

Report on the epidemic of smallpox 1901-2 in the Borough of Lambeth.

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Metropolitan Borough of Lambeth.

REPORT

ON THE

Epidemic of Smallpox

1901—2,

IN THE BOROUGH OF LAMBETH,

BY

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MEDICAL OFFICER OF HEALTH.

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History of the Smallpox Epidemic in Lambeth Borough, 1901-2.

Smallpox, which had been quiescent for many years in London, broke out in epidemic form in the N.W. Districts, and slowly (but steadily) increased, spreading eventually into all other parts of London. The Table on page 38 gives the total cases in London and Lambeth removed to the Hospitals of the Asylums Board, together with the number of deaths, since 1885, the year in which Smallpox patients were first removed away from London. The first case that appeared in Lambeth Borough was notified on August 27th, 1901, at 11, Meadow Place, South Lambeth Road (Henry O., aged 50 years), and was traced to St. Pancras Borough, where at that time the Smallpox was spreading rapidly. This was the only case in Lambeth in August, and in September 2 further cases occurred, followed by 11 in October, 18 in November, and 22 in December—making a total of 54 up to the end of the year 1901. Since then, 350 additional Smallpox cases have been notified in Lambeth Borough, so that the total number of cases that have occurred during the epidemic in Lambeth is 404, and of these, 64 have died, giving a death-rate of 15.8 per cent.

Of the 404 notified cases, 220 were males and 184 females, whilst of the 220 males, 177 were vaccinated and 43 unvaccinated; and of the 184 females, 148 were vaccinated and 36 unvaccinated. 6 of the cases notified were *stated* to have been also re-vaccinated, and 2 to have had previous attacks of Smallpox, but both the re-vaccinations and the previous attacks of Smallpox took place many years ago (in each instance over 20 years). The ages of the re-vaccinated cases were—

Males : 37, 46, 48 years.

Females : 34, 35, 40 years.

and in two instances (Henry H., aged 48, and Kate B., aged 40) death resulted.

The two men who were stated to have had previous attacks of Smallpox, were 38 and 44 years of age respectively, and of these one (Alfred T.), aged 44, died.

Of the 64 deaths, 33 were males and 31 females; whilst of the 33 males, 22 were vaccinated and 11 un-vaccinated; and of the 31 females, 16 were vaccinated and 15 un-vaccinated. Subdividing into age periods, it is seen that

a. Of the 404 notified cases, there were—

6 under 1 year of age (all unvaccinated),

13 between 1 and 5 years (4 vaccinated and 9 unvaccinated),

31 between 5 and 10 years (7 vaccinated and 24 unvaccinated),

83 between 10 and 20 years (64 vaccinated and 19 unvaccinated),

211 between 20 and 40 years (191 vaccinated and 20 unvaccinated),

57 between 40 and 60 years (56 vaccinated and 1 unvaccinated),

3 60 years and over (all vaccinated).

b. Of the 64 deaths, there were—

4 under 1 year of age (all unvaccinated),

3 between 1 and 5 years (all unvaccinated),

3 between 5 and 10 years (1 vaccinated and 2 unvaccinated).

2 between 10 and 20 (both unvaccinated),

36 between 20 and 40 years (22 vaccinated and 14 unvaccinated).

15 between 40 and 60 years (14 vaccinated and 1 unvaccinated).

1 60 years and over (vaccinated).

These interesting and important facts will be more readily understood in tabular form as follow :—

Table I.

Details as to the 404 cases of Smallpox and 64 Deaths.

404 Smallpox cases and 64 deaths.

		CASES.			DEATHS.			Death rate per cent.		
		M.	F.	Total	M.	F.	Total			
{	Under 1 year	{ Vaccinated ...		—	—	—	—	0·0		
		{ Unvaccinated		3	3	6	1	3	4	66·6
{	Between 1 and	{ Vaccinated ...		4	7	11	1	—	1	9·1
	10 years ...	{ Unvaccinated		16	17	33	1	4	5	15·1
{	10 years and	{ Vaccinated *		173	141	314	21	16	37	11·8
	over ...	{ Unvaccinated		24	16	40	9	8	17	42·5
TOTALS (all ages) ...		220	184	404	33	31	64	15·8		

Vaccinated, 11·7 { Male, 12·5
Female, 10·8

Total Death-rates = 15·8.

Unvaccinated, 32·9 { Male, 25·6
Female, 41·7

* 6 (3 males and 3 females) of the notified patients were stated to have been revaccinated over 20 years ago (and two, a male and a female, died), and 2 (both males), to have had previous attacks of Smallpox (and 1, a male, died).

Table II.

Ages and Sex of the 404 Smallpox Cases.

Age	Male.		Female.		Age.	Male.		Female.	
	Vacc.	Not.	Vacc.	Not.		Vacc.	Not.	Vacc.	Not.
Und. 1	—	3	—	3	Br'ght forwd.	126	40	114	36
1	—	—	—	1	36	4	2	2	—
2	1	—	—	1	37	2	—	3	—
3	1	1	—	5	38	10	—	4	—
4	—	—	2	1	39	1	—	—	—
5	—	5	—	1	40	3	—	7	—
6	—	3	1	2	41	—	—	2	—
7	1	1	1	2	42	3	—	—	—
8	—	3	1	2	43	6	—	2	—
9	1	3	2	2	44	2	—	3	—
10	—	4	1	—	45	3	1	1	—
11	3	2	2	2	46	4	—	1	—
12	2	—	2	—	47	—	—	—	—
13	2	—	3	—	48	2	—	—	—
14	1	2	5	—	49	1	—	1	—
15	2	—	2	2	50	3	—	1	—
16	3	—	5	—	51	—	—	—	—
17	1	4	4	—	52	1	—	—	—
18	7	1	6	—	53	—	—	—	—
19	6	—	7	2	54	1	—	2	—
20	4	—	6	1	55	1	—	1	—
21	6	—	3	1	56	—	—	1	—
22	11	—	3	—	57	1	—	—	—
23	10	1	6	1	58	1	—	—	—
24	9	—	4	1	59	1	—	1	—
25	7	1	3	—	60	1	—	—	—
26	9	—	1	1	61	—	—	—	—
27	4	—	6	—	62	—	—	—	—
28	9	1	4	—	63	—	—	1	—
29	5	1	9	—	64	—	—	—	—
30	3	—	9	—	65	—	—	—	—
31	4	2	4	—	66	—	—	—	—
32	5	—	3	—	67	—	—	—	—
33	—	—	2	2	68	—	—	—	—
34	3	1	3	3	69	—	—	—	—
35	6	1	4	—	70	—	—	—	—
					& over *	—	—	1	—
	126	40	114	36	Totals	177	43	148	36

* The patient over 70 years of age was Ann D., aged 85, vaccinated in infancy. She recovered.

N.B.—VACCINATED PERSONS.

- (1) No death occurred amongst vaccinated infants under 1 year of age.
- (2) No death occurred amongst vaccinated children between 1 and 5 years of age

- (3) *One death* occurred amongst *vaccinated children* between 5 and 10 years of age.
- (4) *One death* occurred amongst *vaccinated children* under 10 years of age.
- (5) 37 deaths occurred amongst 314 vaccinated (including 6 re-vaccinated) persons 10 years of age and over, giving a percentage death-rate of 11.8.
- (6) Total death-rate amongst the vaccinated, 11.7 per cent.
- (7) Amongst persons *stated* to have been re-vaccinated, 2 deaths only are recorded, and one death only amongst persons who are *stated* to have had previous Smallpox attacks.

UNVACCINATED PERSONS.

- (1) 4 *deaths* occurred amongst *unvaccinated infants* under 1 year of age.
- (2) 3 *deaths* occurred amongst *unvaccinated children* between 1 and 5 years of age.
- (3) 2 *deaths* occurred amongst *unvaccinated children* between 5 and 10 years of age.
- (4) 9 *deaths* occurred amongst *unvaccinated children* under 10 years of age.
- (5) 17 deaths occurred amongst 40 unvaccinated persons 10 years and over, giving a percentage death-rate of 42.5.
- (6) Total death-rate amongst the unvaccinated, 32.9 per cent.

To estimate the true importance and significance of the above notes, the *ratio* of unvaccinated to vaccinated children under 10 years of age, and of persons 10 years of age and upwards, throughout the Borough of Lambeth, must be taken into account. Roughly, these *ratios* may be taken as follow:—

- (a) 1 unvaccinated to 5 vaccinated (in persons under 10 years of age).
- (b) 1 unvaccinated to 12 vaccinated (in persons 10 years of age and over).

Bearing these proportions in mind, and assuming that vaccination is *no* protection (as claimed by the anti-vaccinators), the vaccinated children under 10 years of age in Lambeth ought to have added to the epidemic 195 cases (instead of the 11) and 45 deaths (instead of the 1). So, too, adults 10 years of age and over in Lambeth ought to have added 480 cases (instead of the 314) and 204 deaths (instead of the 37).

In this way it will be seen that the incidence rate upon the population is very much less amongst the vaccinated than amongst

the unvaccinated, whether regard be had to the number of cases of Smallpox notified, or to the deaths from Smallpox registered. The same argument applies to both the child and the adult populations of Lambeth Borough (or elsewhere throughout London). In this way, the smallness of the figures will not prevent satisfactory conclusions being drawn in regard to the efficacy of *recent* vaccination as, practically, a preventative against death from Smallpox, as well as against even an attack of the disease. Even when a lengthened interval has elapsed between the operation of vaccination or re-vaccination and the Smallpox attack, the disease appears to be modified and rendered less fatal.

As was to be expected, all parts of the Borough have not suffered equally. The incidence of the disease shews a rate of 7.5 in the Inner, as compared with 0.7 in the Outer, Wards, and is found to have varied from a *maximum* 3.9 in Marsh to a *minimum* 0.3 in Norwood, per 1000 inhabitants. The incidence throughout the whole of the Borough of Lambeth was 1.3 per 1000 inhabitants—the smallness of the rate being due to the energetic precautionary measures that were taken (*vide infra*).

The 404 cases represent 333 infected houses, and may be classified according to Wards as follow :—

<i>Inner—</i>		Population, enumerated Census, 1901.	Infected Houses.	Infected Persons.	Incidence per 1000 Inhabitants'
Marsh ...	...	27440	88	107	3.9
Bishop's ...	...	32340	60	64	1.9
Prince's ...	...	47618	61	79	1.7
Vauxhall ...	...	31487	28	42	1.3
<i>Totals for Inner Wards ...</i>		38885	237	292	7.5
<i>Outer—</i>					
Stockwell ...	...	32339	27	29	0.9
Brixton ...	...	43474	30	31	0.7
Herne Hill ...	...	30199	21	28	0.9
Tulse Hill ...	...	27574	9	14	0.5
Norwood ...	...	29424	9	10	0.3
<i>Totals for Outer Wards ...</i>		163010	96	112	0.7
Borough Lambeth }		301895	333	404	1.3

The Inner Wards being more congested than the Outer, and work-places being more numerous in the former than in the latter, it was only natural to suppose that the Smallpox incidence would be greater in the Inner Wards, which were also nearer to the Smallpox-infected areas north of the Thames, and consequently more likely to become infected by workers from such districts returning to Lambeth to sleep. Such is found to have been the case in Lambeth during the Smallpox epidemic 1901—2.

PREVENTIVE MEASURES.

The preventive measures used with success in stamping out the epidemic may be tabulated as follows :—

- (1) Notification,
- (2) Isolation,
- (3) Disinfection,
- (4) Quarantining,
- (5) Vaccination and re-vaccination.

1. NOTIFICATION.

The importance of early and exact notification is the first step in dealing with an epidemic of Smallpox, as it is clear that without exact knowledge as to where the cases exist in the Borough, preventive measures cannot be taken. Knowing the difficulties that medical men (especially the younger medical men, who have had no experience of the disease) have in diagnosing Smallpox in some of its modified forms, I communicated by letter early in the outbreak (October 15th, 1901), with every medical man residing or practising in Lambeth Borough, pointing out the danger of the Smallpox spreading on account of modified cases being mistaken for other diseases (*e.g.* Chickenpox, Lichen, etc.). and the consequent importance of correctly diagnosing the disease in all its varied forms. To accomplish this I suggested that all doubtful or suspicious cases should be voluntarily notified to me, as Medical Officer, and I undertook to act as consultant in such cases and take all responsibility. As a result, 277 doubtful or suspicious cases were notified, and all these the Medical Officer visited and removed to the Smallpox Hospital, or left at home, according as they were Smallpox, or other diseases. During 1901 (four months), 53 cases were notified, and during 1902 as follows :—January 51, February 38, March 30, April 40, May 30, June 24, July 10, and August 1 ; total 277. Of the 277 cases, it is of medical interest to note that 94 were Smallpox, 84 Chickenpox, 17 Lichen, 15 Erythema, 19 Acne and Ecthyma, 14 Porrigo and Eczema, 6 Vaccinia, 6 Measles, 4 Herpes, 4 Psoriasis, 3 Scarlet Fever, 2 Erysipelas, 9 other skin diseases.

Had the 94 doubtful cases, which proved to be Smallpox, been left to be treated as doubtful cases at home, it is appalling to think what proportions the epidemic might have assumed in Lambeth Borough. Copy of the letter sent out is as follows :—

PUBLIC HEALTH DEPARTMENT,

333, Kennington Road, S.E.

October 15th, 1901.

DEAR SIR,

re Smallpox.

As Smallpox appears to be taking an epidemic form in London, and as several imported cases have already been notified in Lambeth Borough, it is of importance that the greatest care should be

exercised in correctly diagnosing suspicious or doubtful cases. Unfortunately, as you are probably aware, Smallpox in its various modified forms is, at times, extremely difficult to diagnose, and in this way the disease may spread. To prevent this, I shall be glad if you will kindly advise me of any suspicious or doubtful cases which you may meet with in your practice, more especially cases which may be mistaken for Chickenpox, etc. I will gladly see them in consultation with you, if you wish it, and will kindly let me know. Do not hesitate to make use of me at any time.

I need not add that any information which you may send will be considered strictly private.

Yours faithfully,

JOSEPH PRIESTLEY.

Notification of Chickenpox.

In view of the ready response to this letter by the medical men throughout the Borough, it was not thought necessary to go to the needless expense of making, temporarily or permanently, Chickenpox a compulsorily notifiable disease, as suggested by the Local Government Board in a letter dated December 27th, 1901. It is true that modified Smallpox cases are frequently mistaken by medical men for Chickenpox, and that in a few instances persons desiring to evade the obligation to report cases of Smallpox to the Sanitary Authority may declare such cases of Smallpox to be cases of Chickenpox. On the other hand, for compulsory notification of Chickenpox to be of use, the Medical Officer of Health should have the power to visit and examine every case notified, and the difficulties in the way of this being carried out *practically* are obvious. Several other Metropolitan Borough Councils, whose officials had not arranged with the medical men practising in their respective Boroughs in the same way as the Lambeth Borough Council had, were in favour of the compulsory notification of Chickenpox throughout London, and the London County Council, on January 28th, 1902, with the approval of the Local Government Board, under Section 55 of the Public Health (London) Act, 1891, made an Order, which came into operation on February 7th, 1902, making Chickenpox a notifiable disease throughout the administrative County of London for a period of three calendar months, on the ground of emergency owing to the prevalence of Smallpox in London, and the fact that the failure in many cases to distinguish between Chickenpox and Smallpox had led to the spread of the latter disease. The notification is dual, viz.: a notice by the head of the family (or other responsible person), and a certificate by the medical attendant; and the penalty for non-compliance is a fine not exceeding forty shillings.

This Order was extended on April 22nd, 1902, for a further period of six months from May 7th, 1902. Up to the end of August, 1902, there have been notified within the Borough of Lambeth 988 cases as follows:—

Ages.	Feb.	Mar.	April.	May.	June.	July.	August.	Total.
0—1	6	11	10	17	19	7	8	73
1—2	8	16	11	17	18	15	9	94
2—3	6	13	13	14	20	12	11	89
3—4	10	27	13	19	19	13	10	111
4—5	21	26	15	24	35	15	10	146
5—6	20	36	18	29	38	10	11	162
6—7	11	13	11	10	29	14	7	95
7—8	5	10	8	9	18	5	5	60
8—9	2	5	2	7	4	2	3	25
9—10	4	3	6	3	6	5	—	27
10—11	1	5	—	2	2	2	1	13
11—12	2	3	2	3	4	3	—	17
12 and over	17	4	7	15	11	12	5	71
TOTALS	113	172	116	169	223	115	80	988

All the 937 Chickenpox-infected houses, in which the 988 cases occurred, were visited, and the usual precautions as to isolation, disinfection, etc., carried out, whilst, as Chickenpox is a rare disease in adult life, and may be at that age-period more readily mistaken for modified Smallpox, the 71 cases notified amongst adults (12 years and over) were the subject of special investigation and examination by the Medical Officer. Four cases notified as Chickenpox proved, on examination, to be Smallpox, but these cases would have been heard of without the compulsory notification of the disease on account of the system of voluntary notification of all doubtful or suspicious cases of "spots," which was inaugurated in Lambeth Borough at the commencement of the epidemic. In the late epidemic (as far as Lambeth Borough is concerned) the compulsory notification of Chickenpox has proved practically useless, as well as being, in the opinion of your Medical Officer of Health, a needless expense, under the special circumstances mentioned.

The practical difficulties in grappling with these large numbers of Chickenpox cases soon appeared, and the London County Council, on February 24th, 1902, appointed 37 medical men throughout the Administrative County of London to act as consultants or experts in connection with the diagnosis of doubtful cases of Smallpox, the London County Council to pay the fees (10s. 6d. for each case visited). The notification fee is, in addition, 1s. each certificate, the Metropolitan Asylums Board, in a letter dated April 5th, giving the opinion that such experts act in a public capacity as Medical Officers of a public body. This action of the London County Council gave rise to a large amount of ill-feeling amongst the different Metropolitan Authorities, it

being thought that such appointments, if required, should be made by the Metropolitan City and Borough Councils concerned. As regards Lambeth, objection was taken on behalf of the Borough Council by your Medical Officer of Health in a letter dated February 20th, 1902, and previously at a personal interview with the London County Council's Medical Officer, with the result that no experts were appointed in Lambeth. The Borough Council protested formally on March 6th, 1902. Experts living in neighbouring Boroughs were, in a very few instances (less than a dozen), called in in connection with doubtful cases occurring in Lambeth Borough, and in three instances the diagnoses made by such experts were found to be wrong—in one instance (a case of Smallpox diagnosed by the expert as Chickenpox) 5 cases arising therefrom, and in the others, the patients (suffering from Chickenpox, but diagnosed by the experts as suffering from Smallpox) being removed to the Smallpox Hospital (but fortunately sent back at once). It is clear that such appointments of experts should be made by the Borough Councils concerned, so that the greatest care might be exercised in order to secure the services of only competent men (if their services are required at all) to act under, and be responsible to, the Medical Officers of Health. The Society of Metropolitan Medical Officers of Health protested officially against the appointments of these experts by the London County Council.

In Lambeth, the Medical Officer of Health acted as expert and consultant for the Borough, and this arrangement was found to work well, though much extra work devolved in consequence upon such officer.

Before leaving the subject of notification, it is only fair to state that, speaking generally, the promptness with which the cases of Smallpox (and all doubtful cases) have been notified throughout the Borough calls for special mention, and that in this connection the medical men practising in Lambeth are to be congratulated. There can be little doubt that the circular letter, which was sent out early in the epidemic, helped materially in securing the prompt notification of all cases.

2. ISOLATION.

Every case was at once removed to Hospital*—a most efficient, and the only efficient, way of isolating Smallpox patients. Isolation at home is practically impossible, and everything depends on the cases being isolated in Hospital as soon as notified. This

* Two patients (malignant Smallpox), died before the ambulance arrived so that they could not be removed to Hospital. Their bodies were at once removed to the Mortuary for infectious cases, at Wanless Road, to await burial, at a cost of £1 14s. 6d. Strict precautions were taken as to disinfection, etc.

has been accomplished in Lambeth, patients being removed, and disinfection commenced, within an hour of such patients being notified. In many instances, removal took place at night, and in a few instances at midnight, arrangements having been made at the Sanitary Offices for a person to be on duty *at all hours* (Sundays and week-days). The routine adopted by the Metropolitan Asylums Board (the Hospital Authority for London) is to take each patient (when notified) first to the Shelters or Observation Wards at Rotherhithe (South Wharf). From these the patient, if found suffering from Smallpox, is sent in one of the river ambulances to the Hospital Ships, which are moored at Long Reach (the mouth of the Thames). Here the patient is again medically examined, and if still thought to be suffering from Smallpox (but not otherwise), is admitted on to the Ships. In this way, all danger of allowing a patient (not suffering from Smallpox) to be placed in a Smallpox Hospital is practically reduced to a minimum, and the method has been found to work satisfactorily. 33 notified cases of Smallpox from Lambeth were returned at once from the Shelters, such patients, in the opinion of the Metropolitan Asylums Board's officials, not suffering from Smallpox at the times of their removals from their homes. These cases have been withdrawn and do not appear in the total number of cases (404) dealt with in the Report. These 33 wrongly-diagnosed cases consisted of Chickenpox, Measles, Acne, Influenza, Erythema, etc.

No possible harm can arise from the removal to the Shelters for observation of doubtful or suspicious cases.

Smallpox Ambulance Service.

The Metropolitan Asylums Board, on the 8th March, 1902, adopted a proposal of their Ambulance Committee, by which all necessary preliminary steps were to be taken with the view of securing sufficient freehold land for the purposes of an Ambulance Station and Shelters for patients midway between London and Dartford. There being considerable doubt as to what the intention of the Asylums Board really was, the Society of Metropolitan Medical Officers of Health sent a deputation to the Board on April 28th, and were then officially informed that the proposed Smallpox Ambulance Service was intended to supplement, and in no way to take the place of, the River Ambulance Service—it being definitely stated to the deputation that, in the opinion of the Asylums Board, the River Service was satisfactory except in a few cases where delays occur from frost and fog. To avoid inconvenience from such delays, and to ensure the patients suffering from Smallpox being at all times at once removed to the Smallpox Hospitals at Long Reach, is the object of the Metro-

politan Asylums Board, and, therefore, their new proposal (mentioned above) was approved by the Lambeth Council as satisfactory and necessary, more especially as the Local Government Board naturally and rightly objects to any important extension of the present temporary observation Shelters, either at Rotherhithe or elsewhere near London.

3. DISINFECTION.

As soon as a case of Smallpox had been removed, the next important preventive measure was to get rid of every trace of infection by efficiently and at once disinfecting the room or rooms in which the patient had lived prior to removal, and, indeed, the rest of the house, together with all clothes, bedding, etc., that had become directly, or indirectly, infected. Upon the efficiency of such disinfection depends the success (in part) of the action taken in dealing with Smallpox outbreaks. To ensure the disinfection being as efficient as possible, the Medical Officer of Health arranged for the use of formalin, or perchloride of mercury, spray, the stripping off of all papers from infected rooms, washing of ceilings, walls, floors, etc., in addition to the routine sulphur fumigation, which is found so useful as a means to ensure the occupiers using plenty of soap and water, and fresh air (by open windows and doors), to get rid of the smell of the sulphur fumes which are very penetrating and lasting. All articles of clothing, carpets, curtains, bedding, etc., were disinfected with saturated steam in the Equifex Disinfecting Machine, Wanless Road. The means adopted proved efficient, as no single secondary or return case of Smallpox arose in connection with inefficient disinfection of any of the infected houses or clothing and bedding—a most satisfactory statement to be able to make.

The rooms from which the Smallpox patients were removed have all been fumigated with sulphur, and sprayed with formalin or per-chloride of mercury solutions, and the other rooms, passages, etc., in connection with infected houses have also been sprayed with formalin. During the epidemic, 514 infected rooms, and 2217 other rooms, have been in this way dealt with (not to mention passages and staircases), and the amount of bedding, clothing, etc., removed and disinfected with steam at Wanless Road will be appreciated from the subjoined statement :—

Articles of bedding, etc., disinfected.

Beds ...	...	...	...	...	...	786
Bolsters	...	...	...	...	...	689
Pillows	...	...	...	...	...	1462
Mattresses	...	...	...	...	...	648
Palliasses	...	...	...	...	...	744
Chair Cushions	...	...	...	...	...	860
Clothing (articles of)	...	...	...	...	...	10610
Blankets	...	...	...	...	...	1374
Rugs and Mats	...	...	...	...	...	71
Counterpanes and Eiderdown Quilts	...	...	...	...	...	772
Carpets	...	...	...	...	...	346
Extras (Curtains, Laundry Goods, etc.)	...	...	...	...	...	7654
Various Sundries, too many to count, and kept in bags	...	...	...	...	... (bags)	129
Total						26145

Articles of bedding, etc., destroyed:

Beds ...	...	...	...	...	...	27
Bolsters	...	...	...	...	...	2
Pillows	...	...	...	...	...	7
Mattresses	...	...	...	...	...	14
Palliasses	...	...	...	...	...	59
Chair Cushions	...	...	...	...	...	9
Clothing	...	...	...	...	...	24
Carpets	...	...	...	...	...	2
Rugs and Mats	...	...	...	...	...	4
Sundries (Curtains, Rags, etc.)	...	...	...	...	...	207
Total						355

In connection with articles of bedding, etc., destroyed, the following goods have been replaced by the Council at a cost of £27 4s. 9d.:—

Palliasses 51,
Flock beds 4,
Wool mattresses 2,
Bolster 1, and Pillows 2.

Despite this large amount of disinfection carried out, complaints from owners of bedding, etc., were few and far between—£11 5s. only having been paid as compensation for damage to disinfected articles during the whole 12 months of the epidemic.

Stripping off of wall papers of infected rooms was considered an important measure, and a total of 392 rooms have been stripped, 49 by private owners and 343 by the Council's own officers—the latter at a total cost of £97 5s. 6d. It was felt to be unfair to allow private builders' men to do this particularly dangerous work, especially recognising the difficulty of ensuring such men being efficiently protected by re-vaccination. It was decided, therefore, to employ, on behalf of the Lambeth Borough Council,

2 temporary officers (accustomed to the work) for the purpose. These temporary officers were re-vaccinated by the Medical Officer previous to their beginning work, and they have, during the epidemic, stripped 322 infected rooms (the other 21 having been previously done by the disinfecting men) at an inclusive charge of 6s. per room stripped (inclusive of collecting the paper in bags, and having it removed to, and burnt at, the Wharf). Neither of the men caught Smallpox, though there have been many instances throughout London of strippers, unprotected by re-vaccination, having caught the disease (3 cases having occurred in Lambeth amongst strippers employed on infected houses in outside Boroughs).

The disinfecting staff has worked well, day and night, and much praise is due to one and all for the prompt and thorough way in which they have carried out their duties. In one or two instances disinfection has been carried out after midnight, and often late at night, necessitating one or more members of the staff being on duty continuously, as the extra pressure of work due to the Smallpox outbreak was not allowed to interfere with the routine work of disinfecting after the notifiable diseases, Scarlet Fever, Diphtheria, Chickenpox, etc.; or with the special work, which is being carried out in Lambeth, in connection with Tuberculosis, Measles, Cancer, etc. It is subject for congratulation that the epidemic was not allowed to interfere with the routine work of the Disinfecting Department.

The Borough Council, on May 1st, 1902, voted a sum of £40 to be distributed amongst the disinfecting staff for extra work done during the first half of the epidemic, and doubtless the Council will see fit to again vote some further sum for extra work done during the second half of the epidemic. Such extra remuneration is well deserved by the disinfecting staff.

4. QUARANTINING.

Without belittling in any way the three preventive measures, which have already been dealt with, it cannot be too much emphasised how very important it is to carefully quarantine all "suspects" or "contacts." Smallpox is a disease that takes 12-14 days to incubate, and it follows that, when Smallpox breaks out, all persons who have been in contact with a Smallpox patient or patients must be watched for 12-14 days (preferably 16 days) from the time that such patient or patients have been removed to Hospital, and the necessary disinfection carried out. Any "contact" who is not efficiently protected by previous recent vaccination, may sicken with the disease, and the necessity, therefore, of following up such a person must be apparent to all. On the care with which this

quarantining, or watching of "contacts" or "suspects," is carried out will depend largely the success of the preventive measures taken in dealing with an outbreak of Smallpox. With one or two cases of Smallpox nothing is easier, but as the cases of Smallpox increase in numbers, the practical difficulties in the way of quarantining increase proportionately.

These "contacts" have arisen in connection with cases of Smallpox (1) in the Borough of Lambeth, or (2) elsewhere. "Contacts" living in Lambeth have been watched for the incubation period of 16 days by the Lambeth Inspectors, and outside "contacts" watched by the officers of the Sanitary Authorities, in whose districts such "contacts" reside, for a similar period. So, too, "contacts" from other districts have, in the same way, been watched during the 16 days' incubation period, and the number of these *outside* "contacts" watched in Lambeth was large, especially when the epidemic was in full swing throughout London and the adjoining Counties.

A daily inter-communication of information *re* Smallpox patients and "contacts" was started at the commencement of the epidemic amongst the different Metropolitan Medical Officers of Health, at the instigation of their Society, and these daily returns were sent out from the office of the County Medical Officer of Health, and have proved of the greatest value. The telephone service has also been requisitioned enormously (*hourly*) during the epidemic, and many cases in this way have been followed up at once, and prompt action taken. The Metropolitan Asylum Board decided in the early days of the Epidemic to send out daily returns to all Medical Officers in London *re* discharges from, and deaths at, the Smallpox Hospitals, together with the names and addresses of all visitors to the Smallpox Hospitals.

The amount of work involved in carrying out systematically and carefully this quarantining will best be gauged by the numbers of persons dealt with in the Borough of Lambeth by your officials, careful details of all quarantined persons having been tabulated for this purpose by the Medical Officer of Health.

In connection with the 333 infected houses and the 404 cases of Smallpox notified in Lambeth, a total of 4182 persons have been watched and quarantined—3236 adults 10 years of age and over, and 946 children under 10 years of age; whilst in connection with cases of Smallpox outside Lambeth, a total of 739 persons have been watched and quarantined in Lambeth Borough, consisting of 677 adults 10 years of age and over, and 62 children under 10 years of age. In addition, 133 persons visited the Smallpox Hospitals for the purpose of seeing their friends when dangerously ill, and these 133 persons (all adults) were watched and quarantined.

The total number quarantined during the epidemic in Lambeth is, therefore, 5054 persons—4046 adults and 1008 children—and to realise the numbers of visits paid, it must be remembered that each "contact" was under observation for the usual quarantine period of 16 days. Allowing for persons being out when their homes were visited, and remembering that a quarantined house generally contained several persons under observation, we may fairly allow, as an average, 8 visits per person, making a total (rough) of over 40,000 visits paid during the 12 months during which the epidemic has lasted.

To show the value of this quarantining, out of the 5054 persons watched, 141 (*i.e.*, 2.8 per cent.) afterwards developed Smallpox, and were at once removed to Hospital, and the usual disinfection immediately carried out. In this way, these 141 fresh centres were at once dealt with. Had they been allowed to spread, a large increase to the number of Lambeth cases would have, of necessity, followed, whereas, by dealing promptly with them, no *single* further case resulted from such sources. In this way, the amount of work involved has been more than justified. Of the 141 cases, 134 arose amongst the 4182 *direct* "contacts" belonging to the Lambeth notified cases, whilst 6 arose in connection with the 739 *outside* "contacts" belonging to cases notified outside Lambeth Borough, and 1 in connection with the 133 visitors to the Smallpox Hospitals. Full particulars as to the vaccination states of all "contacts" will be found under the heading of "Vaccination and Re-vaccination"—the 4th preventive measure dealt with in this Report. Suffice it to say, at this point, that the following statistics tell the old well-known story as to the value of vaccination, if not as an absolute preventative, at least as a modifier, of Smallpox:—

"Contacts" (full totals).				Vaccination states.	Number sickening with Smallpox.	
Direct	4182	{ 3236 adults { vacc. or re-vacc. }	3199	100
					unvacc.	37
				{ 946 children { vacc. unvacc. }	873	13
					73	12
Outside	739	{ 677 adults { vacc. or re-vacc. }	677	6
					unvacc.	0	0
				{ 62 children { vacc. unvacc. }	62	0
					0	0
Visitors to Smallpox Hospitals)	}	133*	(all adults)	{ re-vacc.	115	0
				{ vacc.	18	1
				{ unvacc.	0	0

N.B.—Unvaccinated persons vaccinated whilst under quarantine observation, and vaccinated persons re-vaccinated whilst under quarantine observation, are included under the headings "vaccinated" and "re-vaccinated" respectively.

*Visitors are re-vaccinated before going into the Smallpox Hospitals unless previously protected, or unless they conscientiously object.

Much difficulty has arisen in making enquiries concerning Smallpox cases and "contacts" on account of the inaccuracy of some of the statements made, not to mention reticence, or even concealment of facts. The danger that may arise from persons withholding necessary information must be apparent to all, and to obviate such a danger it has been unanimously decided, at a Conference of Metropolitan Sanitary Authorities held February 7th, 1902, that, in the opinion of such Conference, it shall be an offence under the Public Health (London) Act, 1891, to refuse or withhold information or give false information with respect to persons living in a house in which Smallpox has broken out. Such information has reference to names, employments, schools attended by children, out-workers, etc. The Local Government Board is to be approached with a view to promoting legislation in this direction. Islington Borough Council brought the matter forward in a letter dated December 3rd, 1901, addressed to the Lambeth and other Metropolitan Borough Councils. As far as Lambeth Borough is concerned, comparatively little difficulty has been encountered in this respect during the recent epidemic, though it is clear that, where there is difficulty, some such powers as those suggested should be forthcoming, and the Lambeth Borough Council on January 23rd, 1902, decided to support the Islington Council in regard thereto.

The vagrant classes moving from Workhouse to Workhouse (and from town to town) are a cause of Smallpox spreading—9 separate introductions of the disease by tramps having taken place in Lambeth during the epidemic. It follows, as a corollary, that the importance of quarantining "contacts" in connection with Smallpox cannot be over-estimated, more especially when such "contacts" are amongst the vagrant class. It has been suggested that the law should be altered, or fresh legislation introduced, so that (1) such "contacts" should be compulsorily (*a*) quarantined indoors and kept under observation at their own homes, or in a Sanitary Authority's own Refuges, for at least a fortnight, (*b*) re-vaccinated and their clothing and persons disinfected and cleansed, and (*c*) registered; and (2) that Sanitary Authorities should be empowered to expend moneys out of the rates for such purposes. It is doubtful if the general feeling in the country will countenance such compulsion.

The quarantining and inspection of "contacts" can, with best results, as far as the recent Lambeth experience goes, be carried out at their homes, supplemented, if necessary, with a small monetary allowance when the "contacts" are prevented from going to work by their employers, or for other reasons, and where their wages are consequently stopped (in whole or in part). Such monetary allowances need only be sufficient to cover rent and

maintenance, and are, as such, sufficient to ensure the recipients following out instructions as to necessary precautions, *e.g.*, preventing such "contacts," as far as possible, from entering other persons' houses, or any public institution (or meeting), under penalty of forfeiting their monetary allowances. The quarantined persons have been allowed to go about, and, under conditions satisfactory to the Medical Officer, certain of them have been allowed to continue at work during the whole or part of their period of quarantine. Quarantining of "contacts" in a special building is quite unnecessary, except as occasions may require for a few hours whilst their houses (and clothing) are being disinfected; and for this purpose the existing Refuges at Wanless Road and the Wharf are ready to hand, though, fortunately, even these have only been found necessary on two occasions. It has been found during the epidemic that disinfection of houses by spraying is much more quickly carried out than the old-fashioned method of sulphur-fumigation, and without it being necessary to turn the inmates of such houses out. Whilst the infected room or rooms are under sulphur, the other rooms in the house can be used immediately after, or even during the time that they are sprayed with formalin.

The vaccination and re-vaccination of "contacts" as required has been advised, and ensured as far as possible, and all necessary disinfection carried out.

In connection with quarantining, the Medical Officer communicated with the Guardians, suggesting the need for quarantine and isolation wards being provided for the Workhouses, so that persons from unknown infected houses or areas might be quarantined for 14-16 days prior to being drafted into the House. The suggestion was readily adopted by the Guardians, and special isolation buildings provided, and such a sieve or filter (together with the other measures taken) has undoubtedly saved the House from becoming infected. The Board of Guardians has acted in complete harmony with the Borough Council—a condition of things highly satisfactory, and courteously allowed the Borough Medical Officer an interview, at which many suggestions for dealing with the epidemic of Smallpox were offered to the Borough, and afterwards adopted in their entirety. The thanks of the Borough Council are due to the Board of Guardians, and will, I feel sure, be readily given.

Compensation paid to "Contacts."

The total compensation paid during the epidemic (12 months) in connection with the quarantining of "contacts," or "suspects," in Lambeth Borough amounts to the small sum of £53 8s.—such compensation being for loss of work, etc. When the number of "contacts" is borne in mind, the sum expended is practically infinitesimal ($2\frac{1}{2}$ d. per person quarantined).

A large amount of extra work has been thrown upon the clerical staff in connection with the 5054 "contacts," or "suspects," under observation, *e.g.*, letters to Medical Officers of Health, employers of labour, teachers of schools, librarians, vaccinating officers, etc.

Before leaving the subject of quarantining, reference may be made to a letter sent round by the Local Government Board, and dated February 22nd, 1902, officially drawing attention to the necessity for medical observation of "contacts" for a fortnight after their exposure to infection, and stating that, when under special circumstances "contacts" are kept at their homes or in a special Refuge, a reasonable expenditure out of the Rates will be sanctioned by the Board. The Lambeth Borough Council had, long before the receipt of the Board's letter, *i.e.*, on December 12th, 1901, adopted the practice of medically observing all "contacts," or "suspects," for a period of 16 days with compensation for loss of work, etc., the Council laying much stress on such medical observation as one of the preventive measures in dealing with Smallpox outbreaks.

5. VACCINATION AND RE-VACCINATION.

The Vaccination Officers and Public Vaccinators (officials under the control of the Board of Guardians) have worked well, and in complete unison with the officials of the Borough Council. Immediately on a patient being removed suffering from Smallpox, the vaccination officials were informed by the Medical Officer of the Borough, visited the house and offered vaccination and re-vaccination to the inmates and others, not only to the members of the infected family, but also to other persons living in the same house, court, or street. The people did not respond as they might have done to the offers of free vaccination thus given, though statistics (when ready) will show that very large numbers of persons have been vaccinated or re-vaccinated by the Public Vaccinators, and it is reasonable to conclude that Private Practitioners have also been performing an equally large amount of private vaccinations and re-vaccinations. The full statistics are not yet prepared for publication, but the following are significant facts:—

1. The total number of successful primary vaccinations at all ages performed by the Public Vaccinators amongst persons living in Lambeth was 7992 during 1901, as compared with 6571 during 1900—the increase in 1901 being during the 3rd and 4th quarters, and due to the Smallpox epidemic that began in London in July, and in Lambeth in August. Further, the total number of primary vaccinations performed in Lambeth Borough by the Public Vaccinators during the 12 months of the epidemic (August, 1901, to August, 1902) is 10,183.

2. From the commencement of the epidemic in August up to the end of the year 1901, the following are the numbers of vaccinations and re-vaccinations that have been performed in the Inner Districts of Lambeth tabulated monthly, viz.: July 266, August 235, September 339, October 739, November 1522, December 860, *i.e.*, an increase from 840 during July, August and September to 3121 during October, November and December. Of these 3961 vaccinations and re-vaccinations, 2668 were performed at the persons' own homes (as required by the 1898 Act), and 1293 elsewhere (*e.g.*, Vaccination Stations, etc.). Further, taking the 10,183 primary vaccinations performed by the Public Vaccinators during the year (August, 1901, to August, 1902), and allowing an average of 5 re-vaccinations to every 1 primary vaccination (a small allowance), the total number of re-vaccinations performed during the same period by the same Public Vaccinators may be reckoned as (roughly) 50,000, *i.e.*, a sixth of the population of Lambeth. It is clear that the large number of vaccinations and re-vaccinations performed in Lambeth must have had some influence in stopping the spread of Smallpox.

"Contacts" and their Vaccination States.

The statistics in connection with the "contacts" dealt with during the Epidemic are noteworthy. Of the 4182 *direct* "contacts," 3236 were adults and 946 children. Of the 3236 adults, 925 were re-vaccinated forthwith; 549 had already been done, or had had attacks of Smallpox, previously; 40 were unvaccinated, and of these 3 were vaccinated forthwith; and 1722 had been only vaccinated in infancy. Of the 946 children, 109 (unvaccinated) were vaccinated, and 208 (vaccinated) were re-vaccinated, forthwith; whilst 73 were unvaccinated, and 556 had been only vaccinated in infancy.

In this way, out of a total of 3236 adults of 10 years of age and over, 37 were unvaccinated, and therefore unprotected, and of these 9 sickened with Smallpox (24.3 per cent.); whilst of the 3199 vaccinated or re-vaccinated, and therefore partly or wholly protected, adults, 100 sickened with Smallpox (3.1 per cent.). Of the total 946 children under 10 years, 873 were vaccinated or re-vaccinated, and therefore partly or wholly protected, and of these 13 sickened with Smallpox (1.5 per cent.); whilst 73 were unvaccinated, and therefore unprotected, and of these 12 sickened (16.4 per cent.).

Of the *outside* "contacts," 677 were adults and all vaccinated, and of these 223 were re-vaccinated forthwith; 19 had already been done, or had had attacks of Smallpox, previously; and 441 had been only vaccinated in infancy. All the 677 adults were protected partly or wholly, and of these 6 sickened with Smallpox (0.8 per cent.). The 62 children (all vaccinated in infancy) were all protected partly or wholly, and of these none sickened.

Of the 133 adult visitors to the Smallpox Hospital, 115 were, before admission, re-vaccinated or had had previous attacks of Smallpox, and of these none sickened; whereas of the 18 adults vaccinated in infancy, who refused re-vaccination, 1 sickened (5.5 per cent.).

In tabular form these results show up clearly:—

Vaccinated ...	...	{ Under 10 years	727 (6 sickened).
		{ 10 years and over.	2184 (88 sickened).
Re-vaccinated or had	previous Smallpox attack, ...	{ Under 10 years.	0 (0 sickened).
		{ 10 years and over.	568 (5 sickened).
Unvaccinated ...	...	{ Under 10 years.	73 (12 sickened).
		{ 10 years and over.	37 (9 sickened).
Vaccinated during	quarantine ...	{ Under 10 years.	109 (6 sickened).
		{ 10 years and over.	3 (3 sickened).
Re-vaccinated during	quarantine. ...	{ Under 10 years.	99 (1 sickened).
		{ 10 years and over.	1254 (11 sickened).

Total 5054	Vaccinated (including those re-vaccinated in quarantine).	4264 (106 sickened) = 2.5°/.
	Re-vaccinated or had previous attack of Smallpox.	568 (5 sickened) = 0.9°/.
	Un-vaccinated (including those vaccinated in quarantine).	222 (30 sickened) = 13.5°/.

In other words, of those persons who were, by vaccination, re-vaccination, or a previous attack of Smallpox, protected (partially or wholly), 2.3 per cent. contracted Smallpox, as compared with 13.5 per cent. of those not so protected.

An unprotected person in Lambeth Borough ran, during the late Epidemic, 6 times as much risk of contracting Smallpox as a protected person.

Taking the full totals, it is seen that of the 4944 protected (partly or wholly) persons (adults and children), 120 sickened on exposure to Smallpox, *i.e.*, 2.4 per cent.; whilst of the 110 unprotected persons (adults and children), 21 sickened, *i.e.*, 19.1 per cent.

It is difficult to get away from these figures, which have been most carefully collected and tabulated, and the conclusions to be drawn therefrom are sufficiently obvious.

Everyone who has had experience of Smallpox outbreaks knows the great value of *recent* vaccination and re-vaccination as certain preventatives against attacks of Smallpox. Even vaccination per-

formed in infancy appears to have a considerable modifying power in connection with the disease. These statements have been proved again and again in connection with the present epidemic. What has to be realised to-day, however, is that a Sanitary Authority must be prepared to fight an epidemic of Smallpox without too much reliance upon vaccination and re-vaccination. It is an uphill fight, but that it can be done will be admitted after the perusal of this Report. It is unfortunate that it has to be done, as compulsory vaccination and re-vaccination rapidly stamp out Smallpox, though the days of compulsion in any shape or form are rapidly passing away, and the action of the future must be based on non-compulsion—at least as far as vaccination and re-vaccination are concerned.

As showing the value of recent re-vaccination as an absolute preventative against an attack of Smallpox, the following details (small though they be), as to the Lambeth official staff, are interesting :—

Details as to the Lambeth Protected Staff.

At the commencement of the epidemic, the members of the Staff (disinfecting men, inspectors, strippers, sanitary clerks, and others) who had not already been sufficiently protected by re-vaccination or otherwise, were re-vaccinated by the Medical Officer with glycerinated calf lymph, and no single official has sickened with Smallpox, although in several instances such officials were in constant contact with infected persons and goods. The history of the 2 temporary men who were engaged to strip for the Council all the infected rooms, and who were successfully re-vaccinated before commencing work, is especially interesting, as neither of them contracted the disease, although they have stripped, during the epidemic, 322 Smallpox-infected rooms. In other districts, strippers, unprotected by previous recent vaccination, have caught the disease. So, too, the disinfecting men, who have dealt with the Smallpox-infected bedding and clothes from the infected houses, have escaped the disease, having been recently and efficiently re-vaccinated.

The Medical Officer of Health and the Inspectors, who must often have come in contact with Smallpox-infected persons and goods, have also escaped, being efficiently protected against Smallpox by re-vaccination.

These statistics, when compared with those for certain other Metropolitan Boroughs, where similar precautions as to re-vaccination were not taken, are most satisfactory. A Sanitary Authority, which does not protect by re-vaccination its officials against contracting Smallpox, is blameworthy, and the Lambeth Borough Council is, in this respect, fortunately blameless—a statement that cannot be made with respect to other neighbouring Boroughs.

The end justifies the means adopted, no case of Smallpox occurring amongst the staff.

Efficient Re-vaccination.

At the time of the large increase in vaccinations and re-vaccinations, some difficulty was experienced by medical practitioners in obtaining calf lymph of sufficient activity to give satisfactory results both in primary vaccinations and re-vaccinations. The Local Government Board was appealed to with a view to the Board supplying registered medical practitioners, as well as (at present) Public Vaccinators, with a supply of active glycerinated calf lymph. The Board, however, declined to accede to this appeal, in an official letter sent to the Kensington Borough Council, dated February 6th, 1902. It has also been suggested that all registered medical practitioners residing or practising in Lambeth, and in other Metropolitan Districts, should act as Public Vaccinators at a uniform fee for efficient vaccination or re-vaccination.

Transfer of Vaccination Powers.

The question was raised at the end of 1901 by the Kensington and Stoke Newington Borough Councils and by the Paddington and Wandsworth and Clapham Guardians, as to the advisability of placing such important preventive measures as vaccination and re-vaccination under the direct control of the Sanitary Authority. Theoretically, such a change is desirable, as it is certainly an anomaly that vaccination and re-vaccination alone, of all the well-known preventive measures in connection with the stamping out of Smallpox, should rest with an outside Authority (the Guardians)—the Sanitary Authorities being responsible for all the other preventive measures. From a point of view of efficient administration, all such measures should be under one responsible Authority, as it might happen, for instance, that friction or difference of opinion might exist between members of the Guardians and members of a Sanitary Authority. In this way the health of a district may be prejudiced. The Borough Council of Lambeth, on the advice of the Medical Officer, approved (on December 12th, 1901) the principle of *all* preventive measures in connection with Smallpox being in the hands of one responsible Authority, and that Authority being the Sanitary Authority, which deals with all other infectious diseases and their prevention. It was decided, however, that no action should be taken during the epidemic of Smallpox, but that after such epidemic was over the Local Government Board (or other Department) might be approached with a view to such transference of powers being effected. It has been suggested that a transference from the Guardians to a Borough Council (practically the same electorate) will not benefit matters much,

and that a Central Authority (uninfluenced, to a similar extent, by the popular vote) might be able to do this important work more satisfactorily. This is merely a suggestion, and the unanimous vote given at a Conference of Metropolitan Borough Councils held on February 7th, 1902, was in favour of the newly-formed Borough Councils rising to the occasion and doing the best for the public good, on the advice of their responsible Medical Advisers, and uninfluenced by popular feeling. The Borough Councils deserve to be allowed to try the experiment.

As far as the Lambeth Borough is concerned, the Guardians have worked in harmony with the Borough Council; but the fact remains that *all* preventive measures might, with advantage, from an efficient administrative point of view, rest with one responsible Authority, and that Authority the Borough Council, as the Sanitary Authority, with whom rest all preventive measures with the sole exception of vaccination.

Conscientious Objectors.

As far as Lambeth Borough is concerned, the conscientious objectors are practically non-existent, an annual average of 100 certificates having been granted since the introduction of the new Vaccination Act. Vaccination is, therefore, practically as much compulsory as ever. Consequently, the Lambeth Borough Council on March 6th, 1902, decided to take no action in connection with the suggestion of the Beckenham District Council (supported by the Wandsworth Borough Council) that "The Local Government Board be asked to take steps to repeal Section 2 of the Vaccination Act, 1898." This Act, which was brought in as a 5 years' experiment, will die a natural death next year (1903), unless re-enacted.

Re-vaccination of Workers in Lambeth.

To secure general re-vaccination of workers throughout the workplaces situated within the Borough, irrespective of the workers being residents of Lambeth, the Local Government Board was communicated with by the Medical Officer of Health, as also the Lambeth Board of Guardians, asking them to give instructions to their vaccinating officers to vaccinate and re-vaccinate all persons working in Lambeth workplaces, whether Lambeth residents or not. The Board of Guardians and the Local Government Board on Jan. 22nd, 1902, gave their consent to such a course, and it was arranged to pay fees in connection with all re-vaccinations of work-people working in Lambeth Borough, irrespective of such work-people's places of residence. Article 3 of the Local Government Board's Order to vaccinating officers, dated October 18th, 1898, is not very explicit on the point, and the action of the two Boards was most fortunate. In any case, it is a "give and take" arrange-

ment as other Boroughs acted on the same lines, and what might have proved a serious hitch, not only in Lambeth Borough but throughout the Metropolis, was thereby avoided.

Vaccination states of School Board Children.

A letter was also received in October, 1901, from the Clerk of the London School Board, enclosing copy of the following resolution, dealing with the examination of School Board children as to their vaccination states—a resolution which was passed by the Board on September 23rd, 1901 :—

“That facilities be given to the Public Vaccination Officers of the Metropolis, on the application of the Proper Local Authority (*i.e.*, Borough Council) to enter the schools in infected areas for the purpose of examining the arms of the children with a view to advising the parents to allow their children to be vaccinated; providing that the School Board issues a circular to the parents of the children asking if they have any objection to this examination, and, in case of such objection in any particular case, that such examination shall not take place, and that the Local Government Board and the Public Vaccination Officers be informed accordingly.”

Fortunately, no use had to be made in Lambeth of the School Board's offer, as the Smallpox did not invade any school or class. All children from infected houses, courts, etc., were rigorously excluded from school during the quarantine periods. As a point of interest, and as showing what a Sanitary Authority has to contend with, it may be mentioned that an anti-vaccination circular was distributed broadcast throughout principally the Inner Districts of Lambeth Borough, advising parents not to allow their children to be inspected by the Public Vaccinators, nor to be “poisoned with filth taken from animals, which the Doctors call Vaccine, the evil effects of which they do not themselves understand, but to abolish the filthy practice (of vaccination) altogether.”

THE LOCAL GOVERNMENT BOARD AND THE SMALLPOX EPIDEMIC
IN LONDON.

At the commencement of the Metropolitan Smallpox epidemic, the Local Government Board wrote to the Lambeth Borough Council (and to the other Sanitary Authorities throughout London) drawing attention to the increase of Smallpox throughout the Metropolis, and suggesting energetic measures in the form of isolation of all cases, vaccination of all persons who have been exposed to infection, disinfection of premises, etc. Copies of the Board's memorandum dealing with steps specially requisite to be taken in places where Smallpox is prevalent were enclosed for distribution amongst the Sanitary Inspectors. Previous to the

receipt of such communication from the Board, detailed instructions had been given, and all the machinery duly prepared, by the Lambeth Borough Council, for dealing with Smallpox cases as they arose in the Borough.

CONFERENCE OF METROPOLITAN CITIES AND BOROUGHES.

At the beginning of 1902, an important Conference of Metropolitan Sanitary Authorities was convened, on the initiative of the Metropolitan Borough of Holborn, and held on February 7th, 1902, in the Board Room of the Asylums Board Offices, Victoria Embankment—kindly lent for such a purpose. This Conference was considered necessary on account of the continued prevalence of Smallpox in the Metropolis, and with a view to suggesting further preventive measures (if any). Councillors H. J. Turner and Thwaite attended with the Medical Officer of Health as the appointed delegates of the Lambeth Borough Council—all the other Metropolitan Borough Councils (except Lewisham and Shoreditch), together with the London County Council, being represented. The Chair was taken by the Chairman of the Public Health Committee of the Metropolitan Borough of Holborn, and the Town Clerk of Holborn was appointed the Clerk of the Conference. The result of the Conference may be given in the following resolutions which were passed, such resolutions putting in concrete form the opinions arrived at by the majority of Metropolitan Sanitary Authorities as the result of experience gained in the epidemic, in so far as it had, at that date progressed:—

1. "That, in the opinion of the Conference, the powers and duties at present vested in Guardians of the Poor with regard to vaccination and re-vaccination, should be transferred to, and enforced by, Borough Councils."—[*Nem. Con.*]

2. "That, in the opinion of the Conference, an amendment of the law is necessary, to ensure compulsory vaccination and re-vaccination of all persons in a dwelling house wherein Smallpox has broken out."—[*For, 46; Against, 3.*]

3. "That, in the opinion of the Conference, it should be declared an offence, under the Public Health (London) Act, 1891, to refuse or withhold information, or give false information, with respect to persons living in a house in which Smallpox has broken out, with regard to (*a*) their names, (*b*) employment or occupation, (*c*) schools attended by their children, or (*d*) as to any persons not living in such house, but employed therein."—[*Unanimous.*]

4. "That, in the opinion of the Conference, all disinfections should be carried out by the Sanitary Authority."—[*Unanimous.*]

5. "That, in the opinion of the Conference, the provisions of the Public Health (London) Act, 1891, with regard to the pre-

vention of infectious diseases, require amendment by (a) shortening the period of twenty-four hours, allowed by Section 60, for the master of a house to decide whether he will undertake the disinfection or allow the Sanitary Authority to do so—[*For*, 23; *Against*, 12]; and (b) extending the provisions of Section 64 to the taking of any house, or part of a house, by a person suffering from an infectious disease, or who has been exposed to infection.”—[*Unanimous*.]

6. “That, in the opinion of the Conference, it is advisable that application be made to the Metropolitan Asylums Board to send out, to every Medical Officer of Health in London, *daily* lists of Smallpox cases only, with age and addresses of patients, as is done *weekly* in the case of all infectious diseases.”—[*Unanimous*.]

7. “That the Conference approve the communication, addressed by the Town Clerk of the Royal Borough of Kensington, to the Local Government Board, requesting them to undertake the supply of lymph to any registered medical practitioner who may apply for the same, instead of to Public Vaccinators only.”—[*Unanimous*.]

8. “That, in the opinion of this Conference, an amendment of the law is necessary to the effect that any person inhabiting any part of a house which has been infected by Smallpox, and who, knowingly, associates with other persons without having his person and clothes cleansed and disinfected to the satisfaction of the Sanitary Authority, shall be liable to a fine not exceeding £20.”—[*For*, 26; *Against*, 16.]

9. “That, in the opinion of this Conference, Borough Councils should be allowed to make provision for contacts for whom they may have no accommodation available in their shelters.”—[*Unanimous*.]

In connection with Resolution 1, an amendment suggesting that the administration of the Vaccination Acts should be vested in a Central Authority, so as to secure uniform and consistent action, was lost by 26 to 16, and the resolution, as originally proposed, was afterwards put and carried *nemine contradicente*.

ORIGINS OF THE SMALLPOX CASES.

Each case of Smallpox, as it arose, was carefully investigated, and traced, where possible, to its source. It is interesting to note the following particulars as to sources of infection:—

1. Smallpox was introduced into the Borough from *outside* sources on 154 separate and distinct occasions, viz.:—
Work-places outside 88, “contacts” with outside cases of Smallpox 48, tramps 9, Smallpox Hospitals (Long Reach) 7, infected articles (wearing apparel and carpets) 2. The

outside sources are the City and other Metropolitan Boroughs (Stepney, Southwark, Holborn, City of Westminster, Wandsworth, Marylebone, St. Pancras, Battersea, Greenwich, and Camberwell), St. Albans, Raynes Park, Erith, Swanscombe, Maidstone, Chingford, Dartford, Tottenham, Hertford, Hendon, and Hoxton.

2. Smallpox was spread *within* the Borough itself on 202 separate and distinct occasions, viz.:—Work-places in Lambeth 27, "contacts" with notified Lambeth cases of Smallpox 108, modified Smallpox unrecognised and treated for some other disease 66, infected laundry 1.
3. In 49 cases (*i.e.*, 12.1 per cent.), the sources of contagium could not be satisfactorily traced.

Arising out of the above, the following remarks call for attention:—

1. The Metropolitan Asylums Board (as the Hospital Authority for London) has done much good work in connection with the removal to, and treatment in, Hospitals of notified Smallpox patients, but the disease throughout London has undoubtedly been spread through workmen, who had not been previously protected by vaccination, being allowed to work on the Board's Hospitals Extension at Dartford, near to the existing Smallpox Hospitals, which were at the time occupied by Smallpox patients. In this way, and from this source, many cases of Smallpox have occurred throughout London and elsewhere (5 such workmen sickening in Lambeth Borough alone). The Borough Council's Medical Officer (and others) protested to the Board at the time against this preventable state of affairs being allowed to continue, with the result that it was eventually stopped, and only re-vaccinated men employed on dangerous works. Two cases of Smallpox occurred in Lambeth within 12-14 days of the return from the Smallpox Hospitals of two different patients, and may be causally connected therewith as return cases of Smallpox.
2. Workshops and work-places have proved common sources from which Smallpox has spread—88 cases being traced to work-places *outside* Lambeth and 27 to work-places *inside* Lambeth, making a total of 115 cases, *i.e.*, over a fourth of the whole number of cases notified.
3. "Contacts" account for 156 cases, 108 connected with patients suffering from Smallpox within the Borough, and 48 with patients outside the Borough.
4. The difficulties of diagnosing Smallpox in its protean modified forms have been dealt with elsewhere in the Report,

and in this connection 65 cases have arisen from patients suffering from Smallpox but diagnosed as suffering from other diseases, *e.g.*, Chickenpox and Influenza.

5. The part that tramps or vagrants play in disseminating the disease, not only from one part of a district to another, or from one workhouse to another, but also from one town to another, is well known, and of the 404 cases in Lambeth, 9 were tramps who introduced the disease. The Lambeth Workhouses have been exceptionally free, on account of the adoption of the Borough Council's Medical Officer's suggestions, and the untiring energy displayed by the Guardians' own Medical Superintendent (Dr. Quarry) in practically carrying out such suggestions. On 8 separate occasions a Workhouse or Infirmary was infected, but in no single instance did the disease spread, on account of strict isolation by removal to Hospital, disinfection, and medical inspection (together with re-vaccination of "contacts.") The staffs at the Workhouses and Infirmary were all re-vaccinated as required.
6. In four instances Common Lodging Houses in Lambeth Borough were infected, and in each case, by prompt isolation of the patient, followed by the disinfection of the infected bedroom (or cubicle) and the bedding, etc., the disease was arrested and its extension prevented. The inspected common lodging-house was in each case visited daily for a period of 16 days after removal of the patient and disinfection, and any case of illness amongst the inmates at once investigated medically. No closing of a common lodging-house nor compulsory keeping indoors of the inmates have been rendered necessary, daily enquiries on the premises being found to be all sufficient. The different Workhouses were advised whenever a common lodging-house became infected. Rowton House, in Vauxhall, was carefully watched during the outbreak, and in only 4 instances became infected (in each case the infection being limited to the notified infected person). The usual precautions were also taken in these cases, and in this connection it may be mentioned that the Manager courteously assisted at all times the Borough Officials. The comparative freedom of the Vauxhall Rowton House compared with other Rowton Houses in other Boroughs is cause for congratulation, more especially remembering the numbers of inmates and the natures of their occupations taking them all over London.
7. Tenemented blocks were infected on 20 separate occasions, but in no single instance did the disease spread from the

particular tenements infected to neighbouring tenements. The usual precautions were taken.

8. 4 shops, 3 dining-rooms, and 6 public-houses were infected during the epidemic, but in no single instance did the disease spread. The usual precautions were taken, and in no case was the business interfered with.
9. Infected clothes and carpets appear to have caused the disease in Lambeth Borough in 3 instances—in 2 from outside districts (wearing apparel and carpets), and in 1 in Lambeth through the medium of washing underclothing infected from a case of Smallpox. Bearing in mind the *actual* danger that exists of Smallpox spreading through the sorting or washing of infected clothes, careful enquiries have been made in each notified case of Smallpox in Lambeth as to the laundry or laundries in use, and all suspected, or possibly dangerous clothes, have been traced, taken to the Disinfecting Chamber, and disinfected with steam, and afterwards washed or re-washed. This part of the work has been extensive, on account of several large laundries suspected, and much extra trouble involved; but that this extra trouble was justified will be admitted from a comparison of the one case only in Lambeth that has been traced to infected clothes as compared with the large numbers of cases reported from other districts in this connection. Lambeth's experience of last year in connection with an outbreak of Typhoid Fever spread through infected mangles suggested special precautions being taken during the Smallpox epidemic in regard to laundries and infected clothes. A notice was sent to the occupiers of each infected house prohibiting the sending of infected clothes to the Public Wash-houses.
10. The small percentage (12.1) of cases, the sources of which are not satisfactorily accounted for, is cause for congratulation, and may be regarded as some indication of the care displayed in investigating the different origins of the disease. Upon the care with which such investigations are carried out depends much of the success of dealing with Smallpox outbreaks.

LESSONS TO BE LEARNT FROM THE EPIDEMIC.

1. *Conditions which have favoured the extension or continuance of the Smallpox Epidemic in Lambeth Borough.*
 - (a). Dropping cases of Smallpox being continually introduced from *outside* infected districts.
 - (b). Difficulties in diagnosing cases of modified Smallpox.
 - (c). Workmen allowed to work, by the Metropolitan Asylums Boards' contractors, near to Smallpox hospitals (outside London), without previous re-vaccination; and also workmen allowed to strip the walls of infected rooms (in other districts) without being previously re-vaccinated.
 - (d). Antipathy to, or neglect of, vaccination and re-vaccination, due to thoughtlessness, or to the promptings of others.
2. *Conditions which have tended to check the extension or continuance of the Smallpox Epidemic in Lambeth Borough.*
 - (a). Prompt notification of Smallpox and all doubtful cases.
 - (b). Daily inter-communication amongst Metropolitan (and other) Medical Officers of Health of all information connected with Smallpox cases and "contacts," and the daily issuing by the Metropolitan Asylums Board of returns of patients discharged or dead, visitors to Hospitals, etc.
 - (c). Strict isolation in Hospital of *all* cases.
 - (d). Careful disinfection (with fumigation and spraying), not only of infected rooms, but also of the other rooms and passages and staircases of infected houses, together with stripping off of wall papers of infected rooms by the Borough Council's own men (previously re-vaccinated), etc.
 - (e). Quarantining of all persons in infected houses and districts for 14-16 days, together with the medical inspection of all cases of suspicious illness amongst such quarantines, *e.g.*, absentees from work-places or schools, etc.
 - (f). Vaccination and re-vaccination, which have been carried out in large numbers throughout the Borough, including the re-vaccination of the Sanitary Staff of the Borough Council.

- (g). Sending lists of infected houses to all schools, libraries, public wash-houses, etc.; the preventing of infected clothes going to the public wash-houses; and the collecting and destroying of all Library books found in infected houses (36 books dealt with).

The lessons to be learnt from the epidemic in regard to Lambeth are, from the vaccination point of view, the same *pro rata* as those to be learnt from the epidemic throughout London as a whole. An unbiassed mind must admit that vaccination and re-vaccination recently and efficiently performed are absolute preventatives against an attack of Smallpox, and that vaccination and re-vaccination (even though performed many years back) tend to modify and render harmless the disease, which, in the case of persons unprotected by such means, generally runs a most loathsome and serious course. It is only too apparent that, despite the large amount of vaccination and re-vaccination that have taken place in Lambeth and elsewhere during the epidemic, the epidemic has had to be combatted by other means, which may be tabulated as—

- (1) Exact notification.
- (2) Prompt isolation.
- (3) Efficient disinfection.
- (4) Careful quarantine and medical inspection of all "contacts" or "suspects."

Vaccination and re-vaccination have, unfortunately, not been able to play the part that one could have wished, owing to the pronounced apathy amongst the people in that respect. It is to be feared that Lambeth, and other places, will have to depend upon means of prevention other than vaccination in battling with a Smallpox outbreak in future.

CONCLUSION.

Whilst, as your Medical Officer and as head of the Sanitary Department, I am responsible for the measures that have been taken in dealing with the Smallpox epidemic, I feel that special mention should be made of the loyal support that I have received at all times from the Sanitary Staff, individually and collectively. The inspectors, the disinfecting men, and the sanitary clerks have worked splendidly, and to them is due the credit of having stamped out the Smallpox epidemic in Lambeth Borough, which, though the second largest Metropolitan District, will be found to have suffered *pro rata* less than any other.

My thanks are due to (1) the Metropolitan Asylums Board, whose officers have promptly removed and treated all Lambeth Smallpox patients notified to them; (2) the Lambeth Guardians,

who have carried out my suggestions as to isolation or quarantine wards being provided, and have assisted me in every other possible way through their officials—Dr. Quarry (and his staff), in connection with the Workhouse, and the Vaccination Officers, Messrs. Brooks and Warren, who have been indefatigable in hunting up “contacts” and others for vaccination and re-vaccination; (3) the Medical Practitioners practising throughout Lambeth Borough, who have promptly notified to the Medical Officer of Health all Smallpox and doubtful cases.

Last, but not least, the highest praise is due to the Lambeth Borough Council, and more especially to the Sewers and Sanitary Committee, who have given me a free hand and adopted all my suggestions in dealing with the epidemic, with the result that the epidemic in Lambeth has been stampd out with the small number of 404 patients out of a population of over 300,000, and with a proportionately large saving to the ratepayers, who, had the epidemic been allowed to progress, and not been arrested by the stringent and energ-tic measures taken by the Lambeth Borough Council's officers, would have been put to a very serious and large expenditure, not to mention disorganization of trade, etc.

Under such conditions, my own work as Medical Officer, though throughout arduous and anxious, has been a pleasure.

JOSEPH PRIESTLEY,

Medical Officer of Health.

PUBLIC HEALTH DEPARTMENT,
September, 1902.

Table III.

Shewing Total Number of London and Lambeth Smallpox Patients removed to the Asylums Board Hospitals since 1885 (the year when Smallpox patients were first removed out of London for isolation)

	LONDON.		LAMBETH.		
	Cases removed.	Deaths.	Total cases notified.	Cases removed.	Deaths.
1885	6146	1052	509	418	85
1886	99	22	7	7	3
1887	56	3	1	—	1
1888	62	8	1	1	—
1889	5	—	1	—	1
1890	22	3	15	8	—
1891	63	8	3	2	—
1892	325	35	22	19	1
1893	2376	180	99	86	5
1894	1117	102	26	18	1
1895	941	64	51	43	2
1896	190	9	16	14	2
1897	70	13	2	1	—
1898	5	—	—	—	—
1899	18	3	1	—	—
1900	66	3	—	—	—
1901	1739	256	54	54	4
1902	*	*	350	350†	60

* Returns not yet available.

† 2 patients died of malignant Smallpox before the arrival of the ambulances. The dead bodies were at once removed to Wanless Road Mortuary, and after disinfection buried from there.

