Practical observations on the diet of infancy and childhood / by Thomas Herbert Barker.

To the Editor of the Patriot
With the author's Compts

PRACTICAL OBSERVATIONS

(6)

ON THE

DIET

OF

FANCY AND CHILDHOOD.

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"IT IS OUR FIRM CONVICTION, THAT THE MORTALITY AMONG CHILDREN IS UNNECESSARILY GREAT; AND THAT THIS EXCESS OF MORTALITY ORIGINATES IN VERY MANY INSTANCES, IN THE MAL-ADMINISTRATION OF THE MEANS OF LIFE, RATHER THAN IN THE OPERATION OF NATURAL, OR INEVITABLE CAUSES. SOME ARE NURSED TO DEATH; WHILE MANY DIE BECAUSE THEY ARE NOT NURSED AT ALL; SOME ARE FED TO DEATH, WHILE OTHERS DIE FROM INANITION; SOME ARE PHYSICKED TO DEATH, WHILE OTHERS DIE FROM THE WANT OF A SINGLE DOSE—ALL THESE CASES COMBINE TO PROVE, HOW MUCH EXPERIENCE, AND JUDGEMENT ARE REQUIRED TO ADMINISTER WITH SUCCESS, TO THE MANY LITTLE WANTS AND INFIRMITIES OF CHILDREN.

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TO US SHORT-SIGHTED MORTALS, IT WOULD SEEM TO BE NO PART OF GOD'S PROVIDENCE, TO CREATE SO MANY CHILDREN TO PERISH, AT SO EARLY A PART OF THEIR EXISTENCE." *A Treatise on the Physical and Medical Treatment of Children.* By Dr. Dewees.

PREFACE.

The following observations on the Diet of Infancy and hildhood constitute one chapter of a work in course of prepa-tion, which will include also their General Management and iiseases.

No other department in the management of Infants can be amed in which such glaring deviations from the dictates of ature are perpetrated as in Diet. It is by no means uncom-on to observe the early infant wasting away and dying solely rough mismanagement here; and such will continue to be e case until correct information shall be diffused among others and nurses. It is satisfactory to find that, in the pre-nt day, such information is much more frequently sought ter than formerly: this is shewn by the sale of good works on e general management of childhood; but the writer conceives at but few of these treat the subject of Diet in such a mode its prime importance demands. Hence he has been induced print the following chapter in a separate form.

The remarks on Diet are arranged under three Heads, ac-rdingly as the child is nursed:—

I. By its mother.

II. By a wet-nurse, or

III. By artificial feeding (or by hand), and under these ads will be found the most important rules which may be re-ired in each case.

The reader will understand that, as we employ the terms, e period of *Infancy* implies the first two years of life, and at of *Childhood* from two to eight years. Infant-life has en sub-divided into two periods—that of *early* infancy, from rth to the sixth or seventh month,—and that of *later* infancy, om the fifth or sixth month, to the commencement of child-od.

arpur-Place, Bedford,
September, 1850.

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THE

DIET OF INFANCY AND CHILDHOOD.

I. We can hardly overrate the importance of regimen and diet in infancy. The happiness of future life depends on our care. Here a basis may be laid for a long life of health and vigour; or here that weakness and irritability of constitution may be induced, which will be the cause of disease and suffering. And so closely are the mind and body united, that even the *moral* character of the future man may be affected by errors in the diet, or the general management of infancy and childhood. The curvature of the pliant sapling may end in the confirmed deformity of the full-grown tree.

But as the subject of this chapter is so highly important and interesting, it is pleasant to add that it is also clear. Our duty is to interpret nature, and her reply to the question, "What is the proper

diet of infancy?" is so plain and certain that no room can be left for any doubt or discussion.

THE PROPER DIET OF INFANCY.

In all normal cases, the best nutriment of the babe is found in the mother's breast; and nothing more than this natural supply of food will be found necessary.

Even the best system of artificial feeding which may be employed in exceptional cases, must be regarded as a departure from the order of nature, and, while it may be sometimes necessary, it should never be the result of choice or caprice. But, unfortunately, it is a fact, too frequent in this country, that the infant is consigned to the risk of artificial feeding, or to the care of a hired nurse, when no necessity exists for such a practice. On this delicate and important topic we cannot do better than quote the strong and just terms of reprehension employed by Dr. Conquest:—

"It is more particularly in the higher circles that mothers neglect this obvious duty, and deprive themselves of so high a gratification; but it is not confined to that class of women. Too many women, who bear the name of mothers, are so wedded to gaiety and dissipation, that rather than forego other pleasures, they will neglect their infants, and permit them to pine for want. Surely such parents must possess hearts divested of maternal feeling, and destitute of every natural sensation.

"How cruel is the conduct of that woman, whose vigour of

body, and freedom from disease, admit of her nursing, and who, nevertheless, either brings up her child by hand, or commits it to the care of a hired nurse. Doubly does she violate the law of nature; firstly, in neglecting her own offspring; secondly, in monopolizing, through her cruel weakness, another mother, who would have had the superintendence of her own infant, wherewith to engross all her attention, and which, indisputably, had a prior claim on her solicitude.

"In many parts of the world, hired nurses are unknown. In China, whatever be the rank of the parties, it is deemed disgraceful for a mother to fail in the discharge of so natural a duty as that of rearing her own child. In the purest ages of Greece and Rome the same feelings prevailed, and in the most barbarous nations of the earth the practice of committing infants to the care of foster-parents is unheard of. In Greenland, among the Esquimaux, and in some other northern countries, so much importance has always been attached to an infant living on its mother's milk, that formerly, when a sucking mother died, her babe was either entombed in the same grave, or cast into the sea.

"That unworthy fear of the fatigue and confinement which, to a certain extent, necessarily accompany suckling, should prevail over the dictates of sense, and stifle the natural feelings; or that a short trial of weeks or days, or that some trifling complication, some accidental circumstance, should cause the attempt to be abandoned; are, unhappily, too common events. But it does appear most extraordinary that what can be borne by the poor woman, overwhelmed with toil, should be insupportable to the rich woman, with all the comforts and affluences of wealth to relieve her of everything tiresome or disagreeable in the management and rearing of her infant. Whilst the one is necessarily, by reason of her poverty, compelled to minister to her child at all hours, and to sacrifice her sleep, the other may have the child brought to her occasionally during the night, and have any other assistance she requires."*

* "Letters to a Mother," by J. T. Conquest, M.D., F.L.S.

Language would fail to describe the feelings with which we have witnessed the gradual, daily, yet certain decline, and ultimate death of the infant, which had been in perfect health up to the moment when its *natural* supply of food had been cut off and given to a foster child.

COMMON ERRORS IN THE EARLIEST DAYS OF INFANCY.

Should it happily have been determined that the infant shall enjoy a natural diet, we find that prejudice and tradition often lead mothers and nurses to distrust the sufficiency of nature's resources. The first object of many nurses, after having clothed the new-born child, is to put into its mouth some castor oil, butter and sugar, gruel, rue-tea, or some such mess, for the purpose of removing the *meconium*.* This common process of early purgation is quite unnecessary when the mother is prepared to suckle her infant; for the first flow of milk from the breast possesses a slightly laxative quality, which is sufficient for the purpose of nature. But if the infant must be consigned from the first to the care of a wet-nurse, then a small quantity (half a *small* tea-spoonful) of castor oil will be serviceable, as the milk of the nurse (who has been delivered some weeks before entering on her office) has lost its laxative property. But, supposing that the mother

* *Meconium.* This consists of several secretions in the form of a dark green, or brownish, pitch-like substance, accumulated in the intestines.

intends to suckle her infant, some hours may elapse (or even days) before the secretion of milk is ready. Here it should be remembered that the infant is very well able to bear a fast of moderate length; but in this interval the object of the nurse is, generally, to pour down the child's throat some indigestible (indigestible *to it*) food, such as gruel or panada, which commonly produces oppression, flatulence and pain. The infant complains and shews uneasiness in unmistakeable language, which excites the nurse to farther interference with nature. A quantity of "dill water" or such-like reputed corrective is now added to the undigested gruel. The bowels are moved, or vomiting relieves the system. This process is repeated, again and again, until the mother's milk is secreted, and the child obtains the only nourishment which can perfectly agree with its delicate digestive organs. But, even now, the controversy of the nurse *versus* nature is frequently maintained with all the perseverance of prejudice. It is now, perhaps, imagined that the supply of natural nourishment is scanty, or that the frequent application of the child to the breast may exhaust the mother. As a remedy for these supposed evils, the gruel is repeated, and followed by the above-named symptoms, until the child becomes emaciated and suffers under constant diarrhœa. The mother also suffers, being disturbed by the cries of her infant; and in such a case it is often hinted to the

medical man, that the maternal duty of suckling the child cannot be performed. In many cases like that just described, the experienced medical man will easily put aside the imaginary difficulties. He will assure the mother that her power to nourish the infant is sufficient, without calling in the aid of an inferior mode of nutrition. The child will be applied to the breast and the secretion of milk, thus encouraged by its natural stimulus, will soon be found ample. The mother will find that the natural process of suckling is not so exhaustive and debilitating as she may have imagined. Her health will steadily improve, her mind will become easy and cheerful, and she will have the additional satisfaction of seeing her babe thriving.

THE BEST ARTIFICIAL FOOD, WHEN REQUIRED, IN THE EARLIEST DAYS OF INFANCY.

The secretion of milk may be deferred until the end of the third day, or even later; and it is not always desirable that the infant should remain during this space of time without nourishment. In this case, *let the child's natural food be imitated as nearly as possible.* The nearest approach to the mother's milk is made by *a mixture of cow's milk and water in equal parts, with the addition of a very small quantity of refined sugar.* But let it be remembered that this artificial diet is only to be recommended when there is a delay of some days in the secretion

of the mother's milk. In ordinary cases the infant is well able to continue without any nourishment for twelve hours after birth. We may here lay down distinctly the principle to which we shall adhere in all our remarks on the diet of infants, and which will be dwelt upon at greater length in another section:—*In all cases either let the child have the nutriment intended by nature; or (when this cannot be done,) let the nutriment be imitated, both in its quality and its form, as closely as possible.* Disregard of this principle will inevitably lead to disease and danger.

IMPORTANCE OF NATURAL SLEEP.

It cannot be too distinctly noticed by young mothers that the good effect of quiet sleeping is almost as great as that of a true or natural diet upon the infant constitution. To disturb the repose of an infant in order to press food upon the stomach before nature calls for it is, indeed, a cruel sort of kindness. The process of nature in developing a healthy constitution absolutely demands periods of profound quietness and repose. We observe this law in young plants and animals as clearly as in the child. Night and sleep, even in the vegetable world, are as necessary to growth as daylight and the excitement which attends it.

During the first three or four months of infant life, it is well when the greater part of every twenty-

four hours is passed in natural sleep. Observe, we say in natural or healthy sleep; for the practice of administering narcotics to infants cannot be too strongly condemned, and this common offspring of ignorance will be denounced in the proper place. Unhealthy sleep may easily be known by the oppression of breathing, or other signs of a disturbed system. But it may be said that children vary in the amount of repose which their constitutions require. True:—but let excessive wakefulness be always regarded as an unfavourable symptom, and let all proper means be used to correct it. What are these proper means? Regular feeding, a quiet and soothing style of treatment, abstinence from everything which tends to excite or irritate the child, and darkness, or at least duskiness in the sleeping-room. These may be called natural soporifics, and are most properly employed in the treatment of infancy. Without enforcing an absolute clock-work regularity, in all that relates to the management of infancy, we cannot too strongly recommend the strictest regularity which can conveniently be attained, especially in the times of feeding and sleeping. In the earliest days of infancy such regularity should command the best attention of the mother and nurse, and it will repay them in the avoidance of many an hour of disquiet and trouble; for the new-born infant would appear to be a passive little animal machine, easily kept in

very regular working order,—if only properly managed.—

We may here remark on what may appear to some a trifle. The papering of the nursery or bedroom should be of a sober tint. Strong and bright colours are exciting and injurious. The blind should only be drawn down to exclude the direct rays of the sun while the child is sleeping. The foot of the cradle or cot should be turned towards the window, for as a child will look towards the light, in this position it will do so without straining the eye. On awaking, the infant should not be suddenly excited or exposed to a strong light; for at this time the pupil of the eye is expanded and sensitive. With regard to rocking, it is certainly a practice of which we can say nothing favourable. Even if not physically injurious, we would condemn it as unnecessary and troublesome, and, in infancy as in adult life, a bad habit is much more easily acquired than discontinued. If the means above indicated are duly employed the infant will seldom or never require to be rocked to sleep.—We may sum up the important facts just stated, in two words, when we say that a NATURAL DIET, and plenty of SOUND SLEEP, are two essentials of infant health.

The admission of a plentiful supply of *pure air* into the nursery is highly important. We do not say *raw, cold, or damp air*. It is not necessary to leave the windows of a nursery open, or to

carry a child out in cold weather, during a raw November's morning. Here there is a medium which may easily be discovered. Let the windows and the door of the nursery be opened, on suitable occasions, and, while you guard against sudden and chilling draughts of air, regard as equally dangerous, though in another way, a close, over-heated and impure air. Let every article of use or clothing be scrupulously clean.

For exercise, dandling in the arms of the nurse is sufficient for some months. All violent movements should be avoided. Gentle friction of the skin by the nurse's hand promotes circulation and warmth, and should, therefore, be frequently used.

HINTS ON THE HEALTH OF THE NURSING MOTHER.

The secretion of milk of good quality and proper quantity is so intimately connected with a healthy state of the system, that this part of our subject would be incomplete without some reference, however concise, to the management of the health of the nursing mother.

The diet should be the same as before her confinement, unless perhaps that she may, through increase of appetite, require a somewhat larger quantity of food, which should always be simple, wholesome and nutritious in quality, and not rich and stimulating.

It is a common error for the nursing-mother, to

partake freely of wine, porter or ale, and the consequences may be too great a fulness and febrile condition of the system, and diminution, instead of increase, of the quantity of milk; or if these effects be not produced, the milk may be of too rich a quality from superabundance of cream, and disorder of the digestive organs of the infant and all its attendant inconveniences may be the consequence. Stimulants should not be used unless prescribed by the medical attendant.

The bowels should be attended to, and a proper selection of aperients should be made, when they are required, inasmuch as the infant may be affected by their effect upon the milk. If the infant's bowels be also constipated, the mother may take a saline purgative, as Epsom or Cheltenham salts; if otherwise, she should choose a vegetable aperient, as Castor oil, conserve of senna, or five grains of the compound extract of colocynth, with two grains of the extract of henbane, to prevent its griping.

The mother should attend to the *state of the skin*, and have recourse either to the tepid or cold-water shower-bath, or to sponging the body with tepid or cold salt-water. She should take *exercise in the open air, avoid late hours, maintain a tranquil temper and cheerful disposition.*

A return of *the monthly periods* during suckling, often interferes considerably with the quality of the milk, especially if it occur during the earlier

period of nursing, and may require the transference of the infant to the care of a wet-nurse. If it do not occur until the sixth or seventh month, no inconvenience to the child may result, and as a general rule, artificial food must be substituted for the breast-milk as much as practicable, during the few days that the mother may be unwell.

If pregnancy occur, nursing should be abandoned, and if in the early periods, a wet-nurse should be procured.

II. So far, we have proceeded on the supposition that the mother nourishes her infant with the breast. Unfortunately, in the present day, there are many exceptions to this good rule; and of these we must now speak; but let not the infant be exiled upon trivial grounds, let nothing short of the existence of some serious disease, or physical inability, drive the child from its natural breast; in fact, let this important step be one of absolute necessity, not of choice or caprice.

CHOICE OF A WET-NURSE.

Supposing then that, on medical authority, the mother is declared to be unable to suckle the infant, our next care must be to provide a diet *as near to that intended by nature as possible*. We must look for a suitable wet-nurse. The person to whom the

mother's duty is transferred should be, if possible, like the mother in age and (except with reference to disease) also in constitution. Thus, if the mother is naturally ruddy in complexion and lively in temperament, her child should not be reared by a nurse who is of a dull and phlegmatic temperament. The age of the nurse's own child, if living, or (if deceased,) the time since its birth should correspond as nearly as possible with the age of the infant to be nursed. Good and cheerful temper, a clear and healthy complexion, a regular appetite, a freedom from diseases, especially such as are indicated by indigestion, foul tongue, or breath, or any scrofulous appearances—these are some of the chief good properties to be required in an eligible nurse;—she should, moreover, have firm and well-formed breasts, with nipples of moderate size, and well-developed.

The milk from the breast should be thin and of a bluish-white colour; sweet taste; and on standing in a vessel, should throw up a considerable quantity of cream. If dropped in water it should form a light cloudy appearance, and not sink to the bottom in thick drops. If she is unwell while nursing, her services should at once be dispensed with. It will be well in making a selection of a wet-nurse to examine her child, to observe if it have a healthy appearance, firm flesh, clear skin, and particularly if it be free from any eruption or enlargement about

the head and neck. Temperance, cleanliness, a character for good conduct, fondness for children, and tact in the management of them, are additional good qualifications.

DIET OF THE WET-NURSE.

The following remarks will apply equally to the nursing mother, and must be especially regarded :—

Animal and vegetable food should be proportionately mingled in the nurse's diet and, as a general rule, it may be said that her food should not be dissimilar from that to which she has been accustomed and which she has found to agree with her stomach. It may, of course, be rather more generous; but highly seasoned dishes, *strong* tea or coffee, an excess of salted or very fat meats and rich pastry should be strictly avoided. She should, as far as is possible, avoid such stimulants as wine and beer, but especially spirits. If habit or constitution make some gentle stimulus necessary, perhaps, the best that can be recommended, is a moderate quantity, given at regular hours, of bitter ale or the 'Pale India Ale' of Bass or Allsop.

CAUTIONS IN REFERENCE TO THE INFANT.

It should be distinctly noted that when the nurse is competent to the full discharge of her duty (as she should be) in supplying the infant with a sufficient quantity of milk, no other kind of nourishment should be given, and the ignorant prejudices of the

foster-mother in this respect must be carefully watched and guarded against. To give solid food to an infant when there is plenty of far superior food in the breast of a nurse is gross folly. The infant organs of digestion are suited to assimilate the only natural food—milk, while even the lightest farinaceous food may produce dyspepsia. Mauriceau, a French accoucheur, has recorded the case of a healthy child which was fed, on the third day after birth, with *bouillie*, (or flour boiled in milk). The consequence was that the infant died under a severe attack of colic attended with convulsions. There can be no need of any artificial food, if during the first five or six months, the infant is applied to the breast at regular intervals of about three or four hours, by night as well as by day. The appetite of the child can be thus duly understood and satisfied by regularity of attention. "A single ounce of milk," says Dr. Combe, "well digested will nourish more than double the quantity when it oppresses the still feeble stomach."* The infant should not be confined to one breast; nor should it be allowed to sleep with the nipple in its mouth. The mother or nurse should carefully guard against the commencement of this bad habit—for should it become confirmed it will materially abridge the period of sleep both of herself and the child, lead to undue repletion of the stomach of the latter, and to a long train of

* "A Treatise on the Physiological and Moral Management of Infancy." By Andrew Combe, M.D.

evils. We need hardly add to these hints for the wet-nurse a censure of the disgusting practice of chewing food, and then transferring it to the mouth of the infant. Such a habit needs only to be named to be condemned.

DIET OF A PREMATURE CHILD.

Perhaps, this will be the most suitable place for a few hints on the nursing of children prematurely born. Immediately, on the premature birth of an infant (when there is hope that it may live), a healthy nurse should be found, so that the infant may at once be nourished with natural food, instead of waiting for the appearance of the mother's milk. It is desirable, in such a case, that the nurse should have small nipples, such as may be inclosed within the lips of the infant. If it be too feeble to suck, the artificial food before alluded to, must be administered by means of a small tea-spoon. Its feeble stomach, and digestive powers will require but a small quantity at a time, perhaps not more than two or three tea-spoonsful of the mixture of milk and water, but at shorter intervals—say every hour or two, unless longer sleep should occur to prevent. In these cases warmth is of immense importance to their well-doing, but this will be treated of in the chapters on Clothing and Temperature.

There is a popular prejudice in favour of children born at the seventh month of pregnancy and against the surviving of eight months' children; but this

notion is entirely without reasonable foundation; for it is a fact ascertained beyond doubt, that the seven months' child has a less chance of living than one of eight months, as the latter has a less chance than the child at the full period:* but with careful and delicate attention, both the seven months' and the eight months' child will be likely to live. We need hardly say that attention to a strictly natural diet is of especial importance in such cases.

WEANING.

Weaning implies a *gradual* withdrawal of the infant from the breast, and a careful substitute of other food in the place of the nurse's milk. The change should on no account be abruptly and suddenly made, unless imperatively called for by some circumstance which would render the gradual process of weaning injurious to the mother or child; and it should be borne in mind that the younger the infant, the greater the care required in the choice of food adapted to its digestive organs. We are easily guided by nature to determine, in all normal cases, the proper time of weaning. It is clearly indicated by the appearance of teeth, and, therefore, should generally take place between the seventh and the twelfth month. Here we would offer a word of

* This supposition is as old as Hippocrates, who holds that fœtuses born at the seventh month survive, but not those of the eighth; and it is probable that the Pythagorean notions regarding the mystical power of the number seven, are at the foundation of this statement.

caution against protracted suckling. Constitutions capable of nursing with impunity a strong healthy child for some length of time beyond twelve months, are but rarely met with, and medical men frequently observe the injurious effects of such attempts, both to mother and child. What are these injurious effects it is not our province in this chapter to describe, but the opportunity could not be allowed to pass without thus briefly adverting to them.

If weaning have been determined upon, a proper quantity of the best diet should now be regularly given at intervals of about three hours each, and the child should no longer be disturbed by a want of food during the night. To avoid this, a sufficient meal should be given a short time before the infant goes to rest, and it should be fed early every morning. A common plan is to wean the child during the day, and for some time to continue to nurse it during the night—and this is unobjectionable provided the mother do not allow the child to convert the night season into a regular period of feasting. Should the child fall into this bad habit, the mother will rise in the morning exhausted and unrefreshed, and the child's digestive organs will probably become disordered. To guard against this let the breast be given at longer intervals during the night, and its artificial food as late at night and as early in the morning as convenient. But of what materials should the diet now consist?

For some time this should not differ too much from the qualities of the previous milk diet. To make the change from the breast to the new diet gradual, the infant should be allowed to take a little soft and mild food, such as wholesome bread steeped in milk and water, as soon as any teeth have appeared, and thus he will be gradually prepared to leave the breast. But even after weaning, the diet should still be mild, such as rice, oatmeal, gruel, panada, or biscuits steeped in water, with the addition of a little milk and sugar, and gradually other similar articles of food may be added. The yolks of lightly-boiled eggs are rich in nutritious matter. The *lait de poule*, a French preparation, may be made by shaking or beating up the yolk of an egg in more than half-a-pint of water sweetened with a little sugar. Hard's farinaceous food; Leman's tops and bottoms, or Dodson's biscuit-powder may be tried, or, if these disagree with the stomach, weak beef tea, veal or mutton broth, without a particle of fat, and mixed with an equal quantity of farinaceous food and a few grains of salt. Bullock's Semola, a preparation of the gluten from wheat, is a light, digestible, and nutritious article of food for infants and invalids, which the author has frequently recommended, and found to agree well with the stomach, when other preparations and kinds of food had failed. No general rule

as to the particular food which will be suitable during the process of weaning can be laid down, for in practice it is repeatedly observed that one kind of food, which remarkably well agrees with one child, as decidedly disagrees with another. The general principles which have been insisted on, must be followed, namely—of giving sufficiently thin and light food, and not in too large quantity, and selection must be made after sufficient trial, of that particular preparation which suits best the stomach of the child. Remember that we are here speaking of the *weaned*, and not of the younger infant. The diet of the latter, if artificial food is required, must be restricted to the milk and water. In the last section on artificial feeding, several preparations will be given applicable to the more advanced infant,—all of which have received the sanction of experience, and from which there will be no difficulty in selecting one which will agree. In that place will also be found certain rules to be regarded, as to the method of feeding. In general, it is advisable to defer the giving of animal food in any form, until the *canine* or *eye-teeth* have appeared. But even when this is the case, as dentition is not yet completed, animal food should be sparingly given. No better meat can be given than the lean part of mutton in small quantities. Veal, pork, goose, duck, and fat and salted meats are objectionable. If mothers would wish their children to enjoy heartily

a regular, plain and wholesome diet, let rich pastry be kept strictly under lock and key. It will be far more harmless in the cupboard than in the juvenile stomach. Let it be noticed, as a general rule, that it is not the quantity of food which is eaten, but that quantity which is *well-digested*, that nourishes the system.

Salt and sugar are the only proper condiments to be allowed in the food of children. Though we have strong objections to the use of sweetmeats, we would not deny the use of sugar, which is a luxury that may be safely enjoyed in moderation. A due proportion of salt should always accompany a vegetable diet.

BEVERAGE OF CHILDHOOD. INJURIOUS EFFECTS OF STIMULANTS.

When we turn to consider the proper beverage of childhood, we meet an abuse which calls for the severest reprehension. One might imagine that all persons endowed with common-sense would understand that pure water, with or without a proportion of milk, or well-made toast and water, must be the proper drink during the excitable period of childhood; but unhappily we are compelled to advert to the fact, that some parents and nurses—not knowing the nature of what they do—have the pernicious habit of administering to children, not only tea and coffee, but wine, malt liquors, or even—generally as a cure for some slight complaint, ardent spirits!

It is a duty to explain clearly the tendency of this practice. It tends to injure the child and the future man, not only physically, but also morally. Proofs of this are unhappily too abundant. There can be no dispute on the point. Whatever may be said regarding the use or the abuse of wine, ale or spirits, with regard to the *adult* constitution, it must be observed that on the delicate, excitable and impressible constitution of children, such stimulants act with a tenfold pernicious effect, hurrying on the circulation—naturally quick in youth—vitiating the stomach, disturbing the nervous system, and producing an undue afflux of blood to the head. Common sense, without any help from physiology, might surely put down the practice against which we direct this paragraph. If wine or other alcoholic stimulants are suitable *medicines* to revive the languid circulation and sustain the animal warmth in cold and feeble old age, how can they be proper articles of diet for the precisely-contrary condition of childhood? The fire required in the midst of December's snow is surely not wanted in the height of summer warmth! A spur to the youthful pulse is surely not required when it naturally runs at a pace which would indicate fever in an adult! Besides, the growth of the appetite for alcoholic stimulants, when frequently indulged, is well known to be rapid, and we would therefore ask,—if a child of six years of age is allowed to drink a glass of port or

sherry wine, then *what* and *how much* liquor may he be expected to take when he is a man of sixty? We would lay it down as a rule, that no alcoholic stimulants should be tasted during childhood. The few exceptions to this rule are cases which should be referred to medical treatment. If a medical man is consulted with regard to administering to a child a dose of rhubarb and magnesia, he should in all consistency, be consulted before such a medicine as *port wine* is given. The author is pleased to find his opinions, on the administration of stimulants during childhood, fully confirmed by a distinguished writer on physiology—Dr. CARPENTER—in his recently-published and excellent prize essay "On the Use and Abuse of Alcoholic Liquors in Health and Disease.*

* In a curious old book on the acute diseases of infants, written by Dr. Harris, a contemporary with the celebrated Sydenham, we meet with several remarks which though given in a very homely style, may serve to confirm some of our own observations. This writer strongly condemns the conduct of mothers who in his day, too frequently consigned their infants to the charge of hireling nurses, and refers to "that cursed Habit, which many profligate Nurses have got of indulging in Wine and other spirituous Liquors, whenever they can come by them; by which their Milk is overheated, and the Flame is communicated to the tender Infant, which scorches it up, in Spite of all the Means that can be used to prevent it.

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To how many Dangers then are sucking Children exposed? How slippery is the Health of those innocent little Creatures! Doubtless to these and other Causes, which I shall soon mention, it is chiefly owing, that in the Villages about London, the passing Bell hardly ever ceases ringing out the Death of Infants which have died from the Neglect, Nastiness, Barbarity, or intemperance of the nurses." Again—

III. So far we have proceeded on the supposition that the infant has been nourished either by the mother or a well-chosen nurse. But there may be cases in which it would be highly improper to allow the mother to suckle her own babe, while it may be difficult to employ the services of a good wet-nurse. In such a case, we must, with the utmost caution, employ a system of *artificial feeding*. On this point we must especially request parents to bestow the greatest care and attention; for, as the mode of ar-

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"As to the third more immediate Cause of the Diseases of Infants, *viz.*—Allowing them too soon the Use of Meat—It is very surprising to see some Mothers, who are fond of their Children, even to Distraction, using their utmost Endeavours, as it were, to murder them with a kind of Food, that, as every Body must be sensible, is Death to them. Who in the World, endued with the faculty of Reason, can imagine, that such a tough substance as Flesh, can agree with Infants, before Nature has provided them with Teeth to chew it? Or who, in their Senses, would cram a Child with Food, that a vigorous Adult has enough ado to digest?" Again—

"The fourth more immediate Cause of the Diseases of Infants, was the imprudent allowing them the Use of Wine and other Spirituous Liquors. And this, as I before mentioned, as well as the preceding, is owing to the foolish Indulgence of too fond Mothers. Such will tell you, that those Things which are good for themselves, and refresh their drooping Spirits, can never be of any pernicious Consequences to their Children; as if there were no Allowance to be made for the different Ages and Constitutions of Persons; certainly those good Women very little consider the vast Difference there is between their own firm and compact Frame of Body, and the tender and half-fluid Structure of Infants; neither do they remember the common Saying, that one Man's Meat is another's Poison. In short, they quite forget that their own delicate Stomachs are sometimes surfeited from no other Cause, than a rich Table, while the weak and languid Appetite of their Children is hardly sufficient to digest Panado."

tificial feeding is plainly a deviation from the plan of nature, we should study to make such a breach of rule as small as the circumstances of the case will allow. *A very considerable part of the mortality of infants reared by hand is the result of errors respecting either the quality or the quantity of the artificial food administered.*

In the first place I would observe that where an infant is to be brought up by hand, or where there exists a probability that ere long artificial feeding will have to be resorted to, it ought not to be put to the breast at all; weaning it after it has been accustomed to the breast-milk for a few weeks, is exposing it to imminent danger. This is a notion which is commonly entertained, and experience teaches us that it is correct, for it is a fact that an infant which has never had a nipple within its lips, has a much better chance of being reared by judicious hand-feeding, than if, for a few weeks, it had previously been nursed at the breast.

THE BEST ARTIFICIAL FOOD IN EARLIEST INFANCY.

What then should be the nature of this food? According to the principles already laid down, it is clear that its ingredients should form the *best possible imitation* of the natural milk which *ought* to be the diet of the infant. In order to succeed in this imitation, we must carefully study the properties of the original. MILK is the perfect form in

which nature presents to us the three essential constituents, *saccharine*, *oily*, and *albuminous* matter, necessary to support infant life. It may be resolved into three organized compounds, which we may designate by the familiar terms, *cream*, *curd*, and *whey*. These three constituents vary in proportions in the milk of various animals, as the following table will show:—

Properties.	Human.	Cow's milk.	Goat's milk.	Asses' milk.
Casein	2.95	4.48	4.02	1.82
Butter	5.20	3.13	3.32	0.11
Sugar	6.34	4.77	5.28	6.08
Saline matters.....	0.45	0.60	0.58	0.34
Water	85.06	87.02	86.80	91.65
Total.....	100.00	100.00	100.00	100.00

We see, in the above table, that the milk of the cow contains a considerably greater proportion of *casein* (or cheese-like matter) than human milk. Now it should be observed that this *casein* is the least digestible of the constituents of milk, and from this fact we learn the necessity of *diluting* cow's milk, so as to adapt it to the tender organization of the child. The milk of woman contains a larger proportion of butter than that of the cow, and hence we infer the propriety of adding a small quantity of cream to the diluted cow's milk, given in feeding by hand. But the addition of cream is not so important as the proper dilution of the milk. The foregoing table also shows us that it is proper to

add to the diluted cow's milk a small quantity of loaf sugar, to increase its resemblance, in the saccharine quality, to the milk supplied for the child by nature. Moist sugar may be used occasionally if the infant's bowels are confined; but let it be noticed—we do not recommend the free use of sugar; as this tends to cloy the stomach and weaken the digestion, thus producing acidity, sour eructations and flatulence. Respecting the use of small quantities of sugar in the diluted milk of the cow, the foregoing table—from Dr. CARPENTER'S Principles of Human Physiology—certainly confirms our advice which, in this instance, accords with the general practice of nurses. More distinct notice of this part of our subject is rendered necessary, because Dr. CONQUEST (in his "Letters to a Mother") condemns the use of sugar. His observations on the point appear to us to be founded upon false data; for the table on the comparative composition of various kinds of milk, as given in his work, is very erroneous in several particulars.*

For the first four or five months let a mixture of

* It is stated by Dr. John Clarke (in his "Commentaries on some of the most important Diseases of Children") that cow's milk previously skimmed and then mixed with $\frac{2}{3}$ or $\frac{3}{4}$ of its measure of gruel (made from pearl barley, grits, rice, or arrow-root) is preferable to the mixture of *cow's milk, sugar and water;* but this does not accord with our experience, which warrants us in giving a decided preference to the latter mixture. When gruel is used, there is a considerable risk that the nurse will not make it always of uniform strength, and the slightest variation in this respect is sufficient to derange the delicate digestive organs of the very young infant.

fresh cow's milk and pure boiling water, in equal proportions, with a small quantity of loaf sugar, be used. For the first fortnight the proportion of water may often be advantageously increased to two thirds, but, as a general rule, the best mixture for a healthy, full-grown infant will be of equal parts of milk and water. At the expiration of the fourth or fifth month, pure, fresh, undiluted milk may be *gradually* substituted for the diluted mixture. If, at any time, sickness or disorder of the bowels occur, either diminish the quantity, or try it somewhat more diluted, until these symptoms subside. If, on the other hand, no disorder of the stomach or bowels is produced, and the infant is not satisfied with the above mixture, gradually diminish the quantity of water, or try the addition of *one teaspoonful of cream* to four ounces of the mixture of milk and water.

COMMON ERRORS IN EARLY ARTIFICIAL FEEDING.

The above *recipe* for an imitation of the mother's milk may appear to some nurses as a very poor and thin sort of diet, and they may, consequently, think it advisable to deviate from it by, now and then, giving to the infant more substantial fare, in the shape of gruel, panada, or some other farinaceous preparation. Here the physician has to contend with a very obstinate and firmly-rooted prejudice. The nurse imagines that, because a cup of gruel

contains a considerable quantity of nutriment (even for an adult) it must, therefore, be suitable to strengthen the infant, and never considers that, if the infant's stomach is not prepared to digest and assimilate such food, the effect must be injurious. Frequent observation of the bad consequences of this prevailing error among nurses leads us to state here, emphatically, that an infant brought up by hand is much safer and has a much better chance of thriving with the said mixture of milk and water, than when a stronger food is used.—Why? Because the former is well digested, while the latter is not; and all indigestible food produces irritation and oppression. It is quite certain that the mortality among artificially-fed infants (which is confessedly *very great*) may be considerably diminished by careful attention to this point; and as it is so important we would confirm our own opinion, derived from experience, by a few quotations from medical writers.

THE DIET OF INFANT LIFE BASED UPON CHEMICAL PRINCIPLES.

A pamphlet by Mr. Charles Beckett of Hull,* contains some excellent observations on Diet, based upon the recent researches of the distinguished German Chemist Liebig, and as the writer's conclusions are strongly confirmatory of the correct-

* "A few practical Observations on Diet, especially that of Children and Invalids." By Charles Beckett, Esq., M.R.C.S.

ness of the statements already given, we shall take the liberty of appending a quotation :—

"*The relation of food to the mechanical powers of the system,*" writes Mr. BECKETT, "is of great importance: but this law is often entirely disregarded. It evidently never was intended that children which have not cut their teeth, should be furnished with food requiring mastication, yet how constantly do we see them supplied with portions of meat, pastry, and other (to them) indigestible substances, in direct violation of this plain law. The result is, that instead of premature developement of strength, we have irritation of the lining membrane of the stomach and bowels, which induces diarrhœa, and may result in the more formidable evils of convulsion or atrophy. The difficulty of getting parents to attend to simplicity of diet in children, under five years of age, is a fertile source of disappointment to the practitioner, as well as of atrophy, marasmus, and infantile remittent fever (all fatal forms of disease), to the child. This foolish system of indulgence extends to the lowest ranks of society, and seems often to be the most practised where it is likely to be the most injurious.

"*The relation of the food to the chemical requirements of the system,* is, however, of all others, perhaps, the most important to be borne in mind; and it is here that recent researches more especially avail us.

"All the aliments we take resolve themselves into two great classes, according to the purpose they subserve in the economy —either nourishing the structures, and hence called Elements of Nutrition; or affording animal heat by the breathing process, and therefore termed Elements of Respiration. The former, that is, the elements of nutrition, are quadruple compounds, chiefly composed of four gases—nitrogen being the characteristic gaseous constituent. The latter, or the elements of respiration, are *triple compounds*, composed of three gases, and carbon generally, is their characteristic element.

"In the following tables they are classified:—

NITROGENOUS OR QUADRUPLE COMPOUNDS.	NON-NITROGENOUS OR TRIPLE COMPOUNDS.
Vegetable Fibrin, Albumen, Casein } Found in Vegetables and Grains.	Sugar
Animal Flesh,	Gum, in Flour,
Gluten, in Flour,	Starch, in Flour,
Casein, in Milk and Cheese.	Sago,
	Fats,
	Butter,
	Alcohol, in Beer, Wine, and Spirits.

"The bearing of the chemical classification of aliments just alluded to, upon Diet, proves to be of great importance. One great principle which we may lay down, is, that under all circumstances, those elements which the system requires, must be supplied by the food, in order to the continuance of health; for though the system has an *appropriation*, it has *no creative power*.

"Hence, especially in the management of infants, it is as cruel, as it is unwise, to depend *mainly* upon aliments which are chemically incapable of affording adequate nutrition. Sago, for instance, as an article of diet for children, is, *where relied upon*, most objectionable. I have seen several cases of the unhealthy fattening of children, followed by extreme emaciation, difficult dentition, and even where worse consequences have apparently arisen from this cause. The fact is, that on reference to the table, we shall find sago to be one of those compounds, incapable of organization, from its chemical constitution; and, moreover being deficient in salts of lime, it will not afford the requisite supply for the growth of the bones, and developement of the teeth; thus directly tending to induce rickets, and tardy dentition. No wonder, then, that it fails to supply the place of homelier food. It would appear that, in those cases (unhappily too common), where children are deprived of nature's own inimitable aliment, there is a tendency to tax the powers of imagination to supply the deficiency. If those concerned, would rest satisfied with slight modifications of the milk and bread, which they can so easily command, the result to their

offspring would be most salutary. The chief defect of the milk of the cow, as an aliment for children, is its comparative deficiency of the creamy, and excess of curdy particles; but by diluting the milk with water, to lessen the quantity of the latter, and by adding a little cream, to increase the proportion of the former, together with a little sugar and salt as suggested by Professor Burns, we imitate nature more closely. The various preparations of flour, boiled or carefully baked, or in the form of biscuit powder, are proved, by chemistry, as well as by experience, to be preferable to sago, arrow root, or other farinaceous substances. Surely, if these were essential or desirable aliments for children in this country, we should have them provided nearer home than we find them to be."

"In all circumstances," writes Dr. Darwall,* "it is of great importance not to *overfeed* a child; for without question, this is one of the most fruitful sources of infantile diseases; even of those, which (like "rickets") appear to be the effects of deficient nutriment. It is, however, one of the most difficult things to persuade either mothers or nurses that food can do a child, who seems weak and feeble, any mischief. 'Such a child' (it is said) 'wants strength and, therefore, you must give nourishment.'—Their reasoning is, indeed, correct—their mistake lies in the mode they pursue of obtaining their object. When much food is given, it frequently happens that the child really receives very little nourishment; for the stomach is actually weakened by its own efforts. The plan, therefore, is to afford nourishment in such proportions as will best favour the powers of digestion, and this will be in small quantities and at rather distant intervals."

If gruel, panada, and similar food must be condemned, when they are inconsiderately administered to the infant, what must we say of the practice of

* "Plain Instructions for the Management of Infants." By J. Darwall, M. D.

giving to a toothless child such substances as solid bread, potatoes, or the flesh of animals—roast beef for instance. One might think that common-sense would sufficiently show the absurdity of such treatment. Nature has given to all creatures intended to consume flesh suitable teeth to tear and masticate it, and the adult human being is furnished with such teeth; but look at the mouth of the infant, and observe for what purpose it was intended.—The tender and toothless gums, the soft, full and prominent lips, the whole formation, admirably adapted for receiving a bland, fluid diet by suction, but totally unfitted for mastication,—do not these signs clearly enough declare the impropriety of giving to infants the diet of adults? Reasoning and authority might seem unnecessary on such a point, and yet, so frequently is the error against which we write committed, that we must confirm our protest against it by another quotation:—

Dr. CLARKE* says "the practice of giving solid food to a toothless child is not less absurd than to expect corn to be ground when there is no apparatus for grinding it. That which would be considered an evidence of idiotism or insanity in the last instance, is defended and practised in the former."

Are these reasons and authorities sufficient on this point? or must nature, reason and the highest medical advice be still resisted, while the dictum of

* "Commentaries on some of the most important Diseases of Children." By J. CLARKE, M.D.

an ignorant nurse is to pass as an oracle on the management and preservation of infant-life?*

With regard to the *quantity* of the first artificial food proper in the early stage of infancy; let it be duly considered that the stomach is small and unaccustomed to its functions. A young apprentice must not, at first, have the hardest work to do. Let the diet of the infant be gently given in small quantities. Let the first symptom of indifference be noticed as a sign that the appetite is satisfied for the present. As a general rule, we may state that six or eight table-spoonsful will be enough to be given at one time. It is true that, when too much is given, nature (infinitely wiser than the "cramming nurse") provides a remedy for the evil by vomiting.

* Since writing the above we have met with the following graphic description of the condition of the infant which has been deprived of its natural quality of food, as contrasted with that of the infant when reared naturally, in the elaborate and excellent Lectures on the Diseases of Infancy and Childhood, by Dr. CHARLES WEST. It is worth transcribing:—"The infant whose mother refuses to perform towards it a mother's part, or who, by accident, disease, or death, is deprived of the food that nature destined for it, too often languishes and dies. Such children you may often see, with no fat to give plumpness to their limbs,—no red particles in their blood to impart a healthy hue to their skin,—their face wearing in infancy the lineaments of age,—their voice a constant wail,—their whole aspect an embodiment of woe. But give to such children the food that nature destined for them, and if the remedy do not come at all too late to save them, the mournful cry will cease, the face will assume a look of content, by degrees the features of infancy will disclose themselves, the limbs will grow round, the skin pure red and white; and when, at length, we hear the merry laugh of babyhood, it seems almost as if the little sufferer of some weeks before, must have been a changeling, and this the real child brought from fairy-land."

But even this very emphatic pronunciation of "no more!" from the stomach, does not convince the nurse of her error. She only observes it, and says, "Ah, 'tis a good sign! the child is healthy." This again is an error. It is certainly well that the stomach can thus throw off the superfluous matter, but it would be far better to make the effort of vomiting unnecessary. As it proceeds from an inverted and unnatural action of the stomach, it must have a tendency to induce some weakness in the digestive organs.* Whenever, therefore, a child is observed to vomit frequently, care should be taken *to lessen the quantity, or diminish the strength* of the artificial food, until you have found the point where the appetite is appeased and no food is rejected.†

* "Nurses and mothers imagine this vomiting a sign of children thriving well, but we may compare it to that of a full-grown person, who eats and drinks so often, and in such quantities, that he is obliged to vomit several times in the day." ROSENSTEIN'S Diseases of Children and their Remedies.

† The distinguished American Physician, Dr. DEWEES, observes, "It should be constantly borne in mind, that it is not the quantity of food taken into the stomach, that is availing to the proper purposes of the system; but the quantity which can be digested, and converted into nourishment, fit to be applied to such purposes." A Treatise on the Physical and Medical Treatment of Children.

"The most common causes," remarks Mr. NORTH, "of those derangements of health which either immediately produce, or eventually lead to, convulsions in children, are errors in diet, with respect both to the quantity and quality of the food. So long as nurses and mothers believe that children thrive in proportion to the quantity they eat, so long will convulsive diseases be frequent and severe." Practical Observations on the Convulsions of Infants.

We will close this note with a quotation from the valuable work by

Slight disorder of the digestive organs in infancy, induced by excessive quantity, or indigestibility of food, does not prove fatal in early life, but it frequenly entails upon the individual a weakness of those organs through life, incompatible with perfect health. This has been observed by most medical practitioners, and Dr. Coley, after an experience of forty years, remarks :—"In most cases, the slighter forms of indigestion and flatulence spontaneously subside as the child advances in age, generally about the fourth or fifth month ; but those who have been afflicted during infancy, seldom through after life possess strong digestive powers, and are frequently, when females, the subject of neuralgic and hysterical diseases."*

Nothing can more clearly shew the responsibility of the mother and the nurse, than the fact that their proper management of infancy, in reference to the single subject of diet—involves, not only the

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Dr. Yeats.—"In attending to the health of children, particularly in reference to the disease of Water in the Brain, sufficient regard is not paid to the quantity and quality of their food. In general they are supplied in considerable quantity with various articles, which the well-meant, but mistaken, indulgence of nurses is apt to increase under an opinion that they will be better nourished, and thus have their strength and growth promoted. Perhaps a more fatal idea never prevailed. The stomach is made to labour more than is necessary, by the improper quantity, and injurious quality, of the food, and an imperfectly subdued mass is carried to the duodenum. * * " A Statement of the early symptoms which lead to the disease termed Water in the Brain. By G. D. Yeats, M.D.

* "A Practical Treatise on the Diseases of Children." By J. M. Coley, M.D.

present well-being of the child,—but the future health of the man or woman. To these observations on the most important rule of diet in the early stage of infancy, we may append a few brief remarks :—

We have said little concerning asses' milk, because it can seldom be conveniently procured. Where it can be obtained, however, it may be used with advantage, inasmuch as it contains a smaller amount of casein and a larger quantity of sugar than cow's milk ; in which peculiarity it resembles the milk of woman.

It will be understood, from all that has been said of the propriety of imitating the mother's milk as closely as possible, that the milk and water should always be given neither hot nor cold, but *warm. The milk*, however, *should not be warmed over a fire*, (for by boiling its nutritive quality is diminished), but only by the admixture of the proper quantity of water previously heated, so as to raise it to the temperature of milk from the breast, namely, from ninety to ninety-five degrees Fahrenheit ; and in all cases in which care is needed, a thermometer should be employed in order to ensure the food being always given at the same temperature.* Great

* This is contrary to the recommendation of Dr. Underwood (Treatise on the Diseases of Children) and of Mr. Miles Marley (On the Nature and Treatment of the most frequent Diseases of Children), who state that the milk should be boiled, and the curd or cheesy matter which rises to the surface skimmed off ; which may be done if it is intended not to dilute the milk,—but experience has proved that it is better to use the milk in the purest form in which it can be procured—unboiled—and diluted with the proper proportion of warm water as recommended in the text.

care is necessary, especially in towns, in order to obtain genuine cow's milk. It should be procured, from time to time, *fresh from one healthy cow, and not mixed with the milk from any other cow.* The milk sold in large towns is commonly adulterated with chalk, starch, flour, and even still more objectionable ingredients, as well as diluted with water. If, however, arrangements cannot be made to procure pure, fresh milk from one cow, due allowance must be made for the dilution it has already undergone—and a smaller quantity of water will probably be required from the first.

Human milk is alkaline, and even if kept for a considerable time it shows but little tendency to become sour; the milk of animals, in perfect health, likewise invariably presents an alkaline reaction, and cows when at grass form no exception to this rule. Comparatively slight causes, however, exert a marked influence upon the milk of the cow in this respect; and if the animal be shut up and stall-fed, its milk almost constantly acquires a strongly acid property,* a fact which of itself is sufficient to account for the symptoms of gastric and intestinal disorder so often produced by it in the case of children brought up in large towns. Whenever, therefore, the attempt is made to rear an infant by hand, un-

* See the results of Dr. MAYER'S observations on cows in Berlin and its neighbourhood, in a valuable paper on the artificial feeding of infants, in the Transactions of the Obstetric Society in Berlin.—8vo. Berlin, 1846.—and Dr. WEST'S Lectures on the Diseases of Infancy and Childhood.

der circumstances which render it impossible to obtain the milk of cows which are at pasture, it is desirable that the milk should be daily tested, and that any acidity should be neutralized by the addition of lime water or of finely-levigated chalk, in quantity just sufficient to impart to it a slightly alkaline reaction. If the bowels are inclined to be constipated, carbonate of magnesia may be substituted for the chalk. The possibility of the occurence of this acidity, and of the various adulterations referred to, shews the necessity, when an infant who is brought up by hand fails in health, for making a careful inquiry into the source of the milk with which it is fed; and for examining the fluid both chemically, and under the microscope, before proceeding to prescribe remedies for ailments which may be caused entirely by the unwholesome nature of its food.

INJURIOUS EFFECTS OF NARCOTICS.

When the above rules are disregarded by mothers and nurses; when food wrong in quality or excessive in quantity is habitually given, when cleanliness, sufficient repose, gentle exercise and pure air have been neglected, we must expect the infant constitution to suffer—irritation, wakefulness, a bloated or emaciated habit of body and peevishness of temper will probably appear as the results of such mismanagement. And now, as one error leads to another, the inexperienced mother or nurse, having first produced

disease, proceeds to exasperate that disease by the most mischievous quackery—in short by "drugging" the infant. Its cries are distressing, it will not sleep; it is evidently suffering pain;—the pain must be allayed—the child must be put to sleep;—but what are the means to be used? Nature calls loudly for help and receives—poison! An ignorant neighbour informs the distressed mother of the wonderful virtues of a certain elixer — "Godfrey's Cordial," "Dalby's Carminative," "Poppy tea," "Diocodium and peppermint," or some other cloak for opium. In one respect these destructive nostrums fulfil their promise. The cries of the child are effectually "stilled;" for, in many cases, he is soon silent—in the grave! Let it not be thought that we write too strongly of this murderous practice. We have seen even in the course of our own experience in a rural district, too many instances of the injurious effects of narcotics upon children, but it is in the manufacturing districts that the practice of "drugging" is carried on in a wholesale manner. On this sad topic the Registrar-General has written as follows:

"How pitiful is the condition of many thousands of children born into the world! Here, in the most advanced nation in Europe, in one of the largest towns of England,—in the midst of a population unmatched for its energy, industry and manufacturing skill—in Manchester—the centre of victorious agitation for commercial freedom, aspiring to literary culture—where PERCIVAL wrote and DALTON lived—thirteen thousand three hundred and sixty-two children perished in seven years,

over and above the mortality natural to mankind! These 'little children,' brought up in unclean dwellings and impure streets, were left alone, long days, by their mothers to breathe the subtle sickly vapours—soothed by Opium, a more 'cursed' distillation than 'hebenon,' and when assailed by mortal diseases—their stomachs torn, their bodies convulsed, their brains bewildered, left to die without medical aid which, like Hope, should 'come to all'—the skilled medical man never being called in at all, or only summoned to witness the death and sanction the funeral!"*

Such remarks, we trust, are only required by the most ignorant mothers and nurses in the lowest grades of society. Yet we beg leave to intimate that such drugs as those referred to, may sometimes be found in the possession of nurses in the higher classes of society. The mother who wishes her infant to grow up with "a sound mind in a healthy body," cannot guard too strictly against the use of poisons.†

DIET DURING THE SECOND STAGE OF INFANT LIFE.

We have now to treat of the second stage of infancy, namely, of that beyond the sixth or seventh

* "Ninth Annual Report of the Registrar-General of Births, Deaths and Marriages in England." 1849.

† Referring to narcotics, such as "Godfrey's Cordial," "Dalby's Carminative," "Poppy tea," &c. &c., Mr. NORTH writes "By the improper use of these articles, children are frequently reduced to a state of general debility and nervousness, which very strongly favours the occurrence of convulsions." On the Convulsions of Infants.

In 1776, Dr. ROSEN VON ROSENSTEIN quaintly observes, "but above all care must be taken, that the nurse in secret does not give it *philonium theriaca*, or such soporifics; because children which often get these things grow stupid, crazy, convulsive, and die." Diseases of Children and their remedies.

month—in which other articles of food may be added to the milk-diet. But let it be observed that a child will require a *gradual* weaning from its early artificial diet, as from the breast. The remarks already made respecting weaning from the breast (p. 19), may also be applied to this part of our subject. A few additional notices may be given.

The first deviation from a purely liquid diet may commence in the seventh or eighth month, and may consist of a little soft bread, steeped in hot water, with the addition of fresh cow's milk and a small quantity of sugar. After this has been used for some time, some light broth may be given to vary the bill of fare ; but this must be free from fat and vegetable matter.

Variations of diet may be required during this second stage of infancy ; but the rule of simplicity, lightness and digestibility should always be observed. A diet which agrees well with one child will sometimes be found to disagree with another. Thus prepared barley dressed with water, and unboiled milk will, in some cases where there is a tendency to constipation of the bowels, be found to agree well ; in others it will prove too laxative. This may sometimes be obviated by boiling the milk. Or, in this case, genuine arrow-root (well-cooked) may be useful. But such articles as arrow-root, sago, or tapioca, should never be wholly depended upon as constituents of infantine diet. As we have already seen

(p. 33) they are deficient in some of the requisite elements of nutrition. If the infant suffer much from flatulence, it is advisable to boil a few caraway seeds in water, and carefully strain it before mixing it with the food.

The simplest deviation from the more liquid diet to which the infant had been accustomed is the bread and milk as recommended above, and this is probably the form of food liable to the least risk of error in the mode of its preparation,—and should be persevered with if it is found to agree well with the infant. In order, however, to meet the requirements of different cases, a list of preparations is subjoined in the foot-note, from which it will not be difficult to make a selection suitable to almost every conceivable case.* Bear in mind this rule :—*When*

* 1. *Bouille* (a French preparation), commonly known in this country as *baked-flour* food, may be safely recommended to mothers, as well worthy of a trial. It is made by roasting very gently the best wheat-flour in a slow oven, and afterwards boiling, or rather simmering it for a considerable time, either in water or milk and water, then adding a little sugar. When it is well made, it should be free from knots or lumps and not too thick.

2. If the above should not agree with the infant (although it often does, if properly made) the *boiled-flour* food may be tried. Take a pound of flour, put it in a cloth, tie it up tightly, then put it in a saucepanful of water, and let it boil four or five hours ; then take it out, peel off the outer rind, and the inside will be found quite dry, which grate. A small quantity of this boiled flour should be made into food in the same way as gruel is made, and then slightly sweetened with lump sugar. New milk, provided it agree with the child, may be added to this preparation. This is the mode of preparation recommended by Mr. P. H. Chavasse, of Birmingham (Advice to Mothers on the Management of their Offspring), and has been tried by the writer in many cases with good results.

you have found a diet which evidently agrees well with the child's constitution, do not, for the sake of change or to try a mere experiment, make alterations in that diet.

RULES FOR FEEDING. BEST MODE OF FEEDING.

Whatever the kind of food may be, let it always be immediately prepared before use, and let all the vessels used in cooking be kept perfectly clean.

The food should be given to the infant at a tepid or lukewarm temperature.

Until the infant is old enough to take the thicker kind of milk-sop, preference should be decidedly

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3. A French spoon-food, called *crême de pain* may be prepared according to the following simple recipe:—Take a few slices of well-baked bread, and dry them well (but do not burn them) in an oven; then infuse them in water for several hours, and let them simmer for a considerable time, adding now and then a little more water, that the sop may not become too thick. Sweeten it moderately and add (if you please) a few drops of orange-flower water.

4. The *lait de poule* has been referred to (p. 21.)

5. The Farinaceous Food for Infants, prepared by Hards of Dartford, Dodson's Biscuit Powder or Lemann's Preparations may sometimes be used with advantage.

6. Bullock's Semola, before referred to (p. 21.) is an excellent preparation, of very uniform strength, and has been found by the writer, when properly cooked according to the printed directions accompanying it, to agree remarkably well with the digestive organs of the infant. This preparation is rich in gluten, the pure nutritive or flesh-making principle of wheat. One part is equal in nutritive power to five parts of wheaten flour, and it is as digestible as it is nutritious. The manufacturer's well-known chemical attainments have been usefully exercised in the preparation of a really valuable article of diet, both for the infant and for the invalid. Prepared and sold by Mr. Lloyd Bullock, 22, Conduit Street, London.

given to the bottle, rather than to the spoon or to the boat, for the following reasons:—it is not so likely to render the child uncomfortable by wetting it; it does not require that the child should be lying down to be fed; the temperature of the food is not so likely to be too high; the food is not so likely to be given of too thick consistence; the child is not so likely to be hurriedly crammed with an excess of food; and, lastly, the suction effort in the use of the bottle is the most natural to the infant in this stage of its existence, and leads to the more copious secretion of saliva—which is an important auxiliary to digestion not to be overlooked, even in infancy.

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7. The *rusk-food* is very useful in some cases, and may be made with rusks, boiled for an hour with water, which should then be either strained through a sieve, or well beaten up by means of a fork, and slightly sweetened with lump sugar. Great care should be taken to select good rusks, as few articles vary so much in quality.

8. Another useful food is the top crust of a baker's loaf, boiled for an hour with water, and then moderately sweetened with lump sugar. If at any time the child's bowels should be costive, *raw* may be substituted for *white* sugar, in any of these preparations; and should *moist* sugar not answer the purpose, a small lump of *manna* may be used instead.

9. *Rice-food* may be prepared in the following manner:—Soak some *best* rice in cold water for an hour; strain, and add fresh water to the rice; then let it simmer till it will pulp through a sieve: put the pulp and water into a saucepan with a lump or two of sugar and again let it simmer for a quarter of an hour. A portion of this may be mixed with new milk, so as to make it of the thickness of cream, and should be given by means of the bottle. If the bowels are much relaxed, the milk may be boiled, but not otherwise.

10. The following is a good food, when an infant's bowels are weak and relaxed:—Into five large spoonsful of the purest water, rub smooth one dessert-spoonful of fine flour. Set over the fire five spoonsful of new milk, and put two lumps of sugar into it: the moment it boils, pour it into the flour and water, and stir it over a slow fire twenty minutes.

The bottle should be made of colourless glass, and the form we prefer is made without the opening in the centre, and with a wide opening at one end, into which a large cork, with a well-made ivory mouth-piece piercing its centre, is fitted. We believe that this is the most convenient and cleanly apparatus. Great care should be taken to keep it very clean, or the particles of diet adhering to the inside will ferment and produce acidity. To avoid this, the most convenient way is to use two bottles, so that one may be thoroughly well cleansed, while the other is in use. Never put a second supply of food upon the remains of a former, unless a very short interval has elapsed, and they are of the same making. So soon as the child has taken as much as it chooses, or as may be judged proper for it, let the bottle be emptied, if any food remain, and immediately cleansed by *hot water*. When well cleansed by the hot water, let it be thrown into, and kept in a basin of cold water, in which there is a little soda dissolved. Before using it let it be well rinsed with clean cold water. The tube must be kept clean ;—if an artificial teat be used, very great care must be taken to keep it sweet, and in the intervals between use it should be kept in a mixture of gin or whiskey and water.

As a general rule, such an interval should be allowed between each feeding, as will ensure the digestion of the previous quantity ; and this may be

fixed at about every three or four hours. But do not allow the bottle to become the plaything of the child. The quantity to be given at each period may pretty successfully be determined, by the avidity with which the child receives it; for it will rarely demand more than it feels comfortable to receive—therefore, a little experience will enable any woman to determine this point. When this matter is settled by repeated observation, it is proper that no more than has generally been found sufficient, should be urged upon the child at that time, especially if it be taken rather reluctantly; but making at the same time due allowances for its advancing increase of size. There will also be constitutional differences, as to the quantity which may be required, and some children will habitually require much larger quantities of food than others of the same age—and in perfect health too, but this to any one of observation and care, will offer no embarrassment; it should nevertheless be attended to, that an undue quantity need not be urged upon the child in one instance, nor an insufficient one, be given at another.

For a certain period after each meal, rest is as essential to digestion, as exercise is important at other times, to the general promotion of health.

DIET DURING CHILDHOOD.

The following bill of fare may be regarded as generally sufficient for a child of two or three years.

On awaking early in the morning, a little bread and milk may be given, or (while the child is too young to eat solid bread), a sop of bread in warm milk. The child will then generally sleep again for an hour or two. A second meal may consist of bread softened in hot water. The water being drained off milk and sugar may be added. This may be taken about nine o'clock. The early meal will probably be dispensed with, if the wholesome practice of putting the child to bed early in the evening is not pursued—but if the mother wishes to rear a healthy progeny, she will by no means neglect this important point. Between one and two o'clock, or in the general dinner hour, a little broth made of the lean part of beef or mutton, or chicken-broth, with a slice of bread, will make an excellent meal. When a sufficient number of teeth show that the child is able to masticate solid animal food, a little beef or mutton plainly roasted or boiled, with such fresh vegetables, as potatoes, turnips and cauliflowers, may be given. Until thorough mastication of the solid animal food can be performed by the teeth, it must be finely divided, in fact minced, or the child will suffer from disorder of the digestive organs and innutrition. The mother must not be satisfied with giving directions on this point to the nurse-maid, but must see that it is properly attended to. Accustom the child to eat its food slowly, and to drink some time *after* dinner. Copious draughts

during the time of eating should be avoided. This was a rule laid down by ABERNETHY in reference to the diet of adults, and the habit should be commenced during childhood. The best beverage for children is toast-water, freshly made. The latest meal—bread and milk—should be taken at six o'clock in the evening, not later. Soon afterwards, the child should go to bed. Avoid the foolish custom of allowing children to stay up to a late hour as a treat. In the fourth or fifth year, the bread and milk may be given without water. At this age also the early meal on awaking in the morning may be discontinued.

This course of food will not suit all stomachs. Meat or broth every day would perhaps lead to fulness of the system in some. But it will be easy to observe this, and accordingly to lighten the quality and the quantity of the diet. A lightly-boiled egg may occasionally be substituted with advantage for meat. *Cocoa* is a more suitable beverage for children than tea. Ripe fruits, such as the orange, strawberries, currants, a few grapes, the skins being rejected,—and roasted apples may be allowed, but stone-fruits and nuts must be avoided, also dried fruits, with the exception of figs. Whatever variations may be made, let the whole course of diet be simple, bland, and nutritious. Avoid pastry, pork, veal, salt-beef, new or heavy bread, tea-cakes, strong tea, sweetmeats, and especially (the importance of

this point will bear repetition) all alcoholic beverages. That mother will show sound wisdom who keeps her children as long as possible ignorant even of the taste of ale, wine and spirits.

CONCLUSION.

Our chief purpose in the preceding pages has been to recommend the diet best suited to the constitutions of infants in their ordinary state of health. Such modifications of this usual diet as may be required during the numerous diseases incident to infancy and childhood will be treated of in the proper places. In the present chapter it may also be observed that nothing has been said respecting any alteration of diet during the process of dentition. This is, often, a critical passage in infant life; but we can assure the parent that the mild, light and nutritious forms of food here recommended for ordinary use will also be found to be the most suitable during the irritation of constitution which generally accompanies the first appearance of the teeth.

To conclude—we may here recapitulate, in brief terms, the principal rules already explained.

1. In all normal cases, or, in other words, in all cases where no insurmountable difficulty or objection exists—the infant should be nourished in nature's own inimitable mode—*by the mother*. In this way only can we give the highest human security for the preservation of infant life and health.

2. Avoid the common error of administering medicine or indigestible food to the infant soon after its birth. (See p. 6.)

3. When the mother is not able to nurse, let the nearest and best substitute for nature's provision be found. Let the infant be committed to the care of a healthy and suitable wet-nurse. (See p. 14.)

4. In cases where it is certain that the infant can be nourished by the breast only for a very short period (say, a few weeks), and where a suitable wet-nurse cannot be engaged, it is better to give no nutriment from the breast but, at once, to begin with the best artificial diet.

5. The process of *weaning* should be gradual, and great care must be exercised in the choice of food, according to the rules given in pages 21, 22, 23.

6. The artificial food of early infancy must be, in form, consistence and quality, the nearest possible imitation of the mother's milk. For instructions on this point, see pages 27 to 30.

7. Give no solid food until the teeth have appeared.

8. Never depend on such articles as sago, arrow-root or tapioca, as *main* ingredients of infantine diet. For an explanation of their deficiency of nutritive properties, see pages 32 and 33.

9. The change from a liquid to a rather solid form of diet must be gradually and cautiously made. For various preparations suitable for the second

stage of infancy (or after the sixth month) see foot-note, pages 45, 46, and 47.

10. Never allow either narcotics or alcoholic stimulants (*in any form whatever*) to be administered to infants or children, excepting under medical direction and care.—In connection with this important caution, (and with some other points in the management of infancy), we have found it necessary to speak rather severely (see pages 42 and 43) of the practices of a certain class of nurses. Of course, we would not have our censures indiscriminately applied to all nurses. Fortunately, we may add that we have observed, with pleasure, during late years, some considerable improvement in the qualifications of these valuable servants; and we may hope that, as the result of such a course of instruction as is now given in the 'Institution for the training of Nurses,' far greater improvement will soon become visible.—If a dentist requires a special training to qualify him to treat properly only one part of the human frame; surely, we ought to educate for her office the nurse to whom we intrust, in a great measure, the welfare of a child's whole constitution.

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