

Mr. W. H. Power's report to the local government board respecting a special mortality among infants at Loughton, in the Epping rural sanitary district.

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**Mr. W. H. Power's Report to the Local Government Board
respecting a Special Mortality among Infants at Loughton,
in the Epping Rural Sanitary District.**

EDWARD C. SEATON, M.D.,
Medical Department,
April 15, 1878.

On the 22nd March 1878, complaint was made by Mr. Octavius Deacon, of Golding's Hill, Loughton, to Mr. Secretary Cross, that a serious attack by skin disease of his own infant had resulted from the use for nursery purposes of violet powder, which on analysis by Mr. G. Jones, F.C.S., had been found to contain in large proportion white arsenic; and further, Mr. Deacon stated his belief that a large and fatal prevalence of skin disease among infants in Loughton had been due to the use in a similar way of violet powder of a like sort. This representation was referred by Mr. Cross to the Local Government Board. On 25th March the Board received a communication from the clerk to the Epping Rural Sanitary Authority enclosing a statement by the Medical Officer of Health to the effect that a special mortality among infants in his district, already reported by him, had, he has now reason to believe, resulted from the use of violet powder impregnated with arsenic. Hereupon the present inquiry was ordered.

I lost no time in putting myself in communication with Mr. Deacon and with the several officers of the Epping Rural Sanitary Authority, and from them received every assistance in carrying out my inquiry. Especially am I beholden to Mr. Fowler, medical officer of health, who has supplied me with important information respecting the occurrences resulting in the mortality referred to; and to Mr. Bell, inspector of nuisances, who has accompanied and assisted me day by day during my investigations. To Mr. Lewis district medical officer, and to other medical men practising in Loughton, my acknowledgments are also due.

The result of this inquiry is as follows:—

Since early March 1877, 29 infants and children in Loughton have been attacked by, and 13 have died of, a peculiar affection of the skin, that had been regarded as an anomalous kind of erysipelas. The disease was described to me by the mothers or others nursing the cases as presenting the following appearances:—

In fatal cases, a generally blackened condition of the skin of the groins and pudenda, which quickly became somewhat swollen and hard; this was frequently the first change observed. Occasionally there was a like condition of the abdomen about and below the umbilicus. The skin of the axillæ and folds of the neck was another part in which blackening and swelling was commonly observed. Invasion of these several parts, when it occurred, was simultaneous. In some instances vesication, variously described as "little white blisters," "yellowish bladders" or "bags of water" preceded or appeared about the same time as the blackness; in others, blackness with, or without, vesication was preceded by a short interval by a bluish red condition of the parts affected. The vesicles breaking discharged clear fluid, and left raw black surfaces, which did not, it would seem, take on suppurative or sloughing action. In no instance was a tense shining appearance of the skin spoken of; nor was there, except in one case, any tendency of the blackened condition of the surface to extend over the limbs or trunk. The constitutional symptoms seem to have been great restlessness, with fits of crying or screaming in the first instance, passing soon into a condition apparently of collapse in which the infant quietly died. The average duration of illness in these cases was four to five days.

In non-fatal cases, the symptoms varied much in severity. In almost all, blisters or bladders like those already spoken of formed between the folds of the groins, in the armpits, and in the neck. In some cases these vesications broke and formed black excavated sores, in the neighbourhood of which the skin became more or less indurated and discoloured. From some of the sores "cores came out," and all discharged yellowish matter. In milder cases minute vesicles burst and left shallow sores that were little if at all discoloured, and that quickly healed under appropriate treatment. The constitutional symptoms do not seem to have been in any instance out of proportion to the local malady. In few, if indeed in any, cases were vomiting or purging prominent symptoms.

There has now to be considered—What has been the nature of the disease, and how did it come about? Has it been erysipelas as it was at first thought to be; or, has it been, as recently alleged, skin-poisoning?

I. *As to erysipelas.* From the above account it appears by no means surprising that the malady in its graver cases (many of the slighter ones did not come under medical treatment) should have been regarded as a disease of the nature of erysipelas. It resembled that disease in several important features, and the constitutional symptoms, particularly of the fatal cases, might well have belonged to erysipelas itself. On the other hand it may be remarked that the malady in question seems to have differed from erysipelas as ordinarily observed in certain not unimportant particulars. There was not, so far as I can ascertain, any of that marked, tense, glistening or shining appearance of the skin, almost invariably present in erysipelas of infants; moreover, the affection had commonly no tendency to wander over the trunk and limbs in the manner customary with such erysipelas; but instead remained localised almost from the first, in each instance, in the parts of the body primarily affected by it. This appears to have been specially notable as regards those slighter cases not medically treated; in such the vesication and subsequent abrasion and induration of the skin was observed only in the folds of the neck, armpits, and genital organs. Nevertheless, before discarding the hypothesis of erysipelas, I thought it well to inquire whether there had been any typical erysipelas among infants or others in the parish; and whether the facts of the distribution of the malady in question could be explained on the supposition that those attacked had had conveyed to them erysipelalous infection. In this sense inquiry has result as follows:—

(1.) *As to typical erysipelas.* Except two cases, occurring in adults, one in October the other in December 1877 (both it will be observed long after the earlier cases of the infantile malady), I cannot hear of any occurrence whatever in Loughton of ordinary erysipelas in persons of any age. Vaccination proceeded as usual and no erysipelas or other disease was observed in connexion with it.

(2.) *As to likely channels for erysipelas propagation,* one kind only seems of importance as being in any degree probable, viz., the baby linen clubs of the parish. These, the church club and the chapel club, have been instituted for the purpose of affording their subscribers body and baby linen during the month subsequent to confinement. One rule common to both clubs provides that clothing thus acquired shall be returned properly cleansed and got up within five weeks from the date of loan; and hence it might have happened that, assuming the disease to have been erysipelas, babies' napkins imbued with specific contagion might have been returned to the club imperfectly cleansed or not properly disinfected, and have thus, on reissue, conveyed to other infants the infection of that disease. Examination of the operations of these two clubs shows that during the last 15 months there have been ten boxes or bags of baby linen in circulation, and that of the 29 sufferers by the malady 17 have received club linen, while 12 have not. On the other hand 33 other infants have during the same period had baby linen from one or other of the clubs without ill result. The 17 sufferers, with 19 others, were all of them members of the church club, the total operations of which during the period referred to are shown in detail in Table I.

TABLE I.

Box.	Order of Issue.	Date of Issue.	Infant attacked.	Date of Return of Box.	Order of Return.
C.C. ⁷ -	1	13 Jan. 1877 -	Mid. March 1877	18 Feb. 1877 -	1
" -	5	20 Feb. " -	No - - -	26 March " -	4
" -	10	14 May " -	No - - -	18 June " -	10
" -	33	11 March 1878 -	No - - -	—	—
C.G.H. ² -	2	20 Jan. 1877 -	4 March 1877 -	26 Feb. 1877 -	2
" -	21	26 Oct. " -	26 Oct. " -	12 Nov. " -	21
" -	29	14 Feb. 1878 -	14 Feb. 1878 -	18 Feb. 1878 -	27
S.P. ¹ -	3	14 Feb. 1877 -	2 March 1877 -	23 March 1877 -	3
" -	9	5 April " -	No - - -	14 May " -	9
" -	12	4 June " -	5 June 1877 -	21 June " -	11
" -	14	30 June " -	1 July " -	6 Aug. " -	14
" -	34	14 March 1878 -	15 March 1878 -	—	—

TABLE I.—*continued.*

Box.	Order of Issue.	Date of Issue.	Infant attacked.	Date of Return of Box.	Order of Return.
C.G.H. ¹ -	6	21 Feb. 1877 -	Early March 1877	27 March 1877 -	6
" -	11	28 May " -	No - - -	12 July " -	13
" -	18	27 Aug. " -	No - - -	1 Oct. " -	18
" -	23	26 Nov. " -	1 Jan. 1878 -	1 Jan. 1878 -	24
" -	27	Jan. 1878 -	14 Feb. " -	—	25
" -	30	18 Feb. " -	Mid. March 1878	20 March 1878 -	30
" -	35	29 March " -	No - - -	—	—
G.P. ¹ -	7	22 Feb. 1877 -	No - - -	26 March 1877 -	5
" -	15	2 July " -	2 July 1877 -	6 Aug. " -	15
" -	17	16 Aug. " -	16 Aug. " -	20 Sept. " -	17
" -	19	26 Sept. " -	No - - -	5 Nov. " -	19
" -	22	23 Nov. " -	15 Nov. 1877 -	17 Dec. " -	22
" -	26	14 Jan. 1878 -	No - - -	18 Feb. 1878 -	28
" -	32	7 March " -	No - - -	—	—
S.P. ² -	4	19 Feb. 1877 -	No - - -	26 March 1877 -	7
" -	8	28 March " -	No - - -	4 May " -	8
" -	13	4 June " -	No - - -	9 July " -	12
" -	24	28 Nov. " -	22 Nov. 1877 -	17 Dec. " -	23
" -	25	31 Dec. " -	No - - -	4 Feb. 1878 -	26
" -	28	13 Feb. 1878 -	No - - -	18 March " -	29
" -	36	30 March " -	No - - -	—	—
G.P. ² -	16	3 July 1877 -	No - - -	9 Aug. 1877 -	16
" -	20	27 Sept. " -	No - - -	5 Nov. " -	20
" -	31	18 Feb. 1878 -	19 Feb. 1878 -	25 March 1878 -	31

The facts to be learned from the above table are not upon the whole suggestive of relation between the operations of the club and the attack of sufferers by the malady, and for the following reasons:—The four first sufferers, attacked almost simultaneously in March 1877, received each of them a separate box from the club, and in one instance only out of the four was the next reissue of the box associated with attack of the infant receiving it. Further, the interval between the issue of the box and attack of the infant, in families invaded by the disease, varied very oddly, and in a way too not easily reconcilable with such incubation period as might have been anticipated of erysipelas under circumstances of conveyed infection. In 8, including the four first sufferers, it varied from two to four or more weeks; in 7 it was nil or one day only; while in two the infant was attacked before receipt of the box. Examination of the same sort as regards the movements of monthly nurses gave similarly negative evidence. Apparently the disease, whatever may have been its origin, has not been carried from case to case by means such as might have conveyed erysipelatous or allied infection.

II. *As to skin-poisoning.* The malady from which the 29 infants have suffered has now to be dealt with in its relation to the particular violet powder that has been alleged to have been the cause of it. This powder had, in every instance that I myself investigated, been bought from one or other of two grocer's shops situated, the one in the High Road, the other at Baldwin's Hill, Loughton. From inquiries by Mr. Bell, inspector of nuisances, it would appear that of many shops in Loughton selling violet powder, these two, and these only, obtained such powder from a certain dealer in the East of London referred to by name by the medical officer of health in his statement already mentioned. Mr. Bell further ascertained that in Loughton this particular powder was sold by the retail tradesmen in small penny packets or boxes each of which bore the name and address of the wholesale dealer in question. The facts of the connexion between the powder thus sold in Loughton and the prevalence of disease are as follows:—

1. Of the 29 sufferers, 27 had the particular powder in use at or about the date of attack. Of the remaining two, the mother of one had the particular powder in the house at the time the infant was attacked, but did not, so far as she can remember, use it; the other mother (whose infant suffered very slightly) had no powder at all, and is of opinion that the soreness of her infant's neck was the result of pressure from the instruments used in delivery.

2. The sufferers with few exceptions (all of whom however had the powder) were grouped near to one or other of the two shops which alone in this extensive parish sold the particular powder in question.

3. Infants using the particular powder, and those alone, were attacked by the malady. This is shown in the following table, which is an abstract of the results of personal inquiry to this end respecting infants born in the parish during the half year ended March 1878. Except where otherwise stated, violet powder of some sort was used to every child, and (with certain exceptions to be considered in the text) only one kind of powder was in use to the several children attacked by the malady.

TABLE II.

Locality.	Date of Birth.	Date of Attack.	Violet Powder from one or other of the two Shops.	Remarks.
Forest Road -	2 Oct. 1877	No - -	No -	? Any powder.
Loughton Park -	4 Oct. "	No - -	No -	
High Road -	5 Oct. "	No - -	No -	
Baldwin's Hill -	6 Oct. "	25 Oct. -	Yes -	
Epping New Road -	15 Oct. "	No - -	No -	
Forest Road -	18 Oct. "	No - -	—	Born in a tent by roadside.
Forest Road -	21 Oct. "	No - -	No -	
Ash Green -	25 Oct. "	26 Oct. -	Yes -	
Forest Road -	26 Oct. "	No - -	No -	? Any powder.
High Road -	1 Nov. "	No - -	No -	
High Road -	7 Nov. "	31 Dec. -	Yes -	
Smart's Lane -	8 Nov. "	No - -	No -	
Baldwin's Hill -	11 Nov. "	15 Nov. -	Yes -	
High Road -	14 Nov. "	No - -	No -	
Forest Road -	18 Nov. "	No - -	No -	Only lived 15 minutes.
Ash Green -	20 Nov. "	22 Nov. -	Yes -	
Smart's Lane -	20 Nov. "	No - -	No -	
England's Lane -	27 Nov. "	1 Jan. 1878	Yes -	Habitually used starch.
Smart's Lane -	30 Nov. "	No - -	—	Left district.
Loughton Road -	16 Dec. "	No - -	No -	
Warren Hill -	24 Dec. "	No - -	No -	
Smart's Lane -	24 Dec. "	No - -	No -	
Baldwin's Hill -	29 Dec. "	30 Dec. -	Yes -	
Ash Green -	30 Dec. "	14 Feb. -	Yes -	At first used powder from previous confinement.
Mutton Row -	30 Dec. "	No - -	No -	
Golding's Hill -	2 Jan. 1878	20 Feb. -	Yes -	
Trap's Hill -	3 Jan. "	No - -	No -	
York Hill -	5 Jan. "	No - -	No -	
Forest Road -	19 Jan. "	No - -	No -	
Forest Road -	30 Jan. "	No - -	No -	
Smart's Lane -	5 Feb. "	No - -	No -	
Warren -	8 Feb. "	No - -	No -	
Baldwin's Hill -	10 Feb. "	14 Feb. -	Yes -	
Forest Road -	12 Feb. "	No - -	No -	
York Hill -	17 Feb. "	19 Feb. -	Yes -	
Baldwin's Hill -	19 Feb. "	Mid. March	Yes -	
High Road -	1 March "	No - -	No -	
High Road -	11 March "	No - -	No -	
Golding's Hill -	13 March "	15 March -	Yes -	

4. Further and detailed evidence confirmatory in a high degree of relation in the sense of effect to cause between the malady of infants and the use of the particular powder, could, were it necessary, be given in regard of most, if not all, of the cases attacked by the disease. But the following will suffice. They are also explanatory of the interval between birth and attack observed in certain cases recorded in the above and in the previous table.

E. W., born 6th October 1877; attacked 25th October. Mother states that for the first fortnight from birth she used for dusting the infant violet powder purchased at a distance. This being expended, she obtained a packet of the particular powder from one of the two shops in the parish selling it. A day or two after using this fresh powder she noticed redness, blackness, and swelling of the privates and neck of the infant; in three more days it died. C. N., born 7th November 1877; attacked 31st December. Mother from infant's birth used for dusting it violet powder from a

chemist near at home, and perhaps some also from a friend. On 29th December she attended her daughter in confinement and took with her her own infant. Here she used for both infants powder from one of the two shops referred to. On 30th December her daughter's, and on 31st December her own, infant was attacked. Daughter's infant died January 1st; her own recovered, but is much scarred. P. S., born 30th December 1877; attacked February 14. From birth until about February 11th the mother used violet powder remaining in the house since her last confinement; she also used starch. About the last-mentioned date she obtained some of the particular powder, and after using it perhaps three days noticed pimples on the groins, under the scrotum, under the arms, and at both sides of the neck. The pimples soon turned black, and became deep holes discharging much yellow matter. Used the powder a few days only; "did not like it;" "it was yellow;" burned it. Child recovered. E. D., born 2nd January 1878; attacked about 20th February. The mother used starch powder from infant's birth until two days before it fell ill, when, having no starch powder, she procured a packet of the particular violet powder. This was used two days only, but the infant suffered in the same way as P. S. It recovered, but is scarred. H. J., born 19th February 1878; attacked middle March. The mother at and after infant's birth used violet powder received as a present from London. The day before the infant was attacked she commenced using some of the particular powder recently purchased. The groins only were affected in this case; they became black and broke into sores. The use of the powder was discontinued as soon as the infant fell ill. On one occasion, however, it was used to a sister aged two years and four months; she suffered in like manner. Both children recovered. A. W., born 26th May 1877; attacked 9th June. The mother states that until the infant was 11 days old she had no powder at all. About 5th June she purchased a packet of the particular powder and used it to the infant in the ordinary way. On 9th June she noticed that the privates were swelled, and that white bladders as big as a hazel nut had formed thereon, as well as under the arms and around the neck. These changed colour and broke into deep wounds which discharged yellow matter. Cores came out from the sores under the arms. The use of the powder was discontinued after six days, and in about two months the infant was fairly well. Hereupon the mother recommenced the use of the particular powder, and the same night the infant was very restless and screamed a great deal. Next morning "the bladders were out again;" the powder was then burned. The child eventually recovered, but is deeply scarred about the scrotum, groins, neck, and armpits, as if by sloughing of the soft parts hereabouts. F. W., born 20th February 1877; attacked early in March. From birth the mother used violet powder from a chemist near at hand, but when the infant was about a fortnight old she bought, and used to the lower parts of its body only, a packet of the particular powder. Next day the infant broke out into sores about the navel and pudenda. The use of the particular powder was at once discontinued and the infant shortly got well. Some months later the mother being out of violet powder, again used the particular powder to the infant, and at once the sores reappeared. The powder was then burned. A. D., aged three years, was attacked about Christmas 1877 by varicella. During recovery and while the pocks were dying away, she herself purchased a packet of the particular powder, which was then used for dusting the eruption about the pudenda. Almost at once the dying vesicles became sores which turned black and discharged matter; on healing they left scars. It is stated that in this instance the powder was used on one occasion only. T. C., born 15th August 1877. 36 hours after birth pimples and bladders formed about the privates and navel, which parts swelled, turned black, and became hard; no sores. Infant died 21st August. The particular powder was used in this instance from birth. Three months afterwards some of the remainder of this powder was used for dusting sores on the head, face, and arms of a sister aged four years who had recently suffered from measles. These sores became much worse and inflamed; those on the arms have left large scars.

Incidentally it is here shown that those parts only of infants bodies to which toilet powder is ordinarily applied have been affected by the malady; and further that such application of the particular powder has been constantly followed in very few days by the symptoms complained of. Additional evidence respecting the shortness of the interval between application of the particular powder and the appearance of the symptoms attributed to it, is afforded by the fact of 16 infants to whom this powder was applied from birth onwards no less than 10 were attacked in from one to four days. Nor is the conclusion, irresistible from the foregoing evidence, in any way weakened by the six instances in which the attack was not immediate; for there must have been a beginning to the mischievous quality of the powder bought at the shops of

the vendors of the particular powder. These six cases were at the very commencement of the total series. All of them, and they were of various ages, from two to 20 weeks, fell ill at the same time, viz., early in March 1877. And though all of them it would appear had used more than one packet of violet powder from one or other of the two shops in question between birth and the commencement of illness, in more than one instance a fresh packet of powder is remembered to have been procured a day or two before attack. So far from weakening, these exceptions strengthen the conclusion; more than that, they seem to indicate that not until the end of February or early March of last year did violet powder bought at these two shops in Loughton possess hurtful properties.

Probably enough has been made out to satisfy any reasonable doubt that may have been entertained as to the connexion between the use in Loughton of the particular violet powder and the lamentable effects attributed to it. It will be observed that the evidence is absolutely independent of the nature of the irritating agent in the powder. Whether or not that agent may have been arsenic, as found by Mr. Jones in the specimens submitted to him by Mr. Deacon, matters nothing to the proof I have given of this connexion. But I have submitted to Dr. Dupré for analysis samples of the violet powder which I obtained from the mothers of three of the sufferers from the malady, and when Dr. Dupré's report is received I shall append it. Meanwhile I annex a tabulated statement of the cases investigated.

W. H. POWER.

9 April 1878.

REPORT on three samples of VIOLET POWDER received from Mr. W. H. POWER,
April 4, 1878.

All the powders were of a very pale yellowish colour, and rather more gritty to the touch than ordinary violet powder; they were also appreciably heavier, bulk for bulk. Taking the weight of a given bulk of ordinary violet powder as 1, the same bulk of these powders would weigh about 1.25. Under the microscope they are shown to consist of potatoe starch mixed with a very considerable proportion of crystalline matter, among which regular octahedra (arsenious acid) can be distinguished. On burning they evolve a very powerful arsenical odour.

Chemical analysis showed them to consist in 100 parts of

	A	B	C
Starch with traces of other organic matter - - -	37.58	34.56	36.76
Arsenious acid (white arsenic) - - -	50.34	51.40	48.94
Oxide of lead* - - -	1.07	1.16	0.83
Other mineral matters chiefly carbonate of magnesia -	11.01	12.88	13.47
	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00

A. DUPRÉ.

Westminster Hospital, April 13, 1878.

* The exact combination in which the oxide of lead occurs has not been determined, whether as carbonate or combined with the arsenious acid or in some other form.

29 cases dealt with in Mr. W. H. Power's Report respecting a Special Mortality among Infants in Loughton Parish.

	Locality in Loughton.	Date of Birth.	Date of Attack.	Result.	Remarks as to use of the particular Powder.	Reference to in Report, under		
						Table I.	Table II.	Detailed evidence.
1	Golding's Hill	14 Feb. 1877	2 March 1877	Died 7 March 1877.	Powder from one of the vendors of the particular powder used from birth onwards.	No. 8	—	—
2	Baldwin's Hill	7 Dec. 1876	4 March "	Died 6 March 1877.	Powder from one of the vendors of the particular powder used from birth onwards. Had four packets.	—	—	—
3	Baldwin's Hill	20 Jan. 1877	4 March "	Died 8 March 1877.	Powder from one of the vendors of the particular powder used from birth onwards.	" 5	—	—
4	Baldwin's Hill	17 Oct. 1876	Early March 1877	Recovered -	Powder from one of the vendors of the particular powder used from birth onwards, fresh packet just before attack.	—	—	—
5	Baldwin's Hill	20 Jan. 1877	7 March 1877	Recovered -	Powder from one of the vendors of the particular powder used from birth onwards till attack, probably fresh packet just before attack.	—	—	—
6	Golding's Hill	12 Jan. "	Mid. March 1877	Recovered -	Powder from one of the vendors of the particular powder used from birth onwards till attack, probably fresh packet about time of attack.	" 1	—	—
7	Ash Green -	20 Feb. "	Early March 1877	Recovered -	Other powder till day before attack, then particular powder.	" 13	—	F.W., page 5.
8	High Road -	4 June "	5 June 1877	Died 8 June 1877	The particular powder used from birth.	" 10	—	—
9	Pump Hill -	26 May "	9 June "	Recovered -	The particular powder on and after 11th day from birth. Was twice attacked.	—	—	A.W., page 5.
10	Baldwin's Hill	29 June "	1 July "	Recovered -	No powder of any kind. Thought by mother to have had local injury at delivery.	" 11	—	(doubtful case)
11	Baldwin's Hill	30 June "	2 July "	Died 7 July 1877	The particular powder used from birth to attack.	" 21	—	—
12	Baldwin's Hill	— 1875	Aug. "	Recovered -	The particular powder exceptionally used to a chafed thigh.	—	—	—
13	Stoney Path -	15 Aug. 1877	16 Aug. "	Died 21 Aug. 1877	The particular powder used from birth till death.	" 22	—	T. C., page 5.
14	Baldwin's Hill	6 Oct. "	25 Oct. "	Died 28 Oct. 1877	Other powder till day or so before attack, then particular powder.	—	No. 4	E. W., page 4.
15	Ash Green -	25 Oct. "	26 Oct. "	Died 30 Oct. 1877	The particular powder used from birth onwards.	" 6	" 8	—
16	Baldwin's Hill	11 Nov. "	15 Nov. "	Recovered -	The particular powder used till attack, then discontinued.	" 24	" 13	—
17	Ash Green -	20 Nov. "	22 Nov. "	Died 30 Nov. 1877	The particular powder used from birth till death.	" 30	" 16	—
18	Stoney Path -	— 1873	— Nov. "	Recovered -	The particular powder exceptionally used to sores following measles.	—	—	Sister to T. C., page 5.
19	Golding's Hill	— 1875	Xmas "	Recovered -	The particular powder exceptionally used to sores from chicken pox.	—	—	A. D., page 5.
20	Baldwin's Hill	29 Dec. 1877	30 Dec. "	Died 1 Jan. 1878	The particular powder used from birth till death.	—	" 23	Infant of N.'s daughter, page 5.
21	High Road -	7 Nov. "	31 Dec. "	Recovered -	Other powder till 29 Dec., particular powder at and after that date.	—	" 11	C.N., page 4.
22	England's Lane	26 Nov. "	1 Jan. 1878 -	Recovered -	Starch only thought to have been used; but particular powder kept in house.	" 16	" 18	—
23	Ash Green -	30 Dec. "	14 Feb. "	Recovered -	Powder remaining from previous confinement till few days before attack, then particular powder.	" 17	" 24	P.S., page 5.
24	Baldwin's Hill	13 Feb. 1878	14 Feb. "	Died 18 Feb. 1878.	The particular powder used from birth till death.	" 7	" 33	—
25	Golding's Hill	2 Jan. "	20 Feb. "	Recovered -	Other powder used till two days before attack, then, for two days, particular powder.	—	" 26	E.D., page 5.
26	Golding's Hill	13 March "	15 March 1878.	Died 19 March 1878.	The particular powder from birth till illness.	" 12	" 39	—
27	Baldwin's Cottage.	— Dec. 1875	Mid. March 1878.	Recovered -	The particular powder exceptionally used a day or so before attack.	—	—	Sister to H. J., page 5.
28	Baldwin's Cottage.	19 Feb. 1878	Mid. March 1878.	Recovered -	Powder from London till day before attack, then particular powder.	" 18	" 36	H. J., page 5.
29	York Hill.	17 Feb. "	19 Feb. 1878	Died 22 Feb. 1878.	The particular powder from birth.	" 36	" 35	—

NOTE.—Nos. 3 and 4, 13 and 18, 4 and 12, and 27 and 18 occurred, in each instance, in the same household.

