EXPENDITURE— <i>continued.</i>		£	s.	d.	£	s.	d.
Brought forward		...	...	...	272	9	6
To Hon. Editor (half-year's expenses)—							
Clerk		7	10	0			
Index (preparation of) ...		2	0	0			
Postages, Telegrams, etc. ...		3	2	6			
Contributions inserted in							
PUBLIC HEALTH		23	1	0			
					35	13	6
„ Hon. Solicitor (disbursements)—							
Annual General Meeting ...		8	1	0			
Alteration of Articles of							
Association		40	15	0			
					48	16	0
„ Hon. Secretaries (petty cash)—							
Dr. J. C. Thresh		3	3	8			
Dr. R. Dudfield		2	8	6			
					5	12	2
„ Expenses connected with Annual							
Provincial Meeting					2	3	2
„ Amount refunded to Metropolitan							
Branch <i>re</i> Alteration of Articles							
of Association					12	11	0
„ Funeral Wreath (the late Sir							
George Buchanan, F.R.S.) ...					1	1	0
„ Branch Accounts (proportion of							
Subscriptions)—							
Metropolitan		29	2	6			
Midland		20	2	6			
Northern		18	17	6			
North Western		17	12	6			
Yorkshire		16	10	0			
West of England		13	2	6			
Home Counties		16	10	0			
Southern		12	7	6			
					144	5	0
„ Bank Commission					0	6	4
„ Balance					616	18	4
Total					£1,139	16	0

RECEIPTS.

	£	s.	d.
By Balance brought forward	404	11	1
„ Subscriptions	569	15	6
„ Publisher, balance of Account	42	3	11
„ Dr. Adams, part cost of Diagrams	4	7	6
„ One year's dividend on £4,099 17s. 5d.			
India Three per Cent. Stock	118	18	0
Total	£1,139	16	0

BALANCE SHEET.

August 16th, 1895.

LIABILITIES.

	£	s.	d.
To Capital Account—			
Mr. Berridge's Bequest	4,000	0	0
„ Receipts and Expenditure Account—			
Balance as per Account	616	18	4
	£4,616	18	4

ASSETS.

	£	s.	d.
By value of £4,099 17s. 5d. India Three			
per Cent. Stock, standing in the			
names of Messrs. Lovett, Murphy,			
and Wightwick	4,000	0	0
„ Cash	616	18	4
	£4,616	18	4

We have examined the foregoing accounts with the vouchers, and certify them to be correct.

(Signed) E. GWYNN,
T. P. SCRIVENER, F.C.A., } Auditors.

REPORT OF THE AUDITORS.

We beg to report that we have examined the accounts of the Society with the vouchers and books, and certify them to be correct.

We recommend that in future an additional book be kept, viz., a subscription book, ruled to show—(1) a full list of subscriptions payable, alphabetically arranged, with the amount of subscriptions due; (2) date when such subscriptions are paid or otherwise determined; (3) amount of such subscriptions allocated to branches, and the branch to which such allocation is made; and (4) the arrears standing unsatisfied to be carried forward to the next year's account.

We also recommend that the Trustees under the Berridge Trust be requested to sign an authority to the Bank of England for the payment by the Bank of England direct to the Society's bankers of the dividends on the £4,099 17s. 5d. India Three per Cent. Stock as they fall due.

(Signed) E. GWYNN,
T. P. SCRIVENER, F.C.A., } Auditors.

THE RELATION OF DIPHTHERIA TO INSANITARY CONDITIONS.*

BY

T. G. NASMYTH, M.D., D.Sc., M.O.H. of the County of Fife.

AN outbreak of diphtheria associated with well-marked insanitary conditions is of considerable importance, as at the present time too much importance is apt to be attributed to the bacterial equation, and too little to the insanitary conditions under which the disease frequently arises. The reaction that has set in in this respect, depends on the fact that diphtheria is found to prevail even under the most favourable, or at least, what appear to be favourable, sanitary conditions. The terms favourable sanitary conditions are merely relative, and are used to indicate that the grosser forms of nuisances, so commonly associated with outbreaks of enteric fever, diarrhoea, etc., are absent. The virus, which is the exciting cause of diphtheria, is a micro-organism. All micro-organisms have special selective affinities in relation to the conditions under which they grow and develop, whether the organisms find these in air, water, or soil, or in the solids or liquids of the bodies on which they act as parasites. What are the special chemical and physical conditions under which the diphtheria bacillus thrives outside the body are so far unknown, and what may be considered fairly sanitary conditions, under our current ideas of the causation of diphtheria, may yet be found to represent highly insanitary conditions, in so far as they are the necessary conditions for the growth of diphtheria bacilli. The chemistry of soils is a

* From Dr. Nasmyth's Annual Report for 1894.

complex question in its application to agriculture; and a new science is being gradually built up, so that the agriculturist is getting to know what soils want for the growth of a particular plant. The pathology of the living earth, as it is sometimes called, will yet show what diseases may be expected to arise under certain chemical and physical conditions of the soil. The outbreak of diphtheria in the present case was associated with very marked insanitary conditions, which some time ago would have been called characteristic of the disease.

The cases occurred in a small colliery village, the houses consisting of two rows situated on ground sloping to the west. The ground still further west had a very steep fall. At the bottom of this fall, about 150 yards away from the nearest house, was situated a cesspool, into which the sewer from the houses drained. The cesspool was covered up and unventilated, and there was no disconnecting trap between it and the sewer. The sewer itself was unventilated. At the houses, near to the doors, were placed gully traps, which received surface slop waters from the houses. It will be easily understood that with gases thus held under pressure much greater than of the atmosphere, there would be a great tendency for them to escape, and the situations offering least resistance were the gully traps, which could easily be forced. In these ways sewer gases of a very foul description could gain access to the houses, and the atmosphere surrounding the gully traps would always be foul. It can readily be understood how children would breathe this, playing about the gutters as they do.

Whether the part that sewer gas plays in the causation of diphtheria is secondary or primary matters very little, as without the influence of the secondary cause, the primary—the micro-organism—would not develop, or would only do so with great difficulty, and few cases of diphtheria would ensue.

THE EPIDEMIC OF SMALL-POX IN BIRMINGHAM.

BY

ALFRED HILL, M.D., M.O.H. of Birmingham.

THE small-pox epidemic which had existed all through 1893 manifested increased severity in 1894, more particularly in the first part of the year. All Saints' Ward suffered far more than any other part of the town, the cases there being equal to the very high rate of 14.5 per 1,000 of the population. Next in order came Rotton Park with 8.5, St. Paul's with 8.3, St. George's with 5.5, and St. Stephen's with 5.1. In the southern and eastern parts of the town the rates were quite insignificant in comparison with those just quoted, being 1.1 in Edgbaston and Harborne, 0.9 in Balsall Heath, 1.0 in Bordesley, and 0.7 in Saltley; in fact the disease was almost confined in its

epidemic character to the north-west corner of the city, the neighbourhood in which the Small-pox Hospital is situated.

A comparison with the figures for previous years shows that the present epidemic has been much more severe than that of 1883-4, but less so than the one which culminated in 1874. I am pleased to say, however, that towards the end of the year a diminution in the number of cases set in, and at the time of writing the disease had practically died out, only twenty-two known cases existing in the city.

Of the 2,074 cases notified during the year 1,769 were vaccinated, 224 unvaccinated, and 81 doubtful as to vaccination. Either during the year or after its close there were 165 deaths amongst them, the mortality being distributed among the three classes as follows:—

	No. of Cases.	No. of Deaths.	Proportion of Deaths to Cases.
Vaccinated ...	1769	77	4.4 per cent.
Unvaccinated...	224	75	33.5 "
Doubtful ...	81	13	16.0 "

The following table shows the incidence of the disease at different age periods amongst the three classes of patients:—

AGES.	Vaccinated.			Unvaccinated.			Doubtful.		
	Cases.	Deaths.	Case Mortality per cent.	Cases.	Deaths.	Case Mortality per cent.	Cases.	Deaths.	Case Mortality per cent.
Under 1 year ...	0	0	—	41	32	78	0	0	—
Between 1 and 5 years	5	0	—	38	13	34	0	0	—
" 5 and 15 "	236	1	0	73	6	8	14	1	7
" 15 and 25 "	707	13	2	38	8	21	19	1	5
" 25 and 45 "	689	52	8	25	12	48	28	8	29
" 45 and 65 "	119	9	8	7	2	—	12	2	17
At 65 years and upwards	13	2	15	2	2	—	2	1	—

I have not calculated any percentages on less than ten cases, as conclusions based on a very small number of observations are of no value, and indeed are misleading.

The chief point to be noted in the above figures is the different incidence of the disease upon vaccinated and unvaccinated subjects. Amongst the vaccinated less than one-seventh of the attacks were in children under fifteen, or in other words, amongst those who had been vaccinated within the last fifteen years. On the other hand, of the total number of unvaccinated persons who were attacked by small-pox no less than two-thirds took the disease before reaching the age of fifteen years. Amongst the 241 vaccinated patients under fifteen years of age only one died, this being a boy who was suffering from scarlet fever at the time he contracted small-pox. But amongst the 152 unvacci-