

The comparative properties of human and animal milks : a new theory as to 'essences,' and a new interpretation of some physiological facts : a paper read before a medical audience at the Hanover-square rooms, February 13, 1860, with a short account of the proceedings / by M.A. Baines.

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THE

COMPARATIVE PROPERTIES

OF

HUMAN AND ANIMAL MILKS.

A NEW THEORY AS TO "ESSENCES,"

AND A

NEW INTERPRETATION OF SOME PHYSIOLOGICAL FACTS.

A PAPER READ BEFORE A MEDICAL AUDIENCE AT THE HANOVER-SQUARE
ROOMS, FEBRUARY 13, 1860.

WITH A SHORT ACCOUNT OF THE PROCEEDINGS.

By M. A. BAINES.

1860

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INTRODUCTORY REMARKS.

THE Essay which forms the substance of the following pages was recently read at the Hanover-square Rooms, before an audience chiefly medical. The intention was to invite discussion, and thus to bring the subject prominently before the public. It was considered that those objects might be still further promoted by the publication of the paper in a printed form; and a recommendation in the shape of a resolution to that effect, was proposed and unanimously carried at the meeting.

The writer very gladly responds to that recommendation, and she earnestly hopes that her suggestions may be the means of calling the attention not only of the medical profession, but of mothers—who are individually concerned—to the magnitude of the evil, and that some practical measures may be adopted for its amelioration.

If so large a per-centage of our little ones die from preventable causes, and if SCIENCE, alone, fails to find means of checking the mischief, surely EXPERIENCE and COMMON SENSE have a claim to be heard, when they ask permission to step in to the rescue.

BRIGHTON, *March*, 1860.



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THE
CHEMICAL PROPERTIES OF HUMAN MILK,
ETC.

THE question which I am about to submit for discussion, belongs partly to Medico-Chemical science, partly to Physiology.

The inquiry is undertaken with the view of ascertaining whether it is not possible, by an admixture of farinaceous substances with cows' milk, to compose an artificial food that shall be well adapted to the physical constitution of the infant, and thus form a closer imitation of the natural aliment than can be furnished by any of the animal milks alone.

Before entering upon the argument, I will state very briefly my reasons for bringing forward the present inquiry.

The excessive mortality occurring amongst children has lately aroused the attention of scientific and benevolent individuals; indeed, the high death-rate of infants under two years of age is so appalling, that it is becoming a very serious matter, in more aspects than one; and it behoves us, as a civilised, enlightened, and philanthropic people, to look to it, and to stay, by all means in our power, such a fearful sacrifice of human

life ; a state of things which has no parallel in any other part of the known world.* We must speedily find some better mode of feeding and tending our young, if we would not merit the reproach of admitting infanticide as an *institution*, into our social system.

We will pause here for a while, to consider the contrast offered in this respect, by the whole animal creation ; the young of the brute species and all dumb creatures are capable of maintaining an independent condition at a very early period of their existence, and are guided by their instincts for the preservation of life in various ways, more particularly in the choice of proper food, which nature has not only bountifully afforded, but providentially placed in their way.

Again, when we consider that a wise and beneficent Being has adapted the external world, and all the circumstances therein, to the physical wants, not less than to the moral constitution of mankind—when we consider that the bounteous Giver of all good has provided everything for the happiness and benefit of His creatures, it seems a strange perversion of the Divine intention, that the fate of the infant child should be what it is too often our sorrow to see it: the little being, who, from the very nature of things, from its utter helplessness, is depending on those around it to minister to its wants, to comfort, to nourish, and to sustain it—to see these fragile flowers droop and die, and to know and feel, that had their lot been cast in a lower state, their chances of maintaining existence would have been greater. Surely there must be some-

* Not to the same degree or extent as compared with the high state of our own civilisation.

thing very wrong in our system of management, when the little infant, which belongs to a race endowed with a high intelligence, and utterly depending on its fellow-creatures, is in a worse case than the young of inferior animals, whose instinctive nature alone is capable of providing against those misadventures which too often befall the infant portion of the human family.

What is the reason then of such disastrous failures in rearing our young ?

This question has already supplied matter for scientific, painstaking research: the conclusions arrived at seem to be as follow.

The chief causes of infant mortality may be described under two distinct heads, viz. :—

1st.—The want of breast-milk.

2nd.—The ignorance with which infants, deserted by their mothers, are too often fed and tended.

These are certainly very fruitful sources of sickness and mortality; but if the above statements represented the whole truth, I need make no remonstrance here. These evils are attracting attention; professional effort and public feeling are aroused, and a general crusade may be expected against maternal neglect and ignorant mismanagement.

I have discussed very fully in another place, the moral and physical evils resulting from the custom of hiring *wet-nurses*.* It is sufficient to remark here on that subject, that a mother who cannot or will not suckle her own infant, has no right to rob another child of its natural

* "The Practice of Hiring Wet-nurses, considered as it affects Public Health," &c. A paper contributed to the *National Social Science Association*. John Churchill, New Burlington-street.

nourishment, thereby increasing the chances of mortality by extending the want of maternal care.

But however successful may be our efforts in promoting reform on these points, it is to be feared that a large number of infants must always be left depending, in a great measure, upon hand-feeding, whether from actual disability on the part of some mothers to suckle, from the perverse disinclination of other mothers, or from a supposed necessity on account of pecuniary demands, by which working women are induced to leave their infants during the day to engage in some industrial employment away from their homes. I repeat, the probability is, that very many infants must always be depending chiefly, if not entirely, upon hand-feeding; and it therefore becomes a question of very grave importance respecting the most proper food for hand-reared children.

It has just been remarked that there is no want of sanitary teaching in this our day. The "sanitary movement" is a new and most important feature in philanthropy; for neither the illiterate nor the "educated" need now remain unacquainted with the commonest principles of health, hitherto utterly ignored and disregarded by *all* classes.

But what are we to say, if the teachers themselves are at fault on one of the most important of all hygienic subjects, viz., *the proper food for infants?*

Medical teachers, I believe, are wrong on some of the principles upon which they found their views and their practice in this matter.

[We have now arrived at the main subject submitted for discussion.]

The idea that one or other of the animal milks must afford the best substitute for breast-milk in bringing up a child by hand is so generally entertained, and therefore, apparently, so well established, that it requires more than ordinary courage to attempt to refute it. I trust I shall be heard with patience by those who at the onset may differ from me; and if they will follow me attentively, in considering the various questions as they arise, I believe the arguments which I shall bring forward will have the effect of convincing many minds, and making many converts to my views.

By the results of chemical analysis we are given to understand that animal milks approach very nearly to human milk; that is to say, that in the proportions of their various elements or constituent parts all kinds of milk bear a close resemblance to each other.

But medical inquirers have been too well satisfied in relying on the revelations thus afforded by chemistry, and have attempted to found a system of artificial feeding upon its imperfect teachings—"imperfect," because incomplete. The results of chemical experiment are of course reliable as far as they go, but analytical processes (in the present undeveloped condition of the higher ranges of chemical science) cannot throw sufficient light upon our subject, for there are subtleties belonging to it which lie beyond.

CHEMISTRY, though affording valuable aids to the student in many departments of medical science, does not embrace all the truths which must be *apprehended*, in order to arrive at a satisfactory solution of the present question.

I come now to speak of those "essences" in human

milk which necessarily have an existence, (at least for this I am contending,) and must enter into the calculations of the scientific inquirer, ere we can hope to establish any system of feeding infants, with better success than now.*

The food of the human mother and that of the animal are of so distinctive a kind that the nutritive properties of the respective milks must be supposed to partake of that difference; when this idea shall be thoroughly understood, and this *great fact of natural science* shall be well recognised, then, and not till then, will the value of an admixture of vegetable substances be sufficiently appreciated, as forming with cows' milk the most proper food for infants.

The prejudice on the part of medical men against the use of farinaceous food (or flour of cereals) is much to be lamented. I believe, if that prejudice were to give way, and a more rational system of feeding to take place, thousands of infant lives might be spared annually. I consider the farinaceous foods (a few of them) most valuable articles of diet, used either in the way of an adjuvant to the cows' milk, when it may be deficient in nutritive qualities, as it often is, by diluting or skimming; or the farinaceous will act as a corrective to the milk, when an undue proportion of acidity may be present.

Moreover, the known calorifiant properties contained in most kinds of grain, and various preparations of them, "supplying the respiratory process, keeping up animal heat, and providing fat for the body," render them very valuable aids, in combination with cows' milk, for the

* See Postscript respecting the term "essence"—why adopted. (Page 17.)

purpose of rearing infants *by hand*, because the powers in a young infant of generating heat in the body are so feeble, that when not indulged with the breast the child misses the warmth which the act and position of suckling would produce in it, and which warmth the combustible element in the food that I am contending for would produce in its system, and that too in a more effectual manner and degree than could be obtained by external means.

It appears by some tables furnished by Dr. Routh (giving the proportions of respiratory matter in the various articles of consumption to ten of plastic substances), that cows' milk has ten degrees less of the combustible ingredients than human milk, and I would therefore think it desirable to add the necessary quantity of one or other of those articles having a high figure of the respiratory matter, in order to supply that deficiency in cows' milk.

“Man belongs to the omnivorous class; there must, therefore, be a time when vegetable food may be safely given;”* and I hope to prove presently (when speaking of physiological reasons) that there can be no possible objection to the same nutriment being allowed from the first day of the infant's existence, which nutriment is necessary to its sustenance and development at a later period.

The real objection is not so much against some particular sort of food as it is to the excessive quantity given, and that quantity being improperly prepared; it is as senseless and as much fraught with mischief, nay more

* Dr. Routh.

so, to overload the stomach of an infant beyond its powers of digestion as to weigh the tiny body down with a burthen, which, from its tender age and fragile structure, it is unequal to sustain. OVERFEEDING, which has made so many victims, is the real evil to be combated; the effects of overfeeding are numerous: convulsions, diarrhœa, atrophy, inanition, defective assimilation, may all be the result of improper feeding; it takes different forms, and exhibits various symptoms; in some individuals the effect is rapid, in others slow; an overloaded stomach may, after a time, cause any of the above disorders; the digestive organs becoming weakened they cease to do their duty, and the frame is deficiently nourished in consequence.*

Therefore, I contend that the quantity given and the mode of preparing it are matters of far greater importance than the particular kind of food selected; although, of course, the preference may be given to some on account of their light and nutritious properties, and care

* It is much to be regretted that the *causes* of deaths amongst infants are not better defined. Dr. Farr would greatly aid my objects, and confer incalculable benefit upon the community, if he would arrange the tables of mortality so as to show the *positive* or actual cause of death. Now the returns under "Want of breast-milk" are very large, no doubt including various causes referable to improper diet, such as inanition, defective assimilation, and so on; while "Convulsions" are likewise made to represent a variety of remoter causes, such as over-feeding, narcotic-drugging, brain affections from falls, &c. "Want of breast-milk" is a *negative* cause: no child dies from the absence of breast-milk, but from an improper or insufficient substitute.

It would be instructive to know how many of those children whose deaths are recorded under that heading, were fed, or rather starved, during their short and miserable lives upon *animal milk alone*. I believe the numbers would quite equal those of the children who are crammed to death upon bread-sop and similar unsuitable diet.

must always be taken that the food so selected does contain a due proportion of the elements necessary to supply the frame, during growth and development, with material to sustain and build it up in health and vigour.

[I consider that the *animal milks* do not contain the kind and degree of nutritive qualities necessary for the purposes named above.]

Bread food, which is the article most in use by poor mothers for their children, is considered to be very destructive of infant life; it has been shown in some tables published by Drs. Merri and Whitehead, that bread diet is a very prolific cause of sickness and death amongst children in Manchester; and yet, with *proper preparation*, bread, if pure and unadulterated, may be made a very wholesome and nutritious article of diet.

Medical writers on the subject of infant alimentation appear to base their objections to vegetable food on the supposition that it must, if given at all, form the sole or chief ingredient of an infant's diet,—at least this idea I believe acts as a very strong reason in their minds for the entire prohibition of its use.

Wherever instances are given of great mortality occurring from the employment of vegetable substances, if investigation were to be made with the object of eliciting this fact, it would be found that the *abuse* of it, the excess, had caused the mischief referred to.

I WISH TO CALL ATTENTION TO THAT FACT.—The following instance will illustrate my meaning:—

In the Parisian hospitals “it is the custom, whenever an infant is sick, to withdraw him entirely from the breast, and to *substitute for the milk* some farinaceous substance made fluid by boiling—arrowroot or rice, and

other preparations of a similar kind, usually forming the diet of a sick infant." Then the great mortality attracting attention, "investigation is made in a number of cases, with special reference to the state of the contents of the bowels; a *jelly-like* substance is found, which is proved by chemical test to be starch." May I ask what other result could be expected from the exclusive nature of the diet described?

This is an instance of the prevalence of one extreme, which so alarms people that they rush into another as injurious, viz., the use of cows' milk to the exclusion of all farinaceous diet whatever.*

We want a *common sense* view of this matter to obtain; moderation in the use of vegetable substances (in the proportion of a sixth or eighth part added to cows' milk) would produce the best results.

The PHYSIOLOGICAL view of this question remains to be considered, and I will endeavour to be as brief as possible in explaining my ideas upon it.

It may appear presumptuous on my part to attempt to

* I have been told by an eminent physician (whose name I have not had an opportunity of obtaining permission to mention) that last summer (1859) he inquired into several cases that had contributed to swell the tables of mortality under the heading of "diarrhœa," which was remarkably prevalent at that time, and it was found that, in many instances, *excessive milk-diet* had been the rule: the conclusion arrived at was this—"that cows' milk, as an exclusive article of food for children, is very unwholesome, and pernicious; and that it is very likely to disagree at all times of the year, more particularly during the summer months, as milk then soon turns sour, and the poor are not always careful, if even they had the means, to obtain it fresh."

N.B.—The medical officers might effect an incalculable amount of good by making investigation into these matters, especially in poor districts, and by issuing recommendations with respect to diet accordingly.—See note, p. 16.

throw any fresh light on a subject which has received so much consideration, by some of the highest medical authorities ; nevertheless, I will venture to offer a remark or two concerning the objections raised to vegetable diet for young infants, those objections being founded upon the supposition that the infant is so anatomically made as to be capable of digesting only animal food, as supplied by the parent, or by that which is considered analogous to the natural aliment, viz., animal milk.

It is stated as a proof of the correctness of this proposition, that the stomach of the human infant is a simple membranous tube, whilst the young of herbivorous animals are supplied with a compound stomach, fitted for digesting vegetables.

Now it occurs to me that one important *natural fact* has been lost sight of relating to this compound stomach of animals, and the kind of food supposed to require that peculiar contrivance of nature for its disposal. The "fact" is this, (and in it lies the difference between animal and human alimentation and its processes,) animals take food into their stomach in a crude, uncooked state, and the *compound* stomach may be necessary to act as a sort of cooking apparatus—if I may be allowed the expression—for it does the harder and rougher process, in addition to the performance of the ordinary duties of digestion.

The young of the human species, on the contrary, is provided with the *single* stomach, not, as generally supposed, that it may receive only milk, but because it is the nature and habit of the human family to derive their sustenance from *cooked food*.* The infant belong-

* Dr. West, describing the infant organism, says :—"The liver at

ing to a civilised race is necessarily dependent upon a high state of intelligence to prepare a fitting food, in the absence of maternal milk; and does it not discover a very grievous state of things, to subject a little infant to one of two unhappy alternatives, in the event of its being robbed of its natural nourishment,—which calamity may befall it at any hour after its birth? The “alternatives” are these: either to be handed over to a wet nurse—at best a doubtful good to the nursling—or to be sacrificed by an attempt to rear it by hand.

Let us look to this matter of ARTIFICIAL FEEDING; though it is one that has puzzled many scientific inquirers, it may become simplified in the practice, and may tend to great sanitary results, if henceforth viewed in those aspects presented to us, not only by SCIENCE, but by EXPERIENCE and COMMON SENSE!

birth is unusually large, the pancreas not, perhaps, more developed than the salivary glands; . . . the peristaltic motion is more rapid. All these are evidences that food taken will be kept for a shorter time in the canal, and, *therefore, should be in the condition most favourable for digestion;*—decidedly so; and my arguments tend to prove that “the condition most favourable for digestion” may be obtained by suitable preparation: *well-cooked* food possesses this advantage, because it is thus rendered more soluble and more easy of digestion; *under-done* or *over-done* food becomes indigestible and innutritious; infants’ food is seldom cooked (that is, boiled or baked) enough.

Dr. Lankester recommends flour as an article of diet for infants, but it must first be baked and then boiled; the first-named process separates the starch granules and renders the flour more digestible. It should be packed closely in a jar, and be allowed to remain several hours in a moderately-heated oven; it becomes a hard mass, and should be grated for use. It is a very cheap preparation, and would be invaluable for the poor; one table-spoonful of the flour would be sufficient, added to each meal of cows’ milk.

POSTSCRIPT.

THE term "essence," as employed by me, has been objected to by those who understand it to mean a chemical "extract," having a definite weight and composition; it may be as well therefore to explain that the word "essence" has been adopted in this paper for convenience; the word is a good word for the purpose—supposing a fixed meaning to be attached to it, *i. e.* a certain definite value and character implied and understood.

In order, therefore, that there may be no mistake on this point, I wish to state that when I speak of "essence" in milk, I refer to a *power*, or *quality*, or *influence*, which being quite of an ethereal or intangible character, cannot be demonstrated or proved to have an existence, by any processes of chemical skill or analysis, but, nevertheless, this *power* finds a "home," so to speak, in the union of those elements or constituent parts of which milk is understood to be composed.

I have been asked by those who are dubious as to my theory, to "put the so-called 'essence' into a bottle, and show it to them; then, and not till then, would they believe."

It has also been said, that "as a bit of sealing-wax is the home of the power *electricity*, and the body is the seat, at present, of the *life*, and as we have proof in these

ponderous volumes of the existence of 'electricity' and 'life,' so we require proof of a *power* in milk."

This is a mere trifling with words. However, I am quite prepared to show that such proof may be seen in the effects of this power, or quality, as demonstrated in the suckling child. I will give an instance, in general terms.

The experience of most medical practitioners must remind them of the difficulty that frequently attends an attempt to obtain a suitable wet-nurse; the child will, in many cases, absolutely refuse to take the breast of a stranger, and it is not an uncommon occurrence for four or five nurses to be tried, and dismissed in succession, from such a cause: this arises from an instinctive aversion, a natural antipathy in the physical temperament or constitution; and even when the child evinces a less determined resistance, the milk will, in many instances, not agree—that is to say, the stomach rejects a food which is unsuitable (the best thing that can happen, perhaps, under the circumstances). Offended nature undoubtedly points out in a very remarkable manner that, if the infant be denied the nutriment which is its birthright, *a stranger's milk is not the fitting substitute.*

Hence we have, I think, a very strong proof that there is wanting that peculiar affinity or agreement in the milk of a hired nurse, to the physical or constitutional requirements of the suckling, which affinity does exist in the case of a mother and her own offspring:—"the mother's milk will suit her own child, but no other woman's milk will suit the same child."*

* Dr. C. H. F. Routh.

It may be asked—"Then how is it, that a wet-nurse is sometimes found to whose breast the infant will become reconciled?" I answer, that when such is the case, the apparent suitableness is only brought about by an effort of nature, which has conquered the repugnance to an unnatural proceeding, just as we know that nature has the power to conquer disease—an unnatural condition;—the cases seem to me analogous. We know that nature will resist the encroachments of disease to a certain point, but when the enemy is established, she (*i. e.* nature) gathers up all her forces, and brings them to her aid in carrying out her curative processes; the materials are necessarily drawn from her *life stores*, and unless unfairly pressed beyond her powers, she ultimately conquers, though the victory finds her with diminished forces, and she must begin anew to build up her armaments, and to strengthen her deteriorated functions.

Now, it is just so in the case of a little child, when offered a food that is foreign to its nature; an instinctive repugnance prompts it to resist the attempted innovation, and although at length perhaps yielding, it must be at the sacrifice—to some extent—of its normal health and vigour, *for nature will not be outraged with impunity!*

These difficulties and dangers of wet-nursing are known to every obstetrician whose practice may be among patients of a class who refuse to perform the maternal duty; and although such untoward circumstances are commented upon and deplored, I question whether they have ever been referred to the true, but remote cause, which my theory, as I believe, will explain.

Much more might be said on the subject of essences, but it is unnecessary, because those who are disposed to

accept the hypothesis at all, will not require any argument of mine to convince them of its value. I will only say this,—in order to substantiate my claim to be heard,—that however incredible the views may, from their novelty, appear to those to whom the subject is now for the first time introduced, I have, nevertheless, by a long series of successful practical experiments, under my own observation, proved the opinions here propounded to be correct.

With the greater confidence I now offer the suggestions to scientific inquirers. It is true I have arrived at my conclusions by a very rough road, and have employed arguments, the plainest and most crude imaginable; but they are, nevertheless, *sound*, and will form a very firm basis upon which to build a system which may now be worked out with better materials, and more skill, than can be expected from the hands of an amateur.

A meeting was held on Monday evening, February 13th, at the Hanover-square Rooms, for the purpose of hearing a paper read, on the "Comparative Properties of Human and Animal Milks."

The object of the meeting was, as stated, in the card of invitation, "*to induce discussion with reference to the best substitute for breast-milk in the case of hand-reared children.*"

There were present the following:—

DR. R. DRUITT, DR. C. H. F. ROUTH, DR. G. H. BACHHOFFNER, DR. R. D. THOMSON, DR. THOMAS HILLIER, DR. E. SMITH, and other gentlemen.

Letters were received from DR. E. LANKESTER, DR. W. FARR, DR. C. WEST, &c., regretting their inability to attend, on account of professional engagements.

DR. DRUITT, who was voted to the chair, opened the proceedings, as follows:—

"Gentlemen,—We are called together this evening, to discuss one of the most important problems that can be put before us,—the art of rearing children; it is an art which is practised most unsuccessfully, and I need hardly say, that any contribution which will enable the thing to be done better, may be looked upon as one of the greatest services to humanity. My friend Dr. Routh tells me, he will be good enough to introduce the subject in a few words, before the paper is read."

DR. ROUTH said, that at the express desire of the authoress, he was there to offer a few observations as to her reasons for coming forward in the present manner;

he would say, her motives were of the most philanthropic kind; she is aware that hundreds of children in this great metropolis, and elsewhere, are being destroyed by injudicious feeding, and that it is in order that the subject should be brought before the nation generally, she has taken this heroic step, which she has been urged to take, with a view to the propounding of some plan by which children may be brought up in a better manner than that usually adopted.

DR. ROUTH expressed a hope, that the great object of the paper would be carried out, in bringing the subject before the public, and then creating, as it were, a general feeling in favour of its consideration, and that after its due discussion, something like general principles might be brought out, which might be so taught to mothers, and other persons concerned in bringing up children, as to conduce ultimately to the saving of many lives. Under these circumstances, the paper would, he thought, be received with the greatest deference, coming from a lady who is animated by the best feelings for the preservation of the life of mankind. (Cheers.)

The paper was now read.

The CHAIRMAN then rose to address the meeting. After remarking upon the great importance of the subject, and the interesting character of the various questions brought forward in the paper, which had just been read, the Doctor went on to describe the appalling nature of the sufferings endured by little children, who were allowed to pine away and die from the effects of insufficient or improper food. He said that of all the sufferings inflicted on any portion of living

creation,—talk of negroes or slaves!—talk of animals tortured to death!—there were none of which the mind could conceive equal to those endured by children who are brought into the world by mothers unable or unwilling to perpetuate their existence by proper food or nursing.

The children of unmarried mothers were then referred to, as forming a large proportion of those who fall victims to neglect and other causes of early dissolution. The mere bringing of such a child into the world, surrounded as the mother mostly is by the heaviest disadvantages, is in itself but a preparation for that child's death-bed, at a very early period.

Those mothers of the middle and higher classes were then spoken of who refuse to nurse their infants, and who consequently have children very rapidly; such children are mostly sickly, deriving their delicate constitutions from the mother's exhausted system; the members of such a family die off in quick succession.

Any one, therefore, who desires to save children's lives, must endeavour to spread abroad the idea, as an article of faith, that *a woman should not marry unless her state of health be such, that if she bring children into the world, she has every reasonable prospect of being able to afford them that nourishment, and willing to supply it on that condition, which is most congenial to the wants of the infant.*

The circumstances of another class of children were then considered—those who from accident or illness were deprived of their natural nourishment at an early period of their existence; and with reference to these, the question, What is the best way to supply the deficiency? was, more especially, a very important one; and as in

everything stagnation is the worst thing possible, it was a most gratifying feature of the times, that any lady, not crippled by professional avocations, should come forward in this way, and bring this matter, which involves so many interests, under discussion. (Hear, hear.)

It is very encouraging to find a lady who will come and help in the work, and call public attention to the sufferings of children, who are doomed to death by ignorance; and above all,—for the moral side of the question is at fault as much as the physical,—it is a good work to try and impress on her sisters the necessity of exercising caution with regard to bringing duties—maternal duties—upon them, if they are likely to be unable or unwilling to fulfil them; to show them, in fact, that their child is a gift from the Almighty, requiring to be cherished in spite of all difficulties; that it is a duty which calls upon them to devote all their faculties, and all their time, to the proper performance of the task. *It is the greatest work of a mother's life.*

The authoress of the paper by doing this will be doing great public service, and the members of the medical profession, in following out her suggestions, will be equally benefiting the human race, and mitigating a vast amount of suffering. (Cheers.)

DR. BACHHOFFNER wished to call attention to some statistical statements with reference to the mortality of infants; from which figures it appeared, that 25 per cent. die under four years of age, and *more than double that rate under one year old.*

The speaker remarked that an important fact had been alluded to in the paper which they had heard read, viz.:—That the improper food given to children brings

on a condition which medical men in returning their certificates leave out of sight altogether; allusion had been very wisely made to *atrophy*, and so on. Now it was very much to be regretted that in giving certificates, the antecedent causes are overlooked, and the final symptoms, "convulsions," are recorded instead.

In the five years ending 1857, 119,132 children are returned as dying from *convulsions*, 20,600 died from improper food, 88,998 premature birth and debility; under the latter head, improper food may enter as a cause.

The evils of putting children out to dry-nurse were then depicted; the indifference of the mother, who in many cases, after depositing the child with the woman who undertakes it, hears nothing more of it; frequently the child finds its way to the workhouse, and subsequently to an early grave.*

DR. ROUTH then addressed the meeting.—He did not agree with the authoress in advocating the use of vegetable substances, as an article of diet for young children, and entered into a very elaborate statement as to the conclusions he had arrived at by chemical calculations. These statements have previously appeared in a medical journal, and most of the points alluded to by Dr. Routh at the meeting have been discussed in the paper. No new matter was brought forward to strengthen the arguments already advanced by this speaker, and it is much to be regretted that the question of "essences,"

* N.B.—The system of entering infants on the books of burial clubs should have some mention here. It is not an uncommon thing for one child to be in as many as four or five clubs; thus the parents or nurse, as the case may be, have a direct interest in its death.

which formed the pith of the paper, did not come under discussion at all. Dr. Routh remarked,—and this was the nearest approach to that subject—that the milk of the animal could be made very closely to resemble human milk, by attention to the animal's food: feeding it in a particular manner, with a particular kind of food; thus implying that the character of the food taken by the mother affects the *quality* of the elements of which her milk is composed (this fact is in operation not only with reference to different species, but in the case of individuals). Dr. Routh suggested that milch animals should be kept and fed for the purpose of affording nourishment to infants deserted by their mothers; and if this plan were adopted the benefits of Foundling hospitals would be extended, and one of the greatest curses in this country—the system of wet-nursing—would be removed. It is forgotten that the nurse's own child must be sacrificed to the system. (Cheers.)

MR. LOBB then made a few remarks, in which he said, that he agreed with the opinions expressed by Dr. Routh, and recommended a preparation of sugar of milk, cows' milk and cream as the “best food for infants.” It did not appear, however, that the article had met with much encouragement by the profession.

MR. BALLARD agreed with what had fallen from Dr. Druitt, respecting the diversity of treatment necessary in rearing children; it was impossible to give any rule that could be applied successfully to all. It often happened that not only every family, but every member of a family, required different methods of feeding.

Mr. Ballard thought the mode of administering food to infants of as much importance as the kind of food; he

alluded to a work which he has prepared on the subject, explaining his views fully.

The CHAIRMAN said, that what he wished to inculcate was this, that in all the diversities of temperament and constitution to be met with in young children, much, if not all, depended upon the affectionate care of the mother, guided by that kind of intuitive perception which mothers had, as to what was best for their offspring, and by that experience which they might acquire in bringing up a young family.

A request was then proposed to be forwarded to the writer of the paper to take steps to present it to the public in a printed form.

The motion was seconded, and carried unanimously, and the thanks of the meeting were likewise accorded to the authoress for causing the paper to be read on the occasion.

A motion of thanks to Dr. Druitt for presiding was then passed by acclamation, and the proceedings terminated.*

* I wish to explain here that having placed the matter relating to the meeting in the hands of friends to condense and prepare for publication, I now add a chapter for the purpose of utilizing the occasion; and by remarking on the various points alluded to in the admirable addresses, I shall endeavour still further to illustrate my own ideas upon the wider view of the question thus opened.—*M. A. B.*

A CONCLUDING CHAPTER.

I CANNOT allow this paper to go forth without expressing the satisfaction I feel in recording the remarks made by more than one of the speakers, respecting the importance of a mother's duties: I rejoice in the valuable testimony thus given, as to the extent to which mothers of every class have it in their power, with God's blessing, not only to prevent much sickness, but to save many little lives.

I do not wish to depart from the original design of this paper, viz. to treat the subject mainly in its physical aspects: it may not, however, be inappropriate in this place to glance at another side of the question, so wisely and so well referred to during the discussion. The paper itself is intended to be an appeal to medical men, and without wishing to write a moral lecture to mothers, I must confess that I concur in every word which fell from Dr. Druitt on this head; I believe that the want of the maternal presence in the homes of the working classes, and to the want of the maternal *superintendence*—to say the least, in the nurseries of well-to-do families, may be attributed much of the sickness and mortality amongst the infant population; so convinced am I of this fact, that I have lately caused prizes to be offered in two

important towns of England* for the best essays, by married working men, on the subject "Married Women at Home;" the questions as put by Lord Shaftesbury (when addressing a meeting of the working classes at Bradford) form the theme, viz.—"*Whether it is not better for the wife of the working man to stay at home instead of going out to work? Whether the working man does not lose more by his wife's absence from her domestic duties, than he gains by her earnings away from her family?*"

There are some very well-meaning people who express many doubts as to the success of this movement; they think that if the wife stays at home the husband's wages would be insufficient to provide for the family. Now this is altogether a mistake; an economical use of the husband's earnings by a careful wife would save many expenses which are now a necessity of her absence. Should any persons wish to satisfy themselves on this point—namely, as to whether it is better for married women to remain at home—let such inquirers make a special visitation of the homes of the working classes; let them mark the difference in the aspects of those homes and in the condition of those children in cases where the wife goes out to work, and in cases where she stays at home to attend to her domestic duties: they will thus have a very practical answer to their query.

The results of the competition at Bradford are very satisfactory and encouraging. The writers of sixteen Essays in every case speak of the disastrous consequences of the wife's absence; it is very important thus to obtain the opinion of those most interested in the

* Bradford and Brighton.

question and best acquainted with the evils with which they have to contend through the present too prevalent custom. I do not know a better way of disposing of a guinea or two than in offering prizes for Essays by working men on social questions like this. I should wish to see the plan adopted in every town in the kingdom; it is a means of encouraging the working classes to think for themselves, and by bringing a calm consideration to bear on the subject they will know better how to help themselves, and can show those who are ready to help them how it can best be done. I have endeavoured to prove in a little tract on this subject,* and I think convincingly, that most of the evils with which "society," in a large sense, is afflicted, may be traced to the absence of the wife and mother from her home. This remark applies to every class of mother, whether she may go abroad upon pleasure or business: if her absence be a habit, and protracted unduly, to the neglect of her household and maternal duties, the most disastrous consequences must be the result; and I hesitate not to say it, that the very foundations of society have been unsettled and are now disturbed from this very cause.

It is impossible to overrate the importance of this subject; it opens a wide field of thought, and I believe that the *home question* lies at the very root of those evils which this paper has discussed. Let philanthropists well understand that fact; they would do wisely to direct their efforts there—let them tell the mother more especially, that not only physical suffering but moral degradation

* "A Few Words on Woman's Work, showing the paramount importance of Home Duties." Price 2d. W. Tweedie, 337, Strand.

lie at her door. It is not a hard task that is required of her; it is true, as some of the speakers remarked, "the demands upon time, patience, and rest, are great, which the rearing of a family involves;" but these are labours well compensated by the possession of healthy children. A sickly progeny is indeed a drag, and it is that which a poor man has often to contend with. I have said it is not a hard or laborious task, neither is it a difficult one; the knowledge of these things belongs almost naturally to women, at least to mothers. I will not say that every woman is intuitively a good nurse, but I am quite sure every mother ought to be the best of nurses to her child. "The maternal affection is as express an instance of benevolent design and adaptation as the maternal nourishment;" if the affections are allowed to have full play the intellect will be sharpened to meet the requirements of the offspring in the best possible manner; but what if the living stream which should sustain it be cut off? what if the sympathies which should encircle it be stifled? what if the intelligence which should know how to minister to its wants be deadened? Surely, surely, Nature herself must be out of joint, or these things could not be so.

The question, "*Can a woman forget her sucking child?*" is painfully answered in these days; but let us hope that the curse which has attended a disobedience to God's laws, and which has brought sickness and suffering without measure into the land, may yet be turned into a blessing, "*if*"—according to Divine invitation—"even now the daughters of my people will return and repent."

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