THE INSTITUTE DURING 1904.

CATHCART, E. P	PRODUCTS OF UROTRYPTIC DIGESTION. Salkowski-Festschrift, 1904.
CATHCART, E. P	On the Antitryptic Action of Normal Serum. Journal of Physiology, Vol. XXXI., 1904.
CRAW, J. A	On the Mechanism of Agglutination. Journal of Hygiene, Vol. V., 1905.
DAKIN, H. D	The Fractional Hydrolysis of Amygalinic Acid. Isoamygdalin.  Trans. Chem. Soc., 1904. Vol. LXXXV.
DEAN, GEORGE	FURTHER OBSERVATIONS ON A LEPROSY-LIKE DISEASE OF THE RAT. Journal of Hygiene, Vol. V., 1905.
HARDEN & YOUNG	Gahrversuche mit Pressaft aus Obergahriger Hefe. Deut. Chem. Gessel. Ber. 37, 1904.
HARDEN & YOUNG	The Alcoholic Ferment of Yeast-Juice. Journal of Physiology, Vol. XXXII., 1904.
HILDESHEIM, O., & LEATHES	On the Synthesis of Higher Fatty Acids in the Liver.  Journal of Physiology, Vol. XXXI., 1904.
LEATHES, J. B	On the Percentage of Fat in Different Types of Muscle.  Journal of Physiology, Vol. XXXI., 1904.
MORGAN, H. DE R	THE PRESENCE OF BACTERIA IN THE ORGANS OF HEALTHY ANIMALS.  Lancet, July 2nd, 1904.
PLIMMER, ADERS	The Formation of Prussic Acid by the Oxidation of Albumins.  Journal of Physiology, Vol. XXXI., 1904.
PLIMMER, ADERS	The Formation of Prussic Acid by the Oxidation of Albumins.  No. 2. Journal of Physiology, Vol. XXXII., 1904.
PLIMMER, H. G	On the Treatment of Cancer with Radium Bromide. Lancet, April 16th, 1904.
PLIMMER, H. G	Note on the Effects produced on Rats by the Trypanosomata of Gambia Fever and Sleeping Sickness. <i>Proc. Roy. Soc.</i> , Vol. LXXIV., 1905.
TODD, CHARLES	On a Dysentery Toxin and Antitoxin. Journal of Hygiene, Vol. IV., 1904.



# Lister Institute of Preventive Medicine.

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CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

# MARCH, 1906.

# The Lister Institute of Preventive Medicine,

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.

### President:

THE LORD LISTER, P.C. O.M., F.R.S.

# THE GOVERNING BODY.

SIR HENRY E. ROSCOE, F.R.S., Chairman.

VISCOUNT IVEAGH, K.P.
SIR MICHAEL FOSTER, K.C.B., M.D., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer.

J. ROSE BRADFORD, M.D., F.R.S.

COLONEL DAVID BRUCE, R.A.M.C., C.B., F.R.S.

(Vacant).

### Director:

DR. C. J. MARTIN. F.R.S.

Assistant Secretary and Accountant: MR. GEORGE COOPER.

# THE SCIENTIFIC STAFF.

### Chelsea:-

Director's Laboratory: -C. J. MARTIN, M.B., D.Sc., F.R.S.

Assistant: - SYDNEY ROWLAND, M.A., M.R.C.S., L.R.C.P.

Bacteriological Laboratory: -ALLAN MACFADYEN, M.D., B.Sc.

Assistants: -A. E. BOYCOTT, M.A., M.D.

J. O. WAKELIN BARRATT, M.D., D.Sc., F.R.C.S.

W. E. MARSHALL, M.B., CH.B.

Jenner Memorial Student: - HARRIETTE CHICK, D.Sc.

Pathological Chemistry Laboratory: -S. G. HEDIN, M.D.

Assistant: -J. B. LEATHES, M.B., B.CH.

Chemical Laboratory: A. HARDEN, D.Sc., Ph.D.

Assistant: -W. J. YOUNG, M.Sc.

Grocers' Research Student: -STANLEY WALPOLE, B.Sc.

### Aldenham:-

Antitoxin Department: - GEORGE DEAN, A.M., (ABERD), M.B., C.M.

Assistants: A. MACCONKEY, M.B., B.C., D.P.H. (CAMB.)

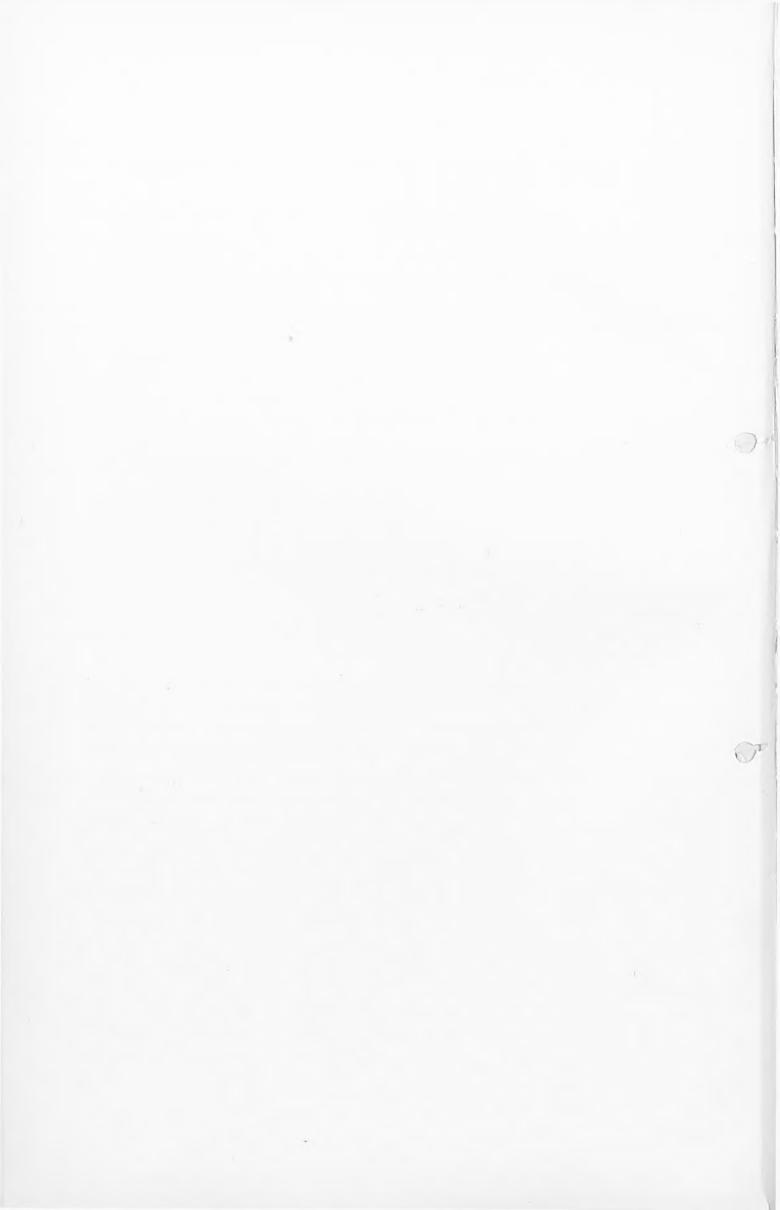
ALAN B. GREEN, M.A., M.D., B.C. (CAMB).

(Bucteriologist in charge of the preparation of Calf Lymph.)

G. PETRIE, M.D.

J. C. G. LEDINGHAM, M.A., M.B., B.Sc.

Research Student: - LEONARD NOON, F.R.C.S., B.C. (CAMB).



# ANNUAL GENERAL MEETING

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# The Lister Institute of Preventive Medicine

APRIL 21st, 1906.

# REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and practical work of the Institute.

During the year a vacancy in the Governing Body has occurred owing to the death of one of its most distinguished and esteemed members, Sir John Burdon-Sanderson. Sir John represented the University of Oxford upon the Council, and had been connected with the Institute since its foundation, having been one of the original members of the Council of the British Institute of Preventive Medicine.

The vacancy caused by the death of Sir John Burdon-Sanderson has to be filled by the Council of the Institute at the forthcoming Annual Meeting.

During the absence of Mr. J. L. Pattisson, who was away from England for several months of the year, Colonel G. W. Addison, R.E., formerly one of the Governing Body, kindly acted as Honorary Treasurer.

Since the last report the Institute has been admitted as a School of the University of London in Hygiene and Pathology.

The following changes and additions to the scientific staff have occurred:

In May, 1905, Drs. Rowland and Petrie were, at the request of the Advisory Committee for the Investigation of Plague in India, deputed to work upon the Commission at present engaged in India.

In September Dr. Cathcart resigned his appointment of Assistant in the Bacteriological Laboratory on his being appointed Lecturer in Physiological Chemistry in the University of Glasgow. During the year Dr. J. O. Wakelin Barratt and Dr. W. E. Marshafl have been appointed Assistants, and Dr. Harriette Chick Research-student in the Bacteriological Laboratory at Chelsea, and Dr. J. C. G. Ledingham an Assistant Bacteriologist to the Serum Department at Aldenham.

Dr. Alan B. Green, formerly Assistant Bacteriologist to the Lymph Department of the Local Government Board, has been appointed an Assistant Bacteriologist at Aldenham, with special charge of the preparation of Calf Lymph.

At the expiration of the term of the Research Scholarship, held by Mr. J. Anderson Craw, Mr. Noon was appointed to the vacant studentship, and is working under Dr. Dean at Aldenham.

The investigation, undertaken at the request of the India Office, into some points concerning the preparation of plague vaccine, with a view to obtaining a standardised preparation which will give uniform results, has been continued during the year by Captain Douglas, I.M.S., and an interim report has been furnished to the Government of India.

The suggestions put forward by the Institute at the request of the India Office regarding the investigation of plague in India, which were referred to in the last report as having received the approval of the Government of India, have been carried into effect. In March, 1905, at the request of the Advisory Committee, Dr. C. J. Martin, the Director of the Institute, and one of its representatives on the Committee, was given leave of absence in order to proceed to India to confer with the Government of India and the Sanitary Commissioner, and to organise the investigation. At the request of the same Committee, the services of Major Lamb, Captain Liston and Captain Gloster, of the Indian Medical Service, were placed at the disposal of the Committee by the Government of India, and Drs. Rowland and Petrie, members of the staff of the Institute, were deputed to work upon the Commission. The various provincial Governments of India have lent the services of several native medical men, specially selected on account of their ability and interest in scientific investigation, to work with the Commission. The Municipality of Bombay has co-operated with the Committee, and through their Medical Officer of Health, Dr. John A. Turner, has rendered most valuable assistance both by placing the administrative machinery of the Health Department at the services of the Commission in its epidemiological and epizootical investigations in Bombay city, and also by appointing a special Medical Officer of that Department to co-operate with the Commission in its enquiries.

The headquarters of the Commission are at the Plague Research Laboratory at Parel, near Bombay, where every facility for experimental work is available; and an investigation is also being carried on upon two more or less isolated villages in the Punjab, which were chosen because they afforded especial advantages for the purpose.

At Aldenham the manufacture of Vaccine Lymph, the preparations for which were mentioned in the previous report, has been undertaken, and the Institute now supplies Calf Lymph as one of its regular products.

Through the munificence of Dr. Ludwig Mond, F.R.S., a large Pressure Chamber, together with a double-acting Compressor-Pump for circulating air at different pressures, has been erected at the Institute at Chelsea. This chamber comfortably accommodates two persons and is to be used for experiments upon men and animals with compressed and rarefied air.

The Governing Body gratefully appreciate this important gift from Dr. Mond.

The apparatus will be employed for investigations upon physiological adaptation to increased and decreased atmospheric pressures with a view to the understanding of the difficulties and limitations at present existing in deep sea diving and caisson-working.

During the year a number of investigations have been carried out. In addition to the regular staff and the holders of the Institute's research studentships, Drs. H. G. Plimmer, Morgan, Armit, Eyre, Arkwright, Castellani, Wigham, Captain Douglas, I.M.S., and Mr. Dakin have been conducting investigations in the laboratories of the Institute. A list of those results which have been published during the year, appears upon the last page of this report.

During the past year the only expenditure charged to Capital Account was £35 for additions to buildings at Aldenham. All other expenses have been debited to Revenue.

The total sales of Antitoxins for 1905 were somewhat less than for the previous year, but remain satisfactory.

In both the Chelsea and Aldenham Accounts there is a balance to the good which has been carried to the credit of the Capital Account.

HENRY E. ROSCOE,

Chairman.

# Che Lister Institute

# Dr.

# BALANCE SHEET,

	£	s.	d.	£	s.	d.
To Creditors				645	12	10
To Loan from Bankers against Securities per contra				3,000	0	0
To Water Laboratory Fund-						
Amount received from the Trustees of the late Richard Bern	ridge,					
for building and endowing a Water Laboratory, condition	onally					
that not more than £8,000 shall be spent upon the bui	ilding					
of the Water Laboratory				26,352	13	10
To Jenner Memorial Fund-						
Amount received from the Committee of the Jenner Memorial	Fund			5,768	0	11
To Yersin Laboratory Fund				1,445	5	0
To Sinking Fund				1,278	19	11
To Capital Fund-						
Balance as per last account, 31st December, 1904	309,791	1 3	0			
Add						
Balance of Chelsea Gardens Department Income						
and Expenditure Account, being excess of						
Income over Expenditure, for the year						
ending 31st December, 1905 2,433	19 7					
Balance of Aldonham Department Income and						
Expenditure Account, being excess of						
Income over Expenditure for the year						
ending 31st December, 1905 378	6 11					
	2,81	26	6			
				312,603	9	6

# J. L. PATTISSON,

HON. TREASURER.

£351,094 2 0

In accordance with the provisions of the Companies' Act, 1900, we certify that all our requirements as Sheet, and in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true

	1.1 (4.1 ) 10 (4.0)						
By	Cash—	£	s.	d.	£	8.	d
	At Bankers, Current Account	614	9	8			
	In hand	34	5	7			
				_	648	15	3
$\mathbf{B}\mathbf{y}$	Investments (at cost)—						
	Mortgage on Freehold Property, Liscombe Estate, at 3 per cent.	20,000	0	0			
	£2,900 New South Wales 3½ per cent. Stock 1918	2,897		0			
	£1,000 Cape of Good Hope 3 per cent. Stock	1,000					
	£1,500 City of Sydney 4 per cent. Bonds	1.500					
	£353 North Eastern Railway 4 per cent. Guaranteed Stock	499	11	0			
	2000 1:00:00 = 0:00 = 0:00				25,897	7	0
$\mathbf{R}\mathbf{v}$	INVESTMENTS, LORD IVEAGH'S DONATION (at cost)-					•	_
	£25,006 2s. 6d. New Zealand Government 3 per cent.						
	Inscribed Stock 1945	24,117	17	6			
	£25,000 Victorian Government 3 per cent. Inscribed Stock	,	~•	•			
	1929-1949	23,875	0	0			
	£25,000 Natal 3 per cent Inscribed Stock 1929-1949	24,484					
	£25,000 New South Wales Government 3 per cent. Inscribed	,	•	•			
	Charle 1095	24,937	10	0			
	£26,100 South Australian Government 3 per cent. Consoli-	21,000		Ŭ			
	dated Stock 1916	24,860	5	0			
	£25,000 Cape of Good Hope 3 per cent. Inscribed Stock	11,000	•	•			
	1933-1943	23,850	0	0			
	£25,000 London and South-Western Railway 4 per cent.	20,000	•	٠			
	Preferred Converted Ordinary Stock	32,000	0	0			
	£25,000 Great Northern Railway 3 per cent. Preference Stock 1898	26,000		ŏ			
	£25,000 Midland Railway 2½ per cent. Preferred Converted	20,000	·	Ü			
	Ordinary Stock	20,375	Λ	0			
	208 000 Fast India Pailway 9 per cent New Debanture Steels	25,500		0			
	£25,000 East India Railway 3 per cent. New Debenture Stock	20,000	U	v	250,000	0	0
-	T T M Hunn (-44)			_	200,000	U	U
RA	INVESTMENTS, JENNER MEMORIAL FUND (at cost)—						
	£2,650 Southwark and Vauxhall Water Co. 3 per cent.	0.050	10	Δ			
	Debenture Stock "B"	2,756					
	\$2,660 South Eastern Railway 3 per cent Preference Stock 1893	2,740					
	2300 11s. Liverpool Corporation 3 per cent. Stock	271	J	11	E 700	Δ	11
D	Tomassure Courses Error (at acet)				5,768	U	11
BA	INVESTMENT, SINKING FUND (at cost)—				1,033	2	8
	£1,136 3s. 11d. 2½ per cent. Consols (The above investments, at the market value, 31st December, 1905, show a depreciation.)				1,000	Δ	O
By	Debtors				1,798	19	4
	STOCK OF TUBERCULIN AND MALLEIN				45		
	FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND						
	Books, as per last Account, 31st Dec., 1904	3,023	14	10			
	Deduct amount written off for depreciation after charging						
	in the Income and Expenditure account £109 5s. 8d.						
	for Books and Boiler	193	1	10			
				_	2,830	13	0
By	EXPENDITURE ON INSTITUTE BUILDING AT CHELSEA-						
	As per Account, 31st May, 1900, including purchase of						
	freehold site, £6,000				42,967	5	8
By	QUEENSBURY LODGE FARM, ALDENHAM-						
	Purchase of freehold land and buildings and Expenditure on						
	new buildings, as per last Account, 31st Dec., 1904	15,371	4	2			
	Additions to Calf Shed during the year		12	8			
	, ,				15,406	16	10
	Stock of Animals and Forage	503	17	2			
	Stock of Anti-Toxins, Bottles, &c	3,369	13	7			
	Stable Utensils, Farm Implements, and Sheds, as per	·					
	Account, 31st December, 1903	138	1	4			
	Laboratory Apparatus, as per Account, 31st Dec., 1903	466		3			
	Furniture, as per Account, 31st Dec., 1903	215	8	0			
				_	4,698	1	4
					0051.00		
					£351,094	2	0

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Institute's affairs as shown by the books of the Institute.

# Che Lister Institute of

Dr. Chelsea	<b>G</b> ard	ens D	epartm	ent—l	(COM	E AN	D	EXPENDIT
	I	ICOME.				£	<i>s</i> .	d.
To Interest and Dividends on Investments					***	8,469	2	11
To Diagnosis and Analysis Fees, &c	***		•••			874	4	10
To Research Fees						44	0	0
To Sales of Tuberculin, Mallein, Anti-Bacter	ial Vacci	ines, &c.		127	7 10			
Add Stock of Tuberculin and Mallein	, 31st D	ecember,	1905	45	0 0			
								-
				172	7 10			
Deduct Stock of Tuberculin and Malle	in, 31st I	December,	1904	30	0 0			1
						142	7	10
To Rent of Laboratories received from the L	ocal Gov	ernment	Board			815	0	0

£10,344 15 7

	I	NCOME.		£	s.	d.	£	8.	d.	
Po Sale of Antitoxins, &c				4,816	6	3				
Add Stock, 31st December, 1905	***	•••	***	3,250	0	0				
				8,066	6	3				0
Deduct Stock, 31st December, 1904			***	2,770	0	0				
					_	_	5,296	6	3	
To Research Expenses recoverable from the	e Indian	Governme	ont	•••		•••	221	16	8	
lo Rent of quarters to Research Students	at Elstree			•••			6	13	4	

# of Preventive Medicine.

	CCOUNT.						- 7")*				Cr.	
				E	XPENDI	TURE.				£	s.	(
	By Rates, Ta			***	***	•••	***	•••	***	418	4	
	By Salaries,			***	•••	•••	•••		***	5,352	6	
	By Stationer			ge	***	***	***	•••	•••	167	15	
	By Advertisi By Office Ex		Sundrice	•••	•••	***	***		•••	164	15	
	By Bank Ch		Sunucies	•••	•••	•••	***	•••			13	•
	By Law Cha						***			15		
	By Travellin	g Expenses		•••						25		
	By Auditors	Fee			***					21	0	
	By Gas and	Water	***	,			***			269	3	
	By Electric		ower	***			***	***	***	95	2	
	By Fuel				***			***	***		16	
	By Director'							***	•••	112	16 7	
	By Bacteriol By Water L						***	•••			19	
	By Patholog	ical Chemist	try Depart	ment Exr	ipparanus ienses	***	***	***		7.1	17	
	By Culture			_			***				18	
	By Animals		***							189	18	•
	By Animal I			. 10	***	***	***	***	•••	73	3	
1	By Repairs a						***	***	•••	263		
	By Library I		***		***	***	***	•••	•••	81 21	$\frac{14}{6}$	
	By General a By Amount		or Depresi	ation of E	urnitura '	Fittings	and Sajar	otific Apr	aratue	21	U	
	and E	Books, after	charging £	109 5s. 8a	1. for Boo	ka and F	koiler in s	thove ite	ms	193	1	
	By Sinking 1									185	0	
		ν				.,						_
	D D I	1				_		a	T 1	7,910	16	
	By Balance,	being Exces	ss of Incom	me over 1	Expenditi	ire Trans	sterred to	o Capital		2,433	10	
	(see 1	Balanco She	еъ)	***	•••	***	***	***		2,400	10	
										£10,344	15	
							1			-		-
	OUNT for						· · ·				Cr.	_
	By Rent, Ta	xes, and Ins			XPENDI					£ 107	s. 18	
	By Rent, Ta By Salaries By Animals	exes, and Instand Wages	surance 	 				•••	•••	£	s. 18	
	By Rent, Ta By Salaries By Animals- Sto	exes, and Instand Wages	surance  cember, 19	E2  04	XPENDI 	TURE.		 462	17 11	£ 107	s. 18	
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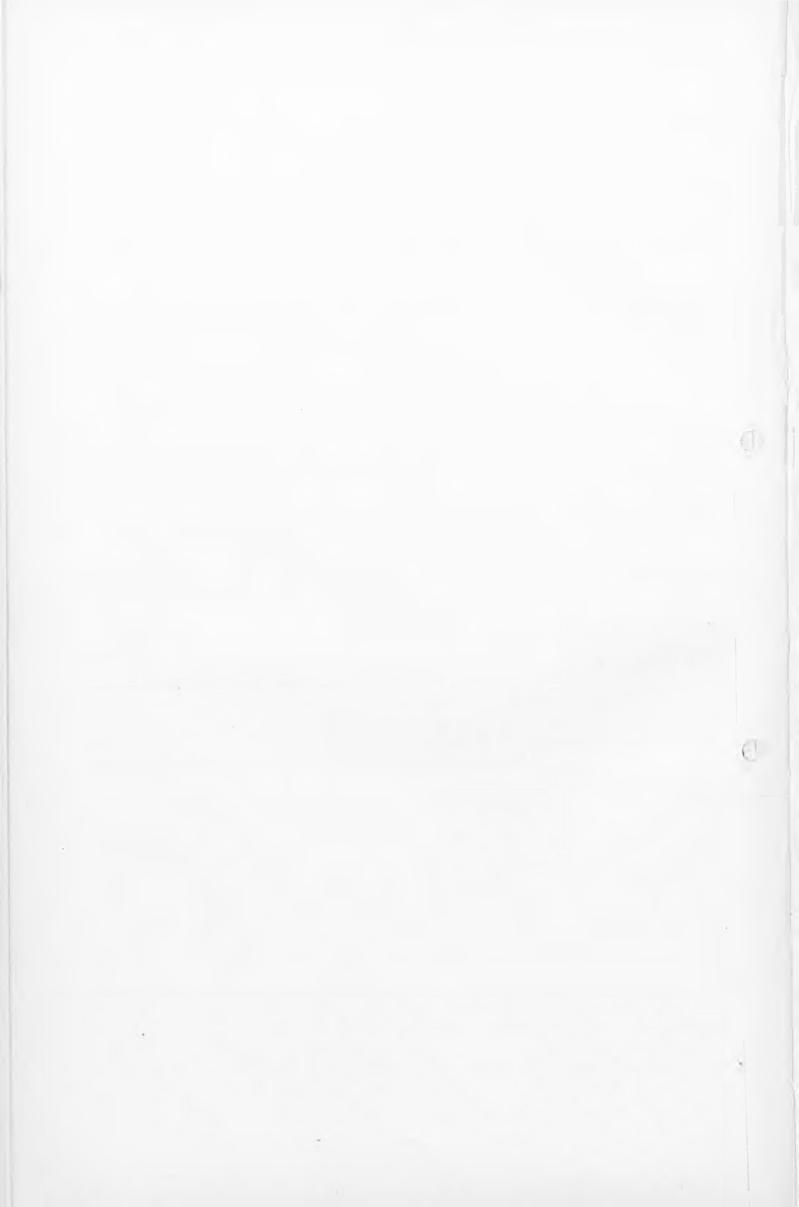
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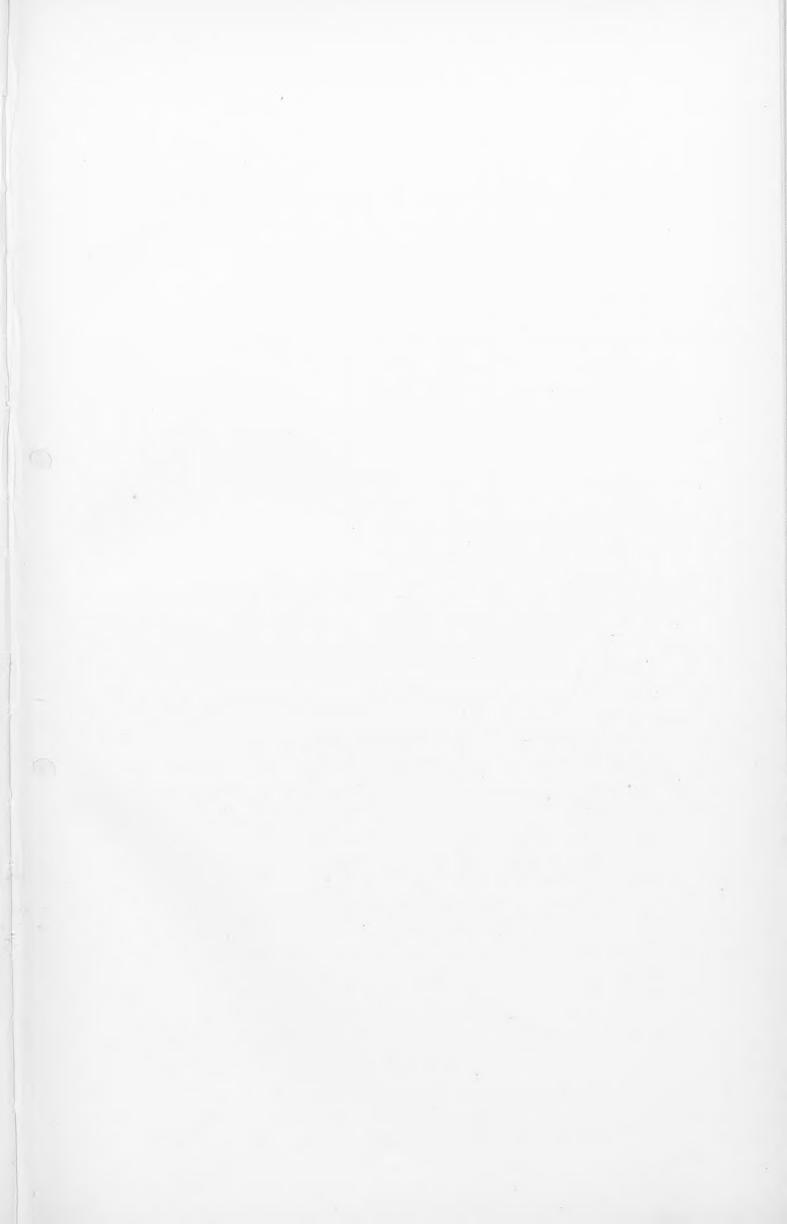
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# Lister Institute of Preventive Medicine.

CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

March 21, 1906.

# APRIL, 1907.

# The Lister Institute of Preventive Medicine.

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, SW.; AND QUEENSBERRY LODGE, ELSTREE, HERTS.

### President:

THE LORD LISTER, P.C., O.M., F.R.S.

## THE GOVERNING BODY.

SIR HENRY E. ROSCOE, D.C.L., F.R.S., Chairman.

VISCOUNT IVEAGH, K.P.

COLONEL DAVID BRUCE, R.A.M.C., C.B., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

PROFESSOR W. OSLER, M.D., D.Sc., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer. Professor ERNEST H. STARLING, M.D., F.R.S.

# THE SCIENTIFIC STAFF.

### Director:

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

# Bacteriological, Antitoxin and Vaccine Department:

GEORGE DEAN, M.A., C.M., M.B., Bacteriologist-in-Chief. A. T. MACCONKEY, M.B., B.C., D.P.H., Bacteriologist in charge of Scrum Laboratories. ALAN B. GREEN, M.D., M.A., Bacteriologist in charge of Calf Vaccine Laboratorics. A. E. BOYCOTT, M.A., M.D.; J. C. G. LEDINGHAM, M.A., M.B., B.Sc.; W. E. MARSHALL, M.B., Ch.B., D.P.H.; G. F. PETRIE, M.D.; SYDNEY ROWLAND, M.A., M.R.C.S., L.R.C.P., Assistants. HARRIETTE CHICK, D.Sc., Jenner Memorial Student.

# Department of Bio-Chemistry:

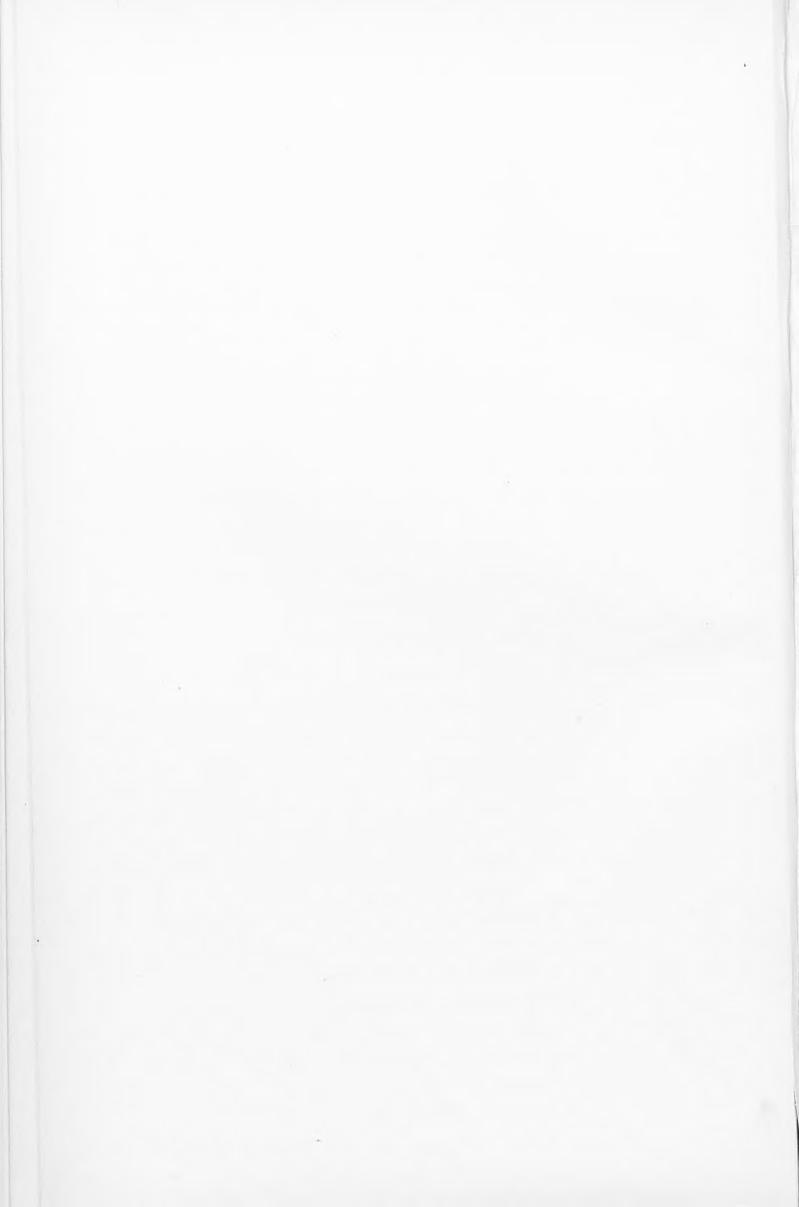
A. HARDEN, D.Sc., Ph.D., Chemist in Chief. J. B. LEATHES, M.B., Ch.B., F.R.C.S., Chemist in Charge of Laboratories for Pathological Chemistry. W. J. YOUNG, M.Sc., Assistant. PERCIVAL HARTLEY, B.Sc., Grocers' Research Student.

### Department of Protozoology:

E. A. MINCHIN, M.A., Professor of Protozoology in the University of London. J. D. THOMSON, M.A., M.B., C.M.; H. M. WOODCOCK, D.Sc., Assistants.

# Assistant Secretary and Accountant:

Mr. GEORGE COOPER.



## ANNUAL GENERAL MEETING

OF

## The Lister Institute of Preventive Medicine.

APRIL 18TH, 1907.

## REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress, both in the research and practical work of the Institute. The list of scientific papers published during the year appears at the end of this report.

The vacancy on the Governing Body occasioned by the death of Sir John Burdon-Sanderson, which existed at the time of the last report, was filled by the appointment by the Council of Professor Osler, Regius Professor of Medicine in the University of Oxford. During the year the Governing Body has sustained another serious loss owing to the death of Sir Michael Foster. Sir Michael Foster had been a member of the Governing Body since 1901. The seat on the Governing Body lately occupied by him has been filled by the appointment of Professor Starling.

The Governing Body have to record also with great regret the premature death of Dr. Allan Macfadyen, formerly Secretary of the Institute, and Head of the Bacteriological Laboratory. Dr. Macfadyen had especially taken an active part in the organisation of the Institute during its earlier years; and upon his recent retirement the Governing Body had marked their sense of these services by voting him a substantial honorarium.

During the absence of Mr. J. L. Pattisson from this country, in January and February of this year, Colonel G. W. Addison, R.E., formerly one of the Governing Body, kindly acted as Honorary Treasurer.

The following changes and additions to the scientific staff have occurred:

During the year Dr. Hedin resigned his position in the Department of Pathological Chemistry and Dr. Barratt his position as Assistant in the Bacteriological Laboratory, on being appointed an Assistant in the Research Laboratories of the University of Liverpool.

The Governing Body have appointed Dr. Dean, hitherto Bacteriologist in charge of the Serum Department at Elstree, to be Chief Bacteriologist to the Institute, and Dr. Ledingham, also of Elstree, to be one of his Assistants. The Elstree Branch of the Institute has been placed under the charge of Dr. MacConkey, with Dr. Alan Green as his Chief Assistant. Dr. Green remains responsible for the manufacture of Calf Lymph, undertaken by the Department.

The Departments of Chemistry and Pathological Chemistry have been fused into one Department of Bio-Chemistry, under the administrative control of Dr. Harden. Dr. Leathes has been placed in charge of the laboratories for Pathological Chemistry.

Drs. Rowland and Petrie are still in India as members of the Commission for the Investigation of Plague at present working at Parel, near Bombay.

Mr. Noon, formerly a research student in the Department of Bacteriology, has been appointed John Lucas Walker Student at the University of Cambridge. Mr. Walpole has resigned his studentship in the Chemical Department, but still continues to work at the Institute under Dr. Harden upon some investigations undertaken for the Royal Commission on Tuberculosis. Miss Harriette Chick, D.Sc., has been appointed to the Jenner Research Studentship for a further period of one year, and Mr. P. Hartley, B.Sc., to the studentship vacated by Mr. Walpole.

In the Report of last year it was mentioned that the Institute was admitted as a School of Research in Hygiene and Pathology in the University of London, and during the present year the heads of all departments in the Institute have been recognised as University Teachers.

In the early part of 1906 negotiations were entered into between the University of London and the Institute regarding the possibility of finding laboratory accommodation at the Institute for the projected Chair of Protozoology in the University, and as the result the Institute offered to undertake the equipment and upkeep of the Department of Protozoology on condition that the Professor and his assistants should become members of the staff of the Institute. Under this arrangement the endowment of the chair would be freed from all charges for maintainance of laboratories, and could be entirely utilized to provide salaries for one or more assistants in addition to the Professor.

The University welcomed the proposition, and Professor Minchin having been appointed to the Chair, took up his duties at the Institute on July 1st, and Dr. Thomson and Dr. Woodcock were afterwards appointed by the University to be his assistants.

The agreement entered into between the University and the Institute has, in the first place, been made for a period of two years, and afterwards can be determined on one year's notice, should either Institution wish to terminate the arrangement.

The investigation, undertaken at the request of the India Office, into some points concerning the Preparation of Plague Vaccine, which was begun by Captain Douglas, I.M.S., in 1905 has been continued.

The Commission for the Investigation of Plague in India, in the inception and organisation of which the Institute took a prominent part, and which was referred to in

the last report as having commenced work in India, still continues its investigations. During last year a first report of the Commission was published in a special number of the *Journal of Hygiene*, and a second report is at present in the press, and will shortly appear in another special number of the same journal.

The investigations into the circumstances attending the occurrence of accidents in deep sea diving and caisson-working, with a view to obviate the dangers to the men engaged in these occupations, have been continued during the year. In the last report, in referring to these investigations, it was pointed out that they had been rendered possible by the gift from Dr. Ludwig Mond of a large steel pressure chamber. The Governing Body have now to gratefully record the receipt of further substantial help towards the expenses of these researches from the well known engineering and contracting firms of Messrs. John Aird & Sons., J. Pearson & Co., Price & Reeves, and from Mr. Basil P. Ellis.

The Institute has, during the year, also undertaken for the Royal Commission on Mines the investigation of the various forms of respiratory apparatus which have been invented to enable miners to proceed to situations where the air is irrespirable, more particularly with a view to rescuing comrades in mine accidents.

The Governing Body are pleased to report that an arrangement has been arrived at with the Managing Committee of the Victoria Hospital for Children, Chelsea, whereby the Institute undertakes the entire pathological work of the Hospital, and in accordance with this arrangement, the Director and Dr. Ledingham have been appointed Pathologist and Assistant Pathologist respectively to the Victoria Hospital.

In addition to the regular staff and the holders of research studentships, Drs. H. G. Plimmer, J. S. Haldane, F.R.S., Morgan, Armit, Eyre, Arkwright, Bayon, Duncan Reid, Cumpston, Catheart and Mavrogordato, Colonel Alcock, F.R.S., I.M.S., Capt. S. P. James, I.M.S., and Messrs. Raper, Walpole, and Damant, have been engaged in researches in the various laboratories of the Institute.

The Balance Sheet of the Institute for the year ending 31st December, 1906, is attached, and shows a satisfactory financial position.

During the past year nothing has been charged to Capital Account. The buildings of the Institute have been well maintained. All repairs, and also a sum of £894 1s. 6d. expended on new apparatus, have been debited to Revenue, and for this reason no depreciation has been written off the Furniture, Fittings, Scientific Apparatus and Books, but the usual sum has been placed to the credit of the Sinking Fund.

HENRY E. ROSCOE,

Chairman of the Governing Body.

# Che Lister Institute

## Dr.

## BALANCE SHEET,

		- 1						
The Champions			£	s. d	. £ 3,065	s. 5	d.	
To Creditors	***	***			•		_	
To Loan from Bankers against Securities per con	ITRA	***			1,000	U	0	
To Water Laboratory Fund-								
Amount received from the Trustees of the late Rich	hard Ber	ridge,						
for building and endowing a Water Laboratory	, conditio	onally						
that not more than £8,000 shall be spent upon	n the bui	ilding						
of the Water Laboratory		***			26,352	13	10	
To JENNER MEMORIAL FUND-								
Amount received from the Committee of the Jenner I	Memorial	Fund			5,768	0	11	
To Yersin Laboratory Fund					1,445	5	0	
To Sinking Fund					1,555	6	8	
To Capital Fund—								
Balance as per last account, 31st December, 1905	•••	312	,603	9 6				
Add								
Balance of Chelsea Gardens Department Income								- 2
and Expenditure Account, being excess of								
Income over Expenditure, for the year								
ending 31st December, 1906	164	19 2						
Balance of Elstree Department Income and								
Expenditure Account, being excess of								
Income over Expenditure for the year								
	115	15 Q						
ending 31st December, 1906	110	15 8	000					
			280	14 10				
					312,884	4	4	

## J. L. PATTISSON,

Hon. Treasurer.

£352,070 15 10

In accordance with the provisions of the Companies' Act, 1900, we certify that all our requirements as Sheet, and in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true

# of Preventive Medicine.

31st DECEMBER, 1906.

Cr.

By Cash— At Bankers, Current Account	£ 1,158 12	s. 1 3	d. 3 8	£ 1,170		
By Investments (at cost)—  Mortgage on Freehold Property, Liscombe Estate, at 3 per cent.  £2,900 New South Wales 3½ per cent. Stock 1918  £1,000 Cape of Good Hope 3½ per cent. Stock  £1,500 City of Sydney 4 per cent. Bonds  £353 North Eastern Railway 4 per cent. Guaranteed Stock	20,000 2,897 1,000 1,500 499	16 0 0	0	25,897		
By Investments, Lord Iveach's Donation (at cost)— £25,006 2s. 6d. New Zealand Government 3 per cent. Inscribed Stock 1945  £25,000 Victorian Government 3 per cent. Inscribed Stock 1929-1949  £25,000 Natal 3 per cent. Inscribed Stock 1929-1949 £25,000 New South Wales Government 3 per cent. Inscribed	24,117 23,875 24,484	0	6 0 6	·		
Stock 1935  226,100 South Australian Government 3 per cent. Consolidated Stock 1916	24,937 24,860		0			
£25,000 Cape of Good Hope 3 per cent. Inscribed Stock, 1933-1943	23,850		0			
Preferred Converted Ordinary Stock £25,000 Great Northern Railway 3 per cent. Preference Stock 1898 £25,000 Midland Railway 2½ per cent. Preferred Converted	32,000 26,000		0			
Ordinary Stock £25,000 East India Railway 3 per cent. New Debenture Stock	20,375 25,500			250,000	0	0
### Style="font-size: 150%;">£2,660 Southwark and Vauxhall Water Co. 3 per cent.  Debenture Stock "B"	2,756 2,740 271	5	0	5,768	n	11
By Investment, Sinking Fund (at cost)—				1,309		5
£1,440 15s. 9d. 2½ per cent. Consols (The above investments, at the market value, 31st December, 1906, show a depreciation.) By Debtors By Stock of Tuberculin, Mallein, Anti-Bacterial Vaccines, &c.				2,191 198	5	0
By Furniture, Fittings, and Scientific Apparatus and Books, as per last Account, 31st Dec., 1905				2,830		
As per Account, 31st May, 1900, including purchase of freehold site, £6,000				42,967	5	8
By QUEENSBERRY LODGE FARM, ELSTREE— Purchase of freehold land and buildings and Expenditure on new buildings, as per last Account, 31st Dec., 1905 Stock of Animals and Forage Stock of Anti-Toxins, Bottles, &c. Stable Utensils, Farm Implements, and Sheds, as per Account, 31st December, 1903	414 3,097 138	12	3 3 4	15,406		
Laboratory Apparatus, as per Account, 31st Dec., 1903  Furniture, as per Account, 31st Dec., 1903	466 215	1	3	4,331	7	1

£352,070 15 10

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Institute's affairs as shown by the books of the Institute.

# Che Lister Institute

ðr.	Chelsea	<b>G</b> ardens	Dep	artment.	.—IN	CC	OME	ΑN	D	EXPE
	. 0	INCOME						£	s.	d.
To Donations for Special Res	searches							550	0	0
To Interest and Dividends or	Investments	***	***					8,471	1	9
To Diagnosis and Analysis F	ees, &c		***		***			1,061	1	2
To Research Fees	444		***				***	24	0	0
To Sales of Tuberculin, Malle	ein, Anti-Bacte	erial Vaccines	, &c.		449	2	3			
Add Stock of Tuber	culin and Mal	lein, Anti-Ba	cterial	Vac-						
cines, etc., 31st I	ecember, 1906		in	***	198	6	0			
				_	647	8	3			
Deduct Stock of Tuber	rculin and Mal	lein, 31st Dec	ember,	1905	45	0	0			
							_	602	8	3
To Rent of Laboratories rece	ived from the	Lecal Govern	ment I	Board	•••		•••	815	0	0

£11,523 11 2

Dr.	Istree	Depai	tment	-INCC	M	Ξ	AND	EX	PENDIT
(4	INC	OME.		£	s.	<i>d</i> .	£	s.	d.
To Sale of Antitoxins, &c		***	***	4,510	8	3			
Add Stock, 31st December, 1906			•••	3,069	8	3			
				7,579	16	6			
Deduct Stock, 3 st December, 1908	5	***		3,250	0	0			
				<del></del>	_	-	4,329	16	6
To Rent of quarters to Research Students	at Elstree		***	***			11	12	0

# of Preventive Medicine.

-								•				_
14	By Datos Mari	and Inco			PENDIT	TURE.				£ 426	s. 1	
	By Rates, Taxo By Salaries, an					•••	•••	***	***	5,742	8	
12	By Honorarium	n to Dr. All	LDML Ion Maafa	dvan			17.0	•••	•••	2,400	0	
	By Stationery.							• • • •	•••	147	7	
	By Office Expe				***		•••		***	155	_	
Ē	By Bank Char	ges	arrarroo						•••	4	9	
F	By Travelling	Expenses			.4.	•••		•••	•••	11	1	
E	By Auditors' F	ee						141		21	0	
	By Gas and W	ater				***	•••			284	18	
	By Electric Lig	ght and Po	wer			•••	•••		•••	86	12	
	By Fuel								•••	70	14	
E	By Director's I	Laboratory	Expenses	s including	g Appara	tus			•••	66	8	
	By Bacteriolog					paratus	•••		•••	204	12	
	By Water Lab						***		•••	72	5	
	By Pathologica		y Departr	nent Expe	enses					54	0	
	By Culture Me	edia	***	***	***		***	***	***	51	0	
	By Animals		***	***	***	• • • •	***	***	•••	123		
	By Animal Ho				***					57		
	By Repairs and				Apparat	us, includ	ing Wor	kshop Te	ools	146	4	
	By Library Ex		***	***		•••	•••	•••	***	113		
	By General Sto		ano in alu	ling Anna	***	***	•••	***	•••	48	5	
	By Protozoolog					***	***	***	***	276		
	By Respiratory By Sinking Fu						•••	•••	***	608 185	5 0	
-	эу энжинд ти	ma (§ % per	апции с	TI COSE OF	Dunann	3)	•••	•••	***	100	v	
										11,358	12	
E	By Balance, be	ing Excess	of Inco	me over 1	Expendit	ure Trans	sferred t	o Capital	Fund			
	(see Balan		**		***	***		***	***	164	19	
										£11,523	11	
	OUNT for				Decer PENDIT		906.			£	e.	
E	By Rent, Taxe	s, and Insu d Wages					906.	***	***		8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock	s, and Insu d Wages : 31st Decer	rance  mber, 190	EX	PENDIT	rure.		445		£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock	s. and Insu d Wages	rance  mber, 190	EX	PENDIT	rure.		63	11 0	£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch	es, and Insu d Wages 31st Decembrased during	rance  mber, 190 g the year	EX	PENDIT	rure.				£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch	es, and Insu d Wages : 31st Decem hased durin —Sales dur	rance mber, 190 g the year	EX	PENDIT	FURE.		63	11 0	£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch	es, and Insu d Wages 31st Decembrased durin, —Sales dur 31st De	mber, 190 g the year	EX 5 r ending 3 year en	PENDIT	FURE.	 06 8 1	63	11 0	£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch	es, and Insu d Wages : 31st Decem hased durin —Sales dur	mber, 190 g the year	EX 5 r ending 3 year en	PENDIT	FURE.	 06 8 1	63	11 0	£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch	es, and Insu d Wages 31st Decembrased durin, —Sales dur 31st De	mber, 190 g the year	EX 5 r ending 3 year en	PENDIT	FURE.	 06 8 1	509	8 2	£ 114	8. 14	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—	es, and Insu d Wages 31st Decembrased durin, —Sales dur 31st De	mber, 190 g the year	EX 5 r ending 3 year en	PENDIT	FURE.	 06 8 1	509	8 2	# 114 2,282	s. 14 15	
E E E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  By Forage—	es, and Insu d Wages 31st Decembrased durin, —Sales dur 31st De	mber, 190 g the year ring the scember, 1	EX  f ending 3 year en 1906 ber, 1906	PENDIT	FURE.	 06 8 1	509	11 0 8 2 2 4 0 0	# 114 2,282	s. 14 15	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  By Forage— Stock	es. and Insu d Wages : 31st Decem nased durin —Sales dur 31st De Stock, 31s	mber, 190 g the year ring the ecember, 1 at December, 1 mber, 190	EX 5 r ending 3 year en 1906 ber, 1906	PENDIT	FURE ember, 190 46 346 1	8 1 4 3	63 509 393	11 0 8 2	# 114 2,282	s. 14 15	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  By Forage— Stock Purch	es. and Insu d Wages : 31st Decen cased during —Sales during 31st De Stock, 31st 2 31st Decen	mber, 190 g the year ring the ecember, 1 at December, 190 g the year	EX	PENDIT	FURE ember, 190 46 346 1	8 1 4 3	63 509 393 63 468 531	11 0 8 2 2 4 0 0 1 11 1 11	# 114 2,282	s. 14 15	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  By Forage— Stock Purch	es. and Insu d Wages : 31st Decen hased during —Sales during 31st De Stock, 31st	mber, 190 g the year ring the ecember, 1 at December, 190 g the year	EX	PENDIT	FURE ember, 190 46 346 1	8 1 4 3	63 509 393 63 468 531	11 0 8 2 2 4 0 0 1 11	# 114 2,282	8. 14 15	
E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  By Forage— Stock Purch	es. and Insu d Wages : 31st December during —Sales during 31st De Stock, 31st : 31st December during —Stock 31st	mber, 190 g the year ring the ecember, 1 at December, 190 g the year at December	EX	PENDIT	FURE ember, 190 46 346 1	8 1 4 3	63 509 393 63 468 531	11 0 8 2 2 4 0 0 1 11 1 11	# 114 2,282	s. 14 15	
E I I	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  Sy Forage— Stock Purch  Deduct—	es. and Insu d Wages  31st Decer based durin  —Sales durin 31st De Stock, 31s  31st Decor bases during  —Stock 31s  other Expe	mber, 190 g the year ring the recember, 190 g the year at December at December at December	EX	PENDIT	FURE ember, 190 46 346 1	8 1 4 3	63 468 531 67	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23	s. 14 15 5	
E I	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  Sy Forage— Stock Purch  Deduct—  By Stable and By Farm Expe	es. and Insu d Wages  31st Decer based durin  Sales durin 31st De Stock, 31s  31st Decor bases during  Stock 31s  other Expenses include	mber, 190 g the year ring the exember, 190 g the year at December the year at December at December	EX	PENDIT	FURE smber, 190  46 346 1 mber, 190	8 1 4 3	63 468 531 67	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52	s. 14 15 5 11 17 10	
E I I I I I I I I I I I I I I I I I I I	By Rent, Taxe By Salaries and Stock Purch  Deduct  Stock Purch  Stock Purch  By Forage  Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water	es. and Insud Wages  31st December during  Sales during  Stock, 31st  31st December during  Stock 31st  other Expenses includer, and Fuel	mber, 190 g the year ring the exember, 190 g the year at December the year at December	EX	PENDIT	FURE smber, 190  46 346 1 mber, 190	8 1 4 3	63 468 531 67	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190	s. 14 15 5 11 17 10 14	
E E E E E E E E E E E E E E E E E E E	By Rent, Taxe By Salaries and By Animals— Stock Purch  By Forage— Stock Purch  Deduct—  By Stable and By Farm Expe By Gas, Water By Postages and	es. and Insu d Wages 31st December during —Sales during 31st December during a Stock, 31st a 31st December during —Stock 31st other Expenses includer, and Fuel	mber, 190g the year ring the seember, 190g the year the year at December the year ring Implement	EX	PENDIT	FURE smber, 190  46 346 1  mber, 190	8 1 4 3	63 468 531 67	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11	s. 14 15 5 11 17 10 14 12	
E E E E E E E E E E E E E E E E E E E	By Rent, Taxe By Salaries and By Animals— Stock Purch  Deduct—  Sy Forage— Stock Purch  Deduct—  By Stable and By Farm Expe By Gas, Water By Postages and By Advertising	es. and Insured Wages  31st December during  —Sales during  Stock, 31st December during  —Stock 31st December during  —Stock 31st December during  —Stock 31st December during	mber, 190 g the year ring the seember, 190 g the year the December the December the December the Janear	EX r ending 3 year en 1906 ber, 1906 ending 3 oer, 1906 uding Ute ements	PENDIT	TURE ember, 190  46 346 1  mber, 190	8 1 4 3	63 509 393 63 468 531 67	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38	s. 14 15 5 11 17 10 14 12 10	
	By Rent, Taxe By Salaries and By Animals— Stock Purch  By Forage— Stock Purch  By Stable and By Farm Expe By Gas, Water By Postages and By Laboratory	es. and Insu d Wages 31st Decer hased durin, —Sales dur 31st Decer hases during —Stock, 31s other Expenses includer, and Fuel nd Telegran g Expenses,	mber, 190 g the year ring the seember, 190 g the year the December at December at December at December at December and Imple a	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements g Cost of I	PENDIT	rure.  smber, 190  46 346 1  mber, 190	8 1 4 3 	63 509 393 63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38 579	8. 14 15 5 11 17 10 14 12 10 10	
	By Rent, Taxe By Salaries and Stock Purch  By Forage— Stock Purch  By Forage— Stock Purch  By Stable and By Farm Expe By Gas, Water By Postages and By Laboratory By Travelling	es. and Insu d Wages 31st Decer hased durin, —Sales dur 31st Decer hases during —Stock, 31s  other Expenses includer, and Fuel nd Telegran g Expenses, Expenses,	mber, 190 g the year ring the seember, 190 g the year the December at December at December at December at December and Implementations including	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements g Cost of I	PENDIT	omber, 190  46 346 1  mber, 190	8 1 4 3 	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38 579 10	8. 14 15 5 11 17 10 14 12 10 10 12	
	By Rent, Taxe By Salaries and Stock Purch  By Forage— Stock Purch  By Forage— Stock Purch  By Stable and By Farm Expensive Gas, Water By Postages and By Laboratory By Interest on	es. and Insu d Wages 31st December of Stock, 31st Stock, 31st a 31st December of Stock, 31st a 51st December of Stock 31st a 5	mber, 190 g the year ring the seember, 190 g the year the December at December at December at December at December and Implementations including	EX 5 r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements g Cost of I	PENDIT	## PURE.  ## 46	8 1 4 3 	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0 	# 114 2,282 116 463 23 52 190 11 38 579 10 77	8. 14 15 5 11 17 10 14 12 10 10 12 1	
	By Rent, Taxe By Salaries and Stock Purch  By Forage— Stock Purch  By Forage— Stock Purch  By Stable and By Farm Expe By Gas, Water By Postages and By Postages and By Travelling By Interest on By Bank Char	es. and Insured Wages  31st December 1st Dec	mber, 190 g the year ring the seember, 190 g the year the December enses including Imple including a Bankers	EX  year en 1906 ber, 1906  5 ending 3  oer, 1906  uding Ute ements  g Cost of I	PENDIT	TURE	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0 	114 2,282 116 463 23 52 190 11 38 579 10 77	8. 14 15 5 11 17 10 14 12 10 10 12 1 8	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water By Postages and By Postages and By Travelling By Interest on By Bank Char By Farm Office	es. and Insured Wages  31st December 1st Dec	mber, 190 g the year ring the seember, 190 g the year the December to December the year at De	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements g Cost of I	PENDIT	TURE ember, 190  46 346 1  mber, 190	8 1 4 3 6 and Ap	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0 	# 114 2,282 116 463 23 52 190 11 38 579 10 77	8. 14 15 5 11 17 10 10 11 12 10 10 12 18 13	
	By Rent, Taxe By Salaries and Stock Purch  By Forage— Stock Purch  By Forage— Stock Purch  By Stable and By Farm Expe By Gas, Water By Postages and By Postages and By Travelling By Interest on By Bank Char	es. and Insured Wages  31st December 1st Dec	mber, 190 g the year ring the seember, 190 g the year the December at December	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements g Cost of I	PENDIT	TURE	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0 	# 114 2,282 116 463 23 52 190 11 38 579 10 77 1 23	8. 14 15 5 11 17 10 10 11 12 10 10 12 18 13	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Stock Purch  Stock Purch  By Farm Expe By Gas, Water By Postages and By Advertising By Laboratory By Travelling By Interest on By Bank Char By Farm Office By Repairs and	es. and Insu d Wages 31st December of Stock, 31s 31st December of Stock, 31s a 31st December of Stock, 31s a 31st December of Stock	mber, 190 g the year ring the seember, 190 g the year at December	EX  year en 1906 ber, 1906  5 c ending 3  oer, 1906  uding Ute ements  c Cost of J	PENDIT	FURE ember, 190  46 346 1  mber, 190	8 1 4 3 6 and Ap	63 509 393 63 468 531 67 	11 0 8 2 2 4 0 0 0 1 11 1 11 10 0	114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175	\$. 14 15 5 11 17 10 14 12 10 10 11 11 18 13 16	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Deduct  Stable and By Farm Expe By Gas, Water By Postages and By Laboratory By Travelling By Interest on By Bank Char By Farm Offic By Repairs and By Bad Debts	es. and Insu d Wages 31st December of Stock, 31s 31st December of Stock, 31s a 31st December of Stock, 31s a 31st December of Stock	mber, 190 g the year ring the seember, 190 g the year at December	EX  year en 1906 ber, 1906  5 c ending 3  oer, 1906  uding Ute ements  c Cost of J	PENDIT	FURE ember, 190  46 346 1  mber, 190 Chemicals	8 1 4 3 6 and Ap	63 509 393 63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0 	114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175	8. 14 15 5 11 17 10 14 12 10 10 12 11 18 13 16 0 17	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water By Postages and By Travelling By Interest on By Bank Char By Farm Offic By Repairs and By Bad Debts By Sinking Fu  By Balance be	es. and Insud Wages  31st December 1 Stock, 31st  31st December 2 Stock, 31st  31st December 2 Stock, 31st  31st December 3 Stock 31st  other Expenses includer, and Fuel and Telegran 3 Stock 31st  Expenses a Loan from 1 Stock 31st  and (½ % per 1 Stock 31st)  and (½ % per 1 Stock 31st)	mber, 190 g the year ring the seember, 190 g the year at December at December, 190 g the year at December the year	EX  year en 1906 ber, 1906  oer, 1906  uding Ute ements  con Estima	PENDIT	omber, 190  46 346 1  mber, 190   Chemicals  of Buildi	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175 2 60	\$. 14 15 5 11 17 10 14 12 10 10 12 1 18 13 16 0 17	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water By Postages and By Travelling By Interest on By Bank Char By Farm Offic By Repairs and By Bad Debts By Sinking Fu  By Balance be	s. and Insud Wages  31st December 1 December 1 December 1 December 2 December	mber, 190 g the year ring the seember, 190 g the year at December at December, 190 g the year at December the year	EX  year en 1906 ber, 1906  oer, 1906  uding Ute ements  con Estima	PENDIT	omber, 190  46 346 1  mber, 190   Chemicals  of Buildi	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175 2 60	\$. 14 15 5 11 17 10 14 12 10 10 12 1 18 13 16 0 17	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water By Postages and By Travelling By Interest on By Bank Char By Farm Offic By Repairs and By Bad Debts By Sinking Fu  By Balance be	es. and Insud Wages  31st December 1 Stock, 31st  31st December 2 Stock, 31st  31st December 2 Stock, 31st  31st December 3 Stock 31st  other Expenses includer, and Fuel and Telegran 3 Stock 31st  Expenses a Loan from 1 Stock 31st  and (½ % per 1 Stock 31st)  and (½ % per 1 Stock 31st)	mber, 190 g the year ring the seember, 190 g the year at December at December, 190 g the year at December the year	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements con Estima me over 1	PENDIT	omber, 190  46 346 1  mber, 190   Chemicals  of Buildi	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	114 2,282 114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175 2 60 \$\frac{2}{3}\$	8. 14 15 5 11 17 10 14 12 10 10 11 11 11 11 11 11 11 11 11 11 11	
	By Rent, Taxe By Salaries and Stock Purch  Deduct  By Forage— Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Stock Purch  Deduct  By Stable and By Farm Expe By Gas, Water By Postages and By Travelling By Interest on By Bank Char By Farm Offic By Repairs and By Bad Debts By Sinking Fu  By Balance be	es. and Insud Wages  31st December 1 Stock, 31st  31st December 2 Stock, 31st  31st December 2 Stock, 31st  31st December 3 Stock 31st  other Expenses includer, and Fuel and Telegran 3 Stock 31st  Expenses a Loan from 1 Stock 31st  and (½ % per 1 Stock 31st)  and (½ % per 1 Stock 31st)	mber, 190 g the year ring the seember, 190 g the year at December at December, 190 g the year at December the year	EX r ending 3 year en 1906 ber, 1906 c ending 3 er, 1906 uding Ute ements con Estima me over 1	PENDIT	omber, 190  46 346 1  mber, 190   Chemicals  of Buildi	8 1 4 3	63 468 531 67 	11 0 8 2 2 4 0 0 1 11 1 11 10 0	# 114 2,282 116 463 23 52 190 11 38 579 10 77 1 23 175 2 60	\$. 14 15 5 11 17 10 14 12 10 10 12 1 18 13 16 0 17	

# SCIENTIFIC PAPERS PUBLISHED FROM THE LABORATORIES OF THE INSTITUTE DURING 1906-7

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# Lister Institute of Preventive Medicine.

CHELSEA GARDENS, LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

April 18, 1907.

## MAY, 1908.

## The Lister Institute of Preventive Medicine.

CHELSEA GARDENS, CHELSEA BRIDGE ROAD,
LONDON, S.W.; AND
QUEENSBERRY LODGE, ELSTREE, HERTS.

#### President:

THE LORD LISTER, P.C., O.M., F.R.S.

## THE GOVERNING BODY.

SIR HENRY E. ROSCOE, D.C.L., F.R.S., Chairman.

THE VISCOUNT IVEAGH, K.P., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer.

COLONEL DAVID BRUCE, R.A.M.C., C.B., F.R.S. PROFESSOR W. OSLER, M.D., D.Sc., F.R.S.

PROFESSOR ERNEST H. STARLING, M.D., F.R.S.

#### THE SCIENTIFIC STAFF.

#### Director:

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

## Bacteriological, Antitoxin and Vaccine Department:

GEORGE DEAN, M.A., C.M., M.B., Bacteriologist-in-Chief. A. T. MacCONKEY, M.B., B.C., D.P.H., Bacteriologist in charge of Serum Laboratories. ALAN B. GREEN, M.A., M.D., B.C., Bacteriologist in charge of Calf Vaccine Laboratories. J. C. G. LEDINGHAM, M.A., M.B., B.Sc.; W. E. MARSHALL, M.B., Ch.B., D.P.H.; G. F. PETRIE, M.D.; J. HENDERSON SMITH, M.B., Ch.B., Assistants.

F. A. BAINBRIDGE, M.D., D.P.H., Jenner Memorial Student.

#### Department of Bio-Chemistry:

A. HARDEN, D.Sc., Ph.D., Chemist in Chief. J. B. LEATHES, M.B., Ch.B., F.R.C.S., Chemist in Charge of Laboratories for Pathological Chemistry. W. J. YOUNG, M.Sc., Assistant. PERCIVAL HARTLEY, B.Sc., Grocers' Research Student. JAMES THOMPSON, Ph.D., Research Student.

### Department of Protozoology.

E. A. MINCHIN, M.A., Professor of Protozoology in the University of London. J. D. THOMSON, M.A., M.B., C.M.; H. M. WOODCOCK, D.Sc., Assistants.

### Director's Laboratory:

MISS HARRIETTE CHICK, D.Sc.; SYDNEY ROWLAND, M.A., M.R.C.S., Assistants.

MISS LANE-CLAYPON, M.B., D.Sc., Januar Memorial Student.

## Assistant Secretary and Accountant:

Mr. GEORGE COOPER.



## Annual General Meeting

OF

## The Lister Institute of Preventive Medicine.

MAY 13TH, 1908.

## REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and general work of the Institute.

The Governing Body record with regret the death of Sir Joseph Fayrer, a member of the Council. Sir Joseph Fayrer was one of the original members of the Council of the College of State Medicine, which was amalgamated with the Institute, and in the early years of the Institute's existence took an active part in its development.

The following changes and additions to the scientific staff have occurred:

Drs. Rowland and Petrie, lately members of the Commission for investigation of plague in India, have re-assumed their work at the Institute.

In September Dr. Boycott resigned his position in the Bacteriological department on being appointed Lecturer on Pathology to Guy's Hospital. Dr. J. Henderson Smith has been appointed an Assistant Bacteriologist to the Institute, and Miss Harriette Chick, D.Sc., formerly Jenner Memorial Student, has been appointed an Assistant in the Director's Laboratory.

Dr. James Thompson has been appointed to a Research Studentship in the department of Bio-chemistry, and Dr. F. A. Bainbridge and Miss Lanc-Claypon, M.B., D.Sc., to Jenner Memorial Research Studentships.

In addition to the individual 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 appended to this report, certain organised enquiries with a definite object, with which the Institute has been concerned, deserve mention.

The Commission for the Investigation of Plague in India still continues its investigations. During the year the second and third reports of the Commission were published in special numbers of the Journal of Hygiene, and a fourth report is at present in the press. This will complete the publication of the results of the programme originally drawn up by the Advisory Committee.

The work of the Commission has afforded a satisfactory interpretation of the main features of the epidemic spread of plague in India. Further problems, however, demanded solution, and the Committee indicated to the Government of India their readiness to continue the enquiry if desired. The Government of India having welcomed this suggestion, Dr. Martin visited India early in January of this year to confer with the Indian Authorities and the members of the Commission, and to make arrangements for further investigations. The programme for future enquiries having been approved by the members of the Advisory Committee, further work was undertaken in Bombay City and two other towns in the Presidency.

The investigations into the circumstances attending the accidents in deep sea diving and caisson-working have been concluded during the year. These investigations were rendered possible, as mentioned in the last report, by the gift of a large steel pressure chamber from Dr. Ludwig Mond, F.R.S., and substantial help towards the expenses of these researches from the engineering and contracting firms of Messrs. John Aird & Sons, S. Pearson & Son, Price & Reeves, and from the late Mr. Basil P. Ellis. Some portion of the results of the investigations was published in an Appendix to the Report of a Committee appointed by the Admiralty to consider the conditions of Deep Sea Diving, issued as a Parliamentary Blue Book in 1907, and the complete results will appear in the forthcoming number of the Journal of Hygiene.

The investigation undertaken for the Royal Commission on Mines into the merits of the various forms of breathing apparatus for use in Mines, mentioned in the previous annual report of the Institute, has been completed, and published as an Appendix to the First Report of the Royal Commission on Mines, issued as a Parliamentary Blue Book in 1907.

The Institute has also, at the request of the Principal Chemist to the Government, drawn up a scheme for the standardisation of disinfectants. This has been adopted by the Board of Trade and other of the Government departments. To accomplish this satisfactorily it was found necessary to obtain further knowledge concerning the laws governing the process of disinfection. This research was carried out by Miss Harriette Chick, D.Sc., and the results have been published in the *Journal of Hygiene*, Vol. VIII., 1908.

During the months of August and September, 1907, a concerted enquiry into the actiology of the summer diarrhea of infants was undertaken by the Institute. The Committees and Medical Staffs of the four principal Children's Hospitals in London were approached and afforded every assistance towards obtaining the necessary material. A staff of eight workers was engaged in the selection of the material and the isolating and identification of the organisms present in it.

The search for a causal agent was in the first instance confined to the group of non-lactose fermenting bacilli, in view of the importance of this group in known diseases of the alimentary canal. Moreover, the researches of Dr. Morgan, conducted at the Institute during the two previous summers, had shown good grounds for regarding as highly significant the frequent association of a particular organism of this group discovered by him with cases of this disease.

The summer was, however, owing to the absence of hot weather, unfavourable to the epidemic, but all available cases (191) were examined and the non-lactose fermenting bacteria isolated and identified.

The results of the investigation confirmed those previously obtained by Dr. Morgan. With the development of the epidemic the bacillus previously discovered by him assumed predominance, and the incidence of this bacillus in the cases examined during August and September showed a striking parallelism to the general mortality from infantile diarrhoea during the same period. The results of the enquiry, as far as it has progressed at present, are ready for publication, and it is hoped that a continuation may be possible during the ensuing summer.

In addition to the regular Staff and the holders of Research Studentships, Drs. H. C. Plimmer, J. S. Haldane, F.R.S., Morgan, Armit, Arkwright, Bayon, Duncan Reid, Cumpston, Catheart, Mavrogordato, Jex Blake, A. White Robertson, Stawell, E. S. Gilbert, L. Noon, E. L. Kennaway, Bradley, and H. D. McCulloch, Colonel Alcock, I.M.S., Major Leonard Rogers, I.M.S., Captain Bateman, R.A.M.C., Captain Hamerton, R.A.M.C., Lieut. Damant, R.N., and Messrs. Raper and Walpole, have been engaged in researches in the various laboratories of the Institute.

The Balance Sheet of the Institute for the year ending 31st December, 1907, is attached, and shows a satisfactory financial position.

During the past year nothing has been charged to Capital Account. The buildings of the Institute have been well maintained. All repairs, and also a sum of £462 15s. 5d. expended on new apparatus, have been debited to Revenue, and for this reason no depreciation has been written off the furniture, fittings, scientific apparatus and books, but the usual sum has been placed to the credit of the Sinking Fund

Owing to the larger number of workers at the Institute and the consequently increased demand for facilities for research, the available laboratories are fully occupied. The Governing Body have accordingly decided to proceed at once with the completion of the original design of the Institute by building the hitherto unfinished wing.

HENRY E. ROSCOE,

Chairman.

# Che Lister Institute

## Dr.

## BALANCE SHEET,

				£	s. d	. £	s. d.
То	CREDITORS	77.				804	2 4
То	WATER LABORATORY FUND-						
	Amount received from the Trustees of the late Ric	ha <b>rd</b> Ber	ridge,				
	for building and endowing a Water Laboratory	, conditie	onally				
	that not more thon £8,000 shall be spent upor	n the bu	ilding				
	of the Water Laboratory		***			26,352	13 10
To	JENNER MEMORIAL FUND-						
	Amount received from the Committee of the Jenner M	Iemorial	Fund			5,768	0 11
To	YERSIN LABORATORY FUND					1,445	5 0
То	Sinking Fund					1,843	4 0
То	CAPITAL FUND-						
	Balance as per last account, 31st December, 1906		3	12,884	4 4		
	Add						
	Lalance of Chelsea Gardens Department Income						
	and Expenditure Account, being excess of						
	Income over Expenditure, for the year						
	ending 31st December, 1907	2,135	12 6				
	Balance of Elstree Department Income and						
	Expenditure Account, being excess of						
	Income over Expenditure for the year						
	ending 31st December, 1907	2,315	4 4				
	_			4,450	16 10		
						317,335	1 2

## J. LUARD PATTISSON,

Hon. Treasurer.

£353,548 7 3

In accordance with the provisions of the Companies' Act, 1900, we certify that all our requirements as Sheet, and in our opinion such Balance Sheet is full and fair and properly drawn up, so as to exhibit a true

# of Preventive Medicine.

## 31st DECEMBER, 1907.

Cr.

Вұ	Cash— At Bankers, In hand		Account Account					$\begin{array}{c} \pounds \\ 1,500 \\ 1,219 \\ 17 \end{array}$		$\frac{0}{9}$	£	<b>s.</b>	d.
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		referenc			***	***	d	4,520	3	6			
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	Stock of Ar	$ ext{ti-Toxim}$	s, Bottles,	, &c.			•••	2,661	19	0			
	Stable Ute				s, and	Sheds, as	s per						
	Accoun	ıt, 31st I	December,	1903		***		138					
	Laboratory	Apparat	us, as per	Account	i, 31st D	ec., 1903	***	466					
	Furniture,	is per Ac	count, 31	st Dec.,	1903	444	***	215	8	0			
											2 000		
											3,827	8	4

Auditors have been complied with, and we report to the Members that we have audited the above Balance and correct view of the state of the Institute's affairs as shown by the books of the Institute.

# Che Lister Institute 1

Dr. Chelsea	6ardens	Dei	partmen	tIN	COME	Al	۷D	EXPENTI
	INCOME.					£	8.	d.
To Donations for Special Researches	***		•••		•••	250	0	0
To Interest and Dividends on Investments	***				•••	8,498	10	9
To Diagnosis and Analysis Fees, &c		***		***		1,249	13	7
To Research Fees		•••				24	0	0
To Sales of Tuberculin, Mallein, Anti-Bacter	rial Vaccines	, de.		420 1	4 1			
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etc., 31st December, 1907	***		***	205	9 9			)
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£10,857 12 2

Dr. Elsti	ree I	)epartm	ent.—I	NCOME	ANI	D EX	(PE	ND	ITUF	E
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To Sale of Antitoxins, &c	***			5,773 10	4					
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# Preventive Medicine.

RE A	ACCOUNT for the Y	ear ending	31St	Decemi	oer, 190	07.		Cr.
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	By Animals				***		***	94   4
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	By Protozoological Expense	s meruaing Ap	paratus		277	***	•••	3 6
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CRAW, J. A		ON VARIATION IN WEIGHT OF NORMAL GUINEA-PIGS IN RELATION TO THE ESTIMATION OF FREE DIPHTHERIA TOXIN. Journal of Hygiene, Vol. VII., No. 4, 1907.
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CUMPSTON, H		. A Contribution to the Bacteriology of Post-Scarlatinal Diphtheria. Journal of Hygiene, Vol. VII., No. 4, 1907.
CUMPSTON, H	3	. THE RELATIVE FREQUENCY OF VARIOUS TYPES OF STREPTOCOCCI IN SCARLATINA. Journal of Hygiene, Vol. VII., No. 4, 1907.
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HARTLEY, P. and M	AVROGOF	RDATO, A.	On the Nature of the Fat contained in Normal and Patho- Logical Human Livers. Journal of Pathology and Bacteriology, Vol. XII., 1908.
HARDEN, A., AND	YOUNG, V	V. J	THE ALCOHOLIC FERMENT OF YEAST-JUICE. Part III. THE FUNC- TION OF PHOSPHATES IN THE FERMENTATION OF GLUCOSE BY YEAST-JUICE. Proc. Royal Society, B. Vol. 80, 1908.
LEATHES, J. B	•••	***	On the Excretion of Nitrogen, Creatinine and Uric Acid in Fever. Journal of Physiology, Vol. XXXV., No. 3, 1907.
LEATHES, J. B			Acidosis in Pregnancy. Proc. Royal Society of Medicine, March, 1908.
LEDINGHAM, J. C	G		THE INHIBITORY ACTION UPON SUBSEQUENT PHAGOCYTOSIS EXERTED ON ACTIVE NORMAL SERUM BY INACTIVE NORMAL SERUM THROUGH WHICH BACILLI HAVE BEEN PASSED. Proc. Royal Society, B. Vol. 79, 1907.
LEDINGHAM, J. C.	G	***	THE PATHOLOGICAL HISTOLOGY OF THE SPLEEN AND LIVER IN SPONTANEOUS RAT-PLAGUE, WITH OBSERVATIONS ON THE EXPERIMENTAL INFECTION. Journal of Hygiene, Vol. VII., No. 3, 1907.
LEDINGHAM, J. C.	G		The Influence of Temperature on Phagocytosis. Proc. Royal Society, Series B, Vol. 80, 1908.
LEDINGHAM, ALE LEDINGHAM,		•••	TYPHOID CARRIERS. British Medical Journal, Vol. I., 1908.
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MARSHALL, W. E.		***	The Influence of Dilution of Serum on its Opsonising Power. Journal of Pathology and Bacteriology, Vol. XII., 1908.
MARTIN, C. J., AND	LAMB, G.	•••	Snake-Poison and Snake-Bite. From "A System of Medicine," Edited by T. Clifford Allbutt and H. D. Rolleston.
MINCHIN, E. A.		•••	Investigations on the Development of Trypanosomes in Tsetse-Flies and other Diptera. Quarterly Journal of Microscopic Science, Vol. 52, Part II., 1908.
MINCHIN, E. A.		***	On a New Species of Homogregarine from the Blood of a Himalayan Lizard (Agama Tuberculata). Proc. Zool. Soc., 1908 (in the press).

MORGAN, II. DE R.	•••	***	•••	Upon the Bacteriology of the Summer Diarrhea of Infants. (Second Communication.) British Medical Journal, Vol. II., 1907.
PLIMMER, H. G	•••	•••	•••	FURTHER OBSERVATIONS ON THE EFFECTS PRODUCED ON RATS BY THE TRYPANOSOMATA OF GAMBIA FEVER AND OF SLEEPING SIGKNESS. <i>Proc. Royal Society</i> , B. Vol. 79, 1907.
PLIMMER, H. G., AND THOMSON, J. D.	•••	•••	•••	A Preliminary Summary of the Results of the Experimental Treatment of Trypanosomiasis in Rats. <i>Proc. Royal Society</i> , B. Vol. 79, 1907.
PLIMMER, H. G., AND THOMSON, J. D.	•••			FURTHER RESULTS OF THE EXPERIMENTAL TREATMENT OF TRYPANOSOMIASIS IN RATS: BEING A PROGRESS REPORT OF A COMMITTEE OF THE ROYAL SOCIETY. Proc. Royal Society. B. Vol. 80, 1908.
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THOMSON, J. D	•••	***		CULTIVATION OF THE TRYPANOSOME FOUND IN THE BLOOD OF THE GOLD-FISH. Journal of Hygiene, Vol. VIII., 1908.
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# Lister institute of Preventive Medicine.

CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

DKY

BALANCE SHEET.

May 13th, 1908.

## MAY, 1909.

## The Lister Institute of Preventive Medicine.

CHELSEA GARDENS, CHELSEA BRIDGE ROAD,
LONDON, S.W.; AND
QUEENSBERRY LODGE, ELSTREE, HERTS.

#### President:

THE LORD LISTER, P.C., O.M., F.R.S.

#### THE GOVERNING BODY.

SIR HENRY E. ROSCOE, D.C.L., F.R.S., Chairman.

THE VISCOUNT IVEAGH, K.P., F.R.S.

COLONEL SIR DAVID BRUCE, R.A.M.C., C.B., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

PROFESSOR W. OSLER, M.D., D.Sc., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer.

PROFESSOR ERNEST H. STARLING, M.D., F.R.S.

#### THE SCIENTIFIC STAFF.

#### Director:

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

#### Department of Bacteriology:

J. C. G. LEDINGHAM, M.A., M.B., B.Sc., Bacteriologist-in-Chief at Chelsea. G. F. PETRIE, M.D.;
J. HENDERSON SMITH, M.B., Ch.B.; J. A. ARKWRIGHT, M.A., M.B., B.Sc., Assistants.
F. A. BAINBRIDGE, M.D., D.P.H., Jenner Memorial Student.

#### Department of Bio-Chemistry:

A. HARDEN, D.Sc., Ph.D., F.R.S., Chemist-in-Chief. J. B. LEATHES, M.B., Ch.B., F.R.C.S., Chemist in Charge of Laboratories for Pathological Chemistry. W. J. YOUNG, M.Sc., Assistant. JAMES THOMPSON, Ph.D., Grocers' Research Student.

#### Department of Protozoology:

E. A. MINCHIN, M.A., Professor of Protozoology in the University of London. H. M. WOODGOCK, D.Sc.; MISS MURIEL ROBERTSON, M.A., Assistants.

#### Antitoxin and Vaccine Department:

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

ALAN B. GREEN, M.A., M.D., B.C., Bacteriologist in Charge of Calf Vaccine Laboratories.

### Director's Laboratory:

MISS HARRIETTE CHICK, D.Sc.; SYDNEY ROWLAND, M.A., M.R.C.S., Assistants.

## Assistant Secretary and Accountant:

Mr. GEORGE COOPER.



## ANNUAL GENERAL MEETING

OF

## The Lister Institute of Preventive Medicine.

MAY 12TH, 1909.

## REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and general work of the Institute.

During the absence abroad of Mr. J. L. Pattisson, Hon. Treasurer, the duties of Treasurer were kindly undertaken by Colonel Addison, R.E.

The following changes and additions to the scientific staff have occurred:

Dr. Dean has resigned his position as Chief Bacteriologist to the Institute on his appointment to the Chair of Pathology in the University of Aberdeen, and Dr. Ledingham has been placed in charge of the Bacteriological Laboratories at Chelsea.

Dr. Marshall has resigned his position in the Bacteriological department on receiving a commission in the Royal Army Medical Corps, and Dr. J. A. Arkwright has been appointed an Assistant Bacteriologist.

Dr. Thomson has resigned his position as Assistant to Professor Minchin, and Miss Muriel Robertson has been appointed to the vacant post in the Protozoological department.

The services of Mr. Sydney Rowland have again been placed at the disposal of the Advisory Committee for the Investigation of Plague in India.

Mr. Percival Hartley has resigned his studentship on his appointment to the position of Bio-chemist to the Imperial Bacteriological Laboratories of India, and Miss Lane-Claypon has accepted an appointment at the Royal Free Hospital.

In addition to the individual 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 and appended to this report, certain organised enquiries with a definite object, with which the Institute has been concerned, deserve mention.

The Commission for the Investigation of Plague in India has continued its enquiries. Epidemiological investigations have been carried on at Poona and Belgaum, and are still in progress. During the year the Advisory Committee were requested by the Government of India to extend the scope of the enquiry entrusted to them, so as to include an investigation into the value of Yersin Scrum in the treatment of cases of plague, and also to institute researches into immunisation by killed cultures of the plague bacillus with a view to the improvement and standardisation of plague vaccines. The former of these enquiries is in

progress in Bombay, but the Committee being of opinion that the latter could best be done in this country under their supervision, the Institute has placed its isolated plague laboratories at Elstree at the disposal of the Committee for the purpose.

In the last report it was mentioned that the Institute had been requested by the Principal Chemist to the Government to draw up a scheme for the standardisation of disinfectants and that, to do this more satisfactorily, an investigation into the laws governing the process of disinfection had been undertaken. This was followed by a further experimental enquiry into the conditions requisite for the standardisation of disinfectants and the influence of admixture of various forms of organic matter upon the germicidal value of disinfectants. The results of these enquiries were published in the *Journal of Hygiene*, Vols. VIII. & IX.

The systematic examination for Tubercle bacilli of samples of milk intended for consumption in the Metropolis which devolved upon the London County Council by a recent Act of Parliament has, at the request of the Council, been undertaken by the Institute.

On the initiative of the Local Government Board, the Institute arranged in June, 1908, to co-operate with the Medical Department of the Board in the investigation of "typhoid-carriers." A considerable time must elapse before a definite pronouncement can be made on the exact importance to be attached to the "typhoid-carrier" as a factor in the spread of enteric fever in this country.

An arrangement was also made for an investigation of "diphtheria-carriers" in schools, in conjunction with the Medical Department of the Local Government Board. The work is in progress.

During the summer, 1908, an investigation into the nature and efficiency of various rat-viruses of bacterial origin was undertaken for the Colonial Office The result of this work has appeared in a Colonial Office paper.

The Chemical Department has during the year undertaken enquiries for the Medical Department of the Local Government Board as to the safety of using potassium ferrocyanide in certain processes employed in the manufacture of vinegar, and also as to the influence of varying quantities of boric acid and borates upon the keeping properties of cream at different temperatures. The latter investigation was undertaken with a view to aiding in determinating the maximum quantity of these preservatives to be allowed by the Local Government Board.

During the months of August and September, 1908, the Institute resumed its investigation of the etiology of epidemic diarrhoa in children. Six members of the Staff of the Institute co-operated in this research, and the services of three temporary assistants were secured for the period of the epidemic.

As in previous summers, the Institute was greatly indebted to the staffs of Shadwell and Victoria Hospitals for affording facilities for the collection of material. It has also to record its grateful appreciation of the cordial assistance rendered to the investigation by Dr. Dudfield, Medical Officer of Health, Paddington, and Drs. Eyre and Minet, of the Bacteriological Laboratory of Guy's Hospital.

In addition to the examination of material from cases of the disease and also from healthy children, milk, dust, and flies from infected and uninfected houses were examined. The association of Morgan's bacillus with cases of epidemic diarrhea was again fully demonstrated. This bacillus was also found to occur in a small percentage of cases of diarrhea of a non-epidemic character and in a few of the healthy children. Flies and bovine excreta may also harbour the bacillus in certain cases, but, so far, it has only once been recovered from milk. The agglutination reactions obtained in typical cases of the disease were distinctly encouraging, and it is proposed during the coming summer to confine our attention very largely to this part of the subject. An account of the work has been already presented to the Epidemiological Society, and the full report will appear in the Journal of Hygiene.

In addition to the regular staff and the holders of research studentships, Drs. H. G. Plimmer, J. S. Haldane, F.R.S., Morgan, Armit, Duncan Reid, Catheart, Mavrogordato, Jex Blake, Fein (Moscow), Parkinson, C. T. Andrew, E. L. Kennaway, Bradley, McKay, Anderson, Penfold, Castellani, Fremlin, Bagshaw, Bosanquet, Cunningham, and Meyer Wedell, Colonel Leslie, I.M.S., Capts. Bateman, Fry and Hamerton, R.A.M.C., Messrs. Walpole, Ogier Ward, Trotter and Robinson, and Miss Curwen have been engaged in researches in the various laboratories of the Institute.

The Balance Sheet of the Institute for the year ending 31st December, 1908, is attached, and shows a satisfactory financial position.

During the past year nothing has been charged against Capital account. On the other hand, as will be seen from the Balance Sheet, a considerable sum has been allotted from savings of Revenue towards the cost of the new wing.

The buildings of the Institute have been well maintained. All repairs, and also a sum of £199 5s. 6d., expended on new apparatus, &c., have been debited to Revenue. After allowing for these improvements a further sum of £83 15s. 10d. has been written off the Chelsea Account for depreciation of furniture, fittings, scientific apparatus, and books.

The usual sums have been placed to the credit of the Sinking Fund in the Chelsea and Elstree accounts.

The building operations for the completion of the original design of the building mentioned in the last report have been proceeding during the year, and it is hoped that the new laboratories will be available for occupation in the autumn.

In conclusion, the Governing Body wish 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,

To CREDITORS	
Amount received from the Trustees of the late Richard Berridge for building and endowing a Water Laboratory, conditionally that not more than £8,000 shall be spent upon the building of the Water Laboratory	
for building and endowing a Water Laboratory, conditionally that not more than £8,600 shall be spent upon the building of the Water Laboratory	
that not more than £8,000 shall be spent upon the building of the Water Laboratory	
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of the Water Laboratory 26,352 13 10	
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To Jenner Memorial Fund—	
Amount received from the Committee of the Jenner Memorial Fund 5,768 0 11	
To Yersin Laboratory Fund 1,445 5 0	)
To Sinking Fund 2,137 4 7	٢
To Capital Fund—	
Balance as per last account, 31st December, 1907 317,335 1 2	
Add	
Balance of Chelsea Gardens Department Income	
and Expenditure Account, being excess of	
Income over Expenditure, for the year	
ending 31st December, 1908 1,948 10 2	
Balance of Elstree Department Income and	
Expenditure Account, being excess of	
Income over Expenditure for the year	
ending 31st December, 1908 4,727 11 8	
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HENRY E. ROSCOE,

Chairman.

J. L. PATTISSON,

Hon. Treasurer.

£360,660 11 7

## REPORT OF THE AUDITORS

We have audited the above Balance Sheet. We have obtained all the information and explanations we and correct view of the state of the Institute's affairs, according to the best of our information and the explanations

# of Preventive Medicine.

## 31st DECEMBER, 1908.

Cr.

	Cash— At Bankers, Deposit Account	***				0	0	£	s.	d
	,, Current Account				468	16	7			
	In hand		***	•••	13	_3 	<b>2</b>	3.481	19	9
$\mathbf{B}\mathbf{y}$	INVESTMENTS (at cost) -							-,		Ī
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	solidated Preference Stock			***	5,940	5	0			
	£5,000 Great Central and Mic	dland Railway	Joint Comn	nittee						
	3½ per cent. Guaranteed S	tock	1010							
	£2,900 New South Water 35 p	er cent. Stock	1915	***						
	<b>£1,000</b> Cape of Good Hope <b>35</b> <b>£1 500</b> City of Sydney 4 ner co	per cent. Stot ent Bonds	3h	***						
	£353 North Eastern Railway 4	per cent. Gu	aranteed Sto	ock						
	·	•					_	26,052	5	1
Вч	INVESTMENTS, LORD IVEAGR'S	Donation (at	cost)—	aust						
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	£25,000 Navat 3 per cent. Thee £25,000 New South Wales Go	rmen atock r overnment 3 r	929-1949 Jer cent. Insc	eribed	24,404	- 1	U			
	Stock, 1935				24,937	10	0			
	£26,100 South Australian Go	vernment 3	per cent. Co	nsoli-	24.860	5	0			
	£25,000 Cape of Good Hope	3 per cent.	Inscribed S	Stock,	23,000		Ü			
	1933-1943	***	***		23,850	0	0			
	Preferred Converted Ordin	western Ran arv Stock	lway 4 per	cent.	32.000	0	Ω			
	£25,000 Great Northern Railw	ay 3 per cent	Preference	Stock	02,000	•	Ť			
	1898	15			26,000	0	0			
	Ordinary Stock	per cent. Er	Merred Conv	verted	20.375	0	O			
	£25,000 East Indian Railway 3	per cent. Nev	r Debenture	Stock						
12.,	Larrage Taxasan Managa	LAT WILLIAM CAL	and)					250,000	0	
Dï				cent.						
	Debenture Stock "B"		***	***						
	£300 11s. Liverpool Corporati	on 3 per cent	Stock	***	271	5	11	5.769	Λ	1
Вv	INVESTMENT, SINKING FUND (8	at cost)—						0,100	Ü	1
	£2,110 17s. 10d. 2½ per cent.	Account								
	Dentors		***	***						
								398	7	
BY	FURNITURE, FITTINGS, AND SCI as per Account, 31st Dec., 190		RATUS AND E	oooks,	2,830	13	a			
	Deduct amount written of		ion after ch	arging	2,000		Ů			
	in the Income and E:	xpenditure acc	count $\pounds 199$ 5		.00	4 10	10			
	for Books, Apparatus	and Furnitur	е	***	83	15	10	2,746	17	
Вv	EXPENDITURE ON INSTITUTE I	BUILDING AT	OHELSEA					2,710		
	As per Account, 31st May, 19	300, ir cluding	purchase of	free-		_				
	hold site £6,000		***	***	42,967		- 8			
	Add additions during the	year	***	***	4,059	11	6	47,026	17	
Вұ	QUEENSBERRY LODGE FARM, I							_,,020		
	Purchase of freehold land an	d buildings an		are on				17.400	10	
	new buildings, as per Acco	ount, 31st Dec			540	1	0	15,406	16	1
	Stock of Animals and Forage Stock of Anti-Toxins, Bottles,	de		***	$\frac{562}{3,292}$	8	9			
	Stable Utensils, Farm Implem		ls, as per Acc	count,	0,202	J	J			
		***	100		138	1	4			
	31st December, 1903		Day 1009		466	1	3			
	Laboratory Apparatus, as per		Dec., 1303	***			-			
			Dec., 1905		215	8	0	1.004	1	
	Laboratory Apparatus, as per				<del></del>	-8	0	4,674	1	

#### TO THE MEMBERS.

have required. In our opinion, such Balance Sheet is full and fair, and properly drawn up so as to exhibit a true given us and as shown by the books of the Institute. COOPER BROTHERS & CO.,

# Che Lister Institute d

<b>G</b> arder	is De	partme	nt.—IN	COM	E A	۷D	EXPEN
INCOM	E.				£	s.	d.
	***				8,489	10	10
ees, &c.			444		2,114	17	6
	***		•••	***	24	0	0
rial Vaccio	រខន, 🕉៤.		658	10 5			
, Anti-Bac	terial Vac	cines,					
			- 398	7 6			
			1,056	17 11			
lein, 31st l	Decembe	r, 1907	205	9 9			
					851	8	2
	INCOM Cees, &c. crial Vaccia , Anti-Bact	INCOME.  'ces, &c.  rial Vaccines, &c. , Anti-Bacterial Vac	INCOME.  Tees, &c  Trial Vaccines, &c  Anti-Bacterial Vaccines,	INCOME.  'ces, &c	INCOME.  Sees, &c	INCOME. # 8,480 lees, &c 2,114 24 rial Vaccines, &c 658 10 5 , Anti-Bacterial Vaccines, 398 7 6 398 7 6 1,056 17 11 lein, 31st December, 1907 205 9 9	

£11,479 16 6

Dr.	€Is	tree	Depar	tment	-INCOME A	ND E	XPE	ENDITURE ,
	_	INC	COME.		£ s. d.	£	s.	d.
To Sale of Antitoxins, &c			***		7,637 11 9			
Add Stock, 31st December,	1908				3,193 2 6			
					10,830 14 3			
Deduct Stock, 31st December	er, 1907			(**)	2,571 4 6			
						8,259	9	9
To Rent of Rooms at Elstree			***		**	19	7	6

# Preventive Medicine.

	ACCOUN	NT for	the	Year	ending	31St	Decembe	r, 190	υ8.		C	I •	
						EXPEN	DITURE.						ć
	By Ra	tes, Taxes	s, and I	nsuran	ee			***	***	•••		19	
		aries and		of Stat	it				***	•••	6,345 1	-	3
	By La	w Charge	S	***		_	***	***	***	•••	1	1	
					ge, and Ad	vertising	400	***	***	***		9	
	By Oil	ice Exper	nses and	Sundi	ies	•••	***	***		***	193	3	
		nk Charg		***	***	***		***	***	***		$rac{4}{4}$	1
		welling B					***	***	***	•••		0	
		ditors' Fe s and Wa					•••	***	***	•••	303 1	-	
		s and wa		Power						•••	114 1		
	By Fu					***	***	•••		***	74 1		
			akamta	en Ern	angog inalu	ding (La	neral Appar	a tue	***	•••		6	
							g Apparatus			•••	230 1		
							s including.				152 1		
		rniture	Dio-che	1310/04	anormony .		, morading	The				8	
		lture Med	lia.								77	6	
	By An				***						233 1	-	
		imal Hou	_		***					•••	219	3	
	By Re	nairs and	Alterati	ions to			aratus, inch				214 1	_	
	By Lil	rary Exp	nenses				244					5	
		neral Sto								•••	65 1	11	
					neluding A					***	80	3	
	By Ba	d Debts									6 1	16	
	By Au	iount wri		or Dep		Farnitar	e, Fittings,	and Sci	entific App	aratus			
							Books, Ap						
		in above		• • • • • • • • • • • • • • • • • • • •					244		83 1	lõ	
	By Sir	iking Fu	nd (1/2 %	per ant	ium on Cos	st of pres	sent Buildin	g)	777	***	185	0	
											41.533		-
		, ,								73 1	9,531	6	
	Ву Ва					er Expen	diture Tran	sterred	to Capitai		1.019	ia	
		(see Bala	ance Sn	eetj	***	***	***	***	****		1,948		
											£11,479	16	
		· · · • • • · · · · · · · · · · · · · ·		<u>-</u>									-
20	OUNT fo	or the	Year	endir	ng 31st	Decen	nber, 19	φ8.			. (	r.	
20	OUNT fo	or the	Year	endir		Decen	-	<b>ω8.</b>				r.	
					EXI		-	φ8. 				s.	
	By Re	or the ent, Taxes laries and	s, and I	nsurane	EXI		-	ο8. 			£	s. 5	
	By Re By Sa	ent, Taxes laries and imals—	s, and Is I Wages	nsuranc	EX		-	ο8. :::	***		£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and imals— Stock	s, and Is I Wages 31st De	nsurane s	EXI	PENDIT	CURE.	:::		18 9	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and imals— Stock	s, and Is I Wages 31st De	nsurane s	EXI	PENDIT	-	:::		•••	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and imals— Stock	s, and Is I Wages 31st De	nsurane s	EXI	PENDIT	CURE.	:::	386	18 9 13 10	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and nimals— Stock Purch	s, and Is I Wages 31st De assed du	nsurances	EXI ce r 1907 e year endi	PENDIT	CURE.	:::		18 9 13 10	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and nimals— Stock Purch	s, and Ind Wages 31st Denased du	nsurances	EXION TO THE PROPERTY OF THE P	PENDIT	FURE December,	1908	386	18 9 13 10	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and nimals— Stock Purch	s, and Is I Wages 31st De assed du -Sales 31st	nsurances  secembering the during December	EXION TO SERVICE THE SERVICE T	PENDIT	FURE December,	::: 1908 16 0	386	18 9 13 10	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and nimals— Stock Purch	s, and Is I Wages 31st De assed du -Sales 31st	nsurances  secembering the during December	EXION TO THE PROPERTY OF THE P	PENDIT	FURE December,	1908	386 642	18 9 13 10 12 7	£ 106	s. 5	
	By Re By Sa	ent, Taxes laries and nimals— Stock Purch	s, and Is I Wages 31st De assed du -Sales 31st	nsurances  secembering the during December	EXION TO SERVICE THE SERVICE T	PENDIT	FURE December,	::: 1908 16 0	386 642	18 9 13 10	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and simals— Stock Purch Deduct—	s, and Is I Wages 31st De assed du -Sales 31st	nsurances  secembering the during December	EXION TO SERVICE THE SERVICE T	PENDIT	FURE December,	::: 1908 16 0	386 642	18 9 13 10 12 7	£ 106	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and simals— Stock Purch  Deduct—	s, and Is I Wages 31st De assed du —Sales 31st Stock,	nsurances ecembering the during December 31st D	EXI or 1907 e year endi the year ober, 1908 eccember, 1	PENDIT	December,	::: 1908 16 0	386 642 508	18 9 13 10 12 7	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and simals— Stock Purch  Deduct—  orage— Stock	s, and It I Wages 31st De assed du —Sales 31st Stock,	nsurances ecembering the during December 21st December 2 occurs a construction occurs and the construction occ	EXIDE	PENDIT	December,  21 487	 1908 16 0 1 9	386 642 508	18 9 13 10 12 7 17 9	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and simals— Stock Purch  Deduct—  orage— Stock	s, and It I Wages 31st De assed du —Sales 31st Stock,	nsurances ecembering the during December 21st December 2 occurs a construction occurs and the construction occ	EXIDE	PENDIT	December,	 1908 16 0 1 9	386 642 508	18 9 13 10 12 7	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and simals— Stock Purch  Deduct—  orage— Stock	s, and It I Wages 31st De assed du —Sales 31st Stock,	nsurances ecembering the during December 21st December 2 occurs a construction occurs and the construction occ	EXIDE	PENDIT	December,  21 487	 1908 16 0 1 9	386 642 508 90 494	18 9 13 10 12 7 17 9 0 0 8 7	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and laries and Stock Purch  Deduct  orage Stock Purch	s, and Ist Wages 31st Denased du  Sales 31st Stock, 31st Denases du	nsurances ecembering the during Decembering the common the common the common three common t	EXIDE r 1907 e year endi the year ober, 1908 ecember, 1907 e year endi	PENDITION OF THE PENDIT	December,  21 487	1908 16 0 1 9	386 642 508 90 494 584	18 9 13 10 12 7 17 9 0 0 8 7 8 7	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and laries and Stock Purch  Deduct  Stock Purch  Purch	s, and Ist Wages 31st Denased du  Sales 31st Stock, 31st Denases du  Stock	nsurances ecembering the during Decembering the common three common	EXIDE r 1907 e year endi the year ober, 1908 ecember, 1907 e year endi	PENDITION OF THE PENDIT	December,  21 487  December,	 1908 16 0 1 9	386 642 508 90 494	18 9 13 10 12 7 17 9 0 0 8 7	£ 106 1,540	s. 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and laries and Stock Purch  Deduct  Stock Purch  Purch	s, and Ist Wages 31st Denased du  Sales 31st Stock, 31st Denases du  Stock	nsurances ecembering the during Decembering the common three common	EXIDE r 1907 e year endi the year ober, 1908 ecember, 1907 e year endi	PENDITION OF THE PENDIT	December,  21 487  December,	1908 16 0 1 9	386 642 508 90 494 584	18 9 13 10 12 7 17 9 0 0 8 7 8 7	£ 106 1,540	s. 5 5 16	
	By Ro By Sa By Ar	ent, Taxes laries and laries and Stock Purch  Deduct  Stock Purch  Deduct  Deduct	s, and Ist Wages 31st Denased du  Sales 31st Stock, 31st Denases du  Stock	ecembering the during Decembering the state December 1981 and 1981 a	EXIDE r 1907 e year endi the year ober, 1908 ecember, 1907 e year endi	PENDITION OF THE PENDIT	December,  21 487  December,	1908 16 0 1 9 	386 642 508 90 494 584	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,540 133 133 133 76	s. 5 16 14 8 13 9	
	By Ro By Sa By An By Fo By Fo By Fo	ent, Taxes laries and laries and Stock Purch  Deduct  Stock Purch  Deduct  Deduct  April 200  April	s, and Ist Wages 31st Denased du  Sales 31st Stock, 31st Denases du  Stock other Enses inc., and F	during the during Decembering the state Decembering the sypense cluding uel	EXIDE  r 1907 e year endi the year ober, 1908 ecember, 1907 e year endi ecember, 1908 s including Implement	PENDITION OF THE PENDIT	December,  21 487  December,	1908 16 0 1 9 	508 90 494 584 75	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,540 133 133 76 197	s. 5 16 14 8 13 9 16	
	By Ro By Sa By An By Fo By Fo By Po By Po By Po	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses, Water ostages ar	s, and In Wages I Wages I Stock Stock, I Stock, I Stock Stock other Educations in the Telegraph of Telegraph	nsurances  secember aring the during Decembering the state Decembering the state Decembering the state Decembering the state December and the state Decembe	EXIDER r 1907 e year ending the year ober, 1908 ecember, 1907 e year ending year ending the year end year e	PENDITION OF THE PENDIT	December,  21 487  December,  urniture	1908 16 0 1 9 1908	386 642 508 90 494 584 75	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 133 133 509 13 76 197 12	s. 5 16 14 8 13 9 16 16	
	By Ro By Sa By An By Fo By Fo By Po By Lo	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses, Water estages and aboratory	s, and In Wages I Wages I Stock Stock, I Stock, I Stock Stock other Expenses ind Telegation	nsurances  secember aring the during Decembering the state Decembering the state Decembering the state Decembering the state December and the state Decembe	EXIDER r 1907 e year ending the year ober, 1908 ecember, 1907 e year ending year ending the year end year e	PENDITION OF THE PENDIT	December,  21 487  December,  urniture	1908 16 0 1 9 1908	386 642 508 90 494 584 75	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 1,5±0 133 509 13 76 197 12 596	s. 5 16 14 8 13 9 16 16 12	
C	By Ro By Sa By An By Fo By Fo By Po By La By Ta	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses, Water estages and aboratory exvelling	s, and It Wages It Wages It Wages It Donased du Sales Stock, It Donases du Stock other Expenses ind Expense Expense	during the during the during the during the during the decembering the decembering the decembering the decembering the decembering the decembers during the decembers during the decembers during the decembers decembered during the decembers decembered during the decembers decembered during the december decembers decembered during the december decembers decembered during the december decembers during the decembers during the decembers during the duri	EXIDER r 1907 e year ending the year ober, 1908 ecember, 1907 e year ending year ending the year end the ye	PENDITION OF THE PENDIT	December,  21 487  December,  urniture	1908 16 0 1 9 1908	386 642 508 90 494 584 75	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 133 133 509 13 76 197 12	s. 5 16 14 8 13 9 16 16 12 12	
	By Ro By Sa By An By Fo By Fo By Po By La By To By Bo	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses, Water stages and boratory avelling ank Charj	s, and In Wages I Wages I Wages I Stock Stock, I Stock Stock Other Expenses ind Expense Expense ges	ecembering the during Decembering the state of the state	EXIDER 1907 e year ending the year ending r. 1907 e year ending r, 1907 e year ending r, 1907 e year ending limplement	PENDITION OF THE PENDIT	December,  21 487  December,  urniture	1908 16 0 1 9 1908 	508 508 90 494 584 75	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 133 133 76 197 12 596 13	s. 5 16 14 8 13 9 16 16 12 12 4	
	By Ro By Sa By An By Fo By Fo By Fo By Ea By Fo By Fo By Fo	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses, Water stages are aboratory eavelling ank Char arm Office	s, and In Wages I Wages I Wages I Stock I Stock, I Stock, I Stock I St	ecembering the during Decembering the state of the state	EXIDE	PENDITION OF BOTT OF B	December,  21 487  December,  urniture	1908 16 0 1 9 1908 	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 1,5±0 133 509 13 76 197 12 596 13 14	s. 5 16 14 8 13 9 16 16 12 12 4 5	
	By Ro By Sa By An By Fo By Fo By Po By Po By Po By Es By Fo By Fo By Es	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses and boratory avelling ank Charg arm Office spairs and	s, and It Wages It Wages It Wages It Wages It Department of Stock,  Stock,  Stock  Stock  Stock  other Expenses ind Expenses ind Expenses Expenses It Altera	ecembering the during Decembering the state of the state	EXIDER 1907 e year ending the year ending r. 1907 e year ending r, 1907 e year ending langlement	PENDITION OF BOTT	December,  21 487  December,  urniture	1908  16 0 1 9  1908  1908  1908	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 1,5±0 133 500 13 76 197 12 596 13 14 274	s. 5 16 14 8 13 9 16 16 12 12 4 5 13	
	By Ro By Sa By An By Fo By Fo By Po By Po By Po By Es By Fo By Fo By Es	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses and boratory avelling ank Charg arm Office spairs and	s, and It Wages It Wages It Wages It Wages It Department of Stock,  Stock,  Stock  Stock  Stock  other Expenses ind Expenses ind Expenses Expenses It Altera	ecembering the during Decembering the state of the state	EXIDER 1907 e year ending the year ending r. 1907 e year ending r, 1907 e year ending langlement	PENDITION OF BOTT	December,  21 487  December,  urniture	1908  16 0 1 9  1908  1908  1908	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,5±0 1,5±0 133 509 13 76 197 12 596 13 14	s. 5 16 14 8 13 9 16 16 12 12 4 5 13	
	By Ro By Sa By An By Fo By Fo By Po By Po By Po By Es By Fo By Fo By Es	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Deduct— able and arm Expenses and boratory avelling ank Charg arm Office spairs and	s, and It Wages It Wages It Wages It Wages It Department of Stock,  Stock,  Stock  Stock  Stock  other Expenses ind Expenses ind Expenses Expenses It Altera	ecembering the during Decembering the state of the state	EXIDER 1907 e year ending the year ending r. 1907 e year ending r. 1907 e year ending langlement	PENDITION OF BOTT	December,  21 487  December,  urniture	1908  16 0 1 9  1908  1908  1908	508 90 494 584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,540 1,540 133 509 13 76 197 12 596 13 14 274 60	s. 5 16 14 8 13 9 16 16 12 14 5 13 17	
	By Ro By Sa By An By Fo By Fo By Po By Ea By Po By Ea By Fa By Fa By Fa By Fa By Fa By Fa By Fa	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Able and arm Expenses, Water aboratory avelling ank Char arm Office spairs and chars and	s, and In Wages I Wages I Wages I Stock Stock, I Stock	during the during Decembering the State December State Decembering the State December State Decembe	EXIDER 1907 e year ending the year ending 1908 eccember, 1907 e year ending coember, 1908 s including Implement	PENDITION OF STATE OF Bott Stimated	December,  21 487  December,  urniture  Cost of Bui	1908  16 0 1 9  1908  1908  als and	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 0 0	£ 106 1,5±0 1,5±0 133 500 13 76 197 12 596 13 14 274	s. 5 16 14 8 13 9 16 16 12 12 4 5 13	
	By Ro By Sa By An By Fo By Fo By Ea By Ea Ea By Ea Ea By Ea Ea Ea By Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea E	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Able and arm Expenses, Water aboratory avelling ank Char arm Office spairs and chars and	s, and In Wages I Stock I Stoc	during the during Decembering the State December of State De	EXIDER 1907 e year ending the year ending 1908 eccember, 1907 e year ending coember, 1908 s including Implement	PENDITION OF STATE OF Bott Stimated	December,  21 487  December,  urniture	1908  16 0 1 9  1908  1908  als and	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 0 0	£ 106 1,540 1,540 133 509 13 76 197 12 596 13 14 274 60	s. 5 16 14 8 13 9 16 16 16 12 4 5 13 17	
Co	By Ro By Sa By An By Fo By Fo By Ea By Ea Ea By Ea Ea By Ea Ea Ea By Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea Ea E	ent, Taxes laries and simals— Stock Purch  Deduct— Stock Purch  Albertand  Arm Expenses, Water Baboratory avelling ank Char ank C	s, and In Wages I Stock I Stoc	during the during Decembering the State December of State De	EXIDER  The year ending the year ending r. 1907  The year ending r. 1908  The year ending r	PENDITION OF STATE OF BOTT OF	December,  21 487  December,  urniture  Cost of Bui	1908  16 0 1 9  1908  1908  als and	508  508  90 494  584 75  Apparatus	18 9 13 10 12 7 17 9 0 0 8 7 8 7 0 0	£ 106 1,540 1,540 133 500 13 76 197 12 596 13 14 274 60	s. 5 16 14 8 13 9 16 16 12 4 5 13 17 5	

# SCIENTIFIC PAPERS PUBLISHED FROM THE LABORATORIES OF THE INSTITUTE DURING THE YEAR.

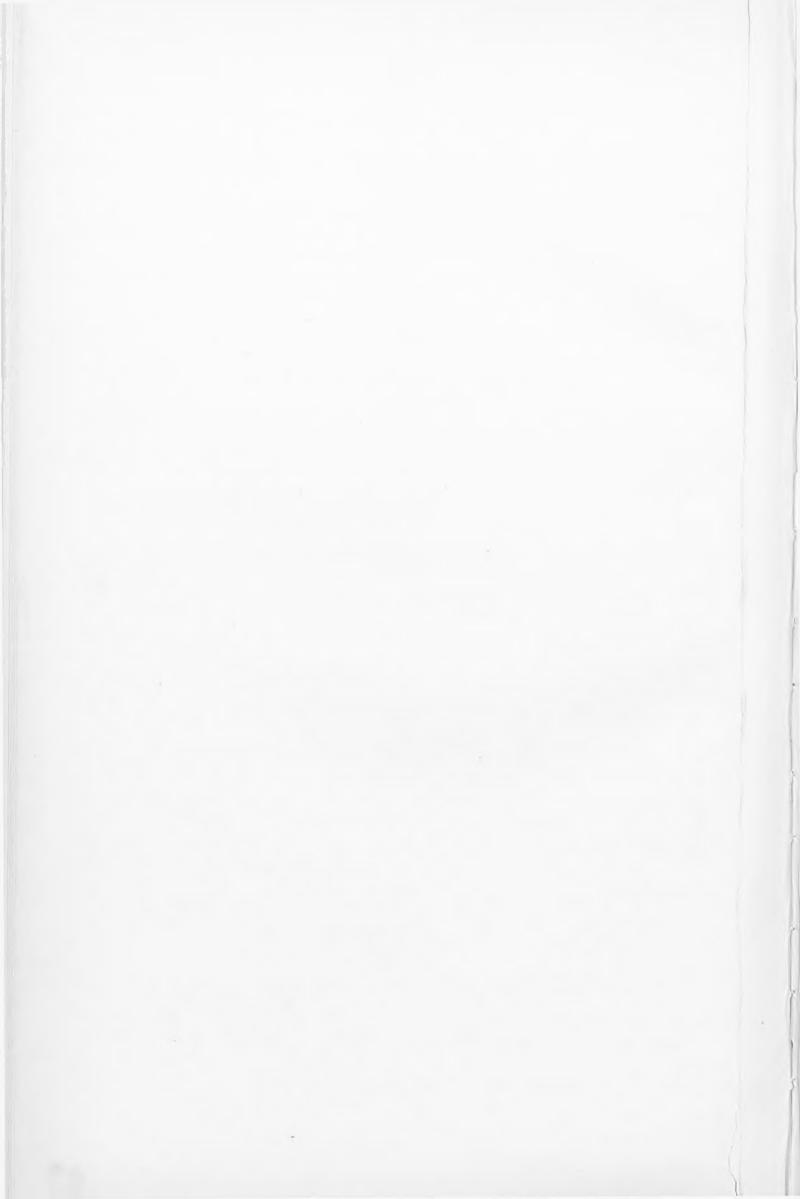
e: £ \$ \$ \$ \*\*\* ... VARIETIES OF THE MENINGOCOCCUS, WITH SPECIAL REFERENCE TO A ARKWRIGHT, J. A. COMPARISON OF STRAINS FROM EPIDEMIC AND SPORADIC Sources. Journal of Hygiene (in the Press). ARMIT, H. W. ... ... THE TOXICOLOGY OF NICKEL CARBONYL. Pt. 11. Journal of Hygiene, Vol. VIII., p. 565, 1908. AVELINE, H. T. S., BOYCOTT, A. E., BACILLUS DYSENTERIAE OF FLEXNER IN RELATION TO ASYLUM Dysentery. Journal of Hygiene, Vol. VIII., 1908. AND MACDONALD, W. F. BAINBRIDGE, F. A. ... ... On the Nature and Efficiency of certain Rat Viruses (in the Press). BAINBRIDGE, F. A. ... THE RELATIONSHIPS OF THE PARATYPHOID GROUP OF BACILLI (in the Press). BOYCOTT, A. E., DAMANT, G. C. C., THE PREVENTION OF COMPRESSED-AIR ILLNESS. Journal of Hygiene, AND HALDANE, J. S. Vol. VIII., 1908. BOYCOTT, A. E., AND HALDANE, J. S. The Effects of Low Atmospheric Pressures on Respiration. Journal of Physiology, Vol. XXXVII., 1908, p. 355. CATHCART, E. P., KENNAWAY, E. L., ON THE ORIGIN OF ENDOGENOUS URIC ACID. Quarterly Journal of Medicine, 1908. AND LEATHES, J. B. ... THE PRINCIPLES INVOLVED IN THE STANDARDISATION OF DISIN-CHICK, HARRIETTE, AND FECTANTS AND THE INFLUENCE OF ORGANIC MATTER UPON MARTIN, C. J. GERMICIDAL VALUE. Journal of Hygiene, Vol. VIII., 1908, p. 654. ... A Comparison of the Power of a Germicide Emulsified or CHICK, HARRIETTE, AND DISSOLVED, WITH AN INTERPRETATION OF THE SUPERIORITY MARTIN, C. J. OF THE EMULSIFIED FORM. Journal of Hygiene, Vol. VIII., 1908, p. 698. DEAN, G., AND MARSHALL, W. E. ... OBSERVATIONS INDICATING THAT THE RECENT OUTBREAK OF DIPH-THERIA IN THE WOOD-PIOEON (COLUMBA PALUMBUS) IS CAUSED BY A "FILTER-PASSER." Journal of Pathology and Bacteriology, Vol. 13, 1908. GREEN, ALAN B. Some Experiments on Immunity against Vaccinia in Animals. Journal of Hygiene, Vol. VIII., 1908. THE INFLUENCE OF TEMPERATURE AND SOME OTHER PHYSICAL CON-GREEN, ALAN B. DITIONS ON CALF VACCINE. Journal of Hygiene, Vol. VIII., 1908.... AN OUTBREAK OF COW-POX. Lancet, Vol. 2, 1908. GREEN, ALAN B. ... THE ALCOHOLIC FERMENT OF YEAST-JUICE. Part III. THE FUNC-TION OF PHOSPHATES IN THE FERMENTATION OF GLUCOSE BY HARDEN, A., AND YOUNG, W. J. YEAST-JUICE. Proc. Royal Society, B. Vol. 80, 1908.

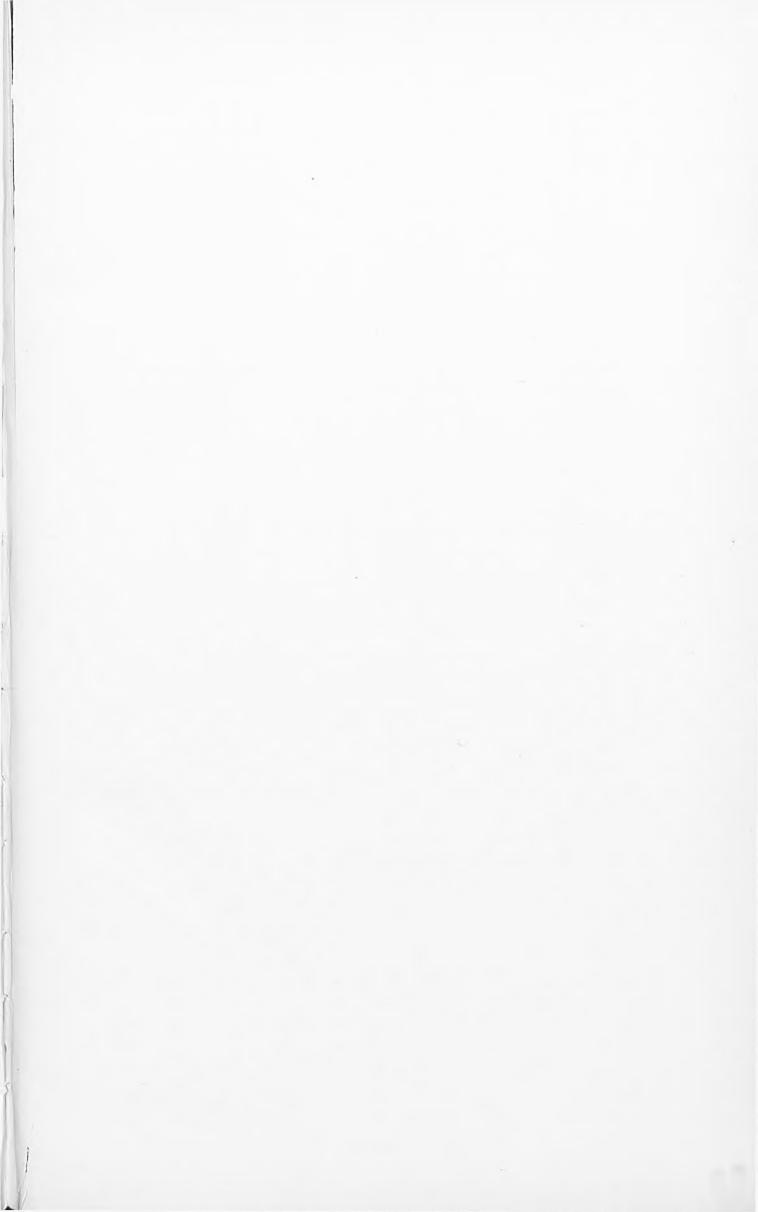
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# Lister Institute of Preventive Medicine,

CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

May 12th, 1909.

### MAY, 1910.

## The Lister Institute of Preventive Medicine.

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.; AND QUEENSBERRY LODGE, ELSTREE, HERTS.

### President:

THE LORD LISTER, P.C., O.M., F.R.S.

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THE VISCOUNT IVEAGH, K.P., F.R.S.

COLONEL SIR DAVID BRUCE, R.A.M.C., C.B., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

PROFESSOR W. OSLER, M.D., D.Sc., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer,

PROFESSOR ERNEST H. STARLING, M.D., F.R.S.

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J. HENDERSON SMITH, M.B., Ch.B.; J. A. ARKWRIGHT, M.A., M.B., B.Sc.;

F. A. BAINBRIDGE, M.D., D.P.H.; H. R. DEAN, M.A., M.B., Ch.B., M.R.C P.; G. H. MACALISTER, M.A., M.D., D.P.H., Assistants.

### Department of Bio-Chemistry:

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### Department of Protozoology:

E. A. MINCHIN, M.A., Professor of Protozoology in the University of London.

H. M. WOODCOCK, D.Sc.; MURIEL ROBERTSON, M.A., Assistants.

### Antitoxin and Vaccine Department.

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

ALAN B. GREEN, M.A., M.D., B.C., Bacteriologist in Charge of Calf Vaccine Laboratories.

### Director's Laboratory;

HARRIETTE CHICK, D.Sc.; SYDNEY ROWLAND, M.A., M.R.C.S., Assistants.

### Statistician :

MAJOR GREENWOOD, M.R.C.S., L.R.C.P.

#### Librarian:

ANNA MUELLENBACH.

## Assistant Secretary and Accountant: GEORGE COOPER.



### ANNUAL GENERAL MEETING

OF

## The Lister Institute of Preventive Medicine.

MAY 11TH, 1910.

### REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and general work of the Institute.

During the short absence abroad of Mr. J. L. Pattisson, Hon. Treasurer, the duties of Treasurer were kindly undertaken by Colonel Addison, R.E.

The following changes and additions to the scientific staff have occurred:

Dr. Leathes has resigned his position as Chemist in charge of the Laboratories for Pathological Chemistry on his appointment to the Chair of Pathological Chemistry in the University of Toronto, Canada.

The Staff of the Bacteriological Department has been increased by the appointment of Dr. Bainbridge, Dr. Dean and Dr. Macalister, and the services of Dr. O'Brien have been secured for a period of one year to undertake a special investigation for the London County Council.

Dr. Maclean has been appointed as Senior Assistant in the Department of Biochemistry.

The development of the Library and the increased demands made upon it have rendered it necessary to secure the services of a Librarian. Miss A. Muellenbach has been appointed to the position.

For some time the Governing Body have had under consideration the advisability of adding a Statistician to the Staff of the Institute. The validity of conclusions drawn from many enquiries in the domain of experimental Medicine, as well as those regarding the practical value of prophylactic and curative treatment must ultimately rest upon the results of statistical analysis of the facts. Further, the statistical treatment of data regarding the spread of disease has in the past, and will, it is imagined, still more in the future, aid in defining the relative importance of different means whereby a disease is spread.

The study of methods of mathematical treatment of data of the kind available has received a considerable impetus during recent years largely owing to the researches of Karl Pearson, Edgeworth and Lexis, and has resulted in the discovery of statistical methods which permit of the analysis of complex data which have not hitherto been amenable to such treatment.

For the position of Statistician to the Institute, the Governing Body believe themselves fortunate in having secured the services of Mr. Major Greenwood, who has already made for himself a reputation in this branch of medical research.

During the year the position of Jenner Memorial and Grocers' Research Scholars in the Institute have been filled by the appointment of Mr. Ashley Cooper and Mr. Roland V. Norris respectively. Mr. S. Paine has been appointed to a special research Scholarship to work in the Chemical Department.

Mr. Sydney Rowland, whose services were last year placed at the disposal of the Advisory Committee for the Investigation of Plague in India, continues to work under that Committee.

In addition to the individual 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 and appended to this report, certain organised enquiries, with which the Institute has been concerned, deserve mention.

The Commission for the Investigation of Plague in India has continued its enquiries. Epidemiological investigations have been carried on at Poona and Belgaum, and are now being extended to Madras and Assam. The investigation into the value of Yersin Serum in the treatment of cases of plague will be continued in Bombay during the present plague season. The researches into immunisation by various products of the plague bacillus with a view to the improvement and standardisation of plague vaccines has been assiduously prosecuted during the year at the Institute's special laboratories at Elstree, and a first report of the results of the experiments is in the press.

The systematic examination for Tubercle Bacilli of samples of milk intended for consumption in the Metropolis which, as mentioned in the last report, was undertaken by the Institute on behalf of the London County Council, has been continued. A number of subsidiary enquiries concerning the Milk Supply of London have also been carried out at the request of the Council.

On the initiative of the Local Government Board, the Institute arranged in 1908 to co-operate with the Medical Department of the Board in the investigation of "typhoid carriers." A preliminary account of the work so far accomplished appeared in the Annual Report of the Chief Medical Officer of the Board (Dec., 1909). This investigation is being continued.

The Chemical Department has, during the year, undertaken enquiries for the Medical Department of the Local Government Board as to the influence of the bleaching of flour on its dietetic value.

The Institute has continued its investigations into the etiology of epidemic summer diarrhea of children, which were carried on in 1907 and 1908. During the epidemic season of 1909 an attempt was made to obtain some evidence of the existence of specific antibodies for Morgan's Bacillus in the serum of affected cases, but the season being so cold, the paucity of suitable material prevented definite conclusions being reached. A serum prepared by immunising horses with Morgan's Bacillus was tried therapeutically in a few cases. The

results, however, were not very encouraging. During the coming season it is proposed to make a renewed enquiry into the question of flies as carriers of infection, and further experiments on Immunity are also contemplated.

In addition to the regular Staff and the holders of research studentships, Drs. Morgan, Molesworth, Kumagava (Japan), Penfold (B.M.A. Research Scholar), Bradley, Mavrogordato, Ida Smedley (Beit Scholar), Cunningham, Nicoll (Ernest Hart Scholar B.M.A.), Manwaring (U.S.A.), Armit, Bosanquet, Kofoid (U.S.A.), Duke, Graham W. Smith, J. D. White, Sir E. Ray Lankester, Surgeon Atkinson, R.N., Major Lamb, I.M.S., Major Liston, I.M.S., Captain Gloster, I.M.S., Captain McCanison, I.M.S., Professor Janssens (Louvain), Messrs. Groom, Cope, Dunkerly, Lanchester, Cooper and Miss Sternberg have been engaged in researches in the various laboratories of the Institute.

In 1908 the Governing Body decided to build the other wing of the Institute, and so complete the original design of the building. The building operations, which were commenced in July, 1908, finished early in this year, but much of the internal fittings of the laboratories is still incomplete. When the new portion is ready, the total laboratory accommodation of the Institute will be nearly doubled and the possibilities and conveniences of the Institute for research greatly enhanced.

It has also been found necessary to very considerably extend the animal house accommodation at Chelsea, and two new animal houses have been erected in the yard at the back of the building. Additional stables and cottages for the employes have been built at Queensberry Lodge, Elstree, to meet the increasing requirements of the Serum Department.

The Balance Sheet of the Institute for the year ending 31st December, 1909, is attached, and shows a satisfactory position. In both the Chelsea and Elstree accounts there is a substantial balance to the good, which has been carried to the credit of the Capital Fund.

During the year, £13,349 17s. 3d. has been spent on building operations at Chelsea, and £287 17s. 6d. on the new cottages at Eistree. The sum of £460 11s. 2d. has been debited to Revenue for new Apparatus, etc., and for this reason nothing has been written off for depreciation of Furniture, Fittings, Scientific Apparatus and Books. The usual sums have been placed to the credit of the Sinking Fund in the Chelsea and Elstree Accounts.

The Governing Body desire 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,

				_			
		£	8.	d.	£	s.	d.
					994	7	10
	***				6,000	0	0
chard Be	rridge						
, conditio	nally						
					26,352	13	10
1emorial	Fund				5,768	0	<b>1</b> 1
					1,445	5	0
					2,439	10	11
		324,011	3	0			
		·					
2,630	18 3						
3,934	9 5						
		6.565	7	8			
				_	330 576	10	8
	chard Be , condition the bu  1emorial 2,630	chard Berridge, conditionally n the building	chard Berridge , conditionally n the building  Aemorial Fund 324,011			994 6,000  chard Berridge , conditionally n the building 26,352  Aemorial Fund 5,768 1,445 2,439 324,011 3 0  2,630 18 3  3,934 9 5 3,934 9 5 6,565 7 8	994 7 6,000 0  chard Berridge , conditionally n the building 26,352 13  Memorial Fund 5,768 0 1,445 5 2,439 10  324,011 3 0

HENRY E. ROSCOE,

Chairman.

J. L. PATTISSON,

Hon. Treasurer.

£373,576 9 9

### REPORT OF THE AUDITORS

We have audited the above Balance Sheet. We have obtained all the information and explanations we and correct view of the state of the Institute's affairs, according to the best of our information and the explanations London, 24th February, 1910.

# of Preventive Medicine.

### 31st DECEMBER, 1909.

Cr.

					***	
Ву	Cash— At Bankers	1,723	s. d. 8 2		ε.	d.
	In hand	9 1	9 2 ——	1,733	7	4
Ву	INVESTMENTS (at cost)—  £5,000 Great Northern Railway 3 per cent. Debenture Stock	4,570 1	1 0			
	<b>25,000</b> Lancashire and Yorkshire Railway 3 per cent. Consolidated Preference Stock	4,520	36			
	£4,900 London and North Western Railway 4 per cent. Consolidated Preference Stock	5,940				
	25,000 Great Central and Midland Railway Joint Committee	0,010	0			
	3½ per cent. Guaranteed Stock	5,123 1				
	\$2,900 New South Wales 3½ per cent. Stock, 1918	2,897 1				
	<b>£1,000</b> Cape of Good Hope 3½ per cent. Stock <b>£1,500</b> City of Sydney 4 per cent. Bonds	$1,000 \\ 1,500$				
	£353 North Eastern Railway 4 per cent. Guaranteed Stock	499 1			_	_
Rv	INVESTMENTS, LORD IVEAGH'S DONATION (at cost)—			26,052	5	9
Ly	£25,006 2s. 6d. New Zealand Government 3 per cent.					
	Inscribed Stock, 1945	24,117 1	<b>7</b> 6			
	\$25,000 Victorian Government 3 per cent. Inscribed Stock, 1929-1949	23,875	0 0			
	<b>£25,000</b> Natal 3 per cent. Inscribed Stock, 1929-1949	24,484				
	£25,000 New South Wales Government 3 per cent. Inscribed Stock, 1935	24,937 1	0 0			
	£26,100 South Australian Government 3 per cent. Consolidated Stock, 1916	24,860	5 0			
	dated Stock, 1916	23,850	0 0			
	\$25,000 London and South Western Railway 4 per cent.  Preferred Converted Ordinary Stock		<b>o</b> 0			
	£25,000 Great Northern Railway 3 per cent. Preference Stock, 1898		0 0			
	£25,000 Midland Railway 2 per cent. Preferred Converted	20,375				
	Ordinary Stock	25,500				
Ву	INVESTMENTS, JENNER MEMORIAL FUND (at cost)—			250,000	U	U
	£2,650 Southwark and Vauxhall Water Co. 3 per cent.  Debenture Stock "B"	2,756	.0 0			
	22,660 South Eastern Railway 3 per cent. Preference Stock, 1898	2,740	5 0			
	£300 11s. Liverpool Corporation 3 per cent. Stock	271	5 11	5,768	0	11
Ву	INVESTMENT, SINKING FUND (at cost)— £2,464 19s. 0d. 2½ per cent. Cousols			2,193		8
т.	(The above Investments, at the market value, 31st December, 1909, show a depreciation.)					_
	DEBTORS STOCK OF TUBERCULIN, MALLEIN, ANTI-BACTERIAL VACCINES, &c.			3,256 $341$		9
	FURNITURE, FITTINGS, AND SCIENTIFIC APPARATUS AND BOOKS,					
Bv	as per account, 31st Dec. 1908  Expenditure on Institute Building at Chelsea—			2,746	17	2
	As per Account 31st Dec., 1908, including purchase of free-					
	hold site, £6,000	47,026				
	Add additions during the year	13,349	7 3	60,376	14	5
Ву	QUEENSBERRY LODGE FARM, ELSTREE— Purchase of freehold land and buildings and Expenditure on			55,510		Ĭ
	new buildings, as per Account, 31st Dec., 1905	15,406	6 10			
	Add additions during the year	287			14	1
	Stock of Animals and Forage	502	5 7		14	Ť
	Stock of Anti-Toxins, Bottles, &c	4,091	0 8			
	Stable Utensils, Farm Implements and Sheds, as per Account, 31st December, 1903	138	1 4			
	Laboratory Apparatus, as per Account, 31st Dec., 1903	466	1 3			
	Furniture, as per Account, 31st Dec., 1903	215	8 0	5,413	6	10
			-			_
				£373,576	9	2

### TO THE MEMBERS.

have required. In our opinion, such Balance Sheet is full and fair, and properly drawn up so as to exhibit a true given to us and as shown by the books of the Institute. COOPER BROTHERS & CO.,

# Che Lister Institute of

Dr.	Chelsea	<b>G</b> ardens	Depa	rtment	-INCC	ME	AND	) E	EXPENDITUE
		IN	COME.				£	s.	d.
To Interest and Divid	lends on Investme	nts					8,577	1	0
To Investigation, Diag	gnosis and Analysi	s Fees, &c.		***			3,048	7	3
To Research Fees			***	***			6	0	0
To Sales of Tuberculin	n, Mallein, Anti-B	acterial Vaccin	es, &c.		1,007	17 5			
Add Stock of T	uberculin and Ma	llein, Anti-Bact	terial Vac	cines,					Ű
&c., 31st I	December, 1909				341	0 0			
					1,348	17 5			
Deduct Stock of	of Tuberculin and	Mallein, 31st D	ecember,	1908	398	7 6			6
							950	9 1	11

£12,581 18 2

Dr.	<b>E</b> lstree	î	)epartme	nt.—[]	NCOME	I	AND	EXF	Έľ	NDITURE	A
			INCOME		£	s.	d.	£	s.	d.	= 1
To Sale of Antitoxins, &c			444		7,352	5	2				
Add Stock, 31st December,	1909		***		3,965	3	2				
					11,317	8	4				
Deduct Stock, 31st December	er, 1908		300		3,193	2	6				ı
					_		_	8,124	5	10	4
To Rent of Rooms at Elstree					***			18	0	0	11

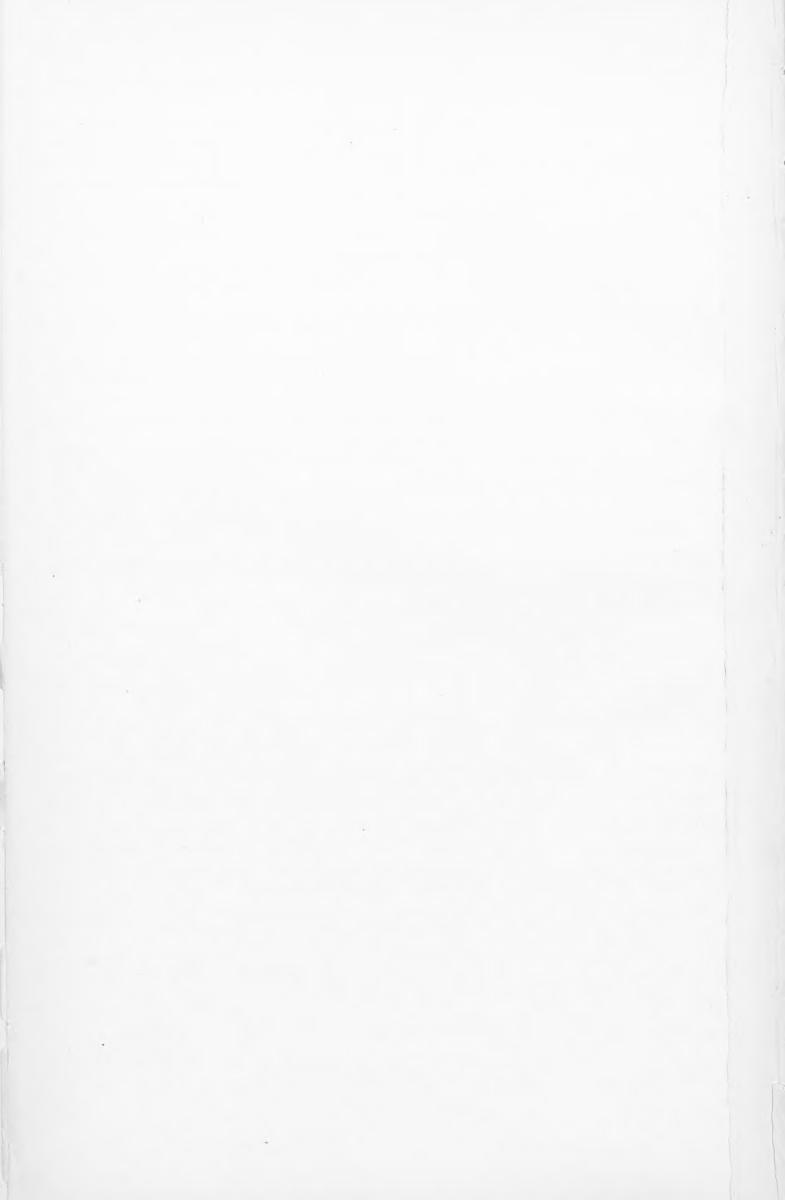
# f Preventive Medicine.

RE	ACCOUNT	for	the	Year	ending	31St	Decer	nber,	1909.			Cı	r.
					EXPE	NDITU	RE.				£		R.
	By Rates,				***				***	• • •	430		7
	By Salaries				***		***		•••	• • •	6,310	1:	3
	By Law C	harges		Dautana	and Ada	whiching	***		• • •	***	6		6
	By Station						***	***	***	• • •	260		5
	By Office I By Bank C							•••	***	***	205		-
	By Travell							• • • •	•••	***	3 51		j D
	By Auditor	s' Fee				***	444	***	•••	•••	$\frac{31}{21}$		0
	By Gas and				***			•••	•••	***	263		_
	By Electric					***		• • •	•••	•••	99		2
	By Fuel					49	***	•••	•••	•••	79	13	3
	By Directo	r's Lab	oratory	Expens	es, includ	ing Gene	eral Appa	ratus	•••	•••	72	7	7
	By Bacteri	ological	Labor	atory En	cpenses, ir	icluding		18	***	•••	330		_
	By Water :					penses	***	***	•••	•••		10	-
	By Furnitu By Culture			***		***	***	•••	• • • •	•••	16		_
	By Animals							•••	***	•••	104 580		
	By Animal							•••		***	261		
	By Repairs									•••	142	_	-
	By Library					***	***		***	•••	166		-
	By General	l Stores		***		***			•••	***		13	
	By Protozo	ological	Exper	nses, inc	luding Ap				•••	•••	75		-
	By Bad De	bts .		***	***	***	***			•••	6	3	3
	By Rent of	Flat fo	r Care	taker du	ring Altera	ations			***		24		_
	By Interess By Sinking	Fund /	an iron	п фанке	rs .on £37.00	n Cost	of Origin	ol Build	in rol	***		17	
	Dy Sinking	rana (	2 % pe	Lannum	011 201,00	JO, COS	or origin	aa Dillu	ings)		185	C	,
	By Balance	bolas	Fuere	o of Inc	ana araw	Venand	ituwa Tro	nafanna d	4- 0	. 1 . 12	9,950	19	•
		Balance							to Capi	ai Fund	2,630	18	3
													_
											£12,581	18	3
CC	OUNT for t	he Y	ear	ending	31St	Decen	nber,	1909,			- 1	Cr	
CC					EXPE	Decen		1909,			£	s,	
CC	By Rent, Tr	axes, an	d Insu					1909,	444	***	£ 107	s. 13	
CC	By Rent, To By Salaries	axes, an	d Insu		EXPE			1909,	***		£	s. 13	
CC	By Rent, To By Salaries By Animals	axes, an and Wa ——	d Insu ages t Decer	rance	EXPE	NDITU	RE. 				£ 107	s. 13	
CC	By Rent, To By Salaries By Animals	axes, an and Wa ——	d Insu ages t Decer	rance	EXPE	NDITU	RE. 		 487 304		£ 107	s. 13	
CC	By Rent, To By Salaries By Animals	axes, an and Wa ——	d Insu ages t Decer	rance	EXPE	NDITU	RE. 		304	18 6	£ 107	s. 13	
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CC	By Rent, To By Salaries By Animals Sto Pu	axes, an and Ward Salar	d Insu ages t Decer l durin	mance imber, 19 ing the ye	EXPE	NDITU.  g 31st 1	RE.   December	 , 1909	304	18 6	£ 107	s. 13	
CC	By Rent, To By Salaries By Animals Sto Pu	axes, an and Ward Salarchased	d Insuages t Deceil durin	mber, 19 the yearing the seember,	EXPE	NDITU	RE.  December 25	, 1909 15 0	304	18 6	£ 107	s. 13	
CC	By Rent, To By Salaries By Animals Sto Pu	axes, an and Ward Salarchased	d Insuages t Deceil durin	mber, 19 the yearing the seember,	EXPE	NDITU	RE.  December 25	 , 1909	304 792	0 3	£ 107	s. 13	
CC	By Rent, To By Salaries By Animals Ste Pu	axes, an and Waller and Waller and Salar chased set—Salar Salar Sa	d Insuages t Deceil durin	mber, 19 the yearing the seember,	EXPE	NDITU	RE.  December 25	, 1909 15 0	304 792	18 6	£ 107 1,771	s. 13 13	
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CC	By Rent, To By Salaries By Animals Ste Pu Dedu By Forage—	axes, an and Waller and Waller and Salarchased Salarch	d Insuages  t Decen durin  es dur blet Decen ck, 31s	mber, 19 the yearing the scember, st Decem	EXPE	NDITU	RE December 25 460	 , 1909 15 0 15 7	304 792 486 75 722	18 6 0 3 10 7 0 0 6 11	£ 107 1,771	s. 13 13	
CC	By Rent, To By Salaries By Animals Ste Pu Dedu By Forage— Sto Pu	axes, an and Warehased set—Sal 3 Sto	d Insuages t Deced durin es duri list Deck, 31s	mber, 19 the year to be	EXPE	NDITU	RE December 25 460	, 1909 15 0 15 7	304 792 486 75 722 797	18 6 0 3 10 7 0 0 6 11 6 11	£ 107 1,771	s. 13 13	
CC	By Rent, To By Salaries By Animals Ste Pu Dedu By Forage— Sto Pu	axes, an and Warehased set—Sal 3 Sto	d Insuages t Deced durin es duri list Deck, 31s	mber, 19 the year to be	EXPE	NDITU	RE December 25 460	 , 1909 15 0 15 7	304 792 486 75 722	18 6 0 3 10 7 0 0 6 11	107 1,771 305	s. 13 13	
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cc	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm Ex By Gas, Wa	axes, an and Warehased set—Sal Stoock 31st rehased set—Stook and other spenses, ter, and	d Insuages  t Decer during  bet Decer during  ck 31st  r Expe, includ	mber, 190 g the year to be the year	EXPE	NDITU	RE December 460	, 1909 15 0 15 7	304 792 486 75 722 797	18 6 0 3 10 7 0 0 6 11 6 11 0 0	305 755 23 68	s. 13 13 13	
CC	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm En By Gas, Wa By Postages	axes, an and Warchased sct—Sal Stock 31st rchased sct—Stock and other spenses, and and Te	d Insuages  t Decer during  es during  bek, 31st  Decer during  ck 31st  Fuel legram	mber, 190 g the yearing the scember, 190 g the year December, 190 g the year December	EXPE	NDITU	RE December  25 460  ecomber,	, 1909 15 0 15 7 1909	304 792 486 75 722 797 42	18 6 0 3 10 7 0 0 6 11 6 11 0 0	305 755 23	s. 13 13 9	1
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CC	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm En By Gas, Wa By Postages By Laborato By Travellin	axes, an and Warchased set—Sal Stock 31st rehased set—Stock and other spenses, and Terry Experg Exper	d Insuages  t Decer during  es during  bek, 31st  Decer during  ck 31st  Fuel blegram enses, nses	mber, 190 g the year pecember, 190 g the year pecember, 190 g the year pecember, including 1 mp	EXPERMENT OF STATE OF	MDITU.  g 31st I  ding   31st D  tensils  nd Furn   Bottles,	RE.  December  25 460  comber,  diture   Chemical	15 0 15 7 1909	304 792 486 75 722 797 42	18 6 0 3 10 7 0 0 6 11 6 11 0 0	305 755 23 68 220 19	s. 13 13 13 13 13 13 13 13	1
CC	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm Ex By Gas, Wa By Postages By Laborato By Travellin By Bank Chi	axes, an and Warchased sct—Sal Storchased sct—Storchased and other spenses, ter, and and Tery Expenses arges	d Insuages  t Decer during  es during  bek, 31st  Decer during  k 31st  Fuel blegram enses, nses	mber, 19 g the yearing the scember, 190 g the year December, 190 g the year December Decembe	EXPE	MDITU g 31st II ding 31st D tensils nd Furn Bottles,	RE December  25 460  ecomber, iture Chemical	, 1909 15 0 15 7 1909 1909	304 792 486 75 722 797 42 	18 6 0 3 10 7 0 0 6 11 6 11 0 0	# 107 1,771 305 755 23 68 220 19 668 7	s. 13 13 13 13 13 13 13 13 14	1
CC	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm En By Gas, Wa By Postages By Laborato By Travellin By Bank Ch By Farm Off	axes, an and Warchased sct—Sal Stock 31st rehased sct—Stock and other spenses, and Terry Expenses arges ice Expenses Expense	d Insuages  t Decer during  es during  bek 31st  Decer during  k 31st  Fuel blegram enses, nses	mber, 190 g the yearing the scember, 190 g the year December, 190 g the year ing Imp	EXPERMENT OF STATE OF	MDITU.  g 31st II  ding   31st D  tensils  nd Furn   Bottles,	RE December  25 460  ecomber, iture	 , 1909 15 0 15 7 1909  s and A	304 792 486 75 722 797 42 	18 6 0 3 10 7 0 0 6 11 6 11 0 0 	# 107 1,771 305 755 23 68 220 19 668 7	s. 13 13 13 14 6	1
CC	By Rent, To By Salaries By Animals Sto Pur Deduction By Forage—Sto Pur Deduction By Stables a By Farm End By Gas, Was By Postages By Laborato By Travellin By Bank Chey Farm Off By Repairs a	axes, an and Warchased sct—Sal Stock 31st rehased sct—Stock and other penses, ter, and and Tery Expenses arges fice Expense Expens	d Insuages  t Decer during  es during  es during  ek 31st  Decer during  k 31st  Fuel legram enses erations	mber, 190g the yearing the scember, 190g the year December, inding Imp	EXPE	MDITU.  g 31st I  ding  a1st D  tensils nd Furn  Bottles,	RE.  25 460  ecomber,  iture  Chemical	15 0 15 7 1909	304 792 486 75 722 797 42 	18 6 0 3 10 7 0 0 6 11 6 11 0 0	# 107 1,771 305 755 23 68 220 19 668 7	s. 13 13 13 6 15 18 0 2 13 3 4 6 12	1
CC	By Rent, To By Salaries By Animals Sto Pu  Dedu  By Forage— Sto Pu  Dedu  By Stables a By Farm En By Gas, Wa By Postages By Laborato By Travellin By Bank Ch By Farm Off	axes, an and Warchased sct—Sal Stock 31st rehased sct—Stock and other penses, ter, and and Tery Expenses arges fice Expense Expens	d Insuages  t Decer during  es during  es during  ek 31st  Decer during  k 31st  Fuel legram enses erations	mber, 190g the yearing the scember, 190g the year December, inding Imp	EXPE	MDITU.  g 31st I  ding  a1st D  tensils nd Furn  Bottles,	RE.  25 460  ecomber,  iture  Chemical	15 0 15 7 1909	304 792 486 75 722 797 42 	18 6 0 3 10 7 0 0 6 11 6 11 0 0 	# 107 1,771 305 755 23 68 220 19 668 7	s. 13 13 13 6 15 18 0 2 13 3 4 6 12	1
CC	By Rent, To By Salaries By Animals Step Purchased By Forage—Sto Purchased By Farm Ex By Gas, Wa By Postages By Laborato By Travellin By Bank Ch By Farm Off By Repairs a By Sinking I	axes, an and Warchased set—Sal 3 Sto ck 31st rehased ct—Stock 31st rehased and other set, and and Tery Experience Experience Experience Expendice	d Insurages  t Decer during  ck 31st  Decer during  ck 31st  Fuel blegram enses enses erations % per	mber, 19 g the yearing the seember, 190 g the year indicate the period of the year including the including the including the including the year in	EXPERMENT OF COST OF LINE OF L	MDITU.  g 31st II  ding   31st D  tensils nd Furn   Bottles,  ted Cost	RE.  25 460  ecember,  iture  Chemical	 , 1909 15 0 15 7 1909    ings)	792 486 75 722 797 42 pparatus	18 6 0 3 10 7 0 0 6 11 6 11 0 0	# 107 1,771 305 755 23 68 220 19 668 7	\$. 13 13 13 15 15 18 0 2 13 3 4 6 12 17	1
CC	By Rent, To By Salaries By Animals Sto Pur Deduce By Forage—Sto Pur Deduce By Stables a By Farm En By Gas, Wa By Postages By Laborato By Travellin By Bank Ch By Farm Off By Repairs a By Sinking I By Balance,	axes, an and Warchased set—Sal 3 Sto ck 31st rehased ct—Stoc and other set, and and Tery Experies Expe	d Insurages  t Decer during  ck 31st  Decer during  ck 31st  Fuel blegram enses enses erations % per	mber, 19 g the yearing the seember, 190 g the year indicate the period of the year including the including the including the including the year in	EXPERMENT OF COST OF LINE OF L	MDITU.  g 31st II  ding   31st D  tensils nd Furn   Bottles,  ted Cost	RE.  25 460  ecember,  iture  Chemical	 , 1909 15 0 15 7 1909    ings)	792 486 75 722 797 42 pparatus	18 6 0 3 10 7 0 0 6 11 6 11 0 0	# 107 1,771 305 755 23 68 220 19 668 7	\$. 13 13 13 15 15 18 0 2 13 3 4 6 12 17	1
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# SCIENTIFIC PAPERS PUBLISHED FROM THE LABORATORIES OF THE INSTITUTE DURING THE YEAR.

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ARKWRIGHT, J. A	On the Production of Antitoxin by the Injection of Filtrates of Cultures of Non-Virulent Diphtheria Bacilli. Journal of Hygiene, Vol. IX., 1910.	
ARMIT, H. W	THE PHYSIOLOGICAL EFFECT OF COBALT CARBONYL VAPOUR Journal of Hygiene, Vol. IX., 1909.	:-
ARMIT, H. W	Hypersensibility to Pure Egg Albumin. Zeitschr f. Immuni tätsforschung (in the Press).	<u>:</u> -
BOSANQUET, W. C	Brief Notes on Two Myxosporidian Organisms. (Pleistophora Hippoglossoideos, N.Sp., and Myxidium Machiei, N.Sp.)  Zoolog. Anz., Vol. XXXV., 1910.	
BOSANQUET, W. C	A Note on the Spirochaete present in Ulcerative Granuloma of the Pudenda of Australian Natives Parasitology, Vol. II., 1910.	_
оніск, н	FURTHER OBSERVATIONS ON THE PROCESS OF DISINFECTION B' CHEMICAL AGENTS AND HOT WATER. Journal of Hygien (in the Press).	
DUNKERLY, J. S	Notes on the Choanoflagellate Genera Salpingoeca and Polyoeca, with description of Polyoeca dumosa, sp.s. Annals and Magazine of Natural History, Ser. 8, Vol. V 1910.	N.
HARDEN, A., AND YOUNG, W. J.	THE ALCOHOLIC FERMENT OF YEAST-JUICE. Part IV. TH FERMENTATION OF GLUCOSE, MANNOSE, AND FRUCTOSE B YEAST-JUICE. Proc. Royal Society, B. Vol. 81, 1909.	E Y
HARDEN A., AND YOUNG, W. J.	THE ALCOHOLIC FERMENT OF YEAST-JUICE. PART V. TH FUNCTION OF PHOSPHATES IN ALCOHOLIC FERMENTATION Proc. Royal Society (in the Press).	E N.
HARDEN, A., AND YOUNG, W. J.	The Function of Phosphates in Alcoholic Fermentation Centralbl. f. Bakt. Abt. II., Vol. XXVI., 1910.	N.
HARDEN, A., AND YOUNG, W. J.	THE FUNCTION OF PHOSPHATES IN ALCOHOLIC FERMENTATION DEMONSTRATION TO COMBINED SECTIONS OF FERMENTATION AND PHYSIOLOGICAL CHEMISTRY. International Congress of Applied Chemistry, 1909.	N
HARTLEY, P	On the Nature of the Fat contained in the Liver Kidney, and Heart. Part II. Journal of Physiology Vol. XXXVIII., 1909.	R, Y,
HENDERSON-SMITH, J., and CANDLER, J. P.	On the Wassermann Reaction in General Paralysis of th Insane. British Medical Journal, Vol. II., 1909.	Œ
KENNAWAY, E. L	ESTIMATION OF PURINE BASES IN URINE. Journal of Physiology Vol. XXXIX., 1909.	y.
LANE-CLAYPON, JANET E	OBSERVATIONS ON THE INFLUENCE OF HEATING UPON TH NUTRIENT VALUE OF MILK AS AN EXCLUSIVE DIET FO YOUNG ANIMALS. Journal of Hygiene, Vol. IX., 1909.	

LEATHES, J. B		DIE SYNTHESE DER FETTE IM TIERKÖRPER. Ergebn. d. Physiol., 1908.
LEDINGHAM, J. C. G		THE PHAGOCYTOSIS OF SO-CALLED NEUTRAL SUBSTANCES. EXPERIMENTS WITH HIPPOMELANIN. Zeitschr. f. Immunitätsforschg., 1909.
MANWARING, W. H	•••	THE PHYSIOLOGICAL MECHANISM OF ANAPHYLACTIC SHOCK. (In the Press).
MINCHIN, E. A		OBSERVATIONS ON THE FLAGRILLATES PARASITIC IN THE BLOOD OF FRESH-WATER FISHES. Proc. Zoological Society, 1909.
MINCHIN, E. A		The Structure of Trypanosoma Lewisi in Relation to Microscopical Technique, Quarterly Journal of Microscopical Science, Vol. 53, 1909.
MINCHIN, E. A., AND THOMS	SON, J. D.	THE TRANSMISSION OF TRYPANOSOMA LEWISI BY THE RAT-FLEA.  Proc. Royal Society, B. Vol. LXXXII., 1910.
MINCHIN, E. A., AND WOODCOCK, H. M.	··· ···	Observations on Certain Blood Parasites of Fishes occurring in Royigno. Quarterly Journal of Microscopical Science, April, 1910.
MOLESWORTH, E. H		THE CULTIVATION OF THE ACNE BACILLUS. (In the Press).
NOON, L	•••	Observations on the Evolution of Immunity in Disease.  Journal of Hygiene, Vol. IX., 1909.
PETRIE, G. F., AND AVARI,	C. B	The Shasonal Prevalence of Trypanosoma Lewisi in Mus Rattus and in Mus Decumanus, and its Relation to the Mechanism of Transmission of the Infection. Parasitology, Vol. 11., 1909.
PENFOLD, W. J		Variation and Mutation in Intestinal Micro-Organisms.  Preliminary Communication. Journal of Pathology and Bacteriology, 1910.
PLIMMER, H. G	•••	REPORT ON DEATHS WHICH OCCURRED IN THE ZOOLOGICAL GARDENS DURING 1908, Proc. Zoological Society, 1909.
PLIMMER, H. G., AND FRY, CAPT. W. B.		FURTHER RESULTS OF THE EXPERIMENTAL TREATMENT OF TRYPANOSOMIASIS; BEING A PROGRESS REPORT TO A COMMITTEE OF THE ROYAL SOCIETY. Proc. Royal Society, B. Vol. LXXXI., 1909.
ROBERTSON, M		STUDIES ON CEYLON HAEMATOZOA. No. 1.—THE LIFE CYCLE OF TRYPANOSOMA VITTATE. Quarterly Journal of Microscopical Science. Vol. 53. Part IV. July, 1909.
ROBERTSON, M		FURTHER NOTES ON A TRYPANOSOME FOUND IN THE ALIMENTARY TRACT OF PONTOBDELLA MURICATA. Quarterly Journal of Microscopical Science, Vol. 54, September, 1909.
ROBERTSON, M	***	Notes on an Ichthyosporidian causing a Fatal Disease in Sea-Trout. Proc. Zoological Society, London, August, 1909.
THOMSON, T., AND LEDINGHAM, J. C. G.	***	PRELIMINARY REPORT TO THE LOCAL GOVERNMENT BOARD ON "TYPHOID CARRIERS." 1909.
WOODCOCK, H. M	•••	"Protozoa." Zoological Record for 1908. International Catalogue of Science and Literature, December, 1909.
YOUNG, W. J		The Hexosephosphate formed by Yeast-Juice from Hexose and Phosphate. Proc. Royal Society, B. Vol. LXXXI., 1909.





# Lister Institute of Preventive Medicine,

CHELSEA GARDENS,
LONDON, S.W.

# ANNUAL REPORT

AND

BALANCE SHEET.

May 11th, 1910.

### MAY, 1911.

## The Lister Institute of Preventive Medicine.

CHELSEA GARDENS, CHELSEA BRIDGE ROAD, LONDON, S.W.; AND QUEENSBERRY LODGE, ELSTREE, HERTS.

#### President:

THE LORD LISTER, P.C., O.M., F.R.S.

### THE GOVERNING BODY.

THE RIGHT HON. SIR HENRY ROSCOE, P.C., D.C.L., F.R.S., Chairman.

THE VISCOUNT IVEAGH, K.P., F.R.S.

COLONEL SIR DAVID BRUCE, R.A.M.C., C.B., F.R.S.

J. ROSE BRADFORD, M.D., F.R.S.

PROFESSOR W. OSLER, M.D., D.Sc., F.R.S.

J. LUARD PATTISSON, C.B., Hon. Treasurer.

PROFESSOR ERNEST H. STARLING, M.D., F.R.S.

### THE SCIENTIFIC STAFF.

#### Director:

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

### Department of Bacteriology:

J. C. G. LEDINGHAM, M.A., M.B., D.So., Bacteriologist-in-Chief at Chelsea. G. F. PETRIE, M.D.;
J. HENDERSON SMITH, M.B., Ch.B; J. A. ARKWRIGHT, M.A., M.B., B.So.;

F. A. BAINBRIDGE, M.D., D.P.H.; H. R. DEAN, M.A., M.B., Ch.B., M.R.C.P.; G. H. MACALISTER, M.A., M.D., D.P.H., Assistants.

### Department of Bio-Chemistry:

A. HARDEN, D.Sc., Ph.D., F.R.S., Chemist-in-Chief. H. MACLEAN, M.D., Ch.B.. W. J. YOUNG, M.Sc., Assistants.

### Department of Protozoology:

E. A. MINCHIN, M.A., F.R.S., Professor of Protozoology in the University of London. H. M. WOODCOCK, D.Sc.; MURIEL ROBERTSON, M.A., Assistants.

### Antitoxin and Vaccine Department:

A. T. MACCONKEY, M.B., B.C., D.P.H., Bacteriologist in Charge of Serum Laboratories.
ALAN B. GREEN, M.A., M.D., B.C., Bacteriologist in Charge of Calf Vaccine Laboratories.

### Director's Laboratory:

HARRIETTE CHICK, D.Sc.; SYDNEY ROWLAND, M.A., M.R.C.S., Assistants.

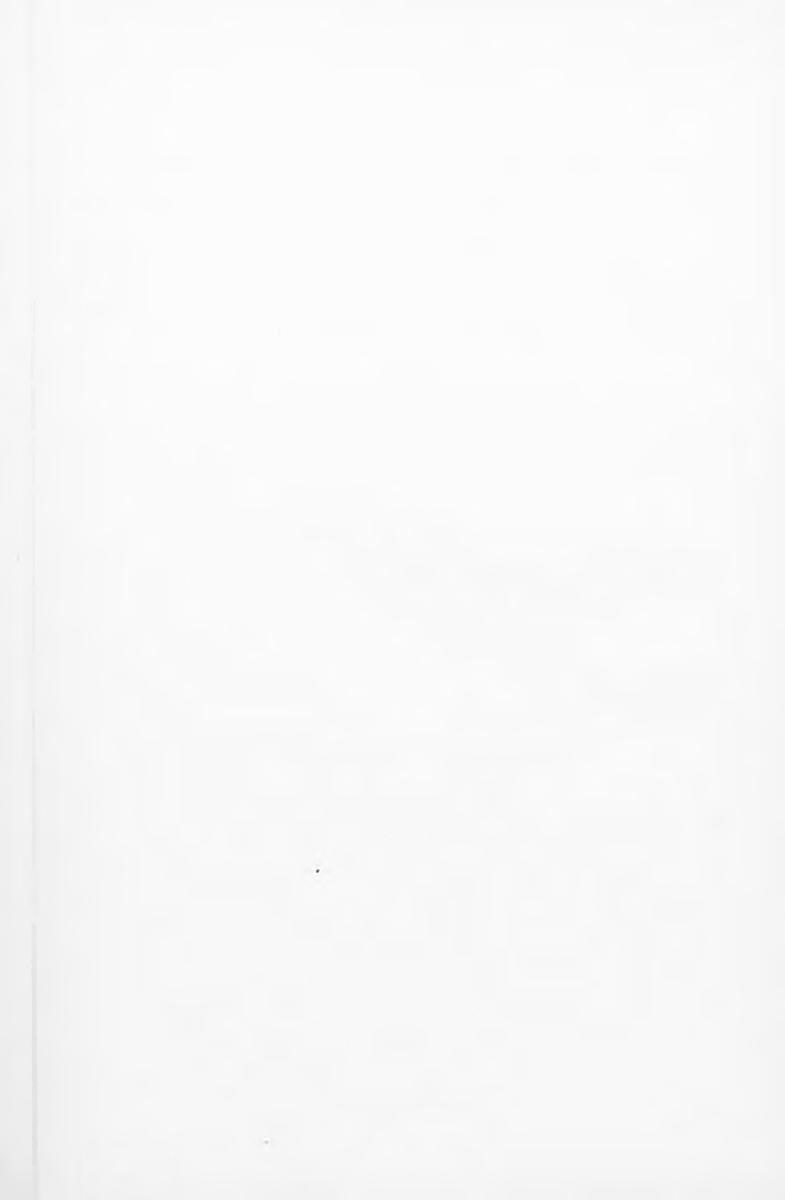
### Statistician;

MAJOR GREENWOOD, M.R.C.S., L.R.C.P.

#### Librarian :

FLORENCE WILSON.

Assistant Secretary and Accountant: GEORGE COOPER.



### ANNUAL GENERAL MEETING

OF

## The Lister Institute of Preventive Medicine,

MAY 10TH, 1911.

### REPORT OF THE GOVERNING BODY.

The Governing Body are glad to report continued development and progress both in the research and general work of the Institute.

During the short absence abroad of Mr. J. L. Pattisson, Hon. Treasurer, the duties of Treasurer were kindly undertaken by Colonel Addison, R.E. Leave of absence for one year was granted to Professor Starling, who was unfortunately obliged to take a protracted holiday owing to ill-health.

Dr. Pye-Smith, F.R.S., who has for many years represented the University of London upon the Council of the Institute, has resigned owing to failing health, and the Rt. Hon. Lord Justice Fletcher Moulton, F.R.S., has been appointed by the Senate of the University in his stead.

No changes in the scientific staff have occurred.

During the year the position of Jenner Memorial and Grocers' Research Scholars in the Institute have continued to be filled by Mr. Ashley Cooper and Mr. Roland V. Norris respectively. Mr. S. Paine has been re-appointed to the research Scholarship in the Chemical Department held by him last year, and Miss A. E. Porter, M.D., has been appointed to an additional research studentship in the Institute.

Mr. Sydney Rowland, whose services were placed at the disposal of the Advisory Committee for the Investigation of Plague in India two years ago, continues to work under that Committee. The Advisory Committee has also recently requested that the services of Dr. Petrie, a former member of the Commission, should be placed at their disposal to proceed to Manchuria to study the recent epidemic of pneumonic plague in that province. The Governing Body was pleased to be able to comply with this request, and Dr. Petrie left for China in February.

In addition to the individual 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 and appended to this report, certain organised enquiries, with which the Institute has been concerned, deserve mention.

The Commission for the Investigation of Plague in India has continued its enquiries. Experimental work has been conducted at the Bombay Bacteriological Laboratory at Parel, and

epidemiological investigations have been carried on at Poona, Belgaum, and Assam, and are now being extended to Madras and the United Provinces. Researches into immunisation by various products of the plague bacillus with a view to the improvement and standardisation of plague vaccines have been continued during the year at the Institute's special laboratories at Elstree. In November the Advisory Committee issued a fifth report of the work of the Commission as a special number of the Journal of Hygiene.

On behalf of the London County Council, the Institute still continues to examine milk intended for consumption in the Metropolis. The number of samples examined for the presence of tubercle bacilli has during the last few years steadily increased, and in 1910 reached 2,950. A further enquiry into the presence of other organisms, possibly deleterious to health, in the milk supply of London, has, at the request of the Council, been undertaken.

The systematic enquiry into the prevalence of typhoid-carriers in this country which has been carried on for the last two years by Dr. Theodore Thompson of the Local Government Board and Dr. Ledingham, Chief Bacteriologist to the Institute, has terminated. Arrangements have, however, been made by which the Institute will continue the bacteriological examination of samples in the case of typhoid outbreaks throughout the country where infection is suspected by the Medical Officers of the Board to be due to a typhoid carrier.

Last summer a concerted enquiry into the Intestinal Bacterial flora of children was organised by the Medical Department of the Local Government Board. A number of bacteriologists throughout the kingdom were asked to co-operate in the investigation. The London portion of this enquiry was carried out at the Institute by Dr. O'Brien.

At the invitation of the Principal Medical Officer of the Local Government Board, Drs. Martin and Rowland undertook an investigation into certain aspects of the Epizootic of Plague recently discovered in East Anglia. Their observations were directed to the study of—

- (1) The species, habits and distribution of the rats in the area affected.
- (2) The amount of plague infection existing among the rodents.
- (3) The parasites carried by rats and rabbits and their prevalence.

Observations were made during November and again at the end of December.

In December, at the request of the Local Government Board, the Institute submitted a scheme for the systematic examination, for plague infection, of rats captured in areas abutting on those in East Suffolk in which plague had already been discovered amongst the rodents. The object of the enquiry was to ascertain the present limits of the epizootic. The scheme submitted by the Institute was approved by the Local Government Board and carried out by Drs. Petrie and Macalister, with the help of a subsidiary staff, during January and February of this year.

In addition to the regular Staff and the holders of the Institute's Research Studentships, Drs. Armit, Bosanquet, St. John Brooks, Cunningham, Elders, Foy, Casimir Funk,

Griffiths, Hort, Lane-Claypon, Manwaring, Morgan, Nabarro, Nicoll, (Ernest Hart Scholar British Medical Association), Penfold (British Medical Association Scholar), Priestley (Beit Scholar), Seidelin, Ida Smedley (Beit Scholar), Vickers and J. D. White, Major Liston, I.M.S., Captain Gloster, I.M.S., Captain Mackenzie, R.A.M.C., Messrs. Ord Brown, Dunkerley, Davies, Mrs. Norris, Miss Frances Chick and Miss Pixell have been engaged in researches in the various laboratories of the Institute.

The internal fittings of the new wing of the Institute were completed during the year. Most of the new laboratories have been put to immediate use to meet the demand for accommodation occasioned by the increase in Staff and workers which has taken place during the last few years. The remaining laboratories, although at present unoccupied, have been completely fitted, and the Governing Body anticipates that it will not be long before these also will be called into requisition. Additional stables and cottages for the employés have been built at Queensberry Lodge, Elstree, to meet the increasing requirements of the Serum Department.

The Balance Sheet of the Institute for the year ending 31st December 1910 is attached and shows a satisfactory position. In both the Chelsea and Elstree accounts there is a substantial balance to the good, which has been carried to the credit of the Capital Fund.

During the year, £10,539 8s. 8d. has been paid on account of the building operations at Chelsea, and £1,358 7s. 6d. for the new cottages and stables at Elstree. The sum of £476 10s. 10d. has been debited to Revenue for the purchase of new Apparatus, etc., and for this reason nothing has been written off for depreciation of Furniture, Fittings, Scientific Apparatus and Books. 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 again 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.	£	s.	d.
To Creditors				3,237	9	10
To Loan from Bankers against Securities per Contra	***			10,000	0	0
Co Water Laboratory Fund—						
Amount received from the Trustees of the late Richard Be	erridge					
for building and endowing a Water Laboratory, conditi	ionally					
that not more than £8,000 shall be spent upon the be	uilding					
of the Water Laboratory				26,352	13	10
To JENNER MEMORIAL FUND-						
Amount received from the Committee of the Jenner Memorial	l Fund			5,768	0	11
To Yersin Laboratory Fund				1,445	5	0
Fo Sinking Fund				2,899	0	5
To Capital Fund—						
Balance as per last account, 31st December, 1909	330	576 10	8			
Add						
Balance of Chelsea Gardens Department Income						
and Expenditure Account, being excess of						
Income over Expenditure, for the year						
ending 31st December, 1910 2,028	12 7					
Balance of Elstree Department Income and						
Expenditure Account, being excess of						
Income over Expenditure for the year						
ending 31st December, 1910 4,718	19 1					
	6	747 11	8			
	-		_	337,324	2	4

HENRY E. ROSCOE, Chairman.

J. L. PATTISSON,

Hon. Treasurer.

£387,026 12 4

### REPORT OF THE AUDITORS

We have audited the above Balance Sheet. We have obtained all the information and explanations we and correct view of the state of the Institute's affairs, according to the best of our information and the explanations London, 18th April, 1911.

31st DECEMBER, 1910.

Ву	Cash— At Bankers In hand							£ 341 21	s. 7 17	4	£	8.	d
Ву	Investments							_		_	363	5	2
	<b>£5,000</b> Grea <b>£5,000</b> Lanc							4,570	11	0			
	dated P. £4,900 Lone	reference don and	Stock North W	estern B	ailway 4	 per cent	. Con-	4,520	3	6			
		l Prefere	nce Stock	1000	***		4	5,940	5	0			
			ranteed S					5,123	19	3			
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Ву	Investments										,	Ť	
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	1929-19			o por		acrioca	Decer,	23,875	0	0			
	£25,000 Nat	al 3 per	cent. Insc	ribed Sto	ock, 1929-	1949		24,484					
	£25,000 Ne					ent. Ins	cribed	04.09#	10	^			
	£26,100 Sor	igoo nth Angl	tralian G	overnine	nt 3 ner	cent C	menli.	24,937	10	U			
	dated S	tock, 191	6		no u por		J118011*	24,860	5	0			
	£25,000 Cap	pe of Go	ood Hope	3 per	cent. In	scribed	Stock,						
	1933-19 <b>£25,000</b> Loc		d South	Western	Railwa	y 4 per	cent,	23,850	0	0			
	Preferre	ed Conve	rted Ordii	nary Stoc	ek	***	•••	32,000	0	0			
	<b>£25,000</b> Gre 1898	at North	iern Kaliv	vay 3 per		terence	Stock,	26,000	0	0			
	£25,000 Mie	dland Ra	ailway 2	per cer	it. Prefer	red Con	verted	,	Ū	Ī			
	Ordinar	y Stock	***	***	***	***	***	20,375					
	£25,000 Eas	t Indian	Railway	3 per cen	t. New D	ebenture	Stock	25,500	0	0	950 000	۸	
Вv	Investments	JENNE	н Мемов	IAL FUN	D (at cos	t)					250,000	U	
,	£2.650 Sou	thwark	and Vau	xbali V	Vater Co	. 3 per	cent.						
	Debent	are Stock	"B"				***	2,756					
	£2,660 Sout						k, 1898	2,740	_	0 11			
	£300 11s. I	nverpoor	Corporat	ion a bei	Cent Ord	GK		271	<u>.</u>		5,768	0	1
Ву	INVESTMENT	SINKING	Fund (	at cost)-	-								Ī
	£2,848 3s. (The above Inves	Od. 2½ p	er cent. (	ionsols ne. Sist Dec	em her, 1910, s	how a denr	eciation )				2,505	7	
Вv	DEBTORS		***		***		***				4,297	12	
Βv	STOCK OF TUI	BERCULIN	, Mallen	N, ANTI-E	BACTERIAL	VACCIN	es, &c.				369		
Ву	FURNITURE,	FITTING	s, Scien	TIFIC A	PPARATUS	AND ]					0.046	1 17	
υ	as per accou	nt, 31st l	Dec., 1900 antoniona T	RITTINING	Сни	LSE4-	***				2,746	17	
Dу	As per Acce	ount 31s	t Dec., 1	909, incl	uding pu	rchase o	f free-						
							***	60,376					
			aring the			***	***	10,539	8	8	50.010		
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Бу	Purchase of	freehold	l land an	d buildir	.— 198 and F	Expendit	ure on						
	new bui	ldings, a	s per Acc	ount, 31s	t Dec., 19	909		15,694	14	4			
	Add addition						***	1,358					
									7.0		17,053	1	1
	Stock of Ani	mals	Datiles	fro.	***	•••	***		19				
	Stock of Ant Stable Uten	oila Form	n Implem	ente and	Shede o	s ner Ar	eount	5,597	9	9			
					Directs, 5	P her uc	cours,	100					
	Higt Do	A 1903		225	7702	255		133	1	4			

### TO THE MEMBERS.

31st Dec., 1903

Laboratory Apparatus, as per Account, 31st Dec., 1903

Furniture, as per Account, 31st Dec., 1903

have required. In our opinion, such Balance Sheet is full and fair, and properly drawn up so as to exhibit a true given to us and as shown by the books of the Institute.

6,953 19 9

£387,026 12

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# Che Lister Institute o

Dr.	Chelsea	Gardens	Depa	rtment.	INCC	ME	AND	)	EXPENDIT
		INCOM	Œ.				£	s.	d.
To Interest and Divid	ends on Investment	is					8,944	19	2
To Investigation, Diag	gnosis and Analysis	Fees, &c.	***			•••	4,305	11	7
To Sales of Tuberculin	r, Mallein, Bacterial	Vaccines, &c.			989	19 7			
Add Stock of I	Cuberculin and Mal	lein, Bacterial	Vaccine	s, &c.,					
31st Decei	mber, 1910 .		•••	***	369	19 0			
					1,359	18 7			
Deduct Stock of	of Tuberculin and M	Aallein, 31st I	December	, 1909	341	0 0			
							1,018	18	7

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		I	COME.		£	s		d.	£	s.	d.	
To Sale of Antitoxins, &c			***		7,550	)	4	3				
Add Stock, 31st December, 19	910				5,459		7	0				
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						_	_	_	9,044	8	1	
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# Preventive Medicine.

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By Fuel .					•••		•••	•••	128	8
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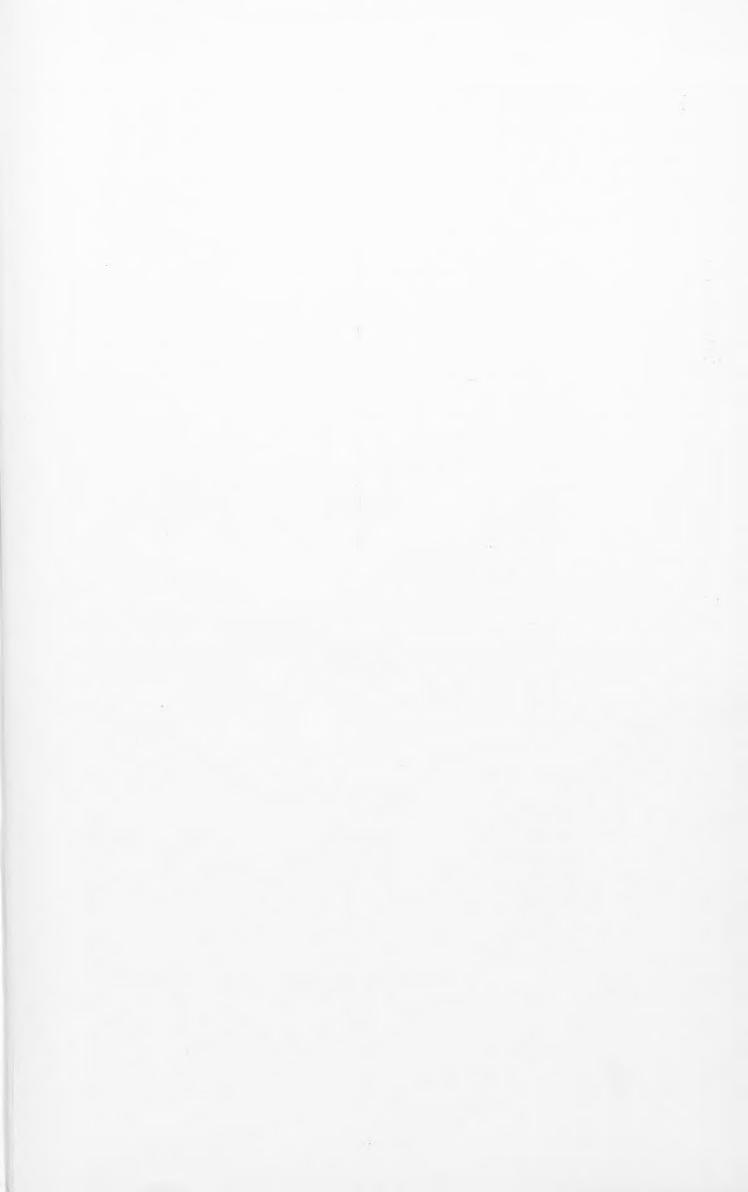
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# Lister Institute of Preventive Medicine,

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