THE USE OF MEAT AS A REGULAR ARTICLE OF DIET IN THE NURSERY.¹

BY CHARLES P. PUTNAM, M.D.

[THIS paper does not take into consideration the use of meat as a medicine for sick children, but is wholly confined to its use as an article of diet for children in health.]

Meat is usually given to children as a matter of routine as soon as they are able to eat it without indigestion, and the question whether it is a food suited to childhood has received no very careful consideration. Yet it seems to be generally recognized that meat has peculiar effects on the organism as compared with other kinds of food. The fact that meat has a well-established position in the diet of adults is not alone a convincing argument in favor of giving it to children, since there are other articles, such as tea and coffee which are generally believed to be good for adults, and yet almost as generally believed to be bad for children.

Dr. Clouston, of Edinburgh, says: "My experience is that children who have the most neurotic temperaments and diatheses and who show the greatest tendencies to instability of brain, are, as a rule, flesh-eaters, having a craving for animal food too often and in too great quantities. I have found, also, a large proportion of the adolescent insane had been flesh-eaters, consuming and having a craving for much animal food. My experience, too, is that it is in such boys that the habit of masturbation is most apt to be acquired, and when acquired, seems to produce such a fascination and a craving that it ruins the bodily and mental powers. I have seen a change of diet to milk, fish, and farinaceous food produce a marked improvement in regard to the nervous irritability of such children. And in regard to such children I most thoroughly agree with Dr. Keith, who in Edinburgh for many years has preached an anti flesh crusade in the bringing up of all children up to eight or ten years of age. I believe that by a proper diet and regimen, more than in any other way, we can fight against and counteract inherited neurotic tendencies in children, and tide them safely over the periods of puberty and adolescence."

My experience has not been drawn from any extended observation of such cases as Dr. Clouston describes, yet I can fully believe that his statement is a fair one. I have become convinced that children fed largely on meat are apt to have a capricious appetite, to suffer from indigestion, constipation, and also from diarrhoea, to be subject to catarrhs of the mucous membranes, and have an unstable nervous system and less resistive power in general.

As a rule the more children are allowed to take meat the more they want it, while the appetite for other kinds of food is apt to diminish.

In families where meat eating has been put off or given up for any considerable period, I have found the children to have more freedom from little and great ailments, and to be less inclined to colds and diarrhoea. In 1884 Dr. D. M. Cammann, of New York, wrote an article on "Milk Diet in Childhood."² After advocating milk as a food of great value, and quoting the above passage from Dr. Clouston he says: "During the past twenty-five years, in a large institution in this

city, meat has been omitted from the dietary of children under eight years of age, and it must be admitted that this has been long enough to test fully the value of the diet adopted."

One of the reports of the Board says: "Past records of the institution furnish such ample proof of the value of milk and vegetable food, and the exclusion of meat from the dietary of children under eight years of age, that the medical board sees every reason to adhere for the future to the diet from which such good results have been reached in the past." He gives the dietary for the children under eight years of age, which consists of a great variety of cereals, vegetables, fruits and milk." Also of the number of deaths by years during the twenty-five years up to 1882, he reports that both the death-rate and the number of illnesses was much greater during the year 1865, when meat was added to the dietary. In a letter which he recently wrote to me he says:

"I have no new facts in addition to those mentioned in my article on milk diet, except that I have seen a number of children in private practice brought up on a diet from which meat has been omitted, until they were seven or eight years old, and the results have been favorable. I think the facts in that article speak for themselves very strongly. In the Orphan's Home a milk and vegetable diet has been tried now for twenty-five years. During all those years the death-rate has been remarkably small; gastro-intestinal troubles during the summer months have been rare. We often go through the summer without a single case of diarrhoea. This, in a large city, among 150 children, many of whom have inherited feeble constitutions from their parents, is a noteworthy fact. Then through the winter we never have many cases of bronchitis or other diseases of the lungs, and those that do have such trouble usually recover rapidly. Another fact well worth noticing is that during the year 1865, in which meat was added to the dietary, the death-rate was larger than in any previous or subsequent year, and that disturbances of the digestive organs were extremely prevalent. The literature of the subject is meagre, and I cannot refer you to any articles bearing on it, except those referred to in my paper. . . . A look at the rosy cheeks of the children would convince any one that it was possible, at least for them to be healthy without the use of meat."

But few medical writers have thought it worth while to give any arguments in favor of meat for children. It is taken for granted that meat is the proper food for every one, and that children are to have it as soon as their digestion will bear it, in any form. For example, Starr, in a book lately published on the "Diseases of the Digestive Organs in Infants and Children," simply says: "Children who have got their milk teeth may be fed a twelfthmonth, namely, up to the age of three and a half years, in the following way." His dietary contains a teacupful of beef-tea at eleven, a slice of underdone roast-beef or mutton, or a bit of roast chicken or turkey, minced as fine as possible, and potato moistened with gravy at twelve o'clock.

In this community the giving of meat seems to be on the increase. Nursing babies, whose age is still counted by months, sometimes receive a regular meal of beef-juice. Some children of two years and upwards have meat or meat extracts twice and three times a day. Certainly this is not a universal custom, but it is getting to be more and more common. The

¹ Read at the meeting of the Boston Society for Medical Observation, January 2, 1887.

² New York Medical Journal, March 29, 1884.

result seems to be an increasing craving for meats and other stimulating foods, and a dislike of bland foods. In many nurseries bread and milk is a forgotten mixture. Puddings, such as were the main food of children forty years ago, boiled or baked rice and sago, rennet pudding or slip, simple blanc mange, bird's nest, baked custard, and bread puddings are distasteful to many children of the present day, and often milk will not be taken unless it have a little tea or coffee in it.

Exactly what place meat holds in the nutrition different from milk, eggs, grains, and vegetables is perhaps not thoroughly understood. Certainly physiologists do not absolutely agree. The best authorities, so far as I know, say that its peculiar effects on the system are due to the abundance of the nitrogenous elements and to the presence of extractive matters which are not in themselves nutritious, but which may be called relishes, as they make other foods more tasty, and thereby more digestible. Thus Liebig's beef extract and some others are made from a liquid out of which all albumen has been precipitated. They are, therefore, not nutritious in the ordinary sense. Still they are valuable under certain circumstances, but might fairly be considered as drugs. Whether this theory satisfactorily accounts for the well-known effects of meat on the dog, whether it accounts for the condition of excitement which sometimes is observed when infants first get beef-juice, and for the craving for meat which is found in older children who have become accustomed to it, I am not prepared to say.

On the whole, the view of Roberts as given in his lectures on "Dietetics and Dyspepsia" seems to be a fair one. He classes meat with tea, coffee, and cocoa, and also with alcohol as among the stimulants. He calls those classes and races that use these articles in abundance "high fed," and says: "There are some very subtle and exceedingly curious relations between the quality of the food and the nutrition and vital habits of the body. They are profoundly difficult to understand, and yet are absolutely authentic and highly important. One would think that so long as an animal obtained his due quantity of proteids, carbohydrates, and fats, it did not matter much from what source they were obtained.

"But this is far from being the case. Experience has taught trainers that the vital habits and qualities of horses and dogs are considerably modified by the nature of their food.

"These differences are expressed in popular phrase by saying that the hunter and the coursing greyhound are 'high fed,' and the draught horses and sporting dog are 'low fed.' The same kind of distinction may be drawn in regard to the diet of different members of the human family; some are high fed and some are low fed. Speaking generally, it may be said that high feeding in the case of man, consists mainly in a liberal allowance of meat and in the systematic use of alcoholic beverages, and that low feeding consists in a diet which is mainly vegetarian and non-alcoholic.

"In drawing this contrast between high feeding and low feeding, the distinction has reference solely to the quality and not to the quantity of the food — to its comparative stimulating properties and concentration.

"If we compare, as best we may with our limited information, the general characteristics of the high fed and low fed classes and races, there is, I think, to be perceived a broad distinction between them. In regard to bodily strength and longevity the difference is

inconsiderable, but in regard to mental qualities the distinction is marked. The high-fed classes and races display, on the whole, a richer vitality, more momentum and individuality of character, and a greater brain power, than their low-fed brethren; and they constitute the soil, or breeding ground, out of which eminent men chiefly arise. In calculating what may be termed the 'man value' of individuals, classes, or races, physical qualities count for relatively little. One man may be twice as strong, or twice as big, or possess twice as much muscular endurance, as another; but the difference of value scarcely goes beyond, and rarely even reaches this proportion. But the possible difference between the mental capacity of one man and another is immense, almost incalculable. If you try to assess and to compare the value or capacity of a man of eminence — whether it be eminence in art, literature, science, statesmanship, commercial enterprise, colonizing aptitude, military command, or any other outcome of brain power — with the value and capacity of an average man, you perceive at once that the proportion is not as two to one, but as ten or twenty to one, or even as a hundred or more to one.

"With regard to infants and children, we observed that they are not allowed to partake of the necessary articles of food which form so conspicuous a part of the dietary of their elders. They are allowed neither the use of alcohol nor of tea and coffee, except gradually as they draw towards the adult age, but are fed on simple nutrients, milk, cooked cereals and more or less meat."

I have quoted thus fully from Roberts in order to be sure of making his meaning clear.

Granting the truth of his theory of high and low feeding, it seems to me to be an argument against meat for children rather than in favor of it. Childhood is certainly the age for low rather than high feeding. The breeder who takes his colt from the pasture young, and feeds him with oats, develops his muscles by work at an early age and makes a horse of him as early as possible, generally turns out to have made an inferior horse at last.

While the community is putting off the age of learning to read until eight or nine, and deploring the existence of a large and exciting literature, is it not out of place to endeavor to stimulate them with "high feeding?"

Robert's himself says, "it is important to remark that the main dietetic customs of a country are instituted for the benefit of the robust and healthy, of the sober and temperate, and those of mean or average constitution; in other words, for those who are bearing the burden of the day and fighting the battle of life. These form the great mass and bulk of the adult population, upon whose bodily and mental efficiency national progress and ascendancy depend. A good many individuals, and even entire families, may not find these customs beneficial to their exceptional tendencies or weaknesses; they may even find them destructive to their health and life. Nevertheless, differences of constitution and personal idiosyncrasies have to be reckoned with; and there are frequently good, indeed paramount, reasons why individuals should, in some particular or other, depart from the general dietetic plan." I think this applies also to peculiarities of age, and he says, in speaking of the high-fed races and classes as the "soil or breeding-ground out of which eminent men chiefly arise," "It

is remarkable how often we hear of eminent men being troubled with gout, and gout is usually produced either by personal or ancestral high feeding."

A diet which tends to produce literary and scientific predominance at the cost of gout hardly commends itself as a diet for children.

Were it only claimed that meat contained nourishment in a concentrated and easily digestible form, it would still remain to be proved that this is an advantage. On the contrary, we know that for infants (not on the breast) milk combined with some, at their age, innutritive material, such as starch, is often more easily digested than milk alone. Coarse oatmeals and cracked wheat are taken by older children and adults, partly for the very purpose of giving a non-nutritive diluting material together with the digestible.

Many nations of great physical strength take no meat. We need only look at the Scotch with their oatmeal, the Egyptian sailors and the Japanese with their rice, the latter of whom perform labors that would be impossible to most meat-eating men. The same may be said of the East Indian runner.

ON THE NEUROTIC TREATMENT OF SUMMER DIARRHŒA AND CHOLERA INFANTUM.

BY ALEXANDER HARKIN, M.D., F.R.C.S., ENGLAND,
Consulting Physician, Mater Infirmorum Hospital, Belfast.

ALL experience teaches, that nations and communities increase, not so much through a preponderance of births, as by a diminished death-rate; in England, where there is, except in certain localities, an almost constant numerical relation between births and deaths and where the prevalence of a high birth-rate is often not inconsistent with an inordinate death-rate, this truth is fully recognized. In this country of large families, it has been truly said that many children appear to die that others may be born, the vacancy in the nursery is very soon supplied; but such results cannot be predicated of American households, where the deaths observe quite a different relation to the births, and where the annual increase is chiefly attributable to immigrants, nor where as in the East Indies, it is frequently found necessary to send children back to Europe in order to secure a certain amount of power and vitality in the constitution.

Although man alone is cosmopolite, yet perfect acclimatization is scarcely attainable; in the constant struggle with the elements, his constitution becomes modified in accordance with the conditions, natural and climatic, which surround him, and, although it might be concluded that the children of European parents, born in a warm climate, would be better able to bear it, than their parent; such, however, is not commonly the fact, for many languish during infancy and die before puberty.

There is also in the habits of the American people, their preference of hotel life as contrasted with the self-contained houses and homes of the British people, their almost nomadic habits, and the prevalent desire among married people to limit the numbers in families, along with the decline of muscular and the increase of nervous development, and diminished reproductive powers, sufficient reason to explain the relative deficiency there, so observable in infant life, with the enhanced value of every child to the family and to the State.

And when, with the annual return of summer, an annual hecatomb of infantile life is the result, the loss almost assumes, under those circumstances the importance of a national calamity; in the manufacturing districts of England and in the great cities of the United States, summer diarrhœa swells the death-rate to an inordinate extreme. A fatal diarrhœa is essentially an infantile disorder, and although great progress has been effected in hygiene and preventive medicine, in both hemispheres, yet so long as we are compelled to admit, with Dr. West, that fully one-half of the children born in this country perish before they reach the fifth year, or with the late Sir James Simpson, that every fourth or fifth grave dug is for a child under twelve months (which statements "*mutatis mutandis*" may fairly apply to the United States, we are not entitled to boast of excessive progress in civilization or sanitary science.

But great as are the resources of sanitation, they are not competent to cope alone with the epidemic causes of diarrhœa, of which an elevated temperature is the most important. With the onset of hot weather, the disease increases in frequency and fatality, and as quickly declines with its departure. Extreme heat operates by lowering and disordering the nervous mechanism of digestion. Under its influence, the systemic circulation is excited to over-activity, the circulation in the vena porta is augmented, the liver, in time, becomes enlarged, and an increased secretion of bile is the result, often followed by diarrhœa.

The cramps and spasms, the great depression of the nervous system and the powers of life, the convulsions of so frequent occurrence, and the stage of collapse which so often terminates the infant's existence, all betray the neurotic origin of the disease, and a lesion of the nervous centres.

According to Claude Bernard, the stage of collapse in cholera is referable to great irritation of the sympathetic nervous system, and, as most authorities regard cholera, choleraic diarrhœa, cholera infantum, cholera nostras, and Asiatic cholera as one in nature, but only differing in degree, if we accept the dictum of the great physiologist in the major, we may fairly apply its teachings to the other divisions of the class. Having for many years been converted to his views on this subject, I have formulated my plan of treatment accordingly, and, knowing that the pneumogastric is the antagonist and controller of the sympathetic nerve in the abdomen, I invoke the action of that spinal nerve by applying over its sheath in the neck a rapidly acting vesicant, the liquor epispasticus of the British Pharmacopœia, with the almost uniform result, that as soon as its powerful irritation is experienced, all vomiting, purging, and cramps immediately cease, natural heat returns to the body, the patient, be he child or adult, generally falls over asleep, and finally awakes, in a few hours, quite free from danger. I apply the fluid with a camel's hair pencil from behind the ear, as far as the angle of the lower jaw, over a space three inches in length and one in breadth; a blister rises in five hours, which I dress with cotton-wool.

In the preliminary stage I enjoin absolute repose, with warmth to the surface and extremities; total abstinence from mother's and cow's milk; order, when available, condensed milk, or as an alternative, arrow-root prepared with water, and the free addition thereto of port wine fairly sweetened; it is wonderful how