

## **Diet for children / by Cecil Webb-Johnson.**

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# DIET FOR CHILDREN



CIL WEBB-JOHNSON

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ORANGE MOUNT, PADGATE,  
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DIET FOR CHILDREN



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# DIET FOR CHILDREN

BY

CECIL WEBB-JOHNSON

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## INTRODUCTION

IN the month of January, 1922, the Editor of *The Times* opened his columns to a discussion on "The Feeding of Schoolboys."

As was to be expected headmasters of public schools, the leading medical authorities on diet, the parents of schoolboys, and others interested in the subject joined in the controversy.

As is invariably the case the lay reader was left in the quagmire of uncertainty, for he found that there were three classes of correspondents, viz. :

- (1) Those who considered that schoolboys are underfed.
- (2) Those who considered that schoolboys are overfed, but wrongly fed.
- (3) Those who considered that schoolboys were fed correctly.

Had it been put to the vote, in all probability the medical men and others who considered that



the schoolboy ate too much, but did not eat the best articles of diet, would have topped the poll.

One of the first letters of importance to appear was one from Dr. Robert Hutchison, a consultant physician of the London Hospital, and a well-known authority on Dietetics. He wrote :

*To the Editor of "The Times."*

SIR,—As a remark of mine made at a conference on this subject some years ago has been referred to in connexion with the present discussion I may, perhaps, be permitted to point out that the scientific principles which underlie the successful feeding of schoolboys are not open to dispute.

It is agreed amongst physiologists that the adolescent between the ages of 13 and 20 requires a relatively larger supply of energy than at any other period of life, the amount being generally given as 3000 utilizable calories daily, which is equal to the requirements of an average full-grown man doing a moderate amount of muscular work. Some authorities put the amount even higher than this. The bulk of this energy is derived from the sugars, starches, and fats of the diet, and it follows



from this that in an adequate diet sugar should be supplied liberally, and bread, as the chief source of starch, should be unrestricted. So-called "standard bread" should be eaten for choice. Whether butter or margarine should be the form of fat eaten with bread is, despite some of your correspondents, a matter of comparative indifference, provided the margarine is palatable. Butter and margarine are practically of equal energy value, and, although it is true that margarines derived from vegetable fats and oils are lacking in the growth vitamin, yet it must be remembered that the same vitamin is abundantly present in green vegetables, milk, and the fat of meat, so that the diet as a whole is not likely to be deficient in it.

In addition to an abundant supply of energy, the diet at this time of life should contain a sufficiency of protein not only to cover wear and tear of tissue, but also to provide for growth, and it is desirable for physiological reasons that a considerable proportion of it should be in the form of animal food. It is also desirable for physiological reasons that the supply of proteins should be spread over the day, and this means in practice that some form of animal food (meat, fish, eggs, cheese, or milk) should form part of each of the three chief meals.



It appears to me that the principles I have indicated are all that are required for guidance in framing a dietary, and, as you rightly remark, too rigid an adherence to scientific standards is unnecessary. Regular weighing of the boys is the best check upon the adequacy or otherwise of the diet, for although it is true, as Mr. Insley points out, that there is no definite standard of weight for any given age, yet whatever a boy's individual weight may be it should not fail to rise during a term. If it does fail to do so, either (1) the diet is inadequate, (2) the life is too strenuous, or (3) there is something wrong with his general health.

I am, Sir, yours faithfully,

ROBERT HUTCHISON.

32 DEVONSHIRE PLACE, W. 1.

There were several points in Dr. Hutchison's letter with which I could not find myself in agreement, e.g. allowing children an *unrestricted* quantity of bread, for many cases of gastric and other disturbances have followed such a procedure. I have always held that a child or adult can be made ill by taking an excess of *any* kind of food, however excellent such food



may be in moderation. Nor can I agree that it is a matter of comparative indifference whether butter or margarine be taken with the bread or other food, for fat is required in comparatively larger quantities during infancy and adolescence, which are the periods of most active growth. Indeed, it may be said that in adolescence more fat is required than in adult life.

In mother's milk the proportion of fat is considerably greater than the protein, while in cow's milk these are nearly equal. Now, 99 per cent of children prefer butter to margarine, and it therefore seems reasonable to suppose that they would like more of the former, and—what is of greater importance—enjoy it more. This is one of the reasons why I am averse from ordering children that nauseous, evil-smelling fat, cod-liver oil; for, though it may contain a greater percentage of necessary vitamins, its place can be taken by fats which are pleasing to the taste.

Although the concensus of opinion is that growing children require a good amount of fat, we must respect the opinion of Pirquet,



who holds that fat is not an essential article of diet, and that its place can be taken by carbohydrates. Of course, even the growing boy can take too much fat and make himself very ill by upsetting stomach and liver. In such cases the symptoms are :

- (1) Coated tongue ;
- (2) Constipation, with large grey stool ;
- (3) Repeated vomiting ;
- (4) Bad breath.

I replied to Dr. Hutchison as follows :

*To the Editor of " The Times."*

SIR,—When Dr. Robert Hutchison vaguely talks about " each of the three chief meals," he leaves the reader in doubt as to how many subsidiary meals a schoolboy should have.

Although I acknowledge that I am not in agreement with the majority of my confrères, I am firmly convinced that no baby should have more than four meals in the 24 hours, and that no schoolboy should have more than three. I am supported in this opinion by experience and the results I have seen. The question of weight is very much exaggerated, and so-called weight charts are not worth the paper they



are written on, for no one on earth knows exactly what a baby should weigh at birth, nor what the weight of a boy of 12 or 15 should be.

Many children are far too fat and heavy, and are always suffering from some minor ailment like constipation or a common cold, and they have the happy knack of contracting any infectious disease which is prevalent at the time. By curtailing their diet and increasing systematic exercises, I have reduced the weight of such children during a term, and there is not one who has not benefited in health and brain. The commonest cause of indigestion, constipation, diarrhoea, bilious attacks, and appendicitis, is over-feeding, and I have never known a case caused by under-feeding unless it has been carried to the point of semi-starvation. I admit that these troubles may be caused by either an incorrect or injudicious diet.

The chief faults in the dietary of the present-day schoolboy are :

(1) They are not given enough fresh fruit and vegetables with their meals ; and raw celery, lettuce, apples, oranges, nuts, &c., should be given at least once a day.

(2) They eat too often and do not give the stomach sufficient rest.



(3) They often eat from a "sense of duty," because they think it is the right thing to do. They should be taught never to eat unless a healthy appetite is present and should never be coaxed into eating in its absence.

(4) The habit of drinking plenty of cold water between meals is not inculcated into the young as it should be.

(5) They should not be allowed to eat between meals, but should be encouraged to eat their sweets, fruit, and "tuck" at the end of their ordinary meals.

(6) When a child is feeling out of sorts, or when he has any fever, he should not be allowed any food, but be given plenty of water and fruit juice. When the fever abates and the appetite returns, he can take light food.

(7) Appetite should not be confused with hunger, which is generally indigestion. I have known a schoolboy eat an enormous meal and half an hour afterwards complain that he is dying of hunger. A glass of water will always lull those abnormal cravings to sleep.

(8) Fond parents often ruin their children's digestions in holiday times by allowing them to eat meals quite unsuited to the requirements of a growing boy.

In short, the average schoolboy does not eat too little—he eats too much, but does not



include sufficient fresh fruit and vegetables in his daily dietary.

Yours, etc.,

CECIL WEBB-JOHNSON.

66 HARLEY STREET, W.

The correspondence was continued by other medical men, and included a letter from Major R. F. E. Austin, R.A.M.C., the well-known authority on diet.

It ran as follows :

*To the Editor of "The Times."*

SIR,—Many years' experience in teaching parents how to keep boys, girls, and infants fit has proved to me that physical or mental health does not depend on the amount of "good nourishing food" taken, or on the weight of the body, as numbers think—indeed, the question of weight seems to be quite an obsession with many—but simply and solely upon eating with a view to preserve the normal alkaline condition of the blood and tissues, and circulating the blood freely throughout the body by the daily use of systematized exercises.

I am in thorough agreement with all the points referred to by Dr. Cecil Webb-Johnson in his recent letter. For some sixteen years I have been advising mothers not to feed babies



more than four times in the day, and not at all at night; also, that schoolboys and girls should not be given more than three meals a day, as they cannot possibly raise a healthy appetite more than that number of times daily. By "a healthy appetite" I do not mean greed, or a morbid craving for food, sinking empty gnawing sensations in the stomach, and perhaps headache, but a normal desire, which is not attended by any discomforts whatever, and is quite satisfied with the plainest of food.

The diet in most public schools contains too large a proportion of the potentially acid foods, known as protein or body-building foods—such as bread, peas, beans, eggs, cheese, and flesh of all kinds—and quite an insufficient quantity of fruits, salads, and properly cooked vegetables, all foodstuffs rich in the alkaline salts of lime and soda, so essential for the preservation of the normal alkaline condition of the blood and tissues.

Here is a sample of a day's menu that I consider suitable for the growing boy or girl: Breakfast—Porridge and milk, brown bread and butter and honey, and some weak tea. Dinner—Beef or mutton, with plenty of properly cooked fresh vegetables (by "properly cooked" I mean vegetables that have not had their valuable salts boiled out of them), a large plate



of raw salad, and some fresh or stewed fruit as a pudding. Eggs or cheese can be substituted for meat if desired. Supper—Brown bread and butter, raisins, dates, or figs, and a cup of milk, which should be sipped slowly.

The young of man and animals furnish a striking proof of the fact that only a small quantity of body-building food is required daily, for they live and grow on milk—a food which contains only  $3\frac{1}{2}$  per cent of protein.

Yours, etc.,

REGINALD F. E. AUSTIN.

41 WIMPOLE STREET, W. 1.

*January 27.*

The following letter also supported my views :

*To the Editor of "The Times."*

SIR,—The discussion on "The Feeding of Schoolboys" will be productive of great service if it raises the question how to provide properly for the nutrition of the growing child, whether at school or at home.

Though at some schools the dietary from the point of view of proper nutrition may not be so good as at home, on the whole, whatever defects there may be are to be found in the



home as well as in the school. In fact, keeping in view only the question of nutrition, at school the boy is often better fed than he is at home. In the average household the provider, when arranging the menu for the day, never has in view the proper nutrition of those for whom food is served. The hours of meals are settled by convention or convenience; the kinds of food are chosen through use and wont, or with a view to an appeal to the palate. At school the hours at which food is served are in many cases far better than at home, because the intervals between meals are greater, and this conduces to better digestion; but, while the food is, as a rule, wholesome, it is more plainly cooked, and there is less variety, so that there is not the same appeal to the palate. The boy complains, and his complaints are taken seriously by the parent, especially by the fond mother, who forgets, if she has ever known, that the purpose of food is not to give pleasure, but to provide material for growth and energy, for warmth and work.

To confine oneself to the feeding of the school-boy I am in agreement with the statements and suggestions made by Dr. Cecil Webb-Johnson in *The Times* of January 26. The tuck shop is harmful in that it provides opportunities for indulging the palate, especially with sweet



foods, between the regular meals, and so interferes with the digestion of the more necessary and wholesome foods taken at those meals. *Pace* Dr. Hutchison and others who think that a large supply of sugar is necessary for the growing child, I am convinced that far too much sugar is taken by children. It is altogether an artificial product, and, until the last century, was only a luxury. The "unstinted supply of bread" demanded by Canon James should be a wholemeal bread, and not the greatly defective ordinary white bread.

I agree fully with your correspondents who urge the necessity of a daily supply of uncooked fruit or vegetable. One or two of your correspondents have touched on one of the greatest errors in school life—namely, the hurrying over meals. Often one finds that too little time is allowed for meals; but, apart from that, the boy is allowed to hurry over meals to get to games, and games are begun so soon after meals that the blood supply required by the digestive organs is diverted to the limbs, and imperfect digestion and nutrition is the inevitable consequence.

Proper food and proper habits of feeding of the child are important, not only during the years of growth, but because the habits and tastes acquired in childhood will continue



throughout life. Faulty nutrition and the results of faulty food habits were largely responsible for so many men being classed as C.3 during the war. As a practical outcome of this discussion will it not be possible to get from physiologists, such as Dr. Leonard Hill and Professor Bayliss, in consultation with a headmaster and a lady housekeeper, detailed suggestions both as to food and habits of feeding, not merely for the schoolboy, but for the child both at home and at school ?

Yours faithfully,

R. ACKERLEY.

LLANDRINDOD WELLS.

*January 27.*

Another letter, although not from a medical man, gave me great encouragement, for it is agreed that an ounce of practice is better than a ton of theory. It ran :

*To the Editor of "The Times."*

SIR,—Perhaps it may interest you to learn that the correspondence you have opened on this subject has—so far as one well-known public school is concerned—borne fruit.

To-day we were notified to discontinue my boy's butter ration from home, as, from now,



margarine is no longer to appear at the boys' tables in that school. Through you I should like to advise all parents and guardians of the young to follow the advice of Dr. Cecil Webb-Johnson. My family has been brought up from birth on the lines laid down by him in his letter to you yesterday, with the result that they are literally sound in wind and limb.

I have the honour to be, Sir,

Your most obedient servant,

MOTHER OF FOUR SONS.

*January 27.*

But what pleased me more than any of these letters was a personal one from Dr. A. Rabagliati, the well-known consulting physician of Bradford, whose many books on diet and health have had a wide circulation.

Although a complete stranger to me he wrote congratulating me on my letter and enclosed the cutting which follows from the Bradford *Argus*.

It makes interesting reading, and I would point out that I claimed no originality for my views, which have simply been founded on my own experience in practice.



His great point, that one should judge a diet not by a boy's weight but by the number of days in a year he has been incapacitated by illness or the frequency with which he "takes cold" or has some minor digestive or biliary trouble.

"Dr. Robert Hutchison, the conventional authority on dietetics, was recently replied to by Dr. Cecil Webb-Johnson in an able and well-reasoned letter on this subject in the *Times*. We append a portion of this interesting letter. Dr. Rabagliati, of Bradford, followed up the subject with a letter strongly supporting Dr. Webb-Johnson, which the *Times* politely refused to insert. We therefore with pleasure give our readers the benefit of such valuable opinions from two of the most experienced dietists of the day.

Dr. Webb-Johnson, in the course of his letter, said :

'When Dr. Robert Hutchison vaguely talks about each of the three chief meals, he leaves the reader in doubt as to how many subsidiary meals a schoolboy should have.

'Although I acknowledge that I am not in agreement with the majority of my confrères, I am firmly convinced that no baby should have



more than four meals in the twenty-four hours, and that no schoolboy should have more than three. I am supported in this opinion by experience and the results I have seen. The question of weight is very much exaggerated, and so-called weight charts are not worth the paper they are written on, for no one on earth knows exactly what a baby should weigh at birth, nor what the weight of a boy of 12 or 15 should be.

‘ Many children are far too fat and heavy, and are always suffering from some minor ailment like constipation or a common cold, and they have the happy knack of contracting any infectious disease which is prevalent at the time. By curtailing their diet and increasing systematic exercises, I have reduced the weight of such children during a term, and there is not one who has not benefited in health and brain. The commonest cause of indigestion, constipation, diarrhoea, bilious attacks, and appendicitis, is overfeeding, and I have never known a case caused by underfeeding unless it has been carried to the point of semi-starvation. I admit that these troubles may be caused by either an incorrect or injudicious diet.’

Dr. Rabagliati, in his letter to *The Times*, wrote as follows :



‘ I beg to congratulate you on your fairness in allowing Dr. Webb-Johnson’s letter to appear on this subject. No doubt he is perfectly right in principle that the fault in the feeding of schoolboys to-day (and of grown-ups also) is that they take food not too little but too much, and not too seldom but too often. Most of the statements he makes are so like the statements which emptied my consulting rooms thirty or twenty years ago (although happily I am not bankrupt yet) that I almost hear my own words and even my own expressions in them. He probably does not know me, so I don’t for a moment mean to imply that he is following me ; for, no doubt, he is following Nature, as I know I am. He might have added that the danger to England and to civilization to-day is not poverty but wealth, and its abuse ; and the waste and extravagance which so plainly lead to the poverty we are now experiencing. If he had added that the doctor who wrote to you recently about the “energy” that comes from food was quite wrong, and if he had said that neither the energy nor the heat of the body come from food at all, he would have been correct ; but you would probably as certainly have refused to admit his letter as you would certainly have done twenty years ago had he written it then. And no doubt when in another twenty years



this fertile field of feeding children is again ploughed, opinions which are denied utterance now will be admitted then.

The chief tests of a school life, and whether the regime is suitable and healthy, is how many illnesses are there in the school; how many colds, pneumonia, how much influenza, how many cases of appendicitis? All of these are diseases of overfeeding of boys, who, growing at their best, increase by about a quarter of an ounce a day, and who because "growing boys must be well-fed" receive half a pound of food, or at least a quarter of a pound extra three times a day, and surprise their nurses and teachers and parents by becoming ill. I am yours, etc.'

A. RABAGLIATI.' "

BRADFORD.

This and other correspondence has led me to write this short book for the guidance of headmasters, matrons, and mothers. If it should fall into the hands of any medical man, I hope he will respect my views, although I fear that the majority will disagree with them. Be that as it may, I consider it the duty of any medical man to place his views on a subject of national importance before the public, always provided



that he has given time and thought to the subject and has proved to his own satisfaction that his views are correct.

Emmott Holt, M.D., LL.D., President of the Child Health Organization and Professor of Diseases of Children, New York, U.S.A., has some interesting remarks to make on this subject.

He says, "My own opinion is that the responsibility for the neglect of nutrition of children can be laid partly upon the home, partly upon the State, and certainly a share of it must be laid at the door of the medical profession. . . . But one sometimes hears the remark made, 'Doctors don't know anything about health; all their time and energies are devoted to a study of disease; their interest is in disease, not in health.' . . . That a knowledge of nutrition which is the very basis of health, is an essential part of a physician's education, is a very recent conception. That his highest duty to his patients is to teach them the rules of health and how to obey them, is something very few physicians probably would admit. . . . The chief reason why his advice was not sought in



matters of diet and general hygiene was because it was discovered that about these things he knew very little more than other people. . . . That one of the most important functions of the physician is that of a health teacher, and also that one of the most important branches of education is health education, are two ideas which are rapidly coming to be accepted by the most intelligent and forward-looking persons, but have not yet touched the majority of physicians or school superintendents and teachers."

So that no offence can be taken by any reader I would emphasize the fact that Dr. Emmott Holt is referring to physicians in America.

Three factors decide the nutrition of a child.

- (1) The character and quantity of his food.
- (2) His general hygiene.
- (3) His inheritance.

The slogan of the Socialists is "equal opportunity for all," for even they cannot influence the last-mentioned; the child must suffer for the sins of his parents.



In this short brochure many opinions will be quoted with which I do not agree myself, but I have no wish to appear as a faddist or crank, and hope I am large-minded enough to respect the opinions of those opposed to my views.

When, however, didactic and overbearing statements, without a particle of proof, are put forward I claim, in the interests of the nation, that I have every right to refute them.

Without entering into any acrimonious discussion and without mentioning names, I give three examples of what I mean.

One well-known physician wrote that a man who opposed milk as a food in acute illnesses was a fool, as milk was the ONLY food which could be given in a case of pneumonia.

With all due respect to him, I would say that in the opinion of many dietetic authorities milk is the worst food of all in acute diseases, and especially in pneumonia, for when the temperature of the body is 103–104 milk is very indigestible and causes much flatulence, which interferes with the action of the heart. In a well-nourished boy or man the ideal diet in such a case is water, fruit juices, sherry-whey, etc.,



until the crisis occurs. Although not a vegetarian myself, I strongly object to a common statement made by medical men that a child cannot thrive without animal food. Any man who has travelled in the East or studied the question in the West must know that millions of healthy children thrive on a diet without meat, fish, eggs or milk.

One other statement, commonly made, is that a milk pudding should be the sweet served up for children at dinner-time.

In connexion with this subject, I feel I cannot do better than repeat what I said in one of my former books, *Diet for Women*: "Sir James Cantlie, in one of his lectures, said that, according to the laws of Moses, one should not take milk for two hours after fish, three hours after chicken, and four hours after mutton.

This was perfectly sound science, though for long disregarded. Milk taken after meat, clotted around it at once, and prevented natural digestion. For this reason the habit of English mothers of giving their children milk puddings after a meat lunch or dinner was wrong and dangerous. Indeed, he said that beer would



have been better than milk, though, of course water was best.”

Personally, although I am aware that the vast majority of the British medical profession is against me, I believe that when a child cuts his teeth he has no need for milk in his dietary. In the case of my own child she has had no milk of any kind since she was a year old.

The diet of the Japanese children is a subject of great interest.

Dr. Hirai, Professor of Diseases of Children in the Imperial University of Kyoto, gives the following as the usual food for children in Japan :

“ Rice plays the most important part in their diet after infancy and NO MILK, cheese or butter forms a part of the regular diet, the principal fat being derived from vegetable oils. They rarely eat meat, but take much fish. Green vegetables are extensively eaten, and they are fond of sweets and consume much of them.”

We must remember that proper nutrition affects not only the body but the mind. Physical development and intellectual ability are closely



allied, but one could point to many contradictions to this rule. Some of the greatest of the world's geniuses have been unhealthy and of poor physique, whilst some of the most perfect specimens of health and the human form have been intellectual nonentities. All of which prove how hard it is to lay down any definite rules on the subject. After all a great deal depends upon how much time is given to training the body and how much to the brain. A man who goes to Cambridge ostensibly with the purpose of devoting three to four years to sport, to the neglect of his work, cannot expect to become a senior wrangler. The man whose one ambition is to become senior wrangler cannot expect to get his "blue" in two or three branches of sport.

It was found at St. Louis that children who gave evidence of more than average capacity in their school work were both taller and heavier than those of the same age whose work was inferior, e.g. :

The average weight of 11-year-old boys in

1st grade was 63 pounds ;

6th " " 73 " "

The effect on girls was very similar.



The average weight of 13-year-old girls in

3rd grade was 75 pounds.

7th „ „ 88 „

Yet if we think of our geniuses and successful men in Britain we have to acknowledge that weight, height, and strength count for little where brains are concerned. In intellectual contests Joe Beckett would be nothing against the brain of Lord Balfour. What chance would all the professional pugilists, footballers, and cricketers have in an intellectual struggle against an equal number of puny, unhealthy, under-sized men of brain? We each have our *métier* in life—one aims at intellectual supremacy at the Bar, medicine or finance—another at the ring, the football or the cricket field. G. K. Chesterton weighs more than J. M. Barrie or Somerset Maugham; but it does not prove that his intellectual powers are greater.

I do not believe that the height and weight of a boy are of the importance attached to them, and the various tables compiled on averages leave me cold.

Mothers who worry unnecessarily about these



items, provided their child is healthy and happy, are making themselves unhappy for very little reason. When a child is brought to me because it is underweight, my first query is "Who says so?"

The invariable reply is: "Oh, I had him weighed at the station (or the chemist's) and he is 4 pounds underweight."

In these cases, I wonder if the mother has any intelligence, and what she would think if one took the weight and height of two horses—one a racehorse and the other a carthorse—and then took the thoroughbred colt to a veterinary surgeon because he was underweight.

We are like horses in this; for some of us are well-bred and others are not. We all know the delicate curves, the light bones, the lovely skin of a well-bred woman, and we equally recognize the heavy, clumsy and coarse type. One would hardly expect the children of the same age of these two different women to weigh the same. The thinnest and lightest women and men live the longest.

An English medical man gives the following table in his book on *The Care of Children*:



Age.	Boys.		Girls.	
	Height.	Weight.	Height.	Weight.
years.	ins.	lbs.	ins.	lbs.
2	33	30	30-32	26-29
4	39	36	38	35
6	43½	44½	43	43
8	47	54	47	52
10	51½	66	51	62
12	55	77	55½	77

An American authority gives the following table for weights at different ages :

Age.	Boys.	Girls.
2	27 pounds	26 pounds
4	36    ,,	35    ,,
6	44    ,,	44    ,,
8	53    ,,	53    ,,
10	64    ,,	63    ,,
12	75    ,,	79    ,,
14	94    ,,	99    ,,
16	120   ,,	112   ,,
18	132   ,,	117   ,,
Adult	150   ,,	132   ,,



These two tables show how futile it is to attempt to say what weight a child should be at a certain age. According to the English table a girl up to 12 years of age never weighs more than a boy of her own age. Yet in the American table at the age of 12 the girl weighs 4 pounds more than the boy of her own age. One could take a dozen more tables and find similar discrepancies. Dr. Emmott Holt holds that the amount of food (measured in calories) required by children of both sexes at the age of 16 exceeds by nearly 1000 calories the requirements of a grown-up man of average activity.

This means, according to this eminent authority on diet, that a schoolgirl of 16 should eat 25 per cent more than her father.

I am pleased to say this is not the opinion of the average British medical man, and in my opinion such a practice would be followed by disastrous results in later life.

The young girl would develop, as many do, indigestion, constipation, and anæmia, and in addition be more likely to contract any infectious disease which happened to be prevalent.



In other words, AT ANY AGE it is better to eat a little less than is necessary for perfect health than a little too much.

It is better to get up from the table feeling you could eat a little more than to rise feeling uncomfortable and suffer afterwards.

A good story is told of a polite little boy at a village feast.

Uncomfortable from repletion, when pressed to eat some more by a kind-hearted lady, he said pathetically: "Oh, please, Miss, don't ask me to have any more; I can't say 'No.'"

Most mothers should remember that they are the direct cause of the illnesses from which their children suffer, for they not only give them the wrong foods, but do everything in their power to overfeed them, with the object of "strengthening" them. If they would only remember that the diet of childhood moulds the man and makes his character they would recognize the fact that they have a responsibility which is the greatest in the land—the upbringing of the future generation.

Children brought up on a proper diet without overfeeding or having too much stimulant food



are healthy, happy, and good-tempered. Those reared on the opposite plan are unhealthy, irritable, bad-tempered, and often become degenerates. When the child reaches this state and is said to be "unmanageable" it is useless taking her to a doctor and expect a bottle of medicine or a few powders to put her right.

The only method of curing her condition, which is due to intestinal poisoning, is to correct her diet.

One recalls the story of the mother who took her baby to the dentist and said: "I want you to stop 'im cutting his teeth at night." The baby "cut his teeth at night" because he was overfed.

Take the complaint of the Mayfair mother to her doctor that she had had her child vaccinated and circumcised, and had his tonsils out, fed him up and wrapped him up in the warmest clothes, and yet in spite of every care he was always ill. He was always ill because he was overfed and overclothed and overtaken-care-of.

Charles E. Hecht, Hon. Sec. of the "Food



Education Society," said quite lately: "A fine educationist cut his days short by his addiction to milk pudding, which was simply bread and starch in another form. Many brain workers confessed to a predilection for bread and milk, which was a fertile source of indigestion and dental caries."

As an illustration of the effect of diet on character I feel justified in ending this introduction by repeating what Charles Kean, the actor, said about himself.

Discussing his various parts, he remarked: "When I play the part of a tyrant I eat pork, beef when I play a murderer, and mutton when I am to be the lover."

Wife-beaters and murderers are nearly always meat-eaters and drinkers of alcohol; the most peaceful people in the world are those who live on the soil.

Therefore give your children the minimum amount of "stimulant foods," and rely in a great measure upon Nature's food—fresh fruit and green vegetables.

Never press a child to eat if he doesn't want to; missing a meal hurts no one, not even a



baby, and always remember "Digestion waits on appetite."

Never give your child any food between meals, and if he says he is hungry give him a glass of water.

Remember that fruit, and, strange to say, even chocolate and milk are FOODS, and should be taken WITH the meals and not between them.

Don't fail to distinguish between "true" and "false" hunger.

"But oft, as Socrates has said,  
The stomach's stronger than the head."





# DIET FOR CHILDREN

## CHAPTER I

### THE RESPONSIBILITY OF PARENTS

WHILE we must give any normal parents credit for desiring to bring up healthy and happy children, it is unfortunately too true that the feeding of the offspring is in many cases conducted on totally wrong lines. A famous American physician has laid it down that nine-tenths of the complaints from which children suffer are the results of improper feeding—of eating the wrong things, or the wrong combinations of things, or of eating at the wrong times. As these helpless little ones are totally dependent on us, and we are wholly responsible for their start in life's race, it behoves us to study very carefully the question of diet. Our children will not thank us in after years if we



handicap them at the outset with a disordered digestion, caused by dietetic errors. Some of the mistakes committed by mothers in feeding their children are perfectly astounding. The ignorant woman of the labouring classes, who says that her infant is given "a bit of anything we 'as ourselves," and stuffs the unfortunate child with fried fish and pickles, whereof it dies, is no more to blame than many middle—and upper—class mothers, whose ideas about the feeding of children are almost equally erroneous. The poor woman gives her children solid food too early, in too large quantities, and at irregular times. Among the better-off the tendency is to go to the other extreme, and keep the child too long on a milk diet. My opinion of milk as a food is given in another chapter.

Proper attention to the diet will go a long way towards eliminating childish ailments. At the present time children are actually expected to suffer from various complaints. One hears a mother complacently say, "Oh, my boy has never had anything but the usual children's little ailments!" A child who is properly fed



and looked after should not have any of the "usual" children's ailments. Is it "usual" for a child to have plague or leprosy? If a child is never ailing, it is so unusual as to excite comment; in fact, some mothers become almost frightened if their little ones do not develop any of the "usual" complaints. A child who is fed properly, and is never overfed, should never be ill; and should go through life untouched by those ailments of children which are now generally supposed to be inevitable.

The overfeeding of children is one of the prime causes of infantile complaints, and it is one of those mistakes of mothers which may have serious effects in after-life. Too many children are bullied into eating more than they require or is good for them. Nature tells us all when we have eaten enough; but adults are very apt to disregard the warning. The young child, on the other hand, is too unsophisticated to disregard Nature's advice, and stops eating when replete. Then the silly mother or nurse scolds the poor mite, and tells it that it is "naughty" to leave so much food



on the plate, and that waste is wicked. To my mind it is far more wicked to turn a child's delicate, immature body into a waste-bin. What is the consequence? The poor child obediently tries to force down the unwanted remains of its meal, and the next thing that the mother knows is that it is feverish and ailing, and ready to develop any complaint that may be lying in wait. In many nurseries, when a child refuses more food, the stern potentate at the head of the table may render it scared and unhappy by saying, "Ah, the time may come when you may be glad of that good food which you are wasting now." For mingled stupidity and cruelty this remark is hard to equal. The use of the word "waste" in this connection is noteworthy. A child is told that it is wasteful not to force down food which it does not require. You might as well say that a man "wastes" a revolver-bullet by not firing it into his head. The bullet may kill more immediately than the overloaded stomach, but it is not more fatal. Because grown-up people, who are able to look after themselves, choose to overeat habitually, that



is no reason why they should force a helpless child to do the same thing. On the contrary, children should be taught that moderation is a virtue. They must know that food is necessary to life, and that it is intended to build up body and mind, and to repair the daily waste ; and they should also be taught that excess is demoralizing and that to take too much interest in your eating and drinking is to brutalize. The ecclesiastics of the Middle Ages depicted gluttony as one of the Seven Deadly Sins, in which they were well-advised not only on moral but on hygienic grounds. Excess in food not only diseases the body but animalises the mind. The glutton at school is nearly always at the bottom of the class or thereabouts. To combat successfully the appalling ignorance of most mothers and nurses—of whatever station in life—regarding the dietetic welfare of children is a hard and uphill task ; but until they grasp some of the first principles of child-nutrition there will always be a distressing amount of preventable disease among children and a pitiful number of unnecessary deaths. One might fill a large volume with the absurd



mistakes which mothers and nurses make about infants and children. Among those which have been hallowed by tradition we find the superstition that if the baby cries, apparently without reason, it is due to the fact that the pregnant mother was disappointed in some desire. In the same way birth-marks are supposed to take the shape of something which the mother desired while she was pregnant, or to be connected with something which happened during that time. Some old women still firmly believe that it is unlucky to weigh a baby before it is twelve months old! It is supposed that if a baby's nails are cut during its first twelve months of existence it will grow up to be a thief, also that when they are cut the toe nails should be cut at the same time so that the thief shall be able to run away. Another old wives' tale was that children born with teeth will be either hanged or drowned. Other superstitions are that the mother must get out of bed at the ninth day following the birth, even if she goes back to bed again, and that a woman who is one of twins can never have any children of her own. These instances are given



here, not because they are either edifying or instructive, but to show that such a mass of crass ignorance and besotted superstition is liable to surround the new-born child that it is a wonder that any of us survived at all!

However, lack of knowledge is not confined to mothers and nurses. In a recent work on child-welfare, Dr. Harold Scurfield, who holds the responsible position of Medical Officer of Health for Sheffield, candidly confesses as follows :

“ Owing to the lack of knowledge on the subject of infant management, advice which is now regarded as bad has in the past been distributed officially by medical officers of health in leaflets. For instance, we used to recommend the baby being fed every two hours during the day and every four hours at night from birth, and to exhibit posters showing the size of the baby's stomach at birth in support of this frequent feeding. It was also customary to recommend the ‘wiping out’ of the baby's mouth. This is now regarded as a pernicious practice and one of the causes of thrush, the very ailment it was intended to prevent. A third common error in advice



leaflets was to recommend much too 'mushy' a dietary after weaning, and to disregard the need for giving the jaws and teeth something to do."

As regards this last clause, the absolute necessity of employing the growing jaws and teeth, so as to render proper development easy and natural, will be fully treated of in another chapter. More and more attention has been directed towards the care of the teeth in recent years, as it is now known that many serious complaints may be caused by a defective dental apparatus.

To return to the mistakes made by parents and guardians as to child nutrition, it may be remarked that some people think their duty done when they see that a child is not allowed to eat anything that is "bad for him." They do not take pains to see that he gets meals that are good for him, in that they are carefully chosen and well-balanced. A well-balanced meal makes a well-balanced boy or girl; but the wrong food-combinations lead to all kinds of evils and may lay the foundation of a stomach trouble or impaired digestion which will be



cured very slowly, if at all. All kinds of preventable evils may be traced to wrong feeding. Most parents think that the "growing pains" of which children often complain are natural, and must be endured. In the same way, the people in the Middle Ages used to think that the fearful epidemics which swept Europe periodically were "acts of God," until some attention was paid to sanitation and the visitations ceased. It is now known that these so-called "growing pains" are really a type of rheumatism caused by acidity. This acidity arises from the fermentation of food in the stomach and shows that the child is overfed or given the wrong diet. Correct errors in the dietary and these pains will disappear. Other childish ailments can be traced to the same cause. The gases caused by the food-fermentation are liable in time to cause chronic irritation of the throat. This opens the door to common colds, winter coughs, tonsilitis (which may become chronic and necessitate an operation), adenoids, and, later on, inflammatory rheumatism, or that dread scourge tuberculosis. Errors in diet are also responsible for rickets, scurvy,



and nervous diseases. Millions of children throughout the Eastern Hemisphere are suffering and will suffer from the effects of the war-years, when food, especially the fats and sugars so essential to growing children, was restricted in supply and difficult to obtain. While Englishmen were fighting and enduring on the blood-soaked battlefields, the children at home were suffering innumerable evils arising from malnutrition, due to the action of the German submarines in sinking our food-ships. We are not at war now and the U-boats have ceased their sinister activities; but our children continue to be the victims of malnutrition, owing to the ignorance of those in charge of them.

“Protect me, ye of larger growth;  
Hear my appeal; please take my hand  
And lead me safely through the days  
Of Childhood to the Grown-up Land.”



## CHAPTER II

### FOOD FOR THE CHILD

IT is not necessary in a practical little work like the present, to invite the busy housewife to probe deeply into the chemistry of foodstuffs. I propose, therefore, to give a few elementary facts as to the food we eat, and the various functions of the substances which constitute it. Let us take the constituents of the average table, and see what each yields in the matter of heat, energy, and body-building material. The principal dish at the dinner-table is, of course, the joint; and though I do not advocate meat for quite young children, this may be a convenient place in which to discuss the importance of flesh-food in the dietary from a general point of view. Meat is very rich in albuminous or nitrogenous substance, fat, salts, and iron. It is thus well-adapted to assist the growth of the organic structure of the body, and to provide



fuel for energy. It is the principal source of the proteids which are so important, for repairing the tissues and providing heat. The analysis of a cut of prime beef gave 22 per cent of proteids, the rest consisting of fat, water, and ash. Protein is also found extensively in animal substances such as cheese, eggs, and milk ; also in peas, beans, lentils, cereals, and nuts. Fish is of great nutritive value and on our coasts whole populations exist upon it. It is extremely digestible, and for that reason is especially suitable for small children whose digestive powers cannot cope with the flesh of ox or sheep. Fish contains an appreciable quantity of phosphorus, which assists growth and nourishes the nerve-cells. The idea that it is a "brain-food" is, however, a fallacy. Otherwise, the fishing communities would be among the most highly intelligent sections of the population. The albuminates in fish vary from 10 to 15 per cent ; and some fish, such as salmon and mackerel, are especially rich in fat. A fresh herring will contain 7 per cent of fat and 10 per cent of albuminates, making it a nourishing food. Delicate children, however, are sometimes un-



able to digest it ; and for them the white-fleshed fish are more suitable. One of the great advantages of a meat diet is that it is digested more rapidly than vegetable food, and thus replaces the waste of the nitrogenous elements more quickly ; it has also been shown that animal fats are more rapidly absorbed than vegetable fats, an important point when we are dealing with growing children.

Now let us consider the vegetable accompaniments to the *pièce de résistance*. Green vegetables are not of any great nutritive value, but add a pleasant variety to the meal. From them are derived various important salts, including potassium, and those mineral substances which are essential to life—such as iron, calcium, soda, and phosphorus. Many a poor child is dosed with “iron mixture” put up by the chemist when he could derive all that was necessary from such common objects of the market as cabbage, spinach, tomatoes, lettuce, beans, celery, or asparagus. Such succulent edibles, though poor in nitrogen, are an integral part of a properly balanced meal. Such a meal would also contain substances yielding carbo-hydrates.



These give both bodily heat and muscular energy. They are found in cereals such as wheat, oatmeal, tapioca and rice; also in potatoes, bananas, and nuts. Sweet fruits, as oranges and grapes; also vegetables, such as beetroot, peas, and carrots, yield sugar for fuel. Fruits in general have received many eulogies; one such, by Dr. Tibbles, the eminent dietetist, may be quoted:

“The value and importance of fresh fruit, especially to the dwellers in towns, cannot be too freely written about; they are equal in value to vegetables. The organic acids in fruit arouse the appetite and aid digestion by increasing the flow of saliva, and, indirectly, of the gastric juice; they are stimulants and sialogogues [promoting salivary discharge]. As the fruit reaches the intestines, the acids increase the acidity of the chyme, and stimulate the secretions of the liver and pancreas, the intestinal glands and muscles; their influence on the blood is marked; they render it less alkaline *but never acid*, by combining with a portion of the alkaline salts of the serum. The phosphoric acid increases the phosphates in the red blood cells, and the potassium salts promote the formation of white blood cells; hence they are



anti-scorbutic and of value in anæmia, general debility, and convalescence from acute illness. Fruits containing oxalates—as tomatoes, gooseberries, and strawberries—are useful in amenorrhœa, and for persons subject to bronchitis and asthma; such as contain salicylic acid—as strawberries, raspberries, currants, blackberries, and oranges—are a valuable addition to the dietary of rheumatic persons. The final stage in the digestion of fruit is the conversion of the fruit acids and salts into alkaline salts, chiefly carbonates; they are therefore useful in scurvy, rheumatism, gout, and other diseases of the uric acid diatheses; they increase the secretion of the urine and its alkalinity—indeed, they are one of the most certain agents to render the urine alkaline, to stimulate the kidneys, and indirectly the skin, and therefore increase the total excretion of salts and other materials. Briefly, fresh fruit is cooling, refreshing, and helps to correct constipation.”

With all respect to Dr. Tibbles's opinion, I must say that while I agree with most of his remarks on the value of fruit, I cannot assent to the use of strawberries by rheumatic subjects. To these I am inclined to forbid them.

I am never weary of advocating the free con-



sumption of fresh fruits, vegetables, and salads, if the body is to be kept in good health. Too many parents and guardians pay attention to that part of the meal which concerns meat, potatoes, and pudding ; and look upon an apple or orange as a luxury. *Fruit is not a luxury ; it is a necessity*, especially for children. I have known bonnie children brought up on little else but fruit ; and they have ailed hardly at all ; at any rate, much less than the average meat-and-pudding child.

#### BEVERAGES

The best drink for everybody is pure water, though one can get few people to believe it. Children need nothing else, and every child should be encouraged to drink plenty of clear, cold water between meals. I say between meals advisedly, for the habit of drinking with solid food is a most pernicious one. It dilutes the gastric juice, so that the food is insufficiently acted upon by the secretion. Moreover, it inculcates a lazy way of eating. The boy is apt to leave the food half-insalivated and imperfectly masticated, when, to use the loathsome phrase which the junior reporter is so fond of using, it



is "washed down" by liquids. Again, the ordinary course of digestion is interrupted by filling the stomach with fluid because of the effect on the muscles of that important organ. A celebrated physician, Sir Lauder Brunton, was in the habit of advising his patients who suffered from digestive troubles to give up drinking with meals. One of them afterwards used to declare that this advice had been worth "hundreds of pounds" to her. Drinking with the food involves a process by which the liquids are removed first from the stomach, and with them go some of the digestive juices. The solids remaining behind cannot be digested because the first step in the process of digestion consists in the chemical action of those juices upon the food.

While every child should be encouraged to drink water, though *not* with meals, the quantity consumed must vary with circumstances. A breast-fed baby generally takes from one to two pints in a day; and larger children should not drink *less* than 2 or 3 pints during the twenty-four hours. The child should be taught to begin the day with a draught of water, say,



about half an hour before breakfast. I am, of course, assuming that the child is not sat at the table immediately upon rising. There are manifold advantages in washing out the stomach at the end of a process of digestion, so let the child have a drink of water an hour or so before dinner or the evening meal—whatever it is called. Water is absolutely essential to the human organism; and people will die of thirst much sooner than of hunger. Those who have undergone great privation—such as shipwrecked sailors or lost explorers—have declared that the deprivation of water was much worse to bear than the deprivation of food. The ordinary adult will consume in average circumstances from 3 to 4 pints of water every day.

The best drink for children, as I have said, is water; and it can be made more interesting to the small drinker by the admixture of fruit juice. The juice of an orange or a lemon in a glass of water is a splendid thing on which to begin the day, either for child or adult. Some people make the mistake of giving children milk as a beverage. My opinion of milk



will be given in another chapter. If a child complains of thirst it is far better to give it a drink of plain water than of milk ; and often a child will obediently drink proffered milk when it would prefer a glass of cool, clear water. On this subject Dr. J. H. Tilden has the following trenchant words :

“ Children that are just beginning to break down from improper care and hot weather will usually take freely of water, though they do not care for anything else. Many mothers make the mistake of satisfying the thirst of sick children with milk, instead of offering them water ; and these unfortunate children, on account of their thirst, will drink milk much to their detriment. Indeed, many children are killed because mothers make the mistake of believing that a thirsty child is hungry. All mothers should understand, first, last, and all the time, that milk is a food and not a drink. Children should be offered water frequently throughout the hot weather, and daily at all other times in the year. If this is attended to carefully, many children will be saved sick spells ; for the substitution of milk, when water is needed, would be quite sufficient to make a grown person sick—and how very much more



certainly a little child that does not have a great resistance ! ”

It need hardly be said that tea and coffee are not drinks for children. A good deal of the nervous irritability from which women suffer is the result of too much devotion to “the cup which cheers and not inebriates” ; and the effect of tea on the immature system of a child is disastrous. As for alcoholic liquors—we have a saner public opinion now than in the days when schoolboys had beer, as a matter of course, with their dinners, and little children were encouraged to “come in to dessert” and drink a glass of wine with their parents. Men still living can remember those bad old days ; but a future generation will hardly credit that such things could be.



## CHAPTER III

### DIET AT SCHOOL

THE hunger of the schoolboy is as traditional as that of the hunter ; and it seems to parents and guardians almost inevitable that a schoolboy should always be eating or about to eat. "Dormitory feasts" are part of the life of nearly every public school ; and that they are old-established institutions is shown by the fact that Charles Dickens has a luscious account of one in one of his earliest works. Who can forget David Copperfield's banquet in the bedroom at Salem House, when at the suggestion of J. Steerforth, currant-wine, almond-cakes biscuits, and fruit were disposed of, being, as Steerforth remarked, "a royal spread" ? There is some excuse for the existence of such secret orgies, also for that of the tuck-shops which are an essential adjunct to school-life, and the hampers from home which make such a pleasant



break in the term, because of the carelessness and mismanagement of the average school-master or house-master. These functionaries are generally totally ignorant of the food-requirements of growing boys, nor does the subject present any interest to them. They seem to forget that they are in a special way responsible for the physical growth and development of those under their charge. This development cannot go on satisfactorily without a careful and *intelligent* supervision of the food. Dr. Clement Dukes, long connected in a medical capacity with Rugby School, has some illuminating remarks on the subject of the feeding of schoolboys in a work which he has given to the world. Dr. Dukes calls attention to the need of more variety, both in the kinds of food provided and the manner in which they are cooked and served. He considers that the likes and dislikes of the boys should be more consulted, as affording trustworthy indications of what suits their constitutions. Some cannot digest fats or starches—even the sight of fat will prevent their eating. This is to be regretted, as these substances are important in alimenta-



tion ; still, they may nearly always be given in certain combinations, and many children who would not touch the fat of roast or boiled mutton will eagerly devour suet pudding with sugar or jam. It would be better, Dr. Dukes thinks—and in this I am in hearty agreement with him—that the cooking in boarding-schools should be more carefully looked after, as roast joints are often so imperfectly cooked and underdone as to be unwholesome as well as unpleasant to look at ; while the distaste boys so often manifest for green vegetables too often originates in the careless manner in which they are cleaned and the peculiarly unattractive fashion in which they are served. In large establishments it would involve very little extra trouble to serve the green vegetables in the form of a *purée*, nicely flavoured ; and as a laxative food this would prove most useful in necessitating daily attention to the bowels, often neglected at school.

A highly important matter is the arrangement of school meals so that the boys shall have sufficient time in which to eat them. “ Bolt-ing ” is a pernicious habit to which hungry



children—both girls and boys—are prone ; and if enough attention is not given to mastication, the consequences in after-life will undoubtedly be extremely serious. A cruel and indefensible custom—which, happily, only exists in the less enlightened foundations—is that of detaining pupils, as a punishment, after school so long that the dinner-hour is seriously curtailed. This custom shows a lamentable lack of understanding of the conditions of health. A largely attended conference was held at the Guildhall, London, on diet in schools, and over 250 schools were represented. The chief defects alleged against school diet were monotony, stodginess, bad cooking and service, lack of vegetables and fruits, and insufficient time for meals.

To this indictment I would add that in some schools the dietary is badly balanced in that too many meals are given. Most diet sheets provide for tea at 6, with a “relish” of some kind, and supper a couple of hours later. A correspondent wrote in *The Times Educational Supplement* a few years ago, “I do wish that they would do away at schools with that silly supper. I find that boys get tea any



time from 5.30 to 6.30, and then they have supper at 7.30 or 8 o'clock and go to bed an hour later. Children, even growing ones, cannot want supper an hour after tea. If supper were done away with, something extra might be given for tea. Until we arrived at the age of 17 or 18, we never had anything after school-room tea at 6. This consisted of fish, macaroni, and cheese, or some vegetable dish. A matron at a large public school remarked to me that no one could imagine how much extra trouble that supper of bread and butter and cocoa gives. . . . I wish you could get doctors to testify against it."

After the Guildhall Conference, a head-mistress said, "On the doctor's strong advice, I have lengthened the time of tea and knocked off supper for the children here. Out of sixty parents, I had only four who objected and asked if their children might continue to have supper; two of them were doctors!"

My principal objections to the system (or want of it) of feeding the children at boarding schools are fully set forth in the Introduction to this little work and there is no necessity for



recapitulating them. Considering the vital importance of diet at school, it is amazing how very archaic are some of the ideas which are too prevalent among those who are in charge of the feeding arrangements at educational establishments. It does not seem to be realized that a properly fed boy or girl is more easily taught than the child who suffers from ailments brought on by malnutrition.

It is a good idea to teach schoolboys that to indulge the appetite is a sensual act, and that the boy who habitually overeats will build up in time a gross and self-indulgent character. Besides which, overeating dulls the brain, and renders us mentally indolent. The dull boy is often so because he is poisoned by the waste-products in his own body—the result of too much food and too little exercise. The boy who gets high marks is the boy who does not cloud his brain by over-indulgence in food.



## CHAPTER IV

### SHOULD THE CHILD EAT MEAT ?

I HOLD that as little meat as possible should enter into the dietary of the young child ; with rapidly growing schoolboys and schoolgirls, strenuous in work and games flesh food supplies heat and energy in small bulk and in an easily assimilable form. It is worthy of note that in this country meat is more largely eaten than in any other land. The consumption of meat in Russia, for instance, is insignificant. Neither in Germany nor in Norway does meat form an important part of the daily dietary, and the same may be said of Spain and Portugal. Meat is hardly consumed at all by the peasants of Roumania, while the peasant class in Serbia, which represents from 80 to 85 per cent of the population, lives chiefly on boiled beans and other vegetables. In the agricultural districts of Chile wheat-flour, kidney beans, and maize



form the principal part of the working-men's food, and meat is seldom partaken of.

In England, on the other hand, beef and mutton, and other flesh-foods, figure as the daily menu much more frequently than there is any need for. In other works I have pointed out that as a nation we eat too much meat, and what is bad for adults is worse for growing children. The child who is permitted to sit at table with the parents, and partake of exactly the same food, is laying up a heritage of ill-health. Stimulating and complex foods, like "made" dishes and highly seasoned and elaborate *entrées*, are not suited for children; but, nevertheless, we see foolish and ignorant parents of the wealthier classes allowing a young boy or girl to work steadily through a long and complicated meal. Soon afterwards begin the bilious attacks and sick headaches which pursue the poor victim for years. Fortunately, we English are becoming a little more sensible in our eating and drinking, and no longer despise a short and light dinner. A newspaper article by an acute observer is well worth quoting here in this connection. The writer says :



“The four-course dinner fashion has taken hold of the frequenters of London restaurants. It is no longer considered good form among diners, who pride themselves on epicurean tastes, to indulge in dinners of six or seven courses.

This is regarded as a remarkable innovation in dining customs, for until quite recently the seven-course dinner was unquestionably correct. The regular menu at all the large hotels is still long, but every day greater numbers of people are ordering special menus, and are insisting on a four-course, perfectly balanced dinner rather than a long one full of superfluous dishes.

Perfect soup, a delicate fish course, game with vegetables, and a sweet, light as air, with wines to correspond, are now considered to comprise an adequate dinner.

A menu, perfect in its lightness and absence of superfluities, presented as a sample by Charles, of Claridge's Hotel, is as follows :

Asparagus soup.

Lobster à la Neuberg.

Pheasant with truffles and stewed celery.

Marron ice.

Petits fours.

The change, significant as it may seem, actually means that the British are losing their reputa-



tion of being a race of hearty feeders. The disappearance of the roast from the menu betrays the fact that the Londoner, at any rate, is becoming fastidious, dainty, almost Gallic in his tastes."

Even so, I should not recommend this dinner to a child! The lobster Neuberg, though delicious, is highly indigestible, though a slice of roast pheasant, if not too "high," could not hurt the most delicate. The total absence of butcher's meat from the above menu is to be noted.

As we allow flesh-food—in *small* quantities, and only *once* a day—to the school child, it may be useful to compare the various kinds of meats in regard to their usefulness on the nursery or schoolroom table. Roast mutton is the traditional children's dinner-joint, and it has much to recommend it. Well-roasted mutton is both savoury and digestible; and it is to be preferred to lamb, for, contrary to the general opinion, the meat of young animals digests less easily than that of mature ones. Thus, beef is easily disposed of, whereas veal is one of the most indigestible of meats. Mutton-fat is harder than



that of beef ; and many children refuse to consider eating mutton-fat at all, wherein they are unconsciously wiser than their elders. In fact, lean meat generally is more digestible than that permeated with fat. Roast pork should be left to the elders, though a little well-grilled bacon is permissible and most children will eat it eagerly. That homely dish, beans and bacon, may with advantage figure at the children's dinner. It is a well-balanced meal, having the nitrogenous and the carbonaceous constituents in proper proportions. Sucking-pig is more fitted for the grown-up table than that of the children, even though the gentle Elia, in his "Essay on Roast Pig," thus eulogises it : "There is no flavour comparable to that of the crisp, tawny, well-watched, not over-roasted crackling ; the very teeth are invited to their share of pleasure at this banquet in overcoming the coy, brittle resistance, with the adhesive oleagenous—oh, call it not fat ! but an indefinable sweetness growing-up to it—the tender blossoming of fat—the cream and quintessence of the child-pig's food ; the lean no lean, but a kind of animal manna, or, rather, fat and lean



so blended and running into one another that both together make but one ambrosian result or common substance."

There are other flesh-foods, besides what is commonly called "butcher's meat," which are available for the young. Chicken and guinea-fowl are most digestible, though less apt to be nutritive than wild birds. Chicken and pheasant are more easily digested than beef or mutton because their muscular fibres are free from fat and have valuable connective tissue; and are therefore more easily disposed of by the gastric secretions. Children should not be given duck or goose, for the oily character of the flesh makes it difficult of digestion. Not only that, but the richness of the meat, even if corrected by the usual concomitant of apple-sauce, may cause what is known as a "bilious attack." These birds may be eaten with impunity by certain adults; but are eminently unsuited for the delicate stomachs of little children. The homely rabbit is tender, juicy and digestible; and is always welcome in a family where there are small people.

Eggs are supposed to be an innocent kind of



food ; but some children cannot touch them. In this case, they should not be scolded or frightened ; and to force them to eat a, to them, distasteful food may have serious consequences. If the child likes eggs and can enjoy them, all the better ; for they are extremely nutritive and digestible, containing as they do a large proportion of albumin and fat. A lightly boiled or poached egg is the best to give a child ; and the worst use to which you can put an egg is to fry it. The immature stomach of a child could as easily digest sole-leather. If it is desired to give the favourite combination egg-and-bacon let the egg be poached. It means a little more trouble in the kitchen ; but saves an attack of indigestion to your little boy or girl. Ducks' eggs are generally too rich for delicate children. Sometimes children who do not like plain boiled eggs will eat an omelette with relish, especially if it is cooked with cheese, fine herbs, or jam. A well-made cheese-omelette is an excellent meal in itself ; and other methods of preparing eggs for the table will readily suggest themselves to the experienced housewife. It is said that over five hundred ways of cooking eggs are known to



the culinary expert. Combination of egg and potato, egg and tomato, etc., are both appetising and nourishing. An authority gives the following comparative analysis of the white and yolk of egg :

	White.	Yolk
Water . . . .	84·8	51·5
Albumenates . .	12·0	15·0
Fats, etc. . . .	2·0	30·0
Mineral matters .	1·2	1·4
Pigment extractives .	—	2·1

Some children, as has been remarked, will refuse eggs and this repugnance will take the most marked forms. A child may be so sensitive to the protein of eggs that swallowing even the most minute portion will produce severe vomiting, with diarrhoea and great prostration. So violent are these symptoms at times that the observer might almost believe that some irritant poison had been swallowed. With other children similar idiosyncrasies exist with regard to fruits, mushrooms, some cereals, or shell-fish. Not



that shell-fish should form part of the nursery dietary, or mushrooms either !

### FORBIDDEN FOODS

While a little beef, mutton, or chicken may be given to children of a suitable age, there are certain flesh foods which must be absolutely forbidden them. Pork, goose, and duck have already been cited as the wrong things ; and we put on the black-list ham, sausages (especially the various forms of sausage sold in the Continental delicatessen shops which abound in London and some large centres), salted or dried fish (kippers, bloaters, haddock, etc.), corned beef, tongue, and preserved meats and meat-pastes of all kinds, " high " game, liver, kidneys, sweetbreads, and similar dishes. As for cooking, plain roast or boiled meat or fowl is best. Stews and made dishes are apt to over-stimulate liver and kidneys, and the young stomach does not require rich sauces or gravies. A little of the " red gravy " that flows when the meat is cut is all that need be administered. All hashes, minces, and twice-cooked meat should be avoided. Re-heating has a tendency



to harden the fibres ; and many children are made really ill by eating meat-dishes which have been made up from yesterday's cold joint. The schoolboy's traditional aversion from "resurrection-pie" is not merely a whim but has a solid hygienic foundation. For older children a well-grilled chop makes a wholesome meal ; but frying is not a method of cooking which should be employed where children are catered for. Even adult stomachs have been known to rebel at fried food ; and, as practised in England, this method of cookery has little to recommend it. I am against cold meats for children, as they do not as a rule masticate them properly. "A slice of cold sirloin from yesterday's roast," as the "Ingoldsby Legend" has it, may be appreciated by the older members of the family ; but the young ones are better without it. Some people have a firm belief in the strengthening properties of broths and soups, but this is founded on a complete fallacy. As a matter of fact, beef-tea and the like concoctions have a stimulating effect because of the extractives in them ; but their nourishing properties are *nil*. They are agreeable to the



taste, and produce a comforting sensation of warmth, but they merely stimulate as a whisky-and-soda or a glass of port stimulates. A vegetable *purée* is useful at times; but the general action of broths and soups is to dilute the gastric juices and distend the stomach without any corresponding yield of nourishment. If, however, they are thickened with arrowroot or cornflour they are less open to objection.

To sum up :

Beef, mutton or chicken, white fish, and eggs are the most suitable flesh-foods in childhood, and the more plainly they are cooked the better.

Meat should only be given at the most once a day, and then in a moderate allowance.

Avoid rich gravies and sauces, made dishes, preserved meats, twice-cooked meals and cold meat, as well as the flesh-foods more particularly specified in the chapter above written.



## CHAPTER V

### NATURAL FOODS

MAN is an omnivorous being and the wisdom of ages has settled that a mixed diet, derived equally from the animal and the vegetable kingdoms, is the best for him. We very soon learnt to eat the flesh of animals; and the Golden Age is a long way behind us. Ovid laments it; and as a well-known passage refers to "that age to which we have given the name of 'the golden' was blessed in the produce of the trees and herbs which the earth bring forth, and the human mouth was not polluted with blood." The poet goes on to say, "Then the birds in safety used their wings in the air; the hare fearlessly wandered in the open fields. Then the fish was not a victim to the hook and to its own credulity. Every place was void of treachery; there was no dread of injury; all things were full of peace."



This is not the place in which to pursue a lengthy discussion on the merits and demerits of that diet-system, which is called vegetarianism or fruitarianism, according to the taste and fancy of its devotees. Suffice it to say that whatever dietetic paths he may choose to follow in after-life a child can be sufficiently nourished and be quite healthy and happy on a regime composed largely on vegetarian lines. The place of meat in a child's dietary has already been sufficiently discussed in a previous chapter ; so we will proceed to the consideration of the products of the earth. It has been noticed that young children will eagerly eat fruit of any kind, even immature apples in their greenest and sourest state ; from which some enthusiastic vegetarians have endeavoured to deduce that fruit is the natural food of man. One of these has actually been led into the debatable statement that " the natural instincts of children lead them to prefer fruit to all other foods, and that the perversion of these instincts during their early years is productive of much physical and moral evil there can be little room for doubt."



All this shows how very intemperate in their statements convinced vegetarians can be ; and how the eating of a slice of roast mutton can lead to "much physical and moral evil" it is a little difficult to see. It is the tendency of this cult to spoil their own case by these violent exaggerations and over-statements, which rather goes to show that the eating of fruit and vegetables conduces to inflammation of the passions. However, the products of the good earth are undoubtedly valuable foods ; and it is possible to enjoy them and be thankful for them without taking any notice of the exaggerated claims of cranks and faddists. For fresh vegetables and fruit contain valuable salts which are absolutely necessary to the blood ; if these are not assimilated in proper quantity the blood becomes impoverished and disease results. These salts exist in combination with certain acids which become carbonates when taken into the body, and exercise a beneficent influence on the kidneys and on the blood. Besides these salts and acids, vegetable products contain other elements useful in body building and in providing heat and energy.



An average potato, for instance, contains 20 per cent of starch, also  $1\frac{1}{2}$  per cent of protein. It is almost possible for man to exist on potatoes alone, with the addition of a little fat, though the diet would have a tendency towards monotony! It is not wise to feed a small child on the bulkier vegetables, such as cabbage, as its immature digestion cannot cope with the coarse fibres. Cauliflower, for the same reason, is not to be recommended as far as the coarse green part goes, though a little of the white "flower" can be given to a robust child. Turnips, carrots, and parsnips are apt to be fibrous and indigestible, unless they are *very* young, and therefore are inadvisable for children. Peas and beans are rich in proteins, but they are apt to cause flatulence and discomfort. Very small children cannot masticate very well, so it is a good plan to mash their vegetables. A mixed vegetable stew is not only very good for children, but is so palatable that I wonder it does not figure more often in the nursery table. For growing boys and girls beyond the stage of childhood, plenty of green vegetables are a necessity. Unfortunately,



children often display a tendency to eat up their meat and neglect the vegetable portion of their meal, and this should be carefully checked. It is not at all a thing to marvel at, for the vegetable part of a meal as served up by the average British cook is not particularly appetizing. The *best* vegetables for quite young children are vegetable-marrow, *boiled* cucumber, artichokes, onions, and asparagus. Other vegetables, such as French beans, kale, tomatoes, and celery may be given occasionally; but mushrooms, capers, and truffles should be avoided. Luckily, young children do not generally show any liking for these luxuries. Spinach is one of the most valuable of vegetables; it contains many useful mineral salts and juices, though its nutritive value is not high. A great objection to its use is the way in which it is usually cooked. This leaves the cellulose basis of the leaf unaffected, and thus renders this useful vegetable very difficult of digestion. If the spinach cultivated for the nursery table were made into a *purée*, this objection would disappear; but perhaps this is too much to hope for while the British cook



clings to her archaic ideas of vegetable cookery. On the Continent, the vegetable portion of the meal is treated with proper respect, and often, as we know, forms a separate course. The same may be said of the United States. The late Walter Hines Page, one of the most Anglicized of the Ambassadors America has ever sent us, once penned a just criticism of this land which he loved so well. To a friend in Washington (or it may have been New York) he wrote: "In Britain there are only two kinds of vegetables—both cabbage."

Children, especially boys, seem to have a natural liking for nuts, so let us say at once that these articles of food are rich in valuable qualities. They are very nutritious; and men have lived upon them solely for considerable periods. The proportion of proteins in Brazil nuts is 15·3 per cent, with 65·0 per cent of fat, and 7·4 of carbohydrates. Chestnuts yield 42·2 per cent of carbohydrates, so the nourishing and sustaining qualities of the nut tribe can easily be seen. A handful of chestnuts will often suffice an Italian peasant for a whole day. The proportion of proteins in almonds is 21·0



per cent—in rump steak, 13·8 per cent. In fact, almonds and raisins will by themselves constitute a nutritious meal. A child could thrive very well indeed on a diet of nuts, vegetables, fruit, and cereals. Oatmeal is one of the most valuable foods among the cereals, ranking high as both energy provider and flesh former. The sturdy lads and lassies reared upon

“the halesome parritch, chief o’ Scotia’s food,”

are living and breathing testimonials to its excellence. It is heating and stimulating, as well as providing energy, but owing to its tendency to retain part of the outer covering unless very carefully prepared, it is apt to cause diarrhoea in small children. Of all the cereals, oatmeal is the richest in phosphates. Many millions of the earth’s inhabitants live almost entirely on rice, but in our colder northern climes it has not the qualities necessary to form a principal food. It may be added to the liquor from stewed mutton to make nourishing mutton-broth. It may also be used as a “vegetable” with roast meat; and many children like it soaked in gravy. Perhaps it is



best when combined with eggs, milk, and sugar to form the familiar and ever-popular rice-pudding. Arrowroot, sago, and tapioca are light, digestible, and unstimulating, but do not contain enough nutritious qualities to render them valuable as foodstuffs.

Enough attention is not paid to salads in this country ; and when a child is old enough to masticate at all, it can with great advantage be given salads—every day is not too often. It is needless to say that the lettuce should be fresh and crisp, the tomatoes firm ; perhaps cucumber may be left out till the child is older, as it is apt to be indigestible. Salads contain valuable salts and iron, which are good for growing children ; and there are many combinations of fruit and salad plants which make a special appeal to young folks. For dressing, lemon juice might replace vinegar with advantage, and only the finest olive oil should be used. Neither pepper nor mustard need find a place in the salad prepared for the younger members ; these condiments exercise a very irritating effect on the immature digestive tract ; and perhaps it is well that the young



and unsophisticated palate has a tendency to reject them. It is a fortunate child where parents and nurses have a proper appreciation of the value of fruit in the diet. Most people think that fruit is a "treat"; and should be allowed *in addition* to the regular dietary; it is time that such mistaken notions were discarded, and people learnt that fruits constitute in themselves a valuable food. Apples are most wholesome, either raw or cooked, and should figure continually on the menu of nursery and schoolroom. The phosphoric and malic acids which they contain are extremely valuable; and the fruit is popularly credited with the property of strengthening a weak stomach. It is not generally known that plums contain as much nutriment as apples and pears; but delicate children should not be allowed to eat too freely of them, as they have a tendency to cause diarrhoea. Peaches, nectarines, and apricots are open to the same objection, though the flesh of these fruits is delicious eating. Strawberries, raspberries, and others of the berry family contain useful mineral salts and are cooling and refreshing. Oranges are one



of the best gifts of Nature; not specially nutritious, they have valuable properties which are useful in feverish conditions, while they are delicious and cooling in health. Orange-juice and lemon-juice make valuable beverages, combined with water and sugar, and children may be encouraged to drink as much as they fancy. Giving these juices to children is as good a way as any of inducing them to take sufficient liquid. Bananas are nearly as nutritive as wheat or potatoes, and for this reason constitute one of the finest fruit-foods. A Jamaica banana contains no less than 22 per cent of carbohydrates, and 1·3 per cent of proteid. A couple of bananas and an orange make together a good and sustaining lunch for a child. Figs and dates are extremely rich in nutritious substances, the former containing no less than 62 per cent of carbohydrates, the latter 69. The protein contents is 3·5 and 4·3 respectively. This accounts for the ability of the Arab of the desert to go for long marches on a handful of dates. The most valuable fruit is the grape, which is nourishing and fattening, and so extremely valuable as a food in health,



and exerts curative properties in bronchitis and other complaints. The "grape-cure" is well known.

The great defect of a diet consisting altogether of the various natural foods is its deficiency in proteins; and to the rapidly growing lad or girl this is absolutely necessary. It must be supplied by animal food, though no child requires animal food more than once a day, as laid down in another chapter. Without for one moment admitting the claims of the vegetarians and the fruitarians, let us see that the children eat plenty of fruit and vegetables, and that as an *integral part* of their ordinary food, and not as a "treat." Fruit is too important a part of the diet to be looked upon as a "dessert" (as it too often is) and added on to the end of an already substantial meal. There is one form in which the vegetables and fruits should be forbidden to children, and that is in the form of pickles or chutney. There is a place for everything; but the place for vegetable substances hardened in vinegar and combined with pepper and spices is not the tender stomach of a young child.



## CHAPTER VI

### SOME REMARKS ON DIET

IN previous works I have laid down that three meals a day—or even two—are enough for an adult, and that for certain individuals the no-breakfast plan is an excellent one to adopt. The usual grown-up arrangement of meals does not allow sufficient interval for proper digestion ; for with early tea at 8, breakfast at 9, lunch at 1, afternoon tea at 5, dinner at 8, and supper at any convenient hour afterwards, the ill-used and overworked stomach obtains no rest whatever. As an ordinary meal requires, on an average, from four and a half to five hours for its digestion, this will easily be seen ; and many cases of indigestion and gastric catarrh arise from the senseless habit of eating another meal before the first has had time to be completely digested. Children, however, must be treated differently from adults. As their diges-



tion is more rapid, they require food at more frequent intervals ; and we should allow them three meals a day—breakfast, dinner, and tea or supper. The intervals may be as follows : breakfast, 8 to 8.30 ; dinner at 1 ; and evening meal at 5.30 or 6. Too many children are allowed tea at 4.30 or 5, and supper at 7. There is not sufficient interval between tea and supper ; and the consequence is that the unfortunate child suffers from indigestion and, often, night terrors. The tea and the supper may be amalgamated into one meal so as to avoid these harmful conditions.

As children digest rapidly, and their respiratory activity is great, they need to consume as much carbohydrate as an adult, and about three-quarters of the amount of protein. The proportion of an adult's allowance of food required by children, at various ages, has thus been worked out :

A child under two years of age requires 0·3 of the food of a man.

A child of from three to five years of age requires 0·4 of the food of a man.



A child of from six to nine years of age requires 0·5 of the food of a man.

A child of ten to thirteen years of age requires 0·6 of the food of a man.

A girl of fourteen to sixteen years of age requires 0·7 of the food of a man.

A boy of fourteen to sixteen years of age requires 0·8 of the food of a man.

In this calculation, an average man doing ordinary work is meant.

As the child requires an adult's allowance of carbohydrates, for the reasons given above, this may be supplied by farinaceous foods—oatmeal, rice, and wholemeal bread, which is better than white for young people. They may be allowed to eat moderately of good bread-and-butter; and good thick pea soup or lentil soup is useful. The ordinary broths and clear soups, however, are useless except as stimulants, and have the added disadvantage of diluting the gastric secretions. There is a widespread superstition that beef tea and such concoctions are “strengthening.” They are no more strengthening than a whisky-and-soda is



strengthening ; but have a temporary power of stimulation as has been already remarked in this volume. Hence the reviving and refreshing effect of a cup of strong soup, which is purely illusory. As well as the carbohydrates, children should be well supplied with fat, which is most important. Fat may be given in the form of butter or dripping on bread, or in fat bacon and the fat of meat. Some children show an invincible repugnance for some forms of fat, as, for instance, the fat of roast mutton. In these cases, fat must be administered in other ways, as in suet-puddings. The suet must be chopped small, for visible lumps may cause a delicate child to turn from it. It is of the utmost importance to establish the habit of taking fat, for if a child is allowed to reject it consistently, the stomach loses the power to deal with it. In after-life, the child will suffer from under-nutrition due to the deficiency of fat in the diet ; and the failure to assimilate fat is believed by good authorities to render one peculiarly liable to tuberculosis. Nothing is more important than to establish good "digestive habits" in the young child. They



will serve him well throughout life. Here let me say that one of the worst habits into which children are liable to fall is eating between meals. Some foolish mothers listen to the child every time it complains of being hungry, and give it a piece of bread-and-butter, a slice of cake, or a biscuit. Let them be a little more Spartan, and allow the child to wait for the regular meal-times. Children who have never been allowed these between-meals snacks never seem to want them—curious, but true! Too much pocket-money leads to expenditure on sweets, and consequently capricious appetite. Sweets or chocolates may be allowed, sparingly, at the end of a meal. There is no harm in chocolates, or in what are known as “boiled sweets,” or in toffee made of butter and sugar. The same may be said of marzipan, which contains 50 per cent of almonds and 33·3 of sugar. Some of the colouring matters used in making sweets more attractive to the eye are harmless, but others are distinctly harmful. Copper, arsenic, Prussian blue, salts of zinc or barium may be used to produce the brilliant hues which make such an attractive show in



the confectioner's shop window. Sugar in some form should always be an integral part of the child's diet, for it cannot be surpassed as a means of supplying heat and energy; and whatever is not used immediately in the body in this manner is stored up in the tissues as fat. Jam, marmalade, treacle, and honey are useful forms of sugar. In excess it may cause impaired digestion and catarrh of the stomach, so let there be moderation in sugar as in all things else. It may be noted in passing that what is sold by the grocers under the name of "golden syrup" is a manufactured article. As compared with genuine treacle it shows an analysis 11·30 per cent of cane-sugar, whereas treacle shows 44·8 per cent—a sufficient difference. Ingenious men have even simulated honey and the honeycomb, glucose being used for the former and moulded paraffin wax for the latter. To illustrate the unequalled value of some form of sugar in the diet the following examples may be quoted from a recent work :

“ During the autumn manoeuvres of a Continental Army a number of the men were given ten lumps of sugar daily, in addition to their



ordinary rations. The trial extended over five weeks, and it was found that the soldiers who had been supplied with sugar marched better and suffered less from hunger, thirst, and fatigue than their fellows who were not so supplied. As a result of the experiments, the surgeon in charge recommended that the sugar ration for soldiers should be raised to 60 grammes per day (about 2 ounces).

“The other example illustrating the practical value of sugar as a muscle food is to be found in the experience of certain rowing clubs in Holland. They found sugar to be a very valuable food in training. The rowers who used it always won, on account of their superior powers of endurance; and it seemed to counteract the bad effects of an exclusively meat diet, so that the men did not become ‘stale.’

“One case, as given in detail, is very interesting. Two schoolboys, seventeen and nineteen years of age, with only two hours a day for practice, at the end of two months entered for the rowing races. No change had been made in their diet except that they ate as much sugar as they wished, sometimes as much as one-third of a pound at the time of their ‘daily’ exercise. One of them, however, did not make this addition to his diet until the third week, when he began to show all the



signs of over-training—loss of weight, and a heavy, dull feeling, with no desire for study. On the third day after beginning the use of sugar these symptoms disappeared. At the time of the race both youths were in fine condition, and were victorious over their antagonists who did not believe in the use of sugar. No bad after effects were observed.”

Commenting on these cases, the authority observes that it seems as if it would be worth the while of captains of football teams to try the effect of serving round small cups of black coffee, strongly sweetened with sugar, at half-time, instead of the usual lemon. They would probably be rewarded by the greater endurance of their men in the second half of the match.

The schoolboy training for some important athletic event needs plenty of protein in his diet, and the allowance of meat, therefore, may be increased. Puddings and pastry are to be avoided, and stewed fruit with plenty of sugar taken instead. It is advisable that the change from ordinary meals to training diet be not made too suddenly, as the immature



digestive apparatus is apt to be disturbed by these experiments.

Before leaving the subject of diet at school, we may glance at a lecture delivered at a meeting of the Food Education Society by Miss A. D. Muncaster. The lecturer said that in women's colleges food had formerly been much neglected; in men's it was far better. Helpful lessons had been learned from the skilful use made by officers of military rations when colleges were filled with cadets. House-masters' wives had also studied to feed boys well under war conditions. Boys needed sufficiently varied and well-cooked food for growth and effort carried on together. Tuck-shops should belong to the school, and profits should be devoted to such matters as games funds. More fruit and less sweetstuffs should be sold there.

In many schools difficulties arose from inability of parents to pay increased fees, from old-fashioned arrangements causing waste of fuel and loss by breakages, as well as from the increased cost of Burnham scale salaries. In orphanages there was great need to build up



delicate children. There was no more urgent economic problem.

The seasons have to be considered in the feeding of children. Most mothers have sufficient intelligence to give plenty of green-stuff in the spring, and to reduce the allowance of meat. In the winter, it is important that the fat-ration be made larger, for fat takes the place of the tonic, warming sunshine which is withdrawn from us during the dark, dreary winter months. Children, being less robust than their fathers and mothers, need in the winter time all the support that fat can give. They should be encouraged to eat as much butter and dripping as they like, and often given fat bacon, bread soaked in the liquid that flows from fried bacon, dumplings made with suet, and all kinds of suet puddings, with raisins, jam, treacle, and marmalade. Stout boots and warm clothing are not enough to ward off the chill of winter; and a good interior lining of animal fat is needed in addition. Children crave for it in the winter, and mothers and nurses should see that they get it.

A little child sometimes instinctively knows



better than mother or nurse what is good for it; but it should not be allowed to rule the roost in this respect. Too often children are deferred to about their choice of food to a ridiculous extent. The consequence is that they grow up dainty, capricious, and fastidious, with all kinds of fads on the subject of their meals. The wise mother who studies her child's constitution should, without any scolding or tyranny, gently direct its attention to suitable foods. She knows that young people are liable to be swayed by whim, and while she makes allowances for genuine dislikes, she is down on any tendency towards fads and fancies with no genuine basis. She must remember that tastes can be acquired, and are not inherited, and while it is very easy to create likes and dislikes, it is not so easy to eradicate them when once they have been formed. A child who is told that certain foods are "good for him" at once takes a dislike to them which may last him the rest of his life, because he has learnt that substances which are "going to do him good" generally taste nasty. Sometimes when a child is feeling poorly, he is given



some new and unfamiliar food by way of a "change." He naturally learns to associate the new food with feelings of discomfort, and this creates a prejudice. All these factors must be taken into account in the inculcation of good habits of diet.

"Suggestion" is a priceless value at the nursery table, as in other matters! And good habits of diet, once instilled, are likely to be permanent.



## CHAPTER VII

### DIET AND ILLNESS

A JAPANESE proverb tells us that "all diseases enter by the mouth"; and, without going as far as this, we are forced to the conclusion that the greater number of children's ailments are caused by wrong feeding, overfeeding, or under-feeding. A widespread complaint which brings others in its train is constipation. This condition, combined with over-eating, is apt to bring on such things as appendicitis and colitis, or inflammation of the colon. The same contributory causes end in gastric complaints, such as gastric fever, and irritation and inflammation of the stomach. It is important that constipation be attended to at once, lest it go on and develop into other things. Waste matter remaining in the bowel causes auto-toxæmia, or self-poisoning, the parent of all kinds of ills. The principal factor in removing



constipation is the rigid inculcation of regular habits. Drugs are useless; they may remove the condition for the time being, but the immature digestion resents being continually whipped and spurred into doing its duty, and the last state of it is worse than the first. Regular habits and diet are essential; all else matters little or nothing. If children were fed properly, the makers of patent medicines for regulating the bowels would be within sight of the Bankruptcy Court in a very short time. When constipation is present, and the little patient shows it by being fretful and irritable, with headache and bad breath, the meals should be revised at once. The intake of starchy foods should be reduced, and brown bread substituted for white. It is sometimes advisable to stop milk altogether; and milk puddings should be cut out of the menu. The amount of green vegetables may be usefully increased; and dishes of spinach, asparagus or French beans given. Stewed figs and stewed prunes may be substituted for the ordinary milk or "boiled" pudding. All the fruits are useful; but with very young children it is advisable



to cook them—a baked apple is a sovereign remedy. Raw fruit may be given to older children in the morning; and they may be taught to begin their breakfast with an orange or apple. These fruits, and a cereal to follow, make a good breakfast for any child. Salads when dressed with oil are beneficial to the constipated child; and at tea or at breakfast he may be encouraged to take honey, marmalade, treacle or jam on his bread. Sugar is laxative; and the combination of fruit and sugar, as in jams and marmalade, is better than all the concoctions of the patent medicine vendors. The child should be allowed to drink plenty of water; and if the condition is obstinate, olive oil or extract of malt may be tried ere resorting to drugs, which constitute the least important part of the treatment. If such things as cascara or senna be used, it should be as sparingly as possible and the dose gradually diminished. Proper diet and regular habits are the two pillars of the treatment.

Constipation invites other evils; a constipated child who is allowed to become overheated will, for instance, catch cold much more



quickly than another. Colds are the result of overclothing and under-ventilation, as a rule ; and while an ordinary cold is disagreeable while it lasts, it is not considered serious. However, it should not be forgotten that many grave illnesses start with a cold, and a cold starts with lowered resistance. A child that is overfed and overclothed has his resistance lowered, and the cold simply takes possession. A child who is allowed to eat too many sweets, or is given biscuits and slices of cake between meals, soon acquires the habit of catching cold when a favourable opportunity arises. A child who is fed properly, has regular bowels, and sleeps in a sweet, clean bedroom, airy but free from draughts, does not fall a prey to this habit, for habit it is. When a cold has taken possession, it may be driven out by reduced meals, an equable temperature, and quantities of fruit juice to drink. Oranges are splendid cold curers ; and a cold may be defeated by substituting oranges for meat and pudding. Sitting over a fire and ingesting three substantial meals a day is not the way to cure a cold ; and, in fact, is the best method known of inducing it



to develop into something more serious. By feeding a cold and neglecting the bowels, we build a cough and even pneumonia. Irritation of the stomach, caused by wrong feeding and constipation, causes many coughs. Acidity of the stomach irritates the mucous membrane, and the cough results. If, instead of giving all kinds of "cough mixtures" and lozenges, the stomach were first attended to, the cough would disappear. When the child develops a persistent cough, see that the bowels are working and reduce the intake of food. The meals may be the same as those recommended above for constipation. It is as well to stop all sweets and "goodies." Muffling a child up, keeping it in hot rooms, and stuffing it with "nourishing" food is the way to turn an ordinary winter cough into something really serious like tuberculosis. Too many people in charge of children are fond of "feeding them up" when there is anything wrong—that is to say, overloading the already overworked and irritable stomach, and aggravating its condition. As most children's ailments come from overeating, the "feeding-up" process is simply throwing oil on flames.



Parents and nurses should really understand that a child is not going to starve to death if it misses a meal, or even two.

No child ought to have indigestion ; and the reason that little children are tortured with this distressing and painful complaint is that they are improperly fed. They are given too plentiful meals, or unsuitable food, by ignorant and careless mothers and nurses, or they are allowed to "bolt" their food before it is properly masticated. The food ferments in the stomach ; and there is pain and flatulence. The appetite is capricious, tongue furred, and breath disagreeable. Anæmia, insomnia, and various nervous disorders may accompany the condition. Getting the stomach back into normal condition may be the work of months, and even years. The greatest care must be exercised in regard to the diet, and all pastry, sweets, and chocolates should be absolutely forbidden. Play in the open-air is recommended ; but the little one should not be allowed to over-tire itself. It should sleep in a large airy, well-ventilated room. It must not be forgotten that excitement, over-fatigue, lack of rest, and



emotional disturbances may have a maleficent effect on the digestive system of the young child. For instance, fear may affect the digestion, and a nervous child be frightened into a fit of indigestion by a bogey-story. This, however, may speedily be overcome; it is the condition brought on by persistent wrong feeding which needs continual and patient care if it is to be successfully combated.

The normal child is joyous and active, and contentedly eats the food set before it. When it is cross and irritable, and complains of its dinner, demands something else, or refuses to eat anything it should be sent to bed and given no food at all. Orangeade or lemonade may be taken in place of solid food; and the bowels must be attended to. The child is probably suffering from stomach acidity caused by indigestion. At times it will complain of pains in its legs. For years ignorant people have refused to take any notice of these symptoms, which they called "growing pains," and looked upon as normal. Actually they are pains of a rheumatic origin, caused by acidity of the stomach. When this acidity is corrected, the



pains will disappear (see also p. 49). Many children suffer from what are called bilious attacks. These are generally brought on by eating too-rich food; but there are other exciting causes. Many nervous, high-strung children are made bilious by any unusual excitement; some have been known to vomit just before going to some form of entertainment. Fear and anger will bring on bilious attacks; so will over-exertion at games, over-study, as just before an examination, or exposure to too hot a sun. The remedy for a bilious attack is to put the child to bed in a cool, darkened room and cut off all meals. Gastric and digestive disturbances may be brought on by eating at the wrong times, as well as eating of the wrong things. A child should never be forced to take a meal when it is tired; often one has seen a tired child kept awake in order to have its supper, when the better plan would have been to allow it to go to sleep. Children have actually gone to sleep with food in their hands, thus showing that they required bed more than supper. A boy or girl should never be required to eat in an over-excited or over-fatigued state.



Harm has been done by a boy or girl coming in from a hotly contested game, and immediately falling to on a substantial meal. A brief interval of rest should be required before food is tackled ; and the child should not be allowed to rush from the table to resume play as soon as a meal is swallowed. Too much stress cannot be laid on the importance of masticating all food properly. Unhappily, "bolting" is a vice of the young, and needs to be corrected if all kinds of ills are to be avoided in after-life. It is not at all necessary to chew each mouthful thirty-two times as a famous statesman was (quite erroneously) said to have done ; but adequate molar action is absolutely necessary. We usually do not allow the teeth enough work to do when the child is young, for we give it mushy and pappy foods, like mashed potatoes soaked in gravy, or bread-and-milk. Some foolish people actually cut the crusts off the nursery bread-and-butter, leaving a spongy mass for the little teeth to tackle, and no real work for them to do at all. Even quite small children should have a crust to mumble, thus giving their teeth and jaws much-needed exer-



cise. The puppy wants bones to gnaw in order to assist the growth of his sharp white teeth ; and if deprived of them, will experiment with the master's slippers, or the corner of the drawing-room hearth rug. In the same way immature human beings ought to be afforded plenty of opportunity for teeth exercise. After the age of two years, let the child finish each meal with a piece of apple or crisp lettuce. The habit of "bolting" is apt to obtain a hold on children, when the meal is liable to be hurried through in order that a move may be made to more exciting and amusing scenes ; but it must be sternly checked. When a little one is persuaded that it is rude to "gobble," a good deal will have been done towards warding off dyspepsia and other scourges of modern life. A distich which this writer learned from an aged lady in his early youth ran—

"Learn to eat slow ; all other graces  
Will follow in their proper places."

Leisurely eating, and a proper attention to tooth-brush drill, will cause the child and the dentist to remain comparative strangers.



## CHAPTER VIII

### THE VALUES OF FOODS

It will be useful, as well as interesting, to give some tables from which can be seen at a glance the caloric value of the ordinary articles of food. Let us take milk, eggs, and butter first.

	Quantity.	Fat.	Carbo- hydrate	Protein	Total Calories.
Egg, whole .	1	55·0	—	30·0	85
„ yolk .	1	54·0	—	12·0	66
„ white .	1	1·0	—	18·0	19
Butter .	tablespoon	39·7	—	0·3	40
Milk .	1 oz.	9·8	5·9	4·3	20
„ skimmed	1 oz.	—	5·8	4·2	10
Cream .	1 oz.	111·5	2·5	2·0	116

The value of fresh vegetables and fruits has been insisted upon in these pages, so the calorific values of some of the best-known are given below.



	Quantity.	Fat.	Carbo- hydrates.	Protein	Total Calories.
Cabbage .	1 oz.	0·8	7·2	2·0	10
Carrots .	„	0·5	4·7	0·8	6
Cauliflower .	„	0·8	3·8	1·4	6
Spinach .	„	1·7	5·8	4·5	12
Turnips .	„	0·5	9·9	1·6	12
Onions .	„	0·6	6·8	1·6	9
Peas . .	„	0·9	18·6	8·5	28
Tomato .	1 medium	1·8	16·4	4·8	23
Asparagus tips	1 oz.	0·5	4·2	2·3	7
French beans	„	3·0	3·0	1·0	7
Potato .	„	0·3	28·2	3·5	32
Apple .	1 medium	5·5	88·3	2·2	96
Orange .	1 large	2·4	87·3	6·3	96
Peach .	1 large	1·0	40·4	2·6	44
Pear . .	1 medium	5·8	81·0	3·2	90
Banana .	1 average	6·0	92·8	5·2	104
Walnuts .	1	25·3	2·4	3·3	31

It will be seen from the above tables that the food value of vegetables and fruits varies considerably. In addition to the constituents enumerated above the articles named contain valuable salts and acids, such as potash, soda, lime, magnesia, iron oxide, phosphoric acid, and sulphuric acid.



Here are tables showing the calorific value of several other foodstuffs, including flesh-food.

	Quantity.	Fat.	Carbo- hydrate.	Protein.	Total. Calories.
Oatmeal . . .	1 oz.	3.2	15.5	3.3	20
Rice . . .	1 oz.	0.3	30.3	3.4	34
Macaroni . . .	1 oz.	4.5	21.4	4.1	30
Bread (white)	1 slice	3.6	65.2	11.2	80
„ (brown)	1 slice	3.5	85.6	16.7	106
Roll . . .	1	9.1	89.1	13.6	112
Cod . . .	1 oz.	0.6	1.4	18.0	20
Oyster . . .	6	9.5	12.9	21.6	44
Beef (lean) . . .	1 oz.	3.0	—	19.0	22
Lamb . . .	1 oz.	23.7	—	16.3	40
Chicken . . .	1 oz.	8.1	1.7	26.2	36
Turkey . . .	1 oz.	34.0	—	23.0	57
Beef juice . . .	1 oz.	6.2	—	1.8	8
Bacon . . .	1 oz.	20.0	—	5.0	25

In these instances we have again some notable differences. It will be seen that bacon yields 25 calories as compared with 8 obtained from beef juice, the same quantity being taken.

The vitamins, although their exact nature is at present not definitely known, are present in any ordinary mixed meal. They exist



principally in vegetables and to a lesser extent in animal foods, and while not in themselves nourishing, they appear to "produce harmonious interaction between materials in the food of the person who consumes them." Diet deficient in vitamins produces definite diseases of malnutrition. Children fed on patent "foods" which have been preserved for some time, or fed on boiled milk exclusively, often suffer from deficiency diseases such as rickets and scurvy. A mixed diet containing a fair proportion of fruit and vegetables is bound to have a vitamin-content.

The proteids, the carbohydrates, and the fats have each their work to do in the young body (as remarked in Chapter II, "Food for the Child"). The proteids—found in meat, milk, eggs and certain cereals and vegetables—build up bone and muscle and tissue. The fats and carbohydrates give heat and energy, and are found in butter, suet, oil, potatoes, bread, sugar, honey, etc. The salts, found in fruit and vegetables chiefly, but also in meat, fish, eggs, and milk, have already been alluded to. Water, which accounts for two-thirds of the body-



weight is found in various foods, and should be drunk freely at intervals during the day. These five substances, proteids, fats, carbohydrates, salts, and water, constitute the materials on which we live and each plays a part in the well-balanced diet sheet. I should fix the proportion of proteid to non-proteid foods as 1 to 5. The rates of fat to carbohydrates may change as the child grows older. Beginning at 1 to 3, it may gradually approach 1 to 5.

Generally speaking, one may say that the ordinary dietary of the nursery is an ill-balanced one because it contains too much starchy food and not enough green vegetables and fruit. The average dinner of meat, potatoes, and pudding is deficient in several important elements. If this little work is attentively studied, mothers and nurses may be enabled to plan a better balanced dietary than that generally found.







## APPENDIX

### THE DOMINIONS IDEA

AN interesting pamphlet dealing with the feeding of children has been issued by the Department of Health of the New Zealand Government, and contains some striking matter on the subject of milk as a beverage. The authors—Dr. Truby King, Dr. E. H. Wilkins, and Mr. T. A. Hunter—say :

“ A consideration of the caloric value and protein ratio of cow's milk, in relation to the total caloric and protein requirements of young children, renders it apparent that a large quantity of milk in the daily diet causes an undue proportion of the child's food to be taken in a liquid or sloppy form, giving no exercise to the jaws, teeth or salivary glands.

It is specially necessary at the present time to insist on the mistake of giving children as much milk as they will drink, because an intemperate 'milk cult' has been given undue



newspaper prominence of late in a set of rules for children headed 'The Health Game.' These rules, emanating from New York, were intended for the poor of great cities who can never get enough milk. Copied without explanation into the newspapers of a well-to-do dairying-country, rule 4 of the American 'Health Game'—namely, 'Drink as much milk as possible'—is palpably wrong and misleading.

Some of our children are already given too much milk—milk being popularly regarded as a mere drink, rather than as a substantial food. Excess of milk in the diet of children from two years onwards may be as harmful as deficiency. It is well to remind parents who happen to be obsessed with the wrong notion that milk should form a large proportion of the diet in childhood that in New Zealand (and in many other countries where exceptionally well-built, virile, capable races were evolved) cow's milk never entered into the diet until cows were introduced by Europeans. The milk industry in its present magnitude is a recent development in the history of civilization.

In reply to the question 'How much milk should a child have daily?' it can be stated confidently that for a healthy child, say, from the age of three years, receiving an otherwise



satisfactory diet, half a pint (including that which is combined with other foods in cooking) is enough."

The great objection to the indiscriminate use of milk is that a child will not—unless it is painstakingly taught—assimilate milk in the right way. Milk is a food, not a drink; but ignorant mothers and nurses tell the child, "Drink up your milk," and the little one obediently gulps it down in two or three long draughts. The result is that large hard curds are formed in the stomach, and indigestion ensues. Milk should be slowly sipped, and each mouthful thoroughly insalivated.

With regard to fruit and vegetables, the Health Department of the New Zealand Government is so thoroughly in accord with the author's views that quotation may be useful. The official pamphlet says :

"The greater use of fruit, especially raw ripe fruit, should be advocated. It should be emphasised that the regular taking of fruit (more or less acid) at the end of each meal, especially at the end of the last meal of the day, is one of the chief means of minimizing oral



sepsis and thus preventing dental decay and the tendency for tonsillitis, rheumatic fever, etc. Attention should also be drawn to the great importance of uncooked fruit, including tomatoes, as a source of the necessary vitamins, and as conducing to healthy activity throughout the digestive tract and the establishment of normal microbic flora in the intestine.

Of course, we all recognize that fruit should be cheaper, and that much more could and would be produced, both commercially and in home gardens, if people in general recognized its supreme importance for the growing family. In both these directions we may be sure that a great economy would soon be brought about if all medical men, dentists, and nurses impressed on the people in their districts the great importance of fresh raw fruit, especially during the period of active growth and development. The cost of fruit should not be considered a serious difficulty in the way of its more general use in the Dominion. In view of the amount of money commonly spent on sweets, the expense of dental treatment, and the much greater expense and loss of efficiency ultimately resulting from untreated dental disease, the greater use of fruit even at its present high prices would be an actual economy."



Again, as to vegetables :

“ A liberal and varied supply of fresh vegetables should be strongly recommended. As green vegetables are specially protective against deficiencies which may occur in the remainder of the diet, this point should be emphasized, and parents should be urged as far as possible to grow some green vegetables in their own gardens. Special importance, of course, attaches to salad materials used in the raw state, such as lettuce, mustard and cress, radish, etc., and the public should be brought to realize the damage done by such common mistakes in cooking vegetables as the use of soda, unnecessary peeling or paring, overcooking in excess of water, etc.

As in the case of fruit, the increased demand which would follow upon a greater appreciation of their food value would no doubt result in an increased production of vegetables and a fall in price.”

These are the principles which the present writer has laid down not only in this but in other works. It is to be noticed that the New Zealand Department of Health deprecates the excessive use of meat by children, holding that the protein needed should be given in the form



of fish, cheese, eggs, and legumes. The Department holds that for children between the ages of 2 and 4, an ounce of meat a day would suffice ; and up to 6 years of age, three ounces would be ample. Rapid growth taking place as the age of puberty approaches, the amount might be increased to six ounces or so in the form of fish, meat or poultry. The Department sets aside a large portion of its pamphlet to the discussion of the necessity of vigorous mastication as a vital function. It recommends that the diet should consist largely of foods which give due exercise to the jaws, teeth, tongue, and salivary glands. Such exercise is not only necessary for the development of these structures, but reacts favourably on the whole digestive tract as well as on the whole organism. That being so, the eating of food such as crust, toast, raw apples, lettuce, etc., cannot be too strongly recommended, and soft, sloppy diet too strongly condemned. As to the progressive increase of dental disease, the pamphlet attributes it to dietetic causes incidental to the great increase of artificial methods of treating and manufacturing foods, and goes on to say that



an unsuitable diet may act prejudicially on children's teeth in two specially important ways, namely :—

- (a) By interfering with the nutrition of the teeth in early life, thus diminishing their inherent resistance to decay.
- (b) By favouring the lodgment of fermentable carbohydrate food about the teeth, and impairing the natural cleansing-action of the saliva.

The chief errors contributing to dental decay are :—

- (1) Wrong feeding ; lack of fresh air, outing, and exercise ; and other hygienic errors on the part of the expectant and nursing mother.
- (2) Neglect of natural feeding in infancy.
- (3) Excessive consumption of artificial sugars.
- (4) The almost exclusive use of cereal and farinaceous foodstuffs in unduly refined forms—especially foodstuffs consisting of artificial combinations of sugars and starches.



- (5) The unnatural frequency and irregular times at which these foods are taken.
- (6) The softness of modern foods.
- (7) Neglect of the use of raw fruit and vegetables.
- (8) Tea drinking.

The eighth point has special importance, perhaps, to the children of the Antipodes, where tea-drinking is carried on to an extent unknown in Great Britain. In Australia, especially, is tea-drinking a national habit. In the restaurants a pot of tea is placed on the table as a matter of course, without being specially ordered. We in Great Britain, even the most ignorant of us, do not abuse the tender stomachs of young children with tea. Not only an impaired digestion, but nervous instability would be the portion of a child who was daily dosed with tea or coffee. The best drink for children, as has been observed in another part of this volume, is pure water. Altogether one parts with regret from the New Zealand Government's pamphlet, which was based on a conference between school medical officers and officials of the



Department of Health. Its recommendations are so genuinely logical and—if one may coin a word—“commonsensible.” It might not be a bad thing if Whitehall were to issue some such work; but probably the action might savour too much of common sense.



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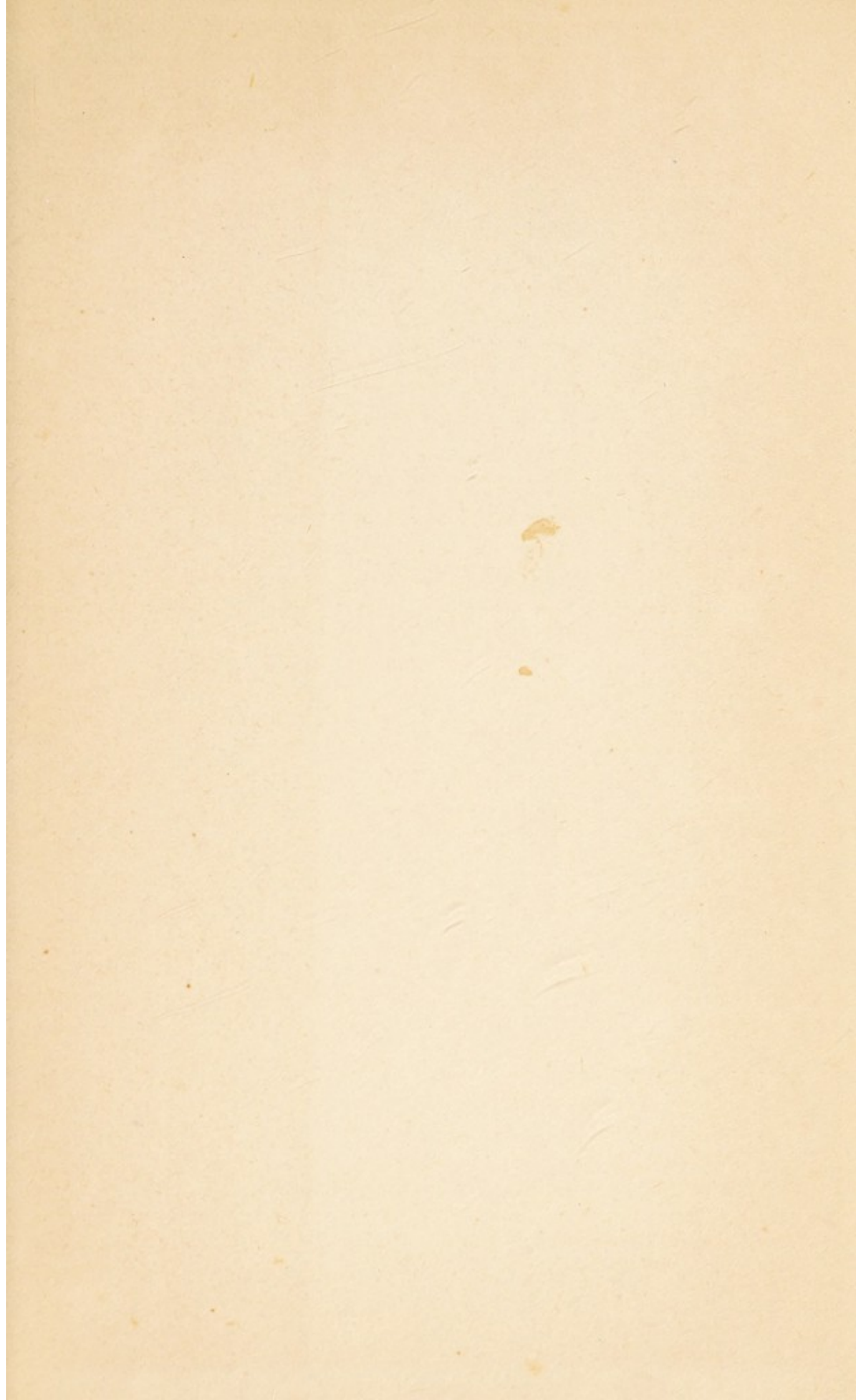
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