INQUIRY ON CHOLERA.

(No. VII.)

By THOMAS HUNT, Esq.

MR. REID, surgeon to the Kent and Canterbury Hospital, has forwarded the following report, which is, in many respects, a model, and will be read with unusual interest.

Canterbury, March 30, 1850.

Dear Sir,—Wishing to assist the inquiry relating to cholera set on foot by the Provincial Medical and Surgical Association, I enclose the accompanying report of the attack which this city suffered in the last epidemic. I have read with much interest the notices in our journal regarding this inquiry, which have proceeded from the Council and yourself. Only two cases of cholera fell to my share, but the opportunity was given me of seeing many of the cases that occurred, and I watched with much interest the whole development and progress of the malady. I am indebted to my excellent colleague Dr. Lochée for the main facts, and the larger portion of the enclosed account of the attack in this city. Dr. Lochée collected all the facts that could be gathered from the medical men who attended the cases, to form a report for the College of Physicians. This report he has kindly allowed me to use for the present purpose; where I have employed it I have used inverted commas. In his investigation, Dr. Lochée, with one exception, which will be seen in the tables he has drawn up, confined himself to the fatal cases. This, I believe, was done in order, as much as possible, to avoid dealing with doubtful or spurious cases, and in consequence of the difficulty of ascertaining with sufficient correctness the number of persons attacked with the *algide cholera*. Through the kindness of Mr. Rigden I have been able to append a more particular account of all the cases, fatal or otherwise, which he attended. The report has been, as much as possible, confined to facts; matters of opinion, as of little value in such inquiries, being left out of consideration. The account is not so full and complete as I should have liked it to have been, but I trust you will find something in it to assist the investigation you are conducting. I shall be very happy to explain anything that requires further elucidation, or to fill up any deficiencies, as far as I can. The ordinary interruptions and occupation of general practice have prevented my forwarding these papers sooner. The cases enumerated in Appendix No. II. are, of course, included in Dr. Lochée's table, Appendix No. I. The map I have added, thinking it would assist in explaining localities, &c. I have endeavoured to mark the points in the city where cholera occurred, and to date the period of attack, as near as I could.

Yours sincerely,

JAMES REID.

To Thos. Hunt, Esq.

The city of Canterbury, occupying a space of 3240 acres, is situated in a valley which is about a mile wide,

and is open to the N.E. and S.W. The ridge of hills on either side is of moderate height, being more abrupt on the northern than the southern aspect. The city is built principally on the south side of the valley, upon alluvial soil of considerable depth; its greatest extent is in the course of the river. A smaller but a healthier portion is placed upon the gentle ascent to the southern ridge of hills, the soil being gravelly, with a variable mixture of sand. The river is narrow and shallow, and runs with a tolerably strong stream, in a meandering course from S.W. to N.E. A little distance above the city it divides, but unites again below, so as to form an island, upon which a considerable portion of the town is built. This part of the city, owing to the flow of water being impeded by mill-dams on either stream, is liable to occasional inundations when there is any large or sudden accumulation of water from the river and streams in the valley above. Such an occurrence took place in the winter of 1848-9, and the lower parts of a large number of houses were flooded. The meadows in the valley immediately above the city are frequently covered with water in wet seasons.

The population in 1841 consisted of 15,435 souls, and had increased in the preceding ten years at the rate of 12.8 per cent.; of these, 7771 were males, and 7664 females.

The poorer population, amongst whom the cholera principally prevailed, are chiefly agricultural labourers, who reside for the most part in the lower and flatter parts of the city, in the neighbourhood of the river. Many of their dwellings are the rooms of the old dilapidated houses of by-gone centuries, whilst others are the thin built cottages of more modern time, imperfectly secured from damp and draught. Their diet is of the coarse kind usually eaten by the labouring class in the country; vegetables form a large portion of it; meat a small part, pork and bacon being most frequently the kinds eaten.

The drainage of the town is as bad and imperfect as it commonly is in the old cities of this country. The system of cesspools prevails. What drains there are run into the branches of the river which form the natural channel for carrying off the refuse. Pigs are kept in abundance by the poorer classes in the back premises of their cottages, which are often on that account in a very offensive state. There is a partial supply of good spring water from the neighbouring hills to the better portion of the city, and there is a company which supplies river water to the houses of those who can afford to pay for it. The remainder of the supply is furnished from wells and pumps, or by directly drawing it from the river. These last are the sources whence the lower orders mainly derive what they require.

Report of the attack of Cholera in 1849.

"From July 17th, 1849, to October 17th, 1849, the registered deaths from cholera, English cholera, diarrhœa, and bowel complaint, in the twenty-two parishes forming the city of Canterbury, amounted to seventy.

"Two fatal cases of diarrhœa were registered on July 1st and July 7th respectively."

Of the seventy deaths registered, fifty-three were

accounted for in the returns made by the medical gentlemen who witnessed the malady during its prevalence in the city, and upon these fatal cases the report is founded. "It will be thus seen that seventeen deaths are left unnoticed. This discrepancy no doubt arises in great measure from the want of proper precautions in registering the deaths, the evidence of nurses or other ignorant persons, who were very likely to call any fatal disease which at all resembled cholera by that name, being taken, as to the cause of death. This is rendered the more probable from the fact of many of these returns, as put down in the registrar's books, not being certified by medical men. Ten or twelve deaths from cholera were registered in August, when, as it will be seen, only two deaths are recorded in the medical reports.

"The *first* case of 'algide cholera' occurred in a travelling tailor, (Thomas Dixon,) who came direct from Chatham on the 15th of July, in apparent good health. He dined heartily on beef and potatoes at mid-day, was seized in the evening with violent purging, vomiting, and cramps, which ran into collapse in twelve hours, and he died on the 17th, about twenty hours from the commencement of his attack. He put up at the Traveller's Rest, a low inn in North Lane, immediately adjoining the river. There is no evidence of his having come from an infected place, or of his having been in contact with infected persons or things. He was addicted to drinking, and had had a severe attack of cholera in 1832, and when taken with it this time loudly declared the nature of his complaint, and that he should die of it.

"The *two next* cases occurred almost simultaneously, during the night of the 18th, in the same lane, which runs parallel with the river (see report on Goldup's children, Appendix No. 4.) Another case appeared on the 19th, in another part of the town, but in the person of a man who had been working in the coal yard where the cottage was placed, in which the two instances of the disease occurred on the 18th. On the 23rd and 24th two cases (No. 2 and 3, Appendix II.,) were attended on the same side of the river as those of the 18th, though lower down. One, if not two other persons, who resided on the opposite side of the stream had been attacked and died before these last two cases. Seventeen deaths took place in July, and the malady then appeared to subside.

"During the whole of August, and up to the end of the thirty-first week in September, only two fatal cases are recorded in the medical reports. The Registrar's book gives a return of ten or twelve, but these are probably returned without sufficient authority in the manner already alluded to."

All the cases that happened at this time, with the exception of the patient that died on the 19th, were in localities bordering on the river.

At the end of the first week in September cholera again prevailed in the city with renewed severity, and it now appeared in parts of the city more distant from the river, though many cases still occurred in that vicinity. Twenty-three of the cases reported were noticed in this month, and nineteen in October.

"The disease was particularly virulent in one badly-drained lane, (Burgate Lane,") where four slaughter-

houses were situated, and was especially located in three cottages of a set of five that formed a continuous line of building. These cottages were placed under circumstances very favourable to the development of the malady. Four or five feet from the back of the buildings stands the city wall, fifteen feet high, and obstructing the admission of air; the space between the wall and the cottages is flanked on either side by buildings as high as the cottages. One of these buildings is a slaughter house. In this confined space were five privies, which were full, and in some instances "the contents were oozing through the brick work and flooring;" refuse from the houses, moreover, was strewed about in the corners of this space. The following diagram will illustrate the position of the Cottages:—

In another neighbourhood, (Best Lane,) where four cases of cholera occurred, the houses were supplied by water from a well which was in close contact with a cesspool, and almost all the persons drinking the water had been about that time afflicted with disordered bowels. The same locality was also a few months before visited severely with typhus.

Cases of cholera appeared in this last neighbourhood

on the 6th, 8th, 21st, and 24th of September. The patient attacked on the 24th, a female aged 70, died in seventeen hours, having previously had diarrhoea for several days. (Appendix II., No. 9.) The niece of this old woman, who resided in one of the cottages in the first district already mentioned, (marked *c* in the diagram,) nursed her, in company with two young women who acted in the same capacity. After her aunt's death she took home some food and the clothes that had been worn by the deceased, together with other articles that had been in the room. The food was eaten, but the clothes were allowed to remain uncleansed in a heap in one of the up-stairs rooms. The two young women, her fellow nurses, were not affected.

"On the 2nd of October the husband of this woman was attacked, and died in thirty-six hours. On the evening of the same day a son, aged 14, was attacked, and died in twenty-four hours. On the same day, October 2nd, four persons, two of them children, in the adjoining cottages (marked *d* and *b* in the diagram,) were attacked. Two of these died.

"October 3rd. This woman herself was attacked, and died in twenty-four hours. Three other children of this family, of the ages 3, 15, and 12 respectively, were taken ill on the 3rd, though not so severely, and were removed to the Union, where they eventually recovered."

This family were known in the parish as very dirty and irregular.

"The old grandfather of the children, who visited the family on the 3rd and 4th, having diarrhoea at the time, from which he had suffered for a week, was attacked on the 7th, and died in nine hours."

"Four women in succession, who acted as nurses to these parties and to the parties next door, between the 3rd and 7th of October, took cholera." One of them was seized after she had removed to the Union, which had been recently finished, and was situated in a high and healthy situation above the city.

"Two of these nurses died; one in nine hours, the other of consecutive fever on the fourth day.

"Lastly, on October 10th, two labourers were sent by the authorities to whitewash and otherwise cleanse these pestilential cottages. One of them ate some bread which he found on the table; was seized with cholera in the evening, and died in ten hours. The other man was also seriously attacked with cholera the next day, but he recovered."

It should be stated in connection with these seventeen cases of cholera, that none had occurred in the whole parish (which is situated in the upper part of the town, and in the best populated neighbourhood,) before the woman had returned from nursing her aunt, and that none re-appeared after these "denizens and visitors of these cottages" had been seized. Diarrhoea prevailed at the time in the lane, as it did everywhere else.

No fresh cases were noticed in the city after the 11th of October. The malady seemed to terminate in the attacks connected with Burgate Lane.

It will be seen by reference to Appendix No. I., and

also No. II. and III., that cholera invaded the city, then subsided, (indeed disappeared for a time, no cases having been noticed by the medical men between the first week in August and the first week in September,) and afterwards returned with fresh vigour. The nineteen deaths that took place in the first attack happened in a period of about fourteen days, whilst the thirty-four deaths that are recorded in the second invasion extended over a period of about thirty-five days.

An accurate return of the number of recoveries from algide cholera has not been obtained, but there is good reason to believe that they did not amount to more than twenty-nine; twenty-two of these are accounted for in the accompanying records. This will give eighty-two as the number of persons attacked, and the proportion of the recoveries nearly as three to five deaths. It may be stated generally as a fact, that on the first visitation of the malady in July and August, though the number of cases was fewer than in September and October, they were more fatal, and ran a more acute course. Recovery and consecutive fever were more frequent in September and October. Amongst the group of symptoms usually observed and noticed as indicating the disease, the only one that differed to an extent that appeared general, was the colour of the extremities and surface of the body. This was not a dark blue or purple, but a livid or leaden hue. The late Dr. Scudamore, who saw many of the cases, remarked, that this circumstance was a peculiarity in the disease as contrasted with that which he had witnessed in 1832. Mr. Rigden particularly alluded to this point in reporting upon the symptoms noticed in the cases he attended. He further observed in several of the *fatal* cases, but especially in one, (marked 9 in Appendix II.,) the peculiar electrical sensation communicated to the head, which has been described by some writers on cholera.

Treatment.—"The treatment most frequently resorted to was small and frequent doses of calomel, (generally with opium,) together with the various means recommended for bringing about re-action and heat to the surface. Six or eight had Dr. Stevens's saline powders given at some period of the attack; stimulants of every kind were also combined with the other remedies, so that, generally speaking, the worst cases had no one remedial agent tried upon them, but a union of nearly all that could be thought of." In one instance the plan of Dr. Stevens was alone adopted throughout the case, without any good effect. Some notice of the use of common salt, and the remarks upon treatment by Mr. Rigden, will be seen in a note at the end of Appendix No. III.

Concurrent Diarrhoea.—Diarrhoea, which had commenced in June, and prevailed in July, increased at the period of the visitation of cholera, and continued to the end of October.

"Six hundred and seventy-five persons variously affected with diarrhoea were prescribed for at the hospital as emergent cases, from July 24th to November 16th. In the vast majority of these cases the disease presented itself under the usual form of the autumnal

malady, but there were some in whom it was characterised by serous discharge, whilst three are known to have gone on into fatal cholera. The ordinary bowel complaint yielded almost at once to the chalk mixture, with aromatics and astringents, whilst the graver form of serous diarrhoea was for the most part checked without difficulty, by Dr. Groves's combination of acetate of lead and opium."

Table showing the number of cases of Diarrhoea treated at the Hospital.

Period of application.	No. who applied.	Total from first application.
From July 24 to July 27	12	12
Week ending Aug. 3	22	34
" " 10	10	44
" " 17	16	50
" " 24	14	64
" " 31	39	103
" Sept. 7	44	147
" " 14	80	227
" " 21	89	316
" " 28	83	399
" Oct. 5	79	478
" " 12	92	570
" " 19	39	609
" " 26	30	639
" Nov. 2	18	657
" " 9	12	669
" " 15	6	675

The hospital was not open for the treatment of persons affected with diarrhoea as cases of emergency until the 24th of July, when cholera had visited the city about a week, and it was not generally known for several days that such assistance might be obtained at the hospital. Disregarding, therefore, the first number in the second column of the foregoing table, it will be seen by comparing it with Appendix No. I., II., and III., that there was a general increase in the cases of diarrhoea during the period that cholera prevailed most. All, doubtless, had something to do with this, and to such a cause may in great measure be attributed the suddenly increased number for the week ending October 12th; for it was during that week the cases in Burgate Lane occurred, and there was a considerable sensation produced on account of them in the city. I may here mention that in many of the severer forms of bilious diarrhoea that came under my care, I noticed a difference from the ordinary autumnal complaint of the same degree of intensity, in the greater amount of depression quickly produced, and the slower convalescence that follow. I do not know if this was observed by other practitioners in the city.

"The cholera was entirely confined to the lower orders; there is no recorded cases of the disease among the higher classes in the city. Our public institutions were also exempt, no case occurring in our hospital, county or city gaol." This latter building is close upon the river, and opposite North Lane, where cholera first appeared. The inmates of the workhouse were also not attacked. The house is immediately on the banks of one of the streams."

APPENDIX No. I.—Dr. Locké's table of fatal cases, &c.

Date.	Number of cases reported by	Age.	Duration of life after collapse set in.	Duration of previous diarrhoea.	Localities : Number of cases in each.
July.	Mr. Cooper ... 8	One 6 mths. One 2 years Three 3 years Four 5 years Four 6 years Two 7 years Two 8 years Two 10 yrs. Three 12 yrs. Three 14 yrs.	One lived five hours	Two 2 wks.	North-lane 9
	— Rigden ... 3				Best-lane 4
	— Holtum ... 1				St. Peter's-pl. 4
	— Reid ... 2				White-horse } 4
	— Andrews 3				Lane ... }
	Total ... 17	Male. 11		Female. 6	
August.	— Cooper ... 0	One 18 yrs. Two 25 yrs. Three 32 yrs. Four 40 yrs. Two 44 yrs. Three 48 yrs. Six 50 years. Two 60 yrs. One 65 yrs. Four 70 yrs. One 72 yrs. Seven not recorded ...	Ten collapse over in about 30 hours; but ran into fever, and died between the fifth and seventh days	Three six hrs. Two 7 hours Two 8 hours Four 10 hrs. Seven 12 hrs. Seven 24 hrs.	Coal-harbour-lane ... } 3
	— Rigden ... 0				Three 2 days
	— Holtum ... 1				Eight 24 hrs.
	— Reid ... 0				Northgate, nr. ditto ... } 1
	— Andrews 1				Palace-street 1
	Total ... 2	1			1
September.	— Cooper ... 7	One 18 yrs. Two 25 yrs. Three 32 yrs. Four 40 yrs. Two 44 yrs. Three 48 yrs. Six 50 years. Two 60 yrs. One 65 yrs. Four 70 yrs. One 72 yrs. Seven not recorded ...	Ten collapse over in about 30 hours; but ran into fever, and died between the fifth and seventh days	Two 7 days One 6 days Three 2 days Eight 24 hrs. Six 12 hours	Burgate-lane 17
	— Rigden ... 8				Abbot's-place 3
	— Holtum ... 3				Beer-cart-lane 1
	— Reid ... 0				Stour-street ... 1
	— Andrews 5				St. Mildred's 3
	Total ... 23	12			11
October.	— Cooper ... 17	One 18 yrs. Two 25 yrs. Three 32 yrs. Four 40 yrs. Two 44 yrs. Three 48 yrs. Six 50 years. Two 60 yrs. One 65 yrs. Four 70 yrs. One 72 yrs. Seven not recorded ...	*Eight recovered	Twelve had no marked pre-monitory symptoms; the state of collapse came on within three hours from the moment of attack	Staplegate ... 4
	— Rigden ... 2				Rosemary-Lane 1
	— Holtum ... 0				Cotton-mill-lane 2
	— Reid ... 0				Rose-lane ... 1
	— Andrews 0				Pound-lane ... 1
	Total ... 19	9			10
GRAND TOTAL ...					33 ... 28
					61

* Enumerated on the table because of their connexion with the "Burgate Lane cases."

APPENDIX No. II.

Analysis of twelve fatal cases of Cholera attended and reported by Mr. Rigden.

No.	Sex.	Age.	Previous Diarrhoea.	Period of Attack.	Duration of Collapse, &c.	Circumstances preceding the Attack.	Evidence relating to the spread of the Disease.
1	M.	70	For 14 days Without treatment	July 19th, 9 A.M.	24 hours	Worked in locality where cholera was prevalent, but had not been in contact with persons affected	None of the family or attendants affected.
2	M.	60	7 days	July 23rd, 12 A.M.	25 hours	Dwelling near river. Employed on previous day in cleaning an offensive dyke in Marshes	None of the family or attendants affected.
3	M.	50	None	July 24th, 9 A.M.	23 hours	Lived in same row as No. 2, but there had been no communication. Brought home from work attacked	None of the family or attendants affected.
4	F.	60	14 days. No treatment	Sept. 5th, 11 A.M.	About 18 hrs.		The husband and son attacked; the former became collapsed. Both recovered. Attendants not attacked
5	F.	50	Several days	Sept. 6th	About 12 hrs.	Very nervous temperament. Had been in the habit of rising water from well in close proximity to a cess-pool. No contact with affected persons traced. Many drink the water from the same well. Had disturbed bowels	No other member of the family attacked. A female lodging in the same house attacked on the 8th. She had no communication with No. 5. Was attended by another surgeon.
6	F.	22	A few days	Sept. 8th	About 9 hours	On a visit at her mother's. Not able to trace the disease in locality. She came from her mother's house near the river	None of the family or attendants attacked.
7	M.	5		Sept. 10th	More than 24 hours. Died of consecutive fever, with symptoms of cerebral effusion Sept. 18th	Residing in a close confined court in the higher part of the town	No member of family attacked. A little girl living in same lane, who had been frequently to the house during illness of No. 7, but not near him, was attacked on Sept. 18th. Went through stage of collapse, and recovered.
8	F.	5		Sept. 21st	Died Sept. 24th with symptoms of cerebral effusion	House near the river in same locality as No. 5, and supplied with water from the same well	
9	F.	70	Several days	Sept. 24th, 3 A.M.	18 hours	Same locality as 8 and 5. Water supplied from the same source. Another woman in the same house affected at the same time, but no communication	The niece who nursed her took away clothes from the house. Was attacked Oct. 3rd, and died. Two nurses were not affected.
10	...	6 mths.		Sept. 27th	Sept. 28th.	Near river	The father subsequently had disturbed bowels. No other symptoms.
11	F.	69		Oct. 3rd	24 hours	Resided in higher part of city	
12	F.	65	Several days	Oct. 5th	About 28 hrs.	Near river	

APPENDIX No. III.

An Analysis of fourteen cases of Cholera which recovered, attended and reported by Mr. Rigden.

No.	Age.	Sex.	Symptoms : their Nature and Severity.	Treatment.*	Date of Attack and Recovery.	Local and other circumstances.
1	50	F.	Constant vomiting and purging, rice-coloured evacuations; spasms particularly severe in muscles of abdomen and calves of legs; feeble pulse and voice; coldness, lividity, and rapid shrinking of surface	July 31st. Pulv. Ipecac., gr. 25, statim. Mist. Cretæ, quartis horis. Warmth to the surface and diffusible stimuli.—August 1st. Potass. Nitr.; Sp. Æth. Nitr.; Magn. Sulph.; Inf. Sennæ; subsequently tonic aperients	July 31st Aug. 15th	Residing near river
2	50	M.	Same symptoms, but greater degree of prostration; less, however, than observed in fatal cases	August 3rd. Mist. Cretæ; Sp. Am. Arom.; warmth, diffusible stimuli.—Aug. 6th. (emetic) Pulv. Ipecac., dr. ss.	Aug. 3rd Aug. 6th	House not far from river. Totally unfit for human beings to dwell in.
3	12	F.	Same symptoms, with as much prostration as No. 2; less than in fatal cases	The same treatment	Aug. 3rd Aug. 6th	House not far from river. Totally unfit for human beings to dwell in.
4	18	M.	Same symptoms	The same treatment		Same.—Had recurrence of the same symptoms about 2 weeks afterwards and recovered
5	14	F.	Same symptoms	The same treatment		Same.
6	30	F.	Same symptoms	The same treatment		Same.
7	50	M.	Same symptoms; but he had as much prostration as observed in the fatal cases	September 5th. Mist. Cretæ c. quartis horis. Pulv. Ipecac. c. gr. viij.; horâ somni sumd.—9th. Sp. Am. Arom.—10th. Cal., Camph., Opium & Capsicum. Effervescing powders.—13th. Ol. Ricini. Warmth to surface and stimuli.	Sept. 6th Sept. 14th	Wife had died of same disease. See No. 4 of fatal cases.
8		M.	Symptoms the same, but less severe	Mist. Cret.		
9	15	F.	All the symptoms of No. 1, well marked and very severe, the prostration as great as in fatal cases	September 5th. Hydrarg. cum Cret.; Opii Pulv.; Potass. Nitr.; Sp. Æth. Nit.; Mist. Camph. Warmth to surface and stimuli	Sept. 5th Oct. 6th	Dwelling near the river. Totally unfit for a human habitation.
10	8	M.	All the symptoms of No. 1	September 12th. Hydrarg. c. Cretâ. Mist. Cretæ. Warm Bath.	Sept. 12th Oct. 15th	House in same lane as Nos. 2, 3, 4, 5, and 6.
11	11	...	The same symptoms as No. 1, all of them very severe; as much prostration as in fatal cases	September 17th. Pulv. Cal. c. Capsico;† Potass. Nit.; Liq. Amon. Acet.; Sp. Æth. Nit. Mist. Camph.—26th. Cinchona; Sp. Æth. Nit.	Sept. 17th Oct. 26th	House in higher part of city, away from river. Case referred in No. 7 of fatal cases.
12	About 25	F.	Same symptoms; stage of collapse severe	September 17th. Mist. Cret. Hydrarg. cum Cret. and Op.—18th. Pulv. Cal. c. Capsico.‡—21st. Cal.; Pulv. Ipecac. Co.; Sodæ Carb.; Pulv. Effervesc.—25th. Sp. Æth. Nit.; Potass. Nit., &c.	Sept. 17th Oct. 11th	Lived in the same court as Nos. 5, 8, and 9 of the fatal cases. Derived a supply of water from same source.
13	50	F.	Same symptoms as No. 1	September 24th. Hydrarg. cum Cretâ; Quin. Disulph.; Potass.; Nit. Sp. Æth. Nit. Liq. Amon. Acet.	Sept. 24th Oct. 12th	House in a position removed from the river.
14	2	F.	Symptoms of No. 1; collapse as great as in fatal cases	October 5th. Hydrarg. cum Cretâ. Mist. Cretæ Co.	Oct. 5th.	Several other cases of cholera had occurred in the same Lane.

* In all the above cases, where the patient could be induced to take it, a teaspoonful of common salt was administered every hour, with beneficial effect in the greater number.

The course of treatment that Mr. Rigden found attended with most success, was the exhibition of an emetic of ipecacuanha, followed by doses of the Pulv. Calomel. c. "apsic." every half hour, with saline mixture, a plentiful supply of common salt, and an unlimited quantity of cold water. Effervescing draughts appeared to be beneficial.

The greater number of cases had secondary fever, with more or less cerebral disturbance. The treatment relied upon was, common evacuants, the application of cold to the head, with warmth and mustard poultices to the extremities.

† Pulv. Calomel. c. Capsic. R. Hydrarg. Chlorid., gr. iij., Camphoræ, gr. ij., Pulv. Opii, gr. §, Capsic., gr.

APPENDIX No. IV.

Particulars of two cases of Algid Cholera, occurring in Canterbury, in July, 1849, being the second and third which appeared in the town.

Frederick Goldup, aged 6 years, was suddenly attacked in the night of July 18th, 1849, with vomiting and purging. I saw him four hours afterwards (three A.M., July 19th,) when he was in the following condition:—

The pulse could not be felt at the wrists, and the pulsation of the heart was scarcely perceptible. The respiration was laboured and rather hurried, the mouth being open. The countenance was distressed and death-like, the face cool, and the upper and lower extremities generally cold. The whole surface of the body was of a dusky colour, (leadens, not blue,) and clammy. A motion had passed involuntarily just as I entered the room; the greater portion of it was fluid, and had soaked into the bed, leaving a solid portion, consisting of some flaky matter, resembling curds, and emitting a peculiar odour. The vomiting was not urgent, occurring principally when anything was taken into the stomach, and the matter ejected was that which had been swallowed, mixed with mucus. The child was sensible, but very restless, every now and then suddenly throwing its arms and legs about, and removing everything covering him. He appeared as if oppressed and in pain, now turning to one side, and then throwing himself on the other, at the same time crying out. There was no other evidence than this of cramps; no rigidity of any of the muscles of the limbs or abdomen could be detected.

The boy had been as well as usual on the previous day, and had been to the National School with his sister, who was attacked half an hour after he was. Neither of the children had any diarrhoea or premonitory symptoms; they were apparently quite well up to the time they were attacked. In the middle of the day they had partaken of a dinner which had been sent to them at school, consisting of sausage-meat, dumpling, and potato; the family at home had eaten the same. They had their tea as usual, and went to bed and fell asleep. About eleven o'clock, P.M., the boy suddenly awoke and was sick. The vomiting and purging was then described as incessant, but in the darkness of the room, and the anxiety of the parent, no notice was taken of the matter ejected. When the change in the countenance produced by the condition of collapse was noticed I was sent for. It should be mentioned that the child in the winter had a slight attack of measles, from which he was recovering, when he was attacked with pneumonia, for which I saw and treated him. The attack was severe, involving the greater portion of one lung, and slightly part of the other. He recovered well, and apparently enjoyed as good a state of health as before.

In six hours from the time I first saw the child, and ten from the commencement of the attack, he died. No motion was passed after the one that has been described. A small quantity of urine, perhaps two drachms, was passed involuntarily; there was just

enough to make itself known by the odour on the linen. He vomited only two or three times, and then after taking fluid. The respiration became more laboured and slower, the face was bedewed with moisture, and during the last hour he lived he was unconscious. The treatment consisted of the application of warmth generally by means of hot bottles, hot-air bath, and friction; the exhibition of stimulants, as Sp. Ammon. Tinct. Camphoræ, with a few drops of Tinct. Opii., then Sulph. Æth., brandy and chloroform. The treatment had no effect; the disease progressed to its end. The hot-air bath partially restored warmth about the body and lower extremities. No further effect was produced by it.

Sarah Goldup, aged 3 years, was taken ill half-an-hour after her brother, and in a similar manner. When I arrived the vomiting and purging had ceased; she was asleep, and her countenance was natural. She continued so for two hours, when she awoke, became uneasy and restless, and cried, then dozed off again, awoke afresh, whined, and was fidgety. She was taken out of the room, and my attention being devoted to the boy, I saw nothing more of her until just before her brother's death, when sickness had returned; the face became pallid, and the eyes depressed; the pulse very feeble. The matter ejected had the rice-water character. From this time the disease progressed in spite of remedies, and she died in twenty-six hours after she was first seized with vomiting and purging.

The same symptoms manifested themselves as in her brother, but more gradually, and they never reached the same degree of intensity. The circulation gradually failed at the wrists, the extremities became cold; the surface clammy and dusky; the respiration was laboured; the vomiting and purging which took place at first three or four times in an hour gradually ceased, so that they completely stopped four or five hours before death. No urine was passed. She died slowly.

At first an astringent mixture was given to her, then tincture of camphor, with one drop of laudanum; Dr. Stevens's saline mixture was next given frequently for four hours: at first it was rejected; it was then given in an effervescing form, and was retained. With this was combined the application of warmth, by hot air, bottles of hot water, &c., but no effect was produced. The child then took alternately every half hour, a common effervescing draught, which was swallowed very readily, and a powder containing a quarter of a grain of acetate of lead, and two grains of Dover's powder. She was frequently sponged over the whole surface, so as to be thoroughly wetted, with vinegar and water, and closely enveloped and packed in blankets. There was no return of warmth, and the symptoms slowly increased.

Some particulars relating to the family of Goldup, and the locality in which they lived, &c.

A traveller had died of Asiatic cholera thirty-six hours before, in a low inn, frequented by such persons, in the same lane, but at a considerable distance from, the Goldup's cottage. There had been no communica-

tion with this house; and although the father, in his occupation, might have passed by the inn, the children, in going too and fro from School, walked in an opposite direction. The traveller's was the first case of cholera that had occurred in the city, the children's the second and third.

The family consisted of the father and mother and three children, besides the two that died,—one an infant at the breast. None of these had diarrhoea at the time, and they have continued in good health since. The mother is a clean woman, and particular in keeping her house neat; and although the father's occupation is necessarily a dirty one, being engaged in the business of a coal-yard, yet the family are clean.

The cottage is detached, and situated in the coal-yard of the South-Eastern Railway Company, about fifty yards from the river, with which it is nearly on a level. The water from the river is used by the family for washing and cleaning, but water from a neighbouring well, about twenty yards distant, is employed for cooking and drinking. This last is clear, fresh, and of good quality. At the back of the cottage, and at the end of a narrow passage with high walls, is the privy used by the family, and the men working in the yard. At the time the children were attacked, this was quite full, and in an offensive state; the odour was very perceptible in a room adjoining the keeping room of the family, which was used as an office. About two yards from the door of the house there was an untrapped gullyhole, which communicated with a deep drain, and from this, very offensive odours were perceived by the clerks of the office. One clerk described the office as most disagreeable at times, especially when he first entered in the morning, after the doors had been closed all night. The privy and drain remained in the same condition for more than six weeks afterwards, and during the time that cholera prevailed in Canterbury; but the family have been in their usual health. Sir W. Burnett's liquid was freely used about the house at the time, and a large quantity diluted was thrown down the privy. All the linen that came from the children was immediately placed in the solution of the disinfecting fluid. There are many other worse localities than this in the same lane, but there is no evidence to show that they were visited by cholera.

REFERENCES TO THE PLAN.

The Churches are indicated by a † Most of them have burial grounds around them.

The dark square spots on the plan indicate the localities in which the cholera appeared.

1. Coal-harbour-lane, North-gate.	12. Ivy-lane.
2.	13. Rose-lane-square.
3. Staplegate.	14. Jewry-lane.
4. Abbot's-place.	15. St. Peter's-place.
5. St. Peter's-lane.	16. Hawk's-lane.
6-7. North-lane.	17. Beer-lane.
8. Palace-street.	18. Stour-street.
9. Best-lane.	19. Rosemary-lane.
10.	20. St. Mildred's.
11. Burgate-lane.	21. Wincheap-street.

Proceedings of Societies.

MEETING OF THE

BATH AND BRISTOL BRANCH.

MR. SWAYNE, PRESIDENT, IN THE CHAIR.

THE Quarterly Meeting of the BATH AND BRISTOL BRANCH OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION was held at the York House, Bath, on March 21st, 1850. There were present:—Dr. Dyke, of Corsham; Drs. J. C. and F. R. Fox, of Brislington; Dr. Pring, of Weston-on-Sea; Messrs. Allen, of St. George's; Boodle, of Chilcompton; Collins, of Chew Magna; Crang, of Timsbury; Crouch, of Bruton; F. Crang, of Hallatrow; Bailey, of Chippenham; C. Edwards, of Batheaston; Flower, of Chilcompton; Jennings, of Laycock; Kenrick, of Melksham; Parsons, of Beckington; Ogilvie, of Stapleton; Vicary, of Warminster; Washbourne, of Carsham; Drs. R. Hall and Swayne, Messrs. Estlin, Green, Jas. Godfrey, Humpage, Lancaster, Nield, Prichard, of Bristol; Drs. Burne, Davies, Ferguson, Goodridge, Lindoe, Hodges, Tunstall, and J. Watson, Messrs. J. Barrett, Bally, Bartrum, Brace, Bush, Church, Cox, George, Godfrey, Hensley, King, Hunt, Lawrence, Mason, Mitchell, Norman, Ormond, Ringer, Skinner, Soden, Taylor, Stone, and Waldron, of Bath, &c.

Mr. NORMAN read the history of a case of many years' duration, which in its earlier stages had simulated phthisis, but ended in death by inanition, from the formation of a pouch at the lower end of the œsophagus, accompanied by constriction of the cardiac orifice of the stomach. (Published at page 253.)

In answer to a question by Mr. Waldron, he observed, in the earlier part of this case auscultation was unknown, and that of late years, from the desire to keep his mind as placid as possible, no examination of the chest had been made, but that when examined it was found that but little air entered the left lung, the right presenting the normal respiratory sounds.

Mr. SWAYNE had been present at the *post-mortem* examination of a gentleman who died from emaciation. For many years previous to his death he had suffered from anomalous symptoms of gastric irritation, which his medical attendants ascribed to dyspepsia, no one suspecting stricture. He had a great dislike to eating in the presence of others. He ate hastily and very largely; after an hour eructation would come on, and he would vomit a large portion of the food previously swallowed. At his death there was found at the lower end of the œsophagus a pouch; it would hold a pint. The constriction of the cardiac orifice of the stomach was almost complete, but without any appearance of cancerous deposit, the great hypertrophy of the muscular structure of the œsophagus and its pouch being the most marked characters of the disease.

Dr. SWAYNE then read a paper giving the history of eight cases of craniotomy. (Published in the *Journal*.)