Thesis for the Degree of M.D.

Some common morbid conditions of the Infantile Alimentary System with special reference to Summer Diarrhœa.

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Having resided for 2 years in a densely populated working class district in one of the largest cities in England, and during that time being actively engaged in private practice - seeing & treating an average of 50 patients daily, the greater portion of whom were women & children I trust I may lay claim to some little practical experience of the subject I have chosen for my Thesis.

The exigencies of private practice have been such that - I have had neither time nor opportunity to undertake any Scientific investigations - so I have striven, in the following pages, to give a practical account from the standpoint of the busy general practitioner, of one phase of Infantile disease as met with among the children of the poorer working-class population

I wish especially to emphasize the fact - that the origin of much of the disease & the cause of the high mortality during the first few months of life - is due solely to the neglect of personal hygiene & uncleanliness in the feeding & surrounding of the children.

Seeing this class of people daily & being ultimately acquainted with the conditions of their everyday life, one quickly recognises how much trouble & disease could be avoided by attention to a more cleanly habit of living, & at the same time one marvels that disease is not more rampant than it is.

The man, whose practice lies among this class of patients, is heavily handicapped in his methods of treatment.

He cannot make use of the various elaborate methods set out at length in different text-books - the authors of which generally write as though the conveniences of a hospital were universally available.

The General practitioner must do the best he can - & the simpler the means & remedies he employs - the more likely - is he in the circumstances in which he is placed - to obtain good results; and considering the surroundings of the patient, & the capabilities of its attendants, it is surprising, & at the same time gratifying, to contemplate what good results one often obtains - despite the various drawbacks one encounters.

The most simple Hygienic principles in the rearing of infants are, more often than not, totally neglected - In few of my cases have I been able to obtain more than a partial carrying out of my instructions, although the latter have always been of the simplest description

For instance in the preparation of Infants food - the various formula for humanizing sterilising milk - are beyond the capacity of this class of mother or nurse.

The use of enemata is only possible in a few instances, & various other little refinements of treatment, which are often of great aid to one in overcoming the disease are quite impossible to carry out among this class of people.

In the large majority of my cases of which I have taken special note, the children were hand fed - this being generally due to the fact that the mother was a mill-hand & so wished to return to her work as soon after confinement as possible. She generally resumed her work about the third or fourth week after delivery. The child

was then either nursed by its grandmother
or put out to nurse, the mother giving
it the breast when she returned from her
work & during the night, until the
supply ceased. During the day, the
child would be fed on milk & water
or a concoction of boiled bread & water -
locally known as 'pobs'. The feeding-
bottle, without exception, would be one of
the tube-kind wh. are universally
condemned by the medical profession,
but which the working class mother
thinks to be without an equal for
general suitability, & clings to it in
spite of every objection that one can
urge against it - I have often
demonstrated the filthiness of the
I.R. Tubing to the mother by splitting
up a section of it & shewing the
decomposing matter with which it
is lined. In some cases although
they buy one of the simple boat-shaped
bottles they invariably return to the
tube. As to keeping the apparatus
clean - even those of the women, who
are, what one would call, very clean,

in ordinary matters. think, that to purchase two bottles & to keep the one which is not in use in a basin of water, amply sufficient.

The india-rubber tubes are hardly ever cleaned - simply left till the rubber wears out & then more tubing is purchased. I wish to emphasize the fact that it is uncleanliness, pure & simple, which is responsible for the high morbidity among infant life in large towns.

According to the notes I have taken the following are the principle common morbid conditions of the alimentary tract for which the children are brought to be treated by the medical man.

Sore mouth.
Teething.
Colic & Constipation.
Diarrhoea & vomiting.
Wasting.
Summer Diarrhoea.

Taking them in the above order ___

Stomatitis. Among the various forms of stomatitis to be met with there are two kinds, which are by far the most frequent, & which constitute the bulk of the cases brought for treatment viz; the aphthous or herpetic variety & the Parasitic variety or true Thrush.

The latter is the more common of the two. I have notes of 36 cases of this Parasitic variety or true Thrush

The infants varied in age from 4 weeks to 11 months. In 4 of the cases the pectum & anus were infected & in 1 case the vagina

In all my cases the cause was traced to uncleanliness in the feeding utensils. The children were all hand fed — milk, milk & water, boiled bread, or some patent food were the principle articles of diet, with the invariably accompanying tube feeding bottle. In 20 of the cases the infants were ailing & weakly, but in the others they appeared quite healthy apart for the condition of the buccal cavity

In the bad cases the child when brought

for treatment was fretful & restless - The secretions of the mouth were scanty & gave an acid reaction - On the surface of the tongue & cheeks & fauces, numerous white patches were to be seen, the surrounding mucous membrane in most cases being swollen & inflamed, though in some cases it appeared to be normal. There was frequently vomiting & diarrhoea; the evacuations green acid & sour smelling. The white patches in the mouth are not easily detached & when removed leave a raw surface.
Microscopic examination of these white curd-like flakes revealed irregular filaments of a fungus (Saccharomyces Albicans) with rounded spores, together with epithelial cells, & debris, & various other organisms.

Under treatment they all, with one exception, quickly regained health

In the one case that ended fatally, I am fairly certain - that the mother made no attempt to treat the child & that the medicine prescribed was not

given. The treatment which I found most successful was to swab out the mouth every 3 hours with the following Solution

℞ Potas. chloratis. gr v
Acid Boric gr v
Glycerin ♏ xx
Aq ad ℥j. gr. Solutus

& to give internally

℞ Calomelanos gr 1/4 bis. die. sum.

with the following mixture

℞ Soda Bicarb gr ii
Tr. Nuc. Vom. ♏i
Soda Salicyl. gr i
Syrup aurant ℥ß vel Glycerin ♏x
Aq ad ℥j
cap. bitter gagne horam

At the same time insisting on the importance of absolute cleanliness in the feeding utensils & that the mouth of the child should be cleansed after every feeding with a solution of Bicarbonate of Soda 3ss to the ounce.

This parasitic form of stomatitis I have often met with as secondary to other diseases of a debilitating character.

The other form of Stomatitis commonly met with - viz. the Aphthous Variety I found to occur in older children - 10 mos. to 2 years - I have notes of 30 cases In this form of the disease the children were generally weakly & unhealthy - often recovering from some respiratory disease which had reduced their vitality - or resident in damp ill ventilated dwellings. In 24 of the cases there was an associated gastric catarrh which seems always to precede the stomatitis. In 19 of the cases Enteric catarrh was also present.

In these cases the cause of the disease is I think due to some toxin circulating in the blood, which acting as a nerve poison in the buccal mucous membrane, causes a herpetic eruption, & then ulceration results from the action of the bacteria which are always present in greater or less numbers according to the attention which is given to the factor of cleanliness in the feeding of the child. This form of Stomatitis

Sometimes occurs as a complication of some grave constitutional disease & in these cases I frequently found the parasitic form to be associated with it.

In the ordinary form the mother brings the child with the complaint that 'it has a sore mouth & will not take its food, & it is very feverish'. On examination of the child it is found that the temperature ranges between 100° - 103°F. & the pulse as a rule is very fast 120-130. It is restless & fretful. The lips are held apart, & the mucous membrane of the mouth is swollen, red & hot & presents characteristic ulcers - There is generally some tenderness & enlargement of the submaxillary glands. The ulcers are a little elevated - have reddened edges - & yellowish white floors They are exceedingly tender, & on this account the child refuses food.

This form resembles the parasitic variety but in the latter there is no ulceration - the child is younger and microscopical examination reveals the fungus.

Under treatment in ordinary cases the case quickly recovers. The treatment I found most efficacious was ——
(1) Swab out the mouth with a little weak solution of Permanganate of Potassium then (2) to paint the ulcers with a 2% sol of Cocain. Hydrochlor. & touch them with solid nitrate of Silver.
Two applications were generally sufficient In addition I gave a teaspoonful of the following mixture every 3 hours, with the directions that it was to be given in very small quantities at a time, so that it might come in contact with the whole of the oral mucous membrane.

℞ Tinct. Ferri. Perchlor. ℥ ii
Glycerini ℥ x
Potas. Chloras gr i
Aq ad ℥ i ℥ss Ter in.

with ½-1 gr of Calomel every night for 3 nights
In 5 or 6 days the child was nearly well again.

Teething. Disorders of Dentition.

Although dentition is a physiological process & cannot be placed under the term morbid condition, still it may be disordered, & give rise to symptoms of irritation. As a matter of fact this is frequently the case, for after the eruption of the tooth or teeth - the symptoms for which the child was brought for treatment frequently disappear rapidly e.g. convulsions - bronchitis - diarrhoea - feverishness. A large percentage of children are brought to the general practitioner for treatment for which no other cause can be found, than the systemic disturbance due to the physiological process of dentition.

In treatment - a calmative in the form of the following mixture, with a small dose of Calomel or Grey Powder invariably has a good effect

℞ Ammon: Bromid: gr ii – iv
Sodii: Bicarb: gr iv – x
Tr. Camph: Comp: ɱ v – x
Sp. Chlorof. ɱ ii – iv
Syrup. Aurant 3ij xx
Aq ad 3j
Cap. bis terve quaque hora.

In connection with Dentition I wish to refer briefly to Infantile Convulsions, because of their intimate connection with the eruption of the Temporary teeth, & also because the majority of cases which have come under my notice have been clearly traced to some disorder in the Alimentary tract. During the last 2 years I have treated over 70 cases of Infantile convulsions in apparently healthy children. In many cases there was a distinct neurotic family history, in others only probable. In others again there was nothing to suggest such an heritage. That, in the greater number of cases, the original cause was to be found in some Disorder of the gastro-intestinal tract, was proved by the fact, that the administration of a ½ to 2 grains of Calomel quickly restored the child to its normal health again, although the tooth which in its process of eruption had probably been the exciting cause of the fit, did not appear through the gum until 2 or 3 days afterwards.

Colic & Constipation. These are frequent & often obstinate conditions of infant life. I have placed them together for in my experience Colic is frequently the precursor of Constipation.

On questioning the mother one constantly elicited the fact that in the first few weeks of the child's life it suffered from "gripes", & this had been treated by the mother with some popular remedy obtained from the druggist e.g. "Infants' preservative" or "Pipe water". As these concoctions invariably contain opium in some form or other, they have, when given for any length of time a decided tendency to inhibit the natural peristaltic action of the bowels, which perhaps in some cases were congenitally sluggish, & so the result is habitual constipation.

Other causes I found to be over-use of badly prepared starchy foods — deficiency of fat in the food — insufficient supply of water. Out of the 62 cases in my notes in 4 I could find no cause and

the defect seemed to be an inherited one. In 3 of these cases, the mother, and in the other, the father suffered from habitual constipation.

In treatment of my cases I found the heavy Carbonate of Magnesia in 5–8 grain doses with occasional small doses of Castor Oil given over a prolonged period to act successfully. At the same time any errors or deficiency in diet were corrected. Abdominal massage along the line of the colon seemed to aid in attaining the desired result.

Vomiting & Diarrhoea.

Among my cases these disorders constitute by far the greater number of causes for which the children were brought for treatment.

I have noted over 380 cases, in which the ages ranged from 3–18 mos. & in only 11 cases were the children breast fed. In these 11 cases the

the mother was in ill health & therefore the milk was probably abnormal in quality or quantity or both.

In the bulk of the cases - the direct exciting cause was - uncleanliness combined with the administration, in many cases, of ill prepared or unsuitable food. The predisposing cause was found in some condition of lowered vitality in the child - or neglect - damp unhygienic surroundings

A great many of these cases occurred in nurse children - the mother leaving the children to work in the mill.

In most of the cases the chief symptom was vomiting - & this had been going on for some time - probably 2 or 3 weeks before advice was sought

The history generally given by the mother was - that the child was being brought up by hand & that the milk, or milk & water as the case may be, on which it was fed, did not appear to satisfy the child, or that 'it all came back curdled.' The

child would then be given some other food - such as sopped bread - pobs' or soaked biscuits. Change of food having no effect, & diarrhoea having now set in - the child was brought to the Doctor. On asking to see the bottle from which the child was fed - the one with the indra-rubber tubing was invariably produced - & the tubing, unless quite new, was always found in a dirty, sour smelling condition - The child was restless, irritable, losing flesh, constantly moaning or crying - The abdomen distended and tender.

The stools have a peculiar sickening smell - they may be pale & putty-like with fragments of undigested food, or curdy, liquid, greenish - and sour smelling - The characters of the vomit are watery, bile-tinged, with particles of undigested food.

If in the later stages of the disease - the child is much emaciated - temperature normal or subnormal - pulse frequent.

small & weak - The skin dry & harsh - with eruptions round the buttocks. The tongue dry & coated - parasitic or aphthous Stomatitis frequently present. The anterior fontanelle sunken & the "abdominal facies" distinctly marked.

In some cases the recovery under treatment is astonishingly quick. In others it is slow, tedious & discouraging, sometimes lapsing into a wasting condition upon which no treatment has any effect. Some do well for a time but the parents or nurse have not the patience to continue the treatment, & the child lingers on in a debilitated condition and ultimately dies from exhaustion or some intercurrent disease.

The treatment I adopted was — firstly to stop all milk food & this I think is a most important point. In place of

the milk food I give albumen water with a small quantity of alcohol, in the form of the best whiskey or brandy, in small quantities at a time - and allow the mother to give as much ordinary water - between feeds as the infant will take. I give ½ grain of calomel every night for 3 nights - followed by ½ a teaspoonful of Castor oil in the morning - & the following mixture to be given every 3 hours

℞ Bismuth: Carb: gr v
Sodii Bicarb: gr ii
Tinct: Nucis Vom: mj
Liq Arsenic mj ¼
Glycerin. m xx
Aq ad ℥j ft. haust.

At the same time strict ~~attention~~ attention to cleanliness is insisted upon. & the infants either fed by spoon, or through a bottle without tubes.

Wasting, Atrophy, or Marasmus.

This condition, though not nearly so frequently met with as the others mentioned, still is a fairly common one, & in my experience was generally the result of a chronic gastro-intestinal catarrh; though in some of my cases there was no history pointing to such an antecedent.

I have notes of 19 cases about which I was at considerable trouble to obtain definite information

All were hand-fed infants, the ages were from 2 – 10 months.

10 cases followed an attack of chronic gastro-intestinal catarrh.

2 cases were the result of insufficient food

2 " " " " inherited syphilis

In the remaining 5 cases there did not appear to be any ascertainable cause – nor did the children give evidence of any organic disease. It seemed to me that the stomach and intestines were simply unable to perform the functions of digestion and assimilation of food.

Of the 10 cases that followed chronic gastro-intestinal catarrh - uncleanliness, combined with unsuitable food, was again the original cause of the disease

Two of the cases proved rapidly fatal - Five ultimately succumbed after weeks of treatment, during which time whatever was done or given made not the slightest difference in the condition of the Infants. Three of the cases recovered after being under treatment for 12, 17 & 20 weeks respectively. One of these made what seemed a miraculous recovery being at one time in an almost moribund condition for over 36 hours. The two who had been starved made a good recovery after being placed in different surroundings - under other care. The Syphilitic infants both eventually succumbed, though one improved immensely, for some time, under $\frac{1}{2}$ gr. doses of Grey powder.

The children when brought to me, all presented much the same clinical

features - The mother says "It goes less & less, & does not weigh as much as when it was born", and indeed it presents a pitiable appearance.

There is great emaciation, the features of the face are small and sharp, with a pinched & worn expression. The skin is dry, harsh, and inelastic, & hangs in loose folds. The extremities are cold, & the anterior fontanelle depressed, the eyes are sunken.

The tongue is red & dry & stomatitis is frequently present. The child is ravenously hungry & will take anything put before it - if the condition of the mouth permits it. The temperature is normal or often subnormal & the pulse small & weak.

The child is constipated - the stools which are passed with difficulty and straining are either very dark & foul smelling - or light-colored cheesy lumps often covered with a greenish mucus. The urine is is scanty - of a very yellow color - and gives a strongly acid reaction - On

standing, there is a large deposit, which under the microscope shows large numbers of urates - crystallized and amorphous together with Uric acid crystals. Fatty & hyaline tube casts are also present. Albumen is invariably present, and out of the 9 cases in which I paid special attention to the urine, Sugar was present in varying quantity in 7 of them.

In several of the cases, the child exhibits what the mother terms "Inward convulsions" - or as she calls it 'It is convulsed inwardly' - If seen in this condition one notices that the child suddenly arches itself, flexes its fingers & toes, works its eyes about, moans & the lips turn livid. These attacks pass away in from 1 - 5 minutes

As to treatment - my results are not satisfactory, but in the class of patients from which my cases were drawn, it was impossible to obtain the long careful attention

to hygiene & the proper care in the preparation and administration of food which were necessary for success. The following was the method of treatment which was carried out as well as possible under the circumstances.

Cleanliness in the preparation and administration of food, & strict attention to the mouth of the child after feeding. The food to be given frequently & in small quantities at a time. I found that the food which was best suited to the low digestive power of the child was a first-class brand of sterilised condensed milk. This well diluted, and a small quantity of alcohol in the form of best whiskey seemed to be retained better than any other food. A teaspoonful of the following mixture was given every 3 hours with 1/2 grain of Grey Powder twice a day

℞ Glycerini: Acid: Pepsini: mv
Tinct. Nucis Vom: mj
Glycerini: mx
Aq ad ℥j. ft. haust

Ordinary meat food being gradually resumed

Summer Diarrhoea. Of this disease I have had considerable experience. I have also benefited very much by the experience of my Chief — who had practised in the same district for 12 years. It is a disease which is well known & dreaded by the unfortunate people who are doomed to live in the crowded houses, & narrow filthy streets of our large cities. The mortality among infants is very high — During the summer of 1901 the annual rate of mortality — under 1 year of age — per 1000 children born was 185.16 in this city of Manchester, with a population of about 550,000. The following are the official figures of the infantile mortality from Diarrhea (Simple & Summer) during the years 1901 and 1902

	Deaths.	
During	1901	1902
Jan. Feb. & March	45	33
Apr. May & June	32	33
July. Aug. Sept.	865	120
Oct. Nov. Dec.	74	52

On looking at these figures one is struck

with the marked difference in the death rate during the Summer months of the 2 years. This is accounted for solely by the difference in the atmospheric conditions which prevailed during these two summers.
In the Summer of 1901 - The temperature was high - rainfall light - and amount of Sunshine large.
In 1902. The opposite conditions prevailed - the temperature was exceptionally low - the rainfall deficient - the sunshine much below the average. This fact demonstrates very forcibly how the incidence of the disease depends, in some manner, directly or indirectly, on the height of the temperature. Dr Ballard has shewn that when a slow-acting thermometer suspended at a depth of 4 feet from the surface of the soil registers 56° F. - then Summer diarrhoea assumes a prevalent character. This fact has, I think given rise to the opinion still held

by some - that it is some emanation from the soil - which supplies the cause of the disease. I think however it is now almost universally recognized that the immediate cause of the disease is to be found in the bacteria-laden food on which the infant subsists.

The fact - that although the average atmospheric temperature of the summer of 1901 was much higher than in 1902, yet the temperature of the soil 4 ft. below the surface, averaged precisely the same during the 3 months July August & September, (of 60 years) viz 57.0° F., may be taken to prove that the soil temperature can only exert an indirect causal effect. The high atmospheric temperature in large towns - does I think undoubtedly predispose to disease by lowering the vitality of the nervous system.

Whatever secondary effects these may have - there is no doubt, in my opinion, that the primary cause of this septic or Summer Diarrhoea of infants is due to the presence of immense numbers of

micro-organisms in the child's daily food.

No specific organism has been detected, but the investigations of Booker & others - point to the streptococci and proteus vulgaris, as being the main delinquents. It is said however by some that the normal bacteria of the alimentary canal such as Baccillus Coli Communis, and Baccillus Lactis Arogenes, - which are universally present in the stools of infants fed on milk - will under certain conditions take on a more virulent form and produce poisonous toxins. However this may be, one has only to visit the crowded dwellings, to see for oneself the almost impossible task of keeping the food free from contamination.

One fact that impressed me very much, & of which I have seen no mention, is that the main source of infection is to be found in the common house-fly, which in these households at this time of the year constitutes a veritable plague.

this universal pest is, I am convinced, largely responsible for the impurity of the food. Putrifying material is all around – In the house, the soiled napkins of the child form a heap in one corner – in another place is the refuse food – just outside the back door is the privy – in the streets are the dung & filth – & from one putrifying mass to another these insects travel – every now and then settling with their bacteria-laden bodies, on, or in, the food about to be consumed or that placed away for another meal.

The milk is in most instances already contaminated when it reaches the consumer, & here again I believe the fly to be the chief culprit – for with the exception of a few instances the cow sheds in the country are generally filthy & surrounded by dung heaps on which swarm myriads of flies, & during the process of milking no care is taken to protect the fluid from the incursions of

these insects. It is my opinion that if the house fly could be exterminated & the milk delivered to the consumer in a sterile condition, then with ordinary cleanliness on the part of the mother or nurse this devastating disease – Summer Diarrhoea would be a thing of the past.

During the months of July, August & September in 1901 the cases under my notice amounted to 40 – 180 – & 100 respectively – total = 320

During the same months in 1902 in the same district – with the same average number of other patients, the numbers were 2 – 20 – & 38 respectively

total number = 78.

In 1901 there were 24 deaths about 8%
In 1902 " - 4 . - 5%

Included in the above number of cases of Summer or Septic diarrhoea were several very mild cases which might be classed as Simple Diarrhoea, but excluding a few which were due to some definite cause I have taken the mildness of the

case to be the effect of a smaller dose of the bacterial poison, or a greater toxin-resisting power on the part of the child.

In the severe cases that come on suddenly, one has to bear in mind acute Scarlet Fever or some Irritant Poison. In one of my cases in which the child rapidly succumbed Scarlet Fever developed in two other children in the same house within the week.

In the ordinary cases the mother brings the child with the history that it had been ailing for 2 or 3 days — & then it commenced to vomit almost everything it took back again, & now can keep nothing on its stomach.

Diarrhoea also started at the same time as the vomiting, & was getting much worse.

In many cases the mother says — that the child had had an attack of Diarrhoea about a week before it was taken ill - from which it recovered.

On examining the child one finds the

temperature raised, varying from 100°F to 103°F. or more. (The temperature does not run high as a rule. In two of my cases hyperpyrexia developed 107°F. being registed per. rectum, one recovered.) The pulse is fast 110 — 130 & upwards. The Tongue is coated with a thick whitish fur. The child is irritable, restless, very thirsty - cannot sleep.
The abdomen is distended & often tender on pressure. The stools vary in frequency from 10 to 20 or more in the 24 hours. They are watery, frothy, often greenish yellow, with sour putrefactive odor.
In severe cases they consists principally of serous fluid.
If the case responds to treatment the child gets rapidly better, but in many cases the disease reaches a further stage, & the child becomes listless, drowsy & more exhausted, Convulsions occur and death quickly Ensues.
In 8 of my cases Cerebral symptoms

set in before death - there was twitching of face and limbs - Squinting - dilated pupils - slow and irregular pulse - Cheyne-Stoke's respiration, & finally Coma & death.

In 3 of my cases death occurred within 36 hours.

In 6 cases the children lingered on in a precarious condition for from 3 to 7 weeks, & then developed a form of Marasmus, from which they eventually succumbed. The intestinal tract appeared to become incapable of resuming its normal functions.

Treatment. In some of the cases owing to the excessive vomiting treatment is often a difficult matter.

The child should be put to bed - not nursed on the knee - & should be disturbed as little as is compatible with the necessary movements for keeping it clean.

All milk food should be absolutely withheld. I found

that giving nothing but sips of water for the first 24 hours, together with 10 to 20 drops of best whiskey well-diluted, & this to be followed by the administration of albumen-water—to be the best method of dietetic treatment.

The preparation of whey, veal broth or barley water could not be carried out & kept in a satisfactory manner.

As to washing out the stomach, and irrigating the colon, as recommended by various authorities, although I have done it in several cases I do not think the practical result is as great as one would expect from the theory that suggests it.

Indeed in a large working-class practice it <u>cannot</u> be satisfactorily carried out.

As to the administration of drugs, I have tried several of the intestinal antiseptics, viz β-Naphthol - resorcin - salol - Acid Carbolic

Hydrarg: Perchlor:, & Calomel, and the latter is the drug which of all the others, seemed to me to do any good. Of other drugs, Castor oil, & Carbonate of Bismuth, with an occasional use of Opium - in the form of Pulv. Ipecacuanha: Comp. generally proved sufficient for the successful treatment of an ordinary case. The following was the routine plan of treatment I adopted, & found to work out successfully in practice compared with other methods of treatment which certain of my friends in the surrounding neighbourhood adopted.

I. Milk food in any shape or form absolutely forbidden.
Nothing but water to be given for 24 hours & that to be given frequently & in sips
Ten to twenty drops of Whiskey every 3 hours
The child to fed on albumen water for the next 3 or 4 days,

continuing with the whiskey.
If the child is improving try it with Mellins food made with water, & if it digests this a gradual return to a milk diet is allowed.
Every hygienic precaution being urged in the meantime, the milk to be well boiled & obtained from the dealer as fresh as possible, these conditions to be carried out for the remainder of the hot weather.

II
From 1–2 grams. of Calomel given in 1/4 gram doses every 2 or 3 hours
Half a teaspoonful of Castor oil to be given every 24 hours for 3 times & the following mixture every 2 hours

℞ Bismuth: Carb: gr viij
Soda. Salicylas: gr ij
Vin. Ipecac: mj
Glycerini: mxv
Aq Anethi ad ℥j

ft. Hst.

III. Cotton wool & flannel binder around the abdomen.

In some of my cases

in which the vomiting was especially severe, I found that if it did not yield to a hypodermic injection of morphia (1/60 - 1/40 grain) — no other drug was of any service.

A recurrence of the disease was not infrequent & generally proved fatal.

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In conclusion I wish to state, and to emphasize, two facts which in my opinion have not received the consideration of the Medical Profession & of the General Public to the extent which is warranted by their importance.

I. That the primary cause of disease in the infant's Alimentary System is to be found in the preventible impurity of their main article of diet viz., Cows milk, together with the lack of knowledge among the working-class Mothers concerning the feeding & management of infants.

II. That in the warm weather, the common

house fly is the main source of the infection & contamination of the milk.

With regard to the latter fact - I am convinced, from my own observations, that the comparatively slight incidence of summer diarrhoea during the summer of 1902 can certainly be traced to the scarcity of flies during that time.

As regards the supply of pure milk. This is a social question of the utmost importance, especially in the large manufacturing towns where so many of the children are reared by hand, for in spite of all the many substitutes - cow's milk is, & as far as I can see, always will be, the main food for infants who are not suckled at the breast. On this account it is much to be desired that the Authorities should exercise a rigorous supervision over the milk-trade, and surely it is quite feasible that some scheme could be formulated whereby a supply of pure, fresh cow's milk could easily be obtained by the people. In France & Germany, I believe there

are several towns where such a supply is obtainable; but our home Authorities, at present, have not yet had the vast importance of this question brought home to them. Could something like this be done, I am convinced thousands of lives would be saved annually.

I regret that I have not been able to set out in a more literary manner the result of a large clinical experience, but I have not "the pen of a ready writer".

I trust however I have given evidence of a practical knowledge & acquaintance with my subject, which, after all is the principal requirement in every day practice.

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