

Second report of the Clinical Hospital for Diseases of Children, Stevenson Square, Manchester : containing data on the social, hygienic, and climatic agencies affecting the health and mortality of the children of the operative classes / by A. Schoepf Merei and J. Whitehead.

Contributors

Schoepf Merei, Agost, 1804-1858.

Whitehead, James, 1812-1885.

Royal College of Surgeons of England

Publication/Creation

Manchester : Bradshaw and Blacklock, 1857.

Persistent URL

<https://wellcomecollection.org/works/v4476ck6>

Provider

Royal College of Surgeons

License and attribution

This material has been provided by This material has been provided by The Royal College of Surgeons of England. The original may be consulted at The Royal College of Surgeons of England. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

5
SECOND REPORT

OF THE

CLINICAL HOSPITAL

FOR

DISEASES OF CHILDREN,

STEVENSON SQUARE, MANCHESTER,

CONTAINING

DATA ON THE SOCIAL, HYGIENIC, AND CLIMATIC AGENCIES AFFECTING THE
HEALTH AND MORTALITY OF THE CHILDREN OF THE
OPERATIVE CLASSES.

BY

A. SCHOEPP MEREL, M.D., L.R.C.P., LOND.,

DIRECTING PHYS. TO THE CLIN. HOSP.

AND

J. WHITEHEAD, M.D., M.R.I.A.,

PHYS. TO THE CLIN. HOSP.

MANCHESTER :

BRADSHAW AND BLACKLOCK, 47, BROWN STREET.

1857.



CONTENTS.

	PAGE.
Introduction	5
Number of Patients admitted	5
Characteristics of the Mothers	7
Trades to which the Parents of the Patients belonged.....	9
Character of the Localities and Dwellings inhabited by the Patients.....	11
General Characteristics of the Patients	14
Vaccination	15
Alimentation in Infancy, and Physical Development of Children under Three Years of Age	16
General Characteristics of the Diseases relative to the Question of Mortality	19
Result of Treatment	23
Table of Deaths	24
Principal Causes of Mortality	28
Observations on Alimentary Articles	31



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b22348608>

R E P O R T .

TO THE COMMITTEE OF THE CLINICAL HOSPITAL.

IN the First Report of the Clinical Hospital it was stated that the objects, amongst others, which its founders had in view were : *To inquire into the causes of the high rate of infantile mortality in Manchester, and the origin and character of those infantile diseases which are the most largely prevalent and destructive; to examine the progress of physical development in childhood, the different modes adopted among the poor classes of nursing and feeding, and the various domestic and social influences affecting their offspring in early life; to impart instruction to mothers and nurses on the subject of nursing and managing children, etc., etc.*

We now submit, for the consideration of the Committee, some such data relative to these purposes as, we believe, may be perused with interest by the friends of the Institution, and by all who sympathise with the lot of the children of the poor. A comprehensive exposure of inquiries and observations, scientifically considered, will, in a short time, be presented to the medical public.

NUMBER OF PATIENTS ADMITTED.

There have been under treatment, from February, 1856, to October 31st, 1857 : children, 1548 ; nursing mothers, 53.

These are all out-patients, many of whom have been occasionally visited at their homes, the organisation of the department for in-patients having been greatly delayed by adverse circumstances and difficulties against which the Institution has had to contend.

The great majority of these patients belong to the districts of Oldham-road, Rochdale-road, London-road, Ancoats, Piccadilly, and Portland-street; especially from those parts of the districts which are the nearest to the Institution. The number of patients living in Ardwick, Deansgate, Chorlton-upon-Medlock, Hulme, and some other more distant localities, is comparatively small, and their attendance frequently irregular and interrupted—a proof, were any needed, that such Institutions cannot spread largely their beneficent influence beyond limited circuits. It is obvious that the great majority of mothers among the working population are unable to leave their home duties for any great length of time; nor is it suitable for sick children, especially in severe weather, to be carried long distances. For this reason, in other countries, even in towns of smaller extent than Manchester, three or more such Institutions have been established.

That the situation of the Clinical Hospital has been suitably selected no one acquainted with the character of the population of the adjacent districts can doubt, and of which the results now furnished give ample proof.

Had it been possible to admit all the patients who sought assistance, the number above quoted would have been trebled or quadrupled. Such, indeed, has been the influx of applicants, that on every admission day, from 8 to 15 new cases have usually been, of necessity, turned away; and during the spring and summer quarters, up to the above dates, there were only on rare occasions fewer than 12 new cases seeking for admission.

Owing to the peculiar difficulties which beset the management of children's diseases, it is by careful investigation alone, and, above all, by comprehensive dietetic instructions imparted to mothers, that any considerable benefit can be achieved in such an Institution; for this reason it was found necessary to limit the number of admissions (not without concern for those who were excluded), in order to be able to pay all possible attention to the admitted. Although every week only 12 or 16 new patients have been inscribed on the books, yet, owing to the increasing regularity in their attendance (which is im-

pressively recommended to them), the number of patients on each consultation day, from March to the end of October, was from 35 to 50; requiring for their due management never less than three hours (from 8 to 11 a.m.), frequently longer. The new applicants begin to assemble as early as at 6 a.m., and as only the smaller portion of these can generally be admitted, the order of precedence, according to priority of presence, has been maintained, and duly appreciated by all of them.

CHARACTERISTICS OF THE MOTHERS.

Generally, though very ignorant on chief points of infantile alimentation, the mothers showed great care and anxiety for their infants, with a laudable desire, and in most instances an intellectual aptability to receive instruction. Their conduct, in spite of the many who were disappointed in their wishes, and the long distances they had travelled, was without a single exception orderly and respectful, and such as to inspire interest and sympathy. Their external appearance seldom betrayed destitution; notwithstanding, the great majority of them were unable to provide certain articles for their children, which they were required to furnish, though the expense thereof would have been very trifling. The number of the utterly destitute—those, namely, who were actually deficient in food for themselves and children, will be mentioned in another place. The proportions of poverty and absolute destitution among the classes furnishing the patients is, of course, subject to variation according to commercial fluctuations; our present data extend over the last and the present year to October 31st.

With regard to regularity of attendance, and attention paid to instructions given to them, we have had the satisfaction of noticing a marked improvement during this as compared with the preceding year.

Only two cases occurred in which the existence of drunken habits in the mothers was ascertained, resulting in a most neglected condition of their children.

Opium drugging was detected in two instances, in a degree

seriously affecting the child; and, in two other cases, there was reason to suspect the same injurious practice.

In only a few instances mothers, unable properly to support their infants, complained of the irregular life or drunkenness of their husbands; but there may be more extensive reasons for such complaints than have been declared.

Of 952 mothers, examined as to their sanitary condition and supply of breast-milk, there were :

Strong and healthy	}	629; of these	{ had abundant milk to 6 mths and upwards, some even to 2 yrs. }	420; medium milk	}	114; { scanty, a few no milk at all. }	95
Delicate or sick	}	323; "	"	"	88; "	69; "	166
		<hr/> 952		<hr/> 508		<hr/> 183	<hr/> 261

A large proportion of the 508 mothers having an abundant supply of milk, were prevented, by the necessity of out-door work, from nursing their infants to a full extent. It is a circumstance worth mentioning, however, that among 1548 children only 43 were entirely deprived of their mother's breast; and this small number partly consists of illegitimate children, whose mothers were obliged to leave them in other hands, in order to provide the means of subsistence; partly of children whose mothers lost their milk by illness, or had none at all, notwithstanding their healthy condition.

From further data it will appear that the insufficient supply of breast milk is one of the great causes of disease among the children of the operatives; but according to a strict examination of circumstances in 511 of those cases in which the children received insufficient breast-milk, or none at all, from birth or earliest infancy, the insufficient supply of breast-milk was caused :

By disease of the mothers, in 39 cases; constitutional debility, suckling irregularly and immoderately, in 132; destitution, want of proper food, domestic troubles, in 52; natural scantiness of secretion, in 136; working from home, in 152.

According to these data, therefore, it is just to state, that the deprivation of the breast seems seldom to arise from voluntary

and culpable neglect of mothers ; on the contrary, it appears that hundreds of them nursed their children in spite of constitutional debility and scantness of mammary secretion ; so much so, indeed, that 49 of them came under treatment for notable degrees of exhaustion, thereupon consequent. These practices, reprehensible in a sanitary point of view as injurious to children, strongly testify, however, to the great extent of maternal affection and devotedness, as a general characteristic of mothers of the operative classes—qualities gratifying to those who take an interest in the moral condition of these ranks of society, and calculated to enlist in their favour the active sympathy of mothers of more favoured ranks.

TRADES TO WHICH THE PARENTS OF THE PATIENTS BELONG.

We shall here mention those trades only, which have furnished at least $\frac{1}{2}$ per cent. of the patients, and we give them in two categories, according to the amount of their wages.

Trades, and respective proportions of patients of those earning 18 shillings or less per week :—

Labourers and Strikers,	wages, 12 to 18s.	patients about 16 p.c.
Carders and Minders	„ 10 „ 18s.	„ $4\frac{1}{2}$ „
Weavers	„ 10 „ 20s.	„ 3 „
Handloom-weavers	„ 6 „ 9s.	„ $1\frac{1}{2}$ „

Ditto, having upwards of 18 shillings per week :

Porters and Packers,	wages, 12 to 24s.	patients about $8\frac{1}{4}$ p.c.
Dyers	„ 12 „ 20s.	„ $1\frac{1}{4}$ „
Tailors	„ 16 „ 24s.	„ 2 „
Shoemakers	„ 16 „ 24s.	„ 1 „
Spinners	„ 18 „ 30s.	„ $2\frac{1}{2}$ „
Mechanics	„ 21 „ 34s.	„ $6\frac{1}{2}$ „
Joiners and Cabinet Makers	24 „ 30s.	„ $3\frac{1}{2}$ „
Smiths and Boiler Makers,,	20 „ 30s.	„ $2\frac{1}{2}$ „
Overlookers	„ 24 „ 35s.	„ $0\frac{3}{4}$ „

There are some sixty other trades and professions, including

soldiers, street musicians, clerks, etc., furnishing altogether about 45 per cent. of patients, but separately very small items each.

The number of patients belonging to trades having lower wages, taken together, is considerably larger than that of trades having higher wages; among the former the largest item belongs to labourers and strikers (16 per cent.), among the latter, to mechanics ($6\frac{1}{2}$ per cent).

To draw decisive conclusions, however, from the above data, as to the relative influence of the amount of wages upon the frequency of infantile diseases, or the relative need of eleemosynary assistance, it would be necessary to show exactly in what relative numbers the respective trades are represented in Manchester—in what relative numbers they live in the quarters adjoining the Institution—and certain characteristics of the health and social habits of the fathers, the occupations of the mothers, and other circumstances peculiar to different trades, which would be too lengthy for our present purpose.

As appears in the above list, some trades, in spite of their low wages, have furnished very few patients, merely on account of the small number of individuals employed in them in this city: as, for instance, handloom-weavers. Again, some others, in spite of high wages, appear with larger items in the list of patients, merely because they are numerous: as mechanics.

The great majority of infantile diseases, as will be shown hereafter, arise from deficient and unwholesome breast-milk, and unsuitable feeding; and although there are many circumstances which may severally or conjointly occasion these noxious influences, it seems natural to consider the amount of wages of the fathers, and the relative necessity arising therefrom of a proportion of the mothers going out to work, as one of them. In this point of view, we may subjoin the following comparative data:

	Had a full supply of breast-milk.	Medium breast-milk.	Insufficient breast-milk.
Among 308 children whose fathers earned upwards of 18s. per week.	120	60	122
Among 308 children whose fathers earned less than 18s. per week ...	122	72	112

According to these data, therefore, the difference of wages of those trades which came under our notice in the institution, shows no influence on the supply of breast-milk. It must be observed, however, that the insufficiency of milk is here taken *relatively to the infant*. The mother may have had an abundant supply, but if she have been obliged to leave home for out-door work, the infant is more or less deprived of the benefit of the breast ; and this circumstance more frequently happens, of course, among the less lucrative trades ; but the *natural* scantness is the more important cause of deprivation to the child.

CHARACTER OF THE LOCALITIES AND DWELLINGS INHABITED BY THE PATIENTS.

The sanitary condition of districts, streets, and dwellings, has undoubtedly a great influence in the production, and more, perhaps, in the spread of some, and the favourable or unfavourable course of other diseases ; but to give an idea of the amount of this influence requires an exceedingly accurate investigation, analytical as well as comparative, of all the other sanitary agencies simultaneously affecting the individual ; otherwise exaggeration or error will be the result, as probably may be the case with some of the statements which have been made on this topic.

As a most striking example of the difficulties which beset the solution of this problem, in the case of children's diseases, it will be sufficient to advert to one, namely, that those families who live in low, overcrowded, and filthy quarters and houses, are generally the poorest, and consequently are the least able to provide for the infant those necessary and accessory contributives of life and development, to which nature has bound its frail organization. It is not easy therefore, to make out the noxious extent of either of these influences.

With regard to *children under two years* of age, undoubtedly the sufficient or insufficient supply and wholesome or unwholesome quality of breast-milk, and suitable or unsuitable modes of

feeding, constitute the preponderating agencies of health or disease, of life or death—agencies, which again arise from, or are lessened or increased by social, domestic, and intellectual conditions of the parents. There are, however, other diseases, more especially among children above two years of age, the origin and intensity of which, constantly or periodically, may be to a certain extent dependent upon the character of the localities and dwellings in which the patients may happen to be placed.

Further investigation is required to enable us to arrive in these respects at accurate conclusions; meanwhile the following data may be given :—

The proportion of					
Patients from Ancoats district	is about	27	per cent.		
„ „ Oldham-road	„ „	22	„		
„ „ Rochdale-road	„ „	18½	„		
„ „ London-road	„ „	13	„		
„ „ Piccadilly and neighbourhood		8	„		
Other districts collectively	„	11	„		

The greatest number of patients, therefore, belong to the *Ancoats* and *Oldham-road* districts, most of them being from between Butler-street and Great Ancoats-street, etc. The sanitary character of this district varies very much in different parts. The streets running off the lower end of Oldham-road are dirty, having, to a great extent, overcrowded dwellings; as for instance Spittal-street, Primrose-street, and others, and their courts and alleys. The upper part of the road is more open, with here and there a space of ground unbuilt upon, and the houses are of a somewhat superior class.

The *Ancoats* district, resembles, in sanitary respects, the above-named; some parts of it being crowded, others open and airy; on the whole, certainly not favourable to health.

Rochdale Road district probably surpasses all the others in filth and destitution; more especially in the streets lying between the main street and Red Bank; as, for instance, Back Style-street, Back Simpson-street, Back Balloon-street, Angel-

street, etc. The sanitary attributes of this district are very bad; many of the streets are low in position, especially those adjoining to the river Irk.

We shall not at this time enter further into this question, but conclude, for the occasion, with certain data relative to the dwellings inhabited by the families of the patients:—

51 per cent. of them live in *double houses*, these having the advantage of a better ventilation.

40 „ live in *single houses*, partly single rooms.

8 $\frac{1}{4}$ „ live in *cellars*.

These data, although insufficient for stringent conclusions, form, no doubt, one of the items of *social* characteristics, influencing the health of children; namely, the different kinds of dwellings coincide in the generality with corresponding qualities of the household; and again, the quality of the street, to a great extent, represents the condition of the dwellings, and the families occupying them. We may, therefore, subjoin a few data bearing upon the comparative frequency of some infantile diseases, of *epidemic* as well as *dietetic* origin, important, partly on account of their extensive prevalence, and partly their serious nature, in *healthy* and *unhealthy* localities:—

	Unhealthy Localities.	Healthy Localities.
Chronic diarrhœa, of <i>indigestive</i> origin, occurred	3 $\frac{1}{2}$	1
Summer diarrhœa, of <i>epidemic</i> origin	4	1
Chronic bronchitis	2	1
Bronchitis, primary, of recent origin	2	1
Pleurisy	2	2
Atrophy, of indigestive origin	2 $\frac{1}{2}$	1
Retarded development and rickets	2	1
Fevers—gastric, typhoid, eruptive	3 $\frac{1}{2}$	1
	21 $\frac{1}{2}$	9

These data must be considered, however, with all that reserve and valuation of collateral circumstances which have been hinted at above, and which it would be too long a task to discuss in this place; for instance, it is necessary, above all, to consider and carefully weigh the proportions of disease

in relation to the proportions of poor families and patients, inhabiting the healthy and the unhealthy localities referred to : the proportion of those living in the latter greatly preponderating.

GENERAL CHARACTERISTICS OF THE PATIENTS.

Among the 1548 patients, there were :—

Males	818
Females	730
Children of English parents	1277
Ditto Irish, one or both parents.....	247
Foreigners	22
Premature births	13
Twin births.....	11
Illegitimate.....	21

The small proportion of premature births tells very favourably for the constitution and general health of the women. With regard to the illegitimate children, we cannot refrain from adverting to their exceedingly small proportion, highly creditable to the working classes of this city, when compared with their number in continental children's hospitals ; the percentage of ours being less than $1\frac{1}{2}$, while in similar establishments on the continent it is considerably greater—amounting to from 20 to 25 per cent., in some still higher: in the Munich Report for 1855, it is above 50 per cent. We allude here, of course, only to the proportion of illegitimate children met with in children's hospitals, and it may be added, that their condition is, generally, a most deplorable one, that of abandonment, disease, and decay.

Orphans	8
Mothers dead	9
Fathers dead	58
Fathers left home (for reasons not in every case blameable)	19
Child deserted by mother	1
In a state of uncleanness and neglect.....	56
Of the neglected were illegitimate	11
Ditto were orphans, or fathers away.....	8

to believe the eruptions in question really attributable to the cause assigned.

On the preventive influence of vaccination it is as yet impossible to adduce trustworthy facts, owing to the circumstance that during the past two years small-pox has occurred only sporadically.

ALIMENTATION IN INFANCY, AND PHYSICAL DEVELOPMENT IN CHILDREN UNDER THREE YEARS OF AGE.

It is needless to advert to the sanitary importance of the subjoined data. The effects and respective results of the various kinds and modes of alimentation upon health and disease, show themselves far more decisively in the structural development of the respective children, than in the digestive functions. These frequently present no striking disorder, and the child may appear to be stout and healthy, when, notwithstanding, it is disordered in its nutrition, feeble, checked, or retarded in development, especially in the bony and muscular structures; and such children, as the results clearly show from an analysis of the list of deaths (see further on), are exquisitely liable to disease, and frequently succumb to them. On the other hand, abdominal disorders may be present independently of the alimentary influence; we lay, therefore, a particular stress upon judging of the effects of these influences upon the sanitary condition of children, according to the state and progress of structural development.

It may be well to remark that the *developmental condition*, of which the subjoined table contains three different degrees, has been determined in every child according to a definite *scheme of inquiry* elsewhere exposed (First report), relating to the respective shapes and relative dimensions of skull and chest, advancement of ossification of the skull, progress of dentition, faculty of walking, etc. And to judge of the relative effects of the various modes of alimentation upon development, children from the age of 9 months to 3 years only have been taken into consideration, because, before 9 months, these effects

are not always clearly perceptible, and after 3 years many who by unsuitable nourishment were defective in development, gradually recover from its effects.

Of 722 children, of whom every particular relative to alimentation and development has been investigated.

At the age of 9 months to 3 years, were

	Well Developed.	Medium.	Badly.
A. 120 had breast-milk alone to 9 months & upwards, some of them to 18 & 20 months ... }	71 (60 per cent.)	31 (25 per cent.)	18 (14½ per cent.)
B. 68 had breast-milk alone to between 6 and 9 months; then bread-food along with that of the breast for various periods }	35 (51 per cent.)	20 (30 per cent.)	13 (19 per cent.)
C. 216 had breast-milk moderately abundant and bread-food along with it from birth or early ages..... }	110 (51 per cent.)	54 (25 per cent.)	52 (24 per cent.)
D. 278 had scanty breast-milk and bread-food from birth or earliest infancy }	80 (28 per cent.)	73 (26 per cent.)	125 (45 per cent.)
E. 40 had no breast from birth or earliest period of life..... }	4 (10 per cent.)	10 (25 per cent.)	26 (65 per cent.)
	<hr/> 722	<hr/> 300	<hr/> 188
			<hr/> 234

We see from this table, that by far the most favourable results of development are obtained by *exclusively breast-milk*, given upwards of 9 months, and that in the ratio that this condition is less fulfilled, the results are less favourable. We see, at the same time, in what proportion children enjoy various degrees of favourable or unfavourable alimentation, and that far the largest proportion of them are in this respect unfavourably situated. We shall have to refer to these data in another place; but it may be remarked here, that the proportion of badly developed children, under the most favourable mode of alimentation (see above, 18 out of 120), though small, would be still smaller, were it not that in that number many children are comprised who were sickly from birth, and such whose mothers are delicate or impaired in health while suckling. To show more clearly the effects of *breast-milk of good quality*, when given *alone* to advanced periods of infancy, the following data may be adduced.

Among the 1548 children there are 59 marked in the case-

books as being of "*very good development*" — namely, those most rapidly advanced in dentition, ossification of the skull, and faculty of walking (most of these having commenced to walk before twelve, many at eleven or ten months), we find, that of the total number of the 59 children of such superior qualification,

43 had breast-milk alone to 9 months and upwards, to 12, 15, 18 months—a few of them even longer.

8 had breast-milk alone to between 6 and 9 months.

8 only, received besides the breast, other kinds of food before the 6th month.

It may be added, that the respective 59 mothers were almost all not only healthy, but of strong constitutions, and had great abundance of milk.

If with this mode of alimentation we compare those of the categories, C, D, E, given in the preceeding table, the defective supply of breast-milk, and early bread-feeding, at once appear as extensive sources of physical imperfections, and (as will be shown in the table of deaths), liability to disease.

In this point of view, a summary on the developmental condition of all the patients of the Institution, and on the mode in which they have been nurtured may be perused with interest:—

Of the 1548 children, were : well developed, 585 ; medium, 362 ; badly, 451 ; not noted, 50.

About 27 per cent. of them had a full supply of breast-milk, or at least for upwards of six months.

" 29 " of them had a medium supply, with bread or other food.

" 38 " of them had scanty breast-milk, and some farinaceous food from birth or earliest infancy.

" 3 " of them had no breast at all, from birth or earliest infancy.

Cow's Milk, the substance most analogous to human milk, and consequently, the only suitable substitute for it in infancy, is, among the working classes, so generally depreciated that,

of all children fed on other articles besides breast-milk, from the earliest infancy, only 7 received cow's milk without bread or other admixture; and 27 used it with arrow-root or sago, partly with flour.

We have, therefore, to notice with regard to alimentation, the great deficiency of breast-milk, and the extensive prevalence of bread-feeding in early infancy, with almost entire depreciation of pure cow's milk. The last named circumstance is deplorable, no doubt; but as will be shown hereafter, the qualities of cow's milk sold in most of the retail places of this city, are bad enough to inspire fear and aversion.

In the second place, as regards the result of alimentation, viz.: the developmental condition of the patients, we have to notice the large proportion of those defectively developed. The rate given above, however, cannot be applied for exactly judging the developmental condition of the children of the operatives in general; it proves, at all events, that children, feeble and retarded in development, are pre-eminently liable to disease.

GENERAL CHARACTERISTICS OF THE DISEASES RELATIVE TO THE QUESTION OF MORTALITY.

Leaving the nominal and analytical exposure of the diseases and their treatment for another publication, we shall here limit ourselves to such data and remarks thereon, as for a better understanding of the chief subject of this communication are indispensable.

The *total number of diseases* which occurred in the 1548 patients is 2771; No. of recorded consultations, 6583.

Of these diseases, two to four kinds occasionally occurred in the same individual, in some consecutively, in others simultaneously.

Epidemics, which periodically constitute an important source of infantile mortality, were, with the exception of hooping cough and summer diarrhoea, scarcely noticeable in 1856, and much less so during the present year. *Hooping cough* was

extensively spread over the districts adjacent to the Institution, during spring and summer, 1857, the total number of cases from March to August having been 53; but it ended fatally during that period in only 6 patients, who were affected with other serious complaints, and were partly atrophic and exhausted previous to being affected with whooping cough. There has been no case of real laryngeal croup this year, and only sporadic occurrences of scarlet fever and measles, and no small-pox.

The usual *summer diarrhœa*, however, was more prevalent this year than in 1856. Many young infants succumbed to the disease, and the almost regular appearance of this epidemic every year, makes it at all events noteworthy, as one of the *permanent local* causes of infantile mortality. It broke out, spread, and rapidly increased in intensity, during the dry, hot weather in the latter end of June, and lasted, with periodical remissions, to the end of September; the total number of cases during that period having amounted to 128. It frequently assumed the form of infantile cholera; and attained its acmè in the first week of July. At that time about 85 per cent. of our patients were affected with diarrhœa, or cholera; and it continued to be the only predominant disease during August, when the thermometer frequently stood at 79° in the shade; with an average of 61° for the whole period. At the latter end of August, however, its frequency as well as its intensity began to abate, and more so in September, when, for a time, dysentery was prevalent; which again became rarer in the month of October, to make room for gastric fever, generally of a slight degree; when, simultaneously, bronchitis began to make its customary appearance, as the dominant complaint during two-thirds of the year.

Bronchitis is so excessively prevalent among children in this city, that of the 1548 patients 487, *i.e.* nearly 33 per cent. were affected by it, many of them in most pertinacious forms, being from birth scarcely ever free from it. In feeble, atrophic, or otherwise deranged habits, it sometimes degenerated into a form of infantile pneumonia (broncho-pneumonia), which then caused or accelerated the destruction of life; but bronchitis, of

itself, in good habits and opportunely attended to, however intense it may have been at its onset, was generally manageable, and in the present list of deaths there is only one instance of single and uncomplicated bronchitis having had a fatal issue. It is remarkable, that during the summer quarter of the present year, considered extraordinary in this country for its exceedingly constant dry and warm weather, we had scarcely any case of bronchitis, but as will be mentioned, several severe cases of pleurisy.

Bronchitis, consequently, needs not to be classed among the notable causes of infantile mortality in this city; whilst summer diarrhoea occurs in the list of deaths from June to the end of September, in both years together, 22 times (in 117 fatal cases), of which 20 refer to children under 2 years of age. Indeed, the number of deaths during the summer quarter of 1857 considerably surpasses that of any other quarter of the year, nearly 3-4ths of the fatal cases of that period having been affected with summer diarrhoea. But we find, that with one exception, *all* other children who succumbed to this epidemic, were either labouring under indigestive diarrhoea, and other gastric diseases for various periods anteriorly, or they were atrophic, or feeble, and retarded in development—so that we may say: summer diarrhoea is one of the noteworthy causes of infantile mortality in this city, but only during a short period of each year, and it is especially dangerous to children under two years, already enfeebled or suffering from gastric derangement, and disorders of nutrition and development.

If we compare the proportion of all endemic climatic diseases affecting infancy, treated at this charity, with that observed in continental children's hospitals, the balance is exceedingly in favour of Manchester. Among the last 1000 patients, we have had occasion to notice only one fever of a typhoid character, and the number of gastric fevers of any intensity, was very small. Among these 1000 patients, there was not a case of primary acute gastric or hepatic inflammation, and only 5 cases of acute pneumonia. More frequent among this class of inflammations, is *pleurisy with exudation*; of which form of disease, among

the 1000 patients, there were 27, the youngest of them being 7 months old. This disease was often severe and dangerous, and not a few such cases occurred during the last dry, warm, summer weather (of unusual occurrence in this country); as, however, the disease generally occurred in children of good constitution, most cases were manageable by treatment, and with two exceptions, terminated favourably. In 27 continental reports, no such small rate of fevers and acute inflammations can be found, and it is smaller also, than it seems to be elsewhere in this country, as would appear, at least, from a recent report of the Great Ormond Street Children's Hospital, London; although the rate of these diseases in children of the metropolis seems also smaller than in continental cities.

Not less satisfactorily turns out the comparison with regard to *hereditary diseases* of the blood—scrofula, tubercles, and other specific taints, transmitted from parent to offspring. There is not 1-10th of scrofulous and tuberculous affections amongst our patients, as compared with those observed in the children's hospitals of Pesth, Berlin, St. Petersburg, Vienna, and others, where from 20 to 60 per cent. of the patients of similar institutions seem to be affected with these diseases, which there indeed form an important item in the list of deaths; in the London report they are about 5 per cent. *Scrofulous affections* of the eyes, skin, glands, and bones, among our patients are $2\frac{1}{2}$ per cent.; *tubercles* of the lungs (partly suspected, partly ascertained), about $1\frac{1}{2}$ per cent.; a fortunate circumstance undoubtedly, otherwise the enormous prevalence of bronchitis would, of necessity, lead to frequent fatal issues by engendering consumption. But we shall not enter further into the detail of diseases. Suffice it to say, the climate and atmosphere of this city are comparatively not in an extensive degree causes of infantile mortality; and as to blood, and type of race, the operative classes appear to be exceedingly favourably constituted.

The frequency of digestive disorders, on the contrary, and their result—defective nutrition and development, and atrophy, prevail to an enormous extent, in this town, and commensurately

taken to induce regularity in attendance, we may regard the following as reliable :—

Ascertained as cured up to Oct. 31st, 1857	629
Greatly improved, and probably cured	352
Treatment prematurely interrupted, & uncertain	273
Incurable	15
Died	117
Under treatment	162
	<hr/> 1548

The subjoined table contains all the cases which ended fatally, so arranged that the presence and relative influence of diseases of digestion and nutrition may be seen at a glance.

TABLE OF DEATHS.

PREEXISTENT DISEASES OF DIGESTION, NUTRITION, & DEVELOPMENT	COEXISTENT AND SUPERVENING DISEASES.	No.	AGES.
Indigestive disorders (diarrhoea and vomiting,) 19 individuals.	Chronic bronchitis	2	5 and 8 months.
	Hooping cough, with white thrush (muguet)	1	11 m.
	Hooping cough, prurigo	1	20 m.
	Diarrhoea, catarrhal	1	18 m.
	" summer epidemic, inclusive of cholera, 1856... 4	9	2, 7, 8, 10, 11 weeks, 2, 3, 4, 17 months.
	" " " 1857... 5		
	Hydrocephalus	1	14 m.
	Convulsion	1	9 w.
	Cyanosis	1	18 m.
	Ulcerative erythema	1	1 m.
	Impetigo on face.....	1	17 m.
Indig. disorders with atrophy. 10 individuals.	No complication	4	3, 6, 22 m., 2 y. 4 m.
	Bronchitis	1	7 m.
	Double pleurisy, exudation	1	7 m.
	Chronic abscesses	1	3 m.
	Syphilides (hereditary)	3	1, 11, 22 m.

PREEXISTENT DISEASES OF DIGESTION, NUTRITION, & DEVELOPMENT	COEXISTENT AND SUPERVENING DISEASES.	No.	AGES.
Indig. disorders with retarded development. 8 individuals.	No complication	3	11, 14, 21 m.
	Tubercles, suspected	1	18 m.
	White thrush	1	15 m.
	" , convulsion	1	16 m.
	Chronic bronchitis	1	2 y.
	" , tubercles	1	20 m.
Indig. disord. retard.develt. and atrophy. 2 individuals.	No complication		
	2	16 m., 2 y. 6 m.	
Atrophy, simple. 10 individuals.	The presence of glandular disease undecided.....	2	8, 16 m.
	White thrush	2	4, 5 m.
	" and catarrhal diarrhoea	1	6 m.
	Hooping cough	1	11 w.
	" and chronic bronchitis	2	8, 16 m.
	" and broncho-pneumonia	1	2 y. 6 m.
	Broncho-pneumonia	1	8 m.
Retarded development, and atrophy simple. 12 individuals.	Hydrocephalus, swelling of cerv. glands	1	2 y. 2 m.
	Hooping Cough	3	13, 17, 19 m.
	Chronic bronchitis	1	13 m.
	" hypertrophy of brain	1	9 m.
	Tuberculosis	1	21 m.
	Tubercles, suspected	2	13, 19 m.
	Diarrhoea, summer epidemic, 1857...	1	21 m.
	Dysentery	1	10 m.
	Impetigo of scalp	1	13 m.

PREEXISTENT DISEASES OF DIGESTION, NUTRITION, & DEVELOPMENT	COEXISTENT AND SUPERVENING DISEASES.	No.	AGES.
Retarded development (developmental debility, defectiveness of bony structures, late dentition and walking).	30 individuals.	Primary hydrocephalus 1 Bronchitis 1 Capillary bronchitis 1 Broncho-pneumonia 1 Hooping cough, bronchitis 1 Catarrhal diarrhoea, in autumn, winter, and spring, 1856 2 " " " 1857 1 " " bronchitis, suspected tubercles 2 Diarrhoea, summer epidemic, in 1856 4 " " 1857 5 " " broncho-pneumonia, 1857 1 " " convulsion, 1856 1 Dysentery 2 " and convulsion 1 Mesenteric atrophy, (glandul. disease) 1 " " convulsion (suspicion of hydrocephalus) 1 " bronchitis (suspicion of tubercle of brain) 1 Tonic spasm of neck (diagnosis uncertain) 1 Typhoid fever, broncho-pneumonia... 1 Convulsion 1	16 m. 15 m. 10 m. 9 m. 2 y. 3 m. 3, 4 m. 7 m. 2, 4 y. two 4, 17, 2 y. 7 m. 18 w., 4 m., 12, 14, 16 m. 12 m. 19 m. 5, 18 m. 14 m. 10 m. 13 m. 3 y. 3 y. 3 y. 13 m.
Rickets.	2 individuals.	Hooping cough 1 Convulsion 1	22 m. 12 m.

ABSENCE OF DISEASES OF DIGESTION, NUTRITION, & DEVELOPM'NT, PREEXISTING OR COMPLICATING	PRIMARY DISEASES.	No.	AGES.
24 individuals.	Fever, scarlatina, with angina & cystitis,	1	5 y. 6 m.
	,, eruptive, adynamic, unde- termined	1	5 y.
	Acute anasarca, œdema of lungs	1	16 m.
	,, cervical meningitis, exuda- tion	1	6 m.
	Laryngeal croup (1856)	1	5 y.
	Bronchitis	1	3 m.
	,, capillary (acute catarrh of lungs)	2	4 and 4 m.
	Broncho-pneumonia	1	3 m.
	Pneumonia (lobar)	1	20 m.
	Double pleurisy, exudation	1	13 m.
	,, ,, suspicion of tubercles	1	4 y. 5 m.
	Hooping cough, bronchitis	1	9 m.
	,, ,, suspected tubercles	1	8 m.
	,, ,, broncho-pneumonia	1	3 y.
	,, ,, with white thrush	1	6 m.
	Catarrhal diarrhœa, exhaustion	1	15 m.
	Cholera, bronchitis	1	10 m.
	Inflammation of liver and intestines, jaundice	1	2 y. 4 m.
	Tubercles of lungs and of other in- ternal organs	1	6 y.
	,, ,, ,, and bones...	1	12 y.
	Mesenteric atrophy (glandular disease)	1	18 m.
	Concussion of brain	1	5 y. 3 m.
	Phlegmon.....	1	7 w.
TOTAL.....		117	Between 3 and 14 years, 12; Under 3 years, 105; Under 2 years, 96; Under 1 year, 47; Under 6 months, 29.

						Per cent.
Under	6 months of age	.....of	186 patients	died	29	} 12 $\frac{1}{2}$
Between	6 „ and 1 year,	of	195	„	18	
„	1 and 2 years	.....of	345	„	49	— 14 $\frac{1}{5}$
„	2 „ 3 „	.. .. .of	220	„	9	— 4 $\frac{1}{10}$
„	3 „ 14 „	..... ..of	602	„	12	— 2

Of 1548 patients died 117—

From these data may be seen the enormous preponderance of disease under two years, with a proportionate rate of mortality still more striking; both the diseases and their relative destructiveness considerably diminishing after the second year,—so much so, indeed, that the rate of disease during the second year stands in proportion to that of the third, as 3 to 2; and the relative destructiveness of disease during the second year, stands to that of the third, as 7 to 2.

It is further shown, that of the 117 patients who died, 93 were affected with disorders of digestion, nutrition, and development; of these 93, 82 were under two years of age; no child, normal in its digestion, nutrition, and structural development, died of convulsion; only one such child succumbed to epidemical diarrhoea (which occurs 22 times in the list of deaths); and altogether, of the 1548 patients only 24 died of diseases mainly of atmospheric, miasmatic, and, to a small extent, hereditary origin, without being constitutionally weakened by the above named disorders of digestion, nutrition, and development.

PRINCIPAL CAUSES OF MORTALITY.

From the facts at command, it appears,

1st. That 61 per cent. of the diseases happened in children under three, and 47 per cent. under two years of age; and also that of 117 deaths, 96, *i. e.*, about 82 per cent., occurred to children under two years of age.

2nd. That of the 117 deaths, 93 relate to children affected with diseases arising from defective or faulty nutrition, which

were partly the direct, partly the co-operative cause of the fatal issue.

3rd. That of these 93 children, 11 had a full supply of breast-milk up to 9 months, but seven of the respective mothers having been delicate or sick, and only four healthy; 19 had a more or less sufficient supply of breast-milk and bread-food along with it, from earliest infancy; 59 were brought up from birth or earliest infancy on bread-food, in addition to scanty breast-milk; and 4 had no breast at all: consequently, only a very small proportion of those who died had enjoyed a fully favourable alimentation—a little above 4 per cent.

4th. That the breast-milk of feeble or sickly women, and scantily secreted, judged according to its effects upon the respective nurslings and its chemical examination, is in the great majority decidedly of unwholesome quality.

5th. That altogether, about 60 per cent. of the children treated in the Institution were brought up in an unfavourable manner.

From these statements will at once be perceived the *extensive* operation of two noxious agents; *insufficient and unwholesome breast-milk, and early bread-feeding.*

In certain years, no doubt, epidemics—which occasionally are very severe in Manchester—namely, measles, scarlatina, etc., add an important item to infantile mortality; but these, with the exception of summer diarrhœa, generally affect children rather above than under two years of age, whilst the two causes of disease just mentioned, are no less constant than they are pervading and destructive.

Among these, the first-named, that is to say, insufficient supply of breast-milk, is by far the most important, inasmuch as it gives rise also to the other cause—to early bread-feeding. Besides, as has been mentioned, milk that is scantily secreted, is generally unwholesome, and deranging in its effects on the child. From a preceding table (see page 18), however, it results, that among the mothers whose children received insufficient breast-milk, the insufficient supply was caused in about 70 per cent. of them by such circumstances as render the milk unwholesome, namely by illness, constitutional debility, over-

suckling, domestic troubles, or natural deficiency of secretion ; and only in 30 per cent. of them, by working from home, the secretion of itself being satisfactory.

It will at once be perceived that among the circumstances and influences rendering the supply of milk scanty or of unwholesome quality, some of them are more or less beyond control, or utterly irremediable ; while others, probably the majority, may be considered as partly avoidable, partly, and to a greater extent, mitigable in their influence. In fact from an investigation of the respective cases it is shown that scantiness as well as unwholesomeness of the breast-milk, in about 40 per cent. of the respective cases, was either caused, or increased and rendered more injurious to the respective infants, by excessive and disorderly suckling ; consequently, in the great majority, *this* cause of disease might have been either obviated or rendered less injurious, by better management of suckling, or by weaning and suitable diet.

Our books contain hundreds of cases, in which mothers continued suckling, although they, as well as their infants, were reduced to an extreme state of exhaustion and illness thereby. We might adduce numerous instances of families having successively lost under such circumstances all their children—six to ten, or more—to say nothing of the damage and misery caused in their households by an uninterrupted series of disasters from disease and death. To give an idea of the deplorable extent of ignorance with regard to nursing, we may mention the following case :—A woman, 39 years of age, solicited advice for an infant, 15 months old, utterly emaciated and exhausted, affected with vomiting and diarrhoea of many months' duration. The woman, near the last stage of her pregnancy, was still giving her infant, twenty to thirty times a day, the watery secretion of an exhausted breast. Not many days after this visit, she was delivered of her *twenty-second child* ; the above-mentioned little patient died shortly afterwards, being the *twentieth who had perished* under like circumstances. Here, undoubtedly, is room for improvement.

It must be observed, however, that to recommend an essential restriction of, or total abstinence from suckling, is a matter

very different in its bearings and difficulties with the poor and with the rich. For the wealthy mother, it means the substitution of a wet-nurse; for the poor, it means weaning and hand-feeding; and hand-feeding itself, for the wealthy, having the means and opportunities of providing cow's milk of good quality, is a purpose much more practicable than for the poor, who, as will presently be shown, are greatly exposed to the danger of obtaining milk of a quality most injurious to their offspring.

It has been mentioned, that up to Oct. 31, 53 nursing mothers had been under treatment; of these, 49 were labouring under debility from nursing, having a scanty secretion, and unwholesome quality of milk. The importance of establishing some simple scheme of directions for the better management of nursing, and the use of cow's milk, such as could be easily comprehended by them, and spread among their fellow-women, made itself increasingly felt daily, and efforts towards the attainment of this object have not been omitted.

Considering, however, that many points of the milk question regarding human as well as cow's milk, practically bearing upon the management of suckling, weaning, and hand-feeding, are as yet imperfectly developed, inquiries have been undertaken to this end by one of us (Dr. Merei), on a comprehensive scale, in concert, so far as chemical examination is concerned, with Mr. J. Robertson, analyst to the Institution. Thus far upwards of 600 nursing women have been subjected to these inquiries, comprising their constitutional condition, the effects of their milk, as observed upon the respective children, and its chemical analysis.

The investigations on cow's milk, intended to promote a practical knowledge of its qualities relating to its fitness as a diet for children, and to devise a means of obviating or lessening the difficulties experienced in its use, acquired additional, and, so to speak, a local interest, on account of the exceedingly bad effects observed to accrue from it in the patients, and the general aversion of mothers to its unmixed employment. There having been strong reasons for suspecting the extensive prevalence of the fraudulent practice of watering and skimming, it was deemed desirable, first of all, to establish

a scale representing the natural qualities of cow's milk of this neighbourhood. This was accomplished by numerous examinations of samples procured from trustworthy owners of cows, direct from the country. Samples were then procured from various dairies and milk-shops in different quarters of the town, and submitted to the same processes of examination.

These inquiries, and the results obtained, both as relates to human and to cow's milk, will be embodied in a work, shortly to appear, on the nutrition of infants and children (by Dr. Merei). In this place it may be well to mention, that, according to data hitherto obtained, the milk sold in the largest proportion of retail places, especially of those where poor families purchase the article, is of a quality excessively injurious, and almost incorrigible for the use of children. It is partly by watering in farms, but greatly more by abstraction of cream in the shops, that the balance of the constituents of milk becomes so much disturbed, that infants, unable to digest it, become more or less seriously affected by its continued use.

So far as the limited sphere of the Institution admits, the mothers of the patients are impressively cautioned on this subject, and advised to procure their milk from trustworthy places; and pains are taken to indicate to them, as far as is practicable, certain measures calculated to correct inferior qualities of it; but the question seems to be one of sufficient importance to merit the attention of other more influential authorities, for which purpose a considerable amount of facts could be furnished, if required.

It is difficult to say in what manner, in a country enjoying the benefit of free institutions, such efficient measures could be employed with a view to control the fraudulent deterioration of an alimentary article so essential to health and of such extensive use, as are adopted in some continental countries;—in Paris and Vienna, for example, where, by the sanitary police, not seldom cart-loads of adulterated milk are poured out upon the ground; but, at all events public opinion and public spirit, in this country, might find means of exerting in this vital matter a salutary influence.

It having been the principal object of this communication to bring to light reliable data on the extent and principal causes of the excessive rate of infantile mortality, it results from what has been stated in the preceding pages, that, to a great extent, there is undoubtedly a possibility of obviating, or at least of limiting and controlling them. A more accurate discussion of the means, however, to this effect, is left for a future occasion.

Before concluding this report, it is due to mention, thankfully, the assistance of Mr. Blackley, in the investigation and treatment of diseases, and for other labours uninterruptedly rendered from the earlist period of the existence of this Institution; the valuable services also of Dr. Gumpert, from the beginning of summer of this year; and the co-operation of Mr. Masfen, as well as Mr. Fisher, during shorter periods. In the analytical department of chemistry, the Institution possesses in Mr. James Robertson, a coadjutor well known for his scientific zeal, whose labours during the two past years have been as valuable as they were extensive.

The purposes which the Institution proposes to accomplish necessitates a vast amount of labour, and to carry on efficiently the plan of operation hitherto prosecuted, its complete organisation, and consequently the adequate means to realise it, are required.

Though the department for out-patients, on account of the extensive opportunity it affords for the examination and treatment of endemic and prevailing diseases, and for spreading information on hygienic and preventive measures, is of paramount importance; on the other hand, for certain cases of a severe nature, combined with extreme destitution, especially such as require surgical operation, as well as for certain important scientific purposes, the establishment of beds, as projected in the original scheme, is anxiously looked for.

A. SCHOEPF MEREI, M.D., Directing Physician.

J. WHITEHEAD, M.D., Physician.

Manchester, December, 1857.

