

JOHN HARVEY KELLOGG (1852-1943)

**SCRAPBOOKS BOUND
LANE, SIR ARBUTHNOT, 1926**

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an acknowledged authority on dietetics, is writing, as announced on Friday, for the benefit of readers of *The Daily Mail*.

By **SIR W. ARBUTHNOT LANE, Bart., C.B.**

More interest is being taken in the subject of nutrition every year, as is shown by the frequent publication in the daily Press of information about what we shall eat.

We are constantly told that we eat too much, and that we do not choose the right kinds of food. The discoveries during the past 20 years of the elusive "vitamins" have opened up new vistas, and the general public have become fascinated by the curious intricacy of the presence or absence of the several vitamins in the various foodstuffs.

A haphazard choice of food may mean the omission of some health-giving substance. Individual likes and dislikes are not a reliable guide as to which foods to

eat and which to avoid. The proper choice of food cannot be made without a little special knowledge. Hence the justification for health education.

Manufactured, over-refined, and preserved foods have led the people away during the last fifty years from the fresh and natural foods which are the basis of good health. No

one need be afraid that the teaching necessary to counteract this evil of our civilization is beyond our understanding of the present. The right food, which will be dealt in a later article, contains the three vitamins A, B, and C, and certain mineral salts and the good fats of protein.

A dietary is to be satisfactory it must include many kinds of food material. In other words, balanced meals are essential. What we require is "a square meal," as set out in the accompanying diagram



Sir W. Arbuthnot Lane

really interested in the modern aspects of the subject.

As far as the medical student is concerned there is no special training in dietetics beyond the few lectures he receives from teachers of other subjects. As a consequence we often find nowadays that the layman knows more about foods than the medical practitioner. The latter, in spite of his ignorance, gaily prescribes curious diets for which he can give no more adequate reason than that they are the usual custom.

Why is boiled white fish with white sauce and white rice pudding such a common diet in our nursing homes and in convalescence? All these foods are grouped among those we ought not to eat by the expert workers on nutrition.

It is high time that alteration be made. Much more thought, time, and endeavour are given to the feeding of animals. There are two large animal nutrition stations in this country, but there is no chair of nutrition in any university or medical school. The feeding of man is just as important as the feeding of animals.

The universities have not at present the funds for departments of nutrition, so a founder of a chair of dietetics or nutrition is awaited. In the United States there are several university departments devoted to foods and nutrition, as well as numerous agricultural stations in which animal nutrition is specially studied. We ought to have at least one university chair of nutrition.

It is a curious thing that no pioneer work is done in this country and that its importance is not realised here. Other countries see the importance of it and start special departments to follow it up and advance it. We cannot be expected to keep pace with other countries if our pioneers can give only part time to the subject. It would be an honour to them if their subject were raised to the full status of a separate department.

BUTTER FOODS.	BREAD FOODS.
FRESH FRUIT AND VEGETABLES.	MEAT FOODS.

"A Square Meal."

prepared by an eminent food expert in a great London hospital. Further particulars must be reserved for a special article.

Much more about foods and their effects upon growth and health has still to be found out. What is the subject dealt with at our universities and medical schools? At present the nutrition comes within the province of the physiologist and the bio-chemist. These teachers are

Feed, or rather the right food, is of such concern to the general public that it is a wonder that they have not clamoured before now for many departments where nutrition could be studied for itself. The public want full information about every food we eat and its effect upon the body. It cannot be got without special departments devoted to the teaching of food values and research upon every article of food.

SECRETS OF GOOD HEALTH.

II.—DISEASES DUE TO WRONG FOOD.

In the second of the series of articles on health and diet, which he is writing for the benefit of readers of *The Daily Mail*, Sir W. Arbuthnot Lane, the distinguished surgeon and authority on dietetics, dwells on the importance of vitamins contained in food consumed during the winter.

By **SIR W. ARBUTHNOT LANE, Bart., C.B.**

A sound body cannot be built up from poor material.

The right kinds of food produce good health and resistance to infection. The wrong kinds of food make for ill-health and lowered resistance to infection.

Many of the ills of civilisation are due to wrong habits of feeding. Among these are indigestion, constipation, appendicitis, and rickets. Even the widespread diseases of tuberculosis, diabetes, and cancer are certainly connected with a faulty diet.

The right kinds of food supply not only warmth and energy but everything that the body needs for its growth and maintenance. The foods in common use are largely the wrong ones. This is not to say that they contain any harmful substance. But they are lacking in the special materials which the body needs, so that it falls into a state of disrepair and gradually fails.

Now that we are coming to the winter months the need for vitamins becomes greater as our diet undergoes the seasonal change. Owing to the rise in the price of milk and eggs, and the smaller choice of vegetables and fruits, it becomes of more importance to see that we are eating enough of those foods which contain the vitamins.

FRUITS THAT PREVENT SCURVY.

In one respect we may consider ourselves better off in the winter than in the summer. Supplies of oranges gradually become plentiful, and oranges are better in flavour and quality. Fresh fruits supply vitamin C (the anti-scurvy factor), and with an orange a day we become safe from incipient scurvy, a disease which played havoc in the winter months with our people in former days.

Our consumption of vitamin A (which helps us to fight off disease germs) is derived mainly from milk, butter, eggs, and animal fat. We substitute margarine for butter and

THE MOST VALUABLE FOODS.

VITAMIN A (Resistance to Disease.)	VITAMIN B (Nerve Tonic.)	VITAMIN C (Anti-Scurvy.)
Cod Liver Oil	Cereals, comprising the whole grain.	Oranges
Roast Fish		
Butter	Dried Seeds, such as Peas, Beans and Lentils.	Tomatoes
Egg Yolk		
Mutton and Beef Fat	Nuts.	Raw Greens.
Milk	Internal Organs (Heart, Liver, etc.)	Raw Carrots.
Fatty Fish		
Green Carrots	Oatmeal.	Raspberries.
Tomatoes	Milk.	Peas.
Margarine (if Animal Fat)		
Wholemeal Flour.		Most other Fruits.
		Green cooked short time without salt.
		Baked Potatoes.
		Raw Milk.
		Liver cooked short time.

— Contains some Vitamin. — Contains more Vitamin. — Rich in Vitamin.

take fewer eggs and less milk. But unless the restriction in consumption of these articles is very great we need not fear any trouble arising from lack of vitamin A.

The position is different with vitamin B (which helps the nerves to function properly). The quantity taken in the general articles of food is always likely to be on the short side. Vitamin B is essentially in the seeds of plants. (No one can eat more than a small quantity daily of nuts, or haricot beans, or dried peas.)

As the colder weather naturally leads to a higher food consumption, the increase is derived from bread, flour, and sugar. The bread and flour are usually white and, like the sugar, contain no vitamin B. We should turn to wholemeal flour and bread, if we wish to eat a proper quantity of vitamin B. It is difficult to find any other way of getting our daily need of vitamin B.

DIGESTIVE TROUBLES.

We can, however, easily make up for any shortage by taking daily a small quantity of a food rich in this vitamin, such as various palatable forms of yeast extract. A daily quantity of 1oz. to 1oz. in the daily diet, which amounts to about 2oz. dry weight of food, is very suitable. In the winter it is pleasant to have this in the form of a cup of hot soup.

The importance of vitamin B in the diet is not sufficiently recognised. Absence of vitamin B, or a very small quantity of it, gives rise to the Eastern disease called beri-beri. Too little vitamin B, or what is called a shortage, does not usually lead to the beri-beri symptoms but rather to various forms of digestive troubles, the most prominent of which are constipation and dyspepsia.

Then the shortage may lead to indigestion, to various complications, as acute and chronic appendicitis, or to enlargement of the heart. These are such common symptoms nowadays that the insufficiency of vitamin B in the diet, which is such a common error if we carefully examine the food consumption, appears to be the underlying cause.

We look to the several business organisations concerned to supply the public with the all-important fruits and green vegetables at reasonable prices, and thus to take a philanthropic interest in cheapening the people's food and so improving their health and efficiency and reducing ill-health and disease.

SECRETS OF GOOD HEALTH

III.—LESSONS FROM SAVAGES.

By SIR W. ARBUTHNOT LANE, M.B., M.S.

In the third of his series of authoritative articles on health and diet written for the benefit of *Daily Mail* readers Sir W. Arbuthnot Lane, the distinguished surgeon and authority on dietetics, emphasises the importance of drainage of waste products from the human body.

Many years ago that great organiser Dr. Simon Flexner, always on the lookout to secure men of superlative genius to plant in that hotbed of intellectual research the Rockefeller Institute in New York, discovered such a one in Chicago. He was a French medical man who was educated in Lyons and later drifted into the research laboratory of Dr. Carl Beck, a very eminent surgeon in Chicago. Dr. Carl Beck had always paid great attention to the laboratory aspect of his profession and managed to secure for it very able men.

The name of the French surgeon was Dr. Alexis Carrel. Entering that institute—the most generous gift of the American oil king—Dr. Carrel employed his wonderful dexterity and manipulative skill in performing such extraordinary operations as exchanging the legs of dogs and carrying out many experiments which were of the greatest use to surgery.

GROWING LIVING TISSUES.

He then determined to attempt to grow living tissues, and three years before the war he was able to grow various tissues of the body upon microscope slides. These were kept at a suitable temperature, were fed daily with some juice from a living organ, and were washed daily to remove the products of digestion by the cells of the tissue of the food material which was administered to them.

Treated in this manner the tissues grew and thrived, the cells multiplying and the material increasing steadily in bulk.

He found that if the drainage of the products of the digestion of the body juices by the cells was not effected at sufficiently short intervals the cells became wanting in vitality and in size. If the interval was sufficiently long the cells shrank and died.

This impressed him with the vital importance of drainage in the case of the several tissues of the body. The specimens which were thriving before the war are still growing, and as far as it is possible to see will continue to grow and thrive for ever, provided their diet and drainage are attended to with regularity.

For this and his other work Dr. Alexis Carrel received the Nobel prize, which he has richly deserved.

While his earlier work was most interesting and useful to the medical profession, these successful experiments in the mode of growth of living tissues have thrown a flood of light upon our methods of treatment, since they have demonstrated in the clearest possible manner the enormous and vital part which the drainage of the products of digestion, not only of the several cells which compose every organ in the body but also of the body as a whole, plays in the preservation of health and in the duration of life.

Let us apply this most important knowledge to our daily lives. Two thousand years ago Hippocrates, the Father of Medicine, the great pioneer of the New Health Society, regarded it as the most important function of the doctor that he should instruct the people in the laws of health. This duty he regarded as absolutely essential and one far transcending all attempts to alleviate suffering and disease.

THE TWO MAIN FACTORS.

He talked freely to the Greeks, explaining to them the infinite importance of diet in relation to health and insisting on the associated necessary evacuation of the products of digestion. These two factors, the input and the output, he showed, bore a definite relation to one another and were of equal importance, being indeed inseparable.

Two thousand years ago he recognised, without the aid of the microscope and without the various scientific means at Alexis Carrel's disposal, the fundamental importance of this subject to the vitality, stature, health, and freedom from disease of the community.

He pointed out that man differed in no way from any other animal living in a state of nature, and that any departure from the habits of life in either man or any other animal as the result of civilisation ended sooner or later in disaster.

For a certain period in the life of the infant, provided that the child is supplied with the breast milk of a healthy, vigorous mother, each feed is followed by a reflex passage of the contents along the several portions of the gastro-intestinal tract, the terminal portion being evacuated. This condition, which is normal and physiological, occurs throughout the entire life of savages living in normal surroundings, just as it does in all animals in the same circumstances.

After a short period in civilisation a change is made in the habits of the infant, since the mother insists that the normal sequence as regards drainage shall be most materially altered, the input of meals remaining as before. She insists that the regular reflex sequence shall be replaced by a single evacuation of the products of digestion, and this at a certain specified time of the day.

The result of this over-distension of the end of the larger bowel is that, first, extensive changes take place in that portion, producing obstructive changes and the damming up of material of a poisonous nature in the bowel proximal to the obstruction. Following on the mechanical changes is an infection of the food supply contained in the distal intestine by the invasion of organisms from the foul contents of the large bowel or caecum.

DAMAGE TO CHILDHOOD.

The earlier in life these unnatural and practically criminal changes enforced upon the unfortunate helpless infant take place the greater is the damage sustained, since new formation develops in young life in an inverse proportion to the age of the infant.

The result of this interference is that changes arise which are the direct and indirect causes of all the depreciation, misery, and disease of civilisation, a condition from which savages are fortunately permitted to escape, not being contaminated by the food and habits of civilisation.

Take these same savages and inflict on them the diet and habits of civilisation and in that proportion you deteriorate them and render them unhealthy and exposed to all the diseases which affect us and from which they were perfectly free.

IV.—A CRYING NEED OF SCHOOL LIFE.

By SIR W. ARBUTHNOT LANE, M.R.C.S.

The need for more adequate sanitary arrangements in public and preparatory schools is the theme of Sir W. Arbuthnot Lane, the distinguished surgeon and dietetic authority, in the fourth of the series of articles on health and diet which he is writing for the benefit of *Daily Mail* readers.

In the last article the vital importance of retaining the sequence of reflex in the intestinal canal, following on the ingestion of food into the stomach was clearly indicated.

It was pointed out that, owing to the supreme ignorance of parents, this sequence was abruptly altered early in life, in that, while the import of food continued to take place on three or more occasions during the day, the output of the waste products of digestion was controlled for 24 hours, with disastrous results to the health of the individual. While this matter of only a single output may receive some attention from the parent or nurse in earlier life, even this very imperfect compromise may be very materially modified during the school life of the individual.

Quite apart from the very important subject of diet, upon whose nature the performance of the function of the stomach and intestine depends, the lava-

tory arrangements in nearly all private and public schools are lamentably defective. In some institutions the conditions are so insufficient as to amount to criminal neglect.

This is not the case in such institutions and schools as are controlled by the Ministry of Health, since the medical officers and officials in that service control the situation, and take care that no lack of arrangements shall exist.

HEALTH SACRIFICED.

The conditions are very different in preparatory and public schools, in both of which the time that should be spent in attending to what is the most vital of all functions is sacrificed to being present at Divine service. However useful this ritual may be to the ordinary boy and girl, either at that period of life or subsequently, is difficult to determine, but to the medical man, whose function should be to deal with the health of the individual and not with his spiritual uplift, it would seem infinitely preferable to attend first to urgent physiological purposes.

The proportion of boys to one lavatory is very frequently, indeed, excessive, if not ridiculous, in consideration of the small amount of time at their disposal. In one large public school, for instance, a calculation revealed the astounding fact that the time available for each individual boy was thirteen seconds per day, whereas the time he devoted to attendance at Divine service was thirty minutes.

Such a state of things only requires to be realised in order that parents and medical officers should insist on care and instruction being devoted to this most important subject. It would seem urgently necessary that every preparatory and public school should be asked to supply definite information on the proportion of lavatories to pupils, on the total time allotted for their use, together with such instruction as is given, and what precautions are taken to ensure a normal, healthy function.

PREVENTABLE DISEASE.

It must be remembered, as pointed out definitely in the last article, that boys and girls are merely animals living in a state of civilisation. That this state entails the incidence of a vast amount of ill-health and disease, a large proportion of which can be eliminated by proper food and by good habits. That the food supplied to the young, both at home and during their school life, is manifestly defective is generally recognised, and no proper attention is paid to their habits.

While these statements apply to schools, there are many adults who suffer in health quite as severely from defective sanitary arrangements. Perhaps nurses are affected as much as any during their residence in hospitals, since their times available for health purposes are too often encroached upon by services which may possibly teach discipline, at considerable cost to the health of those very hard-working members of the community, who deserve every possible consideration.

SECRETS OF GOOD HEALTH

V.—OUR DAILY BREAD

By SIR W. ARBUTHNOT LANE, M.B., M.S.

It is scarcely necessary to point out that bread and other articles of food made from flour form a very large part of our daily food.

At a rough estimate flour provides the average working-class family with nearly half of the food that produces heat and energy—that is, half the fuel required to drive the engines of the human body.

It represents anything from one-fifth to one-seventh of the weekly expenditure on food and constitutes one-half to two-thirds of the total weight of food consumed.

One would suppose, therefore, that this particular food substance would be the last we should choose so to degrade that one of the greatest living authorities on diet is able to say that "white flour is not only the most important and widely used article of diet in Europe and America, but it is notably deficient in more dietary factors than any other food except sugar."

HEIGHT OF FOLLY.

This sweeping statement in condemnation of white flour is well merited. The milling process to which our cereal foods are subjected is one of the worst things civilised man has devised for his own undoing. Deliberately to remove certain parts of the wheat grain so as to please the eye and the palate while we rob the body of invaluable material for its well-being is surely the height of folly. Yet the vast majority of people in this country and America prefer this staple substance of their diet to be thus degraded.

CAUSE OF PARALYSIS.

White flour is produced by removal of the germ of the wheat grain and of its branny coverings. In this germ and bran are contained the special vitamin substance on which the health and vitality of the nervous system is largely dependent.

If this substance is absent from the daily food to a serious extent paralysis and death will ensue. A less marked deficiency causes serious disorder of the bowel and leads through constipation to bowel disease and grave impairment of the general health. Removal of the bran deprives the body of valuable mineral salts and the bowel of its natural stimulation to efficient action.

Bread containing the bran of the wheat encourages proper mastication and so promotes a healthy condition of the teeth and gums and a full development of the jaw bones by providing them with proper exercise.

VALUE OF MASTICATION.

Its absence from bread is largely responsible for the widely prevalent diseases of the teeth and gums. Mastication also promotes a free secretion of saliva and of the important ferments contained in it so essential to proper digestion.

The people of Sweden, who make their bread from the entire grain of rye, bake it so hard that the most thorough and vigorous mastication is necessary. Rye bread can now be obtained in quantity in this country, and is to be highly recommended.

Wholemeal flour can and should be used for all purposes for which white flour is now employed, such as in the making of pastry, cakes, and so forth. By doing so universally a very great improvement in the health of the community could be obtained at no cost beyond the sacrifice of a totally unfounded prejudice in favour of the whitened aspic now in popular favour.

The jewel of health lies in the whole grain of the wheat, but the pearls are thrown to the swine and man is deprived of his heritage and his health.



SECRETS OF GOOD HEALTH

VI.—LEARN MORE ABOUT FOODS.

By SIR W. ARBUTHNOT LANE, M.B., M.S.

The Americans have founded a chair of dietetics in Johns Hopkins University at Baltimore, which is held by Dr. E. V. McCollum; another in Columbia University, New York, whose professor of food chemistry is Dr. H. C. Sherman, and there is a very important food investigation bureau in Washington.

Other centres for the study of nutrition exist there, perhaps the most important of which is in Wisconsin, where Dr. Steenbeck is doing excellent work on the A and D vitamins. In this country we have no university chair for the study of nutrition, yet surely our medical



Sir F. Gowland Hopkins.

students in our hospitals and schools have the same right to be supplied with the knowledge so essential to them in the proper performance of their duties as medical men as have the students in Canada and the United States.

That this is a crying need must be apparent to the members of the general public. The work required is not intended to criticise the excellent teaching in our medical schools, but to supplement and perfect it. This requirement must be met without delay.

In Great Britain there are two re-

search stations dealing solely with the investigation of the feeding of large animals, one in Cambridge and one in London. In fact the pioneer work on vitamins was done in this country. The general principle of an accessory food factor, or vitamin, was firmly established by scientific experiment in 1912 by Professor Sir F. Gowland Hopkins, the most distinguished living bio-chemist. The fact that B vitamin is a natural substance was first shown by British subjects working as researchers in the Public Health Department in the Federated Malay States. And the work done by Drs. Fraser and Stanton has just been recognised by the award to Dr. Stanton of the Dical medal by the Royal College of Physicians.

The bio-chemists are endeavouring to extract definite substances, or vitamins, which are known now only by their effect on health and are demonstrated by the diseases which arise when certain substances are separated from the food.

About a year ago Professor Brown-Scott at last succeeded in isolating the elusive vitamin A, but with the care and accuracy which characterises British science the observer would not commit himself to a positive statement.

It is almost impossible for the layman to realise the difficult and laborious work entailed in the attempt to separate a vitamin as an actual substance, made all

THE MOST VALUABLE FOODS.

VITAMIN A (Substance to Blindness.)	VITAMIN B (Nerve Tonic.)	VITAMIN C (Anti-Scurvy.)
Cod Liver Oil	Cereals comprising the whole grain.	Onions Lentils Green Peas Tomatoes Tomatoes Raw Green Beans Raw Spinach Raw Carrots Raw Liver Raspberries Blackberries Peaches
Roast Fish Butter Egg Yolk Mutton and Beef Fat Milk Fatty Fish		
Green Carrots Tomatoes Margarine (of Animal Fat)	Dried Seeds Peanut Oil Rice & Lentils Milk Egg Yolk	Most other Fruits Cucumbers cooked short time without salt Baked Potatoes Raw Milk Liver cooked short time.
Whole-meal Flour	Interval Organs (Heart, Liver, etc.) Oatmeal Root Vegetables Milk Yeast	

•—Contains some Vitamin. ••—Rich in Vitamin.

the more difficult by the fact that the vitamin is so readily destroyed in the process, which means beginning again.

Though the actual vitamin has not yet been prepared in a pure form, most potent extracts are now easily obtained, and the characteristic properties of each can be recognized. The day cannot be far distant when the vitamin will be shown as a definite entity. But as far as the health of the people is concerned the final isolation of the vitamin is not essential. They have only to eat those foods which contain them, and to avoid those from which they are absent or are present in an amount insufficient for the preservation of health.

Our dietitians have described in the clearest manner possible the actions of the several vitamins now recognized, together with their distribution in the foods which are so readily accessible to the public and so absolutely essential to health. Therefore there is no reason why the members of the community should not keep their bodies healthy by comprising in their dietary just such foods as go to form a square meal. This *The Daily Mail* is endeavouring to effect in the series it is publishing.

VENBER 2, 1926.

SECRETS OF GOOD HEALTH.

VII.—PRODUCING A C3 RACE.

By SIR W. ARBUTHNOT LANE, M.B., M.S.

If there are any members of the public who are in any doubt as to the necessity for the methods which the New Health Society is adopting to improve the physique of our people and to free them from disease, the remarks made by Lieut.-General Sir Matthew Fell in a speech delivered at the Council dinner of the British Medical Association will give them plenty of food for thought, and perhaps fill them with sadness and depression.

Sir Matthew Fell stated that the number of applicants for enlistment is very greatly in excess of requirements; that 25 per cent. of the men who pass the recruiting officers are being rejected on medical examination, and that the proportion turned down at sight by the recruiting officers is very much higher.

This means that more than two-thirds of the young men who try to go into the Army, and are presumably and probably above the general average in physique, are C3. Can any statement be more damning or more conclusive of the utter fatality of the present state of ignorance of the rules of health?

Out of this mass of what is practically and essentially an unhealthy, badly fed and diseased community our hospitals are supplied with thousands of applicants for outdoor or indoor treatment, who throng the doors of the various institutions in the hope of obtaining relief to their suffering.

Yet some are ready to criticise the New Health Society for attempting to stem this torrent of depreciated vitality, miserable physique, associated unhappiness, and consequent degeneration and disease.

DRINK AND CRIME.

Is it any wonder that our people are discontented with present conditions, and that they resort to drink and crime to ameliorate their mental and physical depression?

Instead of tolerating opposition to the wise aims of the society, the public should insist on their being supported, not only by public subscription, but by State aid.

The medical profession as a body should be in the van of progress instead of quibbling about signing names to articles by which it is hoped to help and instruct the people. They should avail themselves of any opportunity of helping the New Health Society to carry on its beneficent work, which is the most important endeavour that has ever been undertaken to improve our race.

The society has no quarrel with the B.M.A. and would gladly welcome their help and co-operation and that of any other body to carry out a duty to humanity, which cries out for their assistance, as is demonstrated by the appalling statement of facts made by Sir Matthew Fell in his address, the substance of which has long been known to the medical profession.

Instead of begging for funds to build new hospitals, new asylums, and so on, let the authorities insist that the medical profession shall teach them how best the present condition of physical degradation of the people can be met by the most ample instruction in the laws of health and by the provision of proper diet.

The last is rendered difficult, if not often impossible, by the great cost entailed by the carriage of fruit and vegetables to our large centres of population, where our people are herded in ignorance and are not getting their fair share of the happiness of life which is their due.

B.M.A.'S LECTURE

How does the B.M.A. propose to provide instruction necessary to meet this terrible situation and so instil into the minds of the people the essential laws of health, and teach them how to improve their physique and vitality and that of their offspring?

Its Council has decided to give a single popular lecture next year, to which the public will be invited. Can anything be more utterly futile? The time has passed for criticism, which does no good, but only stirs up bitter animosity.

The Government, or at least that portion of it that is supposed to deal with the health of the nation, might take a leaf out of the book of that great reformer Mussolini, and do its duty to the people as it ought to do. Let these governing bodies realise their responsibility and act promptly and efficiently, knowing that they will be supported and encouraged in every possible way by the vast majority of the British public in any action which they may adopt, however thorough and radical it may be.

SECRETS OF GOOD HEALTH

VIII.—HOW TO PREVENT COLDS.

By SIR W. ARBUTHNOT LANE, M.D., M.S.

The common cold, or acute inflammation of the mucous membranes of the nose and throat, is one of the minor plagues of civilisation.

This inflammation, of which the signs—excessive discharge, soreness, sneezing, and coughing—are only too familiar and render us such a nuisance to ourselves and to our neighbours, is due to the successful attack of virulent germs.

These germs are to be found in the noses and throats of most of us in the winter months, especially in the crowded cities. Whether we succumb to their attack depends on two factors—the virulence, or activity, of the germ, and the strength of the resistance that the defensive forces of our body can put up against the attack.

The microbes which give rise to nasal and bronchial catarrhs are conveyed from one person to another by coughing, spitting, sneezing, infected handkerchiefs, or even by talking at close quarters.

They cannot survive in air and sunlight, and are absent from the air of ocean wastes and mountain summits. Men living almost entirely in the open air are free from colds, no matter what exposure and hardship they may undergo.

TOO MUCH FOOD, TOO LITTLE AIR.

What, therefore, is the explanation of the greater prevalence of colds in the winter months in civilised communities?

It probably lies in the fact that people in the winter months tend to shut themselves up and seek the comfort of stuffy, overheated rooms, where the virulence of the infective germs is increased and the resistance to disease is lowered by stagnant, polluted air, and by deprivation of sunlight.

Added to this, the outer air is more polluted with smoke and soot, which cause irritation of the mucous membranes, and so render them more susceptible. People take less open-air exercise and tend more than ever to overeat in the winter months. These bad habits lead to a poisoned condition of the blood and so to a lowered resistance.

The more general the epidemic of colds the more virulent become the infective germs. Few people regard the common cold as anything more than a nuisance, and take very few precautions to avoid infecting others. A little thought and care to avoid this reprehensible carelessness of other people's welfare would do a great deal to lessen these epidemics.

Infection is conveyed principally in rooms and in badly ventilated public vehicles, where the air is stagnant and the sunlight never penetrates. Sunlight, if it is to do any good, must come into a room through an open window. Ordinary window glass prevents the most useful rays—the ultra-violet—from passing through.

DON'T CODDLE YOURSELF.

Draughts tend to prevent colds, not to cause them, unless one exposes oneself to a cold current of air when overheated, or so coddles the skin by habitual overclothing that the natural heat-adjusting mechanism of the body becomes weakened and fails to act.

The body should be capable of adjusting itself promptly to sudden changes of temperature, and will do so if kept in proper training. This can be done by frequent exposure of the skin to fresh air and sunlight, by the habit of bathing in cool or cold water, and the wearing of porous, loose-textured garments next the skin.

Warm woollen and heavy garments should be reserved for outer clothing, to be donned to meet unusual exposure to low temperatures. Exercise should be taken in the cold air with light loose clothing by all who can raise the body temperature by brisk walking, or the playing of a game.

HOW TO KEEP WELL.

For the rest we can keep our blood clean and active by eating the foods that make for health—milk, oranges, green vegetables, good wholemeal bread and good butter in plenty; meat, fish, eggs, and cheese only in moderate amount. The waste products of the body must be freely got rid of by ensuring activity of the bowel and by the cleansing action of liberal draughts of water.

To sum up. While avoiding as far as possible the depressing effects of sudden exposure to a lowered temperature by the use of suitable extra clothing, try to habituate the body to moving cool air by day and night—keep the feet warm and the head cool.

Expose large areas of the skin as often as possible to the open air and the sun.

Keep the body clean internally as well as externally, and if, alas! you should succumb to a virulent dose of infection, treat it seriously and isolate yourself as far as possible during the early stages.

Any chronic obstruction to free breathing through the nose or unhealthy condition of the teeth or tonsils should be treated under medical advice. These conditions considerably increase the liability to "catch cold."

SECRETS OF GOOD HEALTH

IX.—WE EAT TOO MUCH MEAT.

THE REAL FUNCTIONS OF FOOD.

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By **SIR W. ARBUTHNOT LANE, M.B., M.S.**

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Butcher's meat differs from fish and fowl only in its somewhat higher nutritive value, bulk for bulk, and owing to its higher content of fat is rather less easy of digestion.

The consumption of meat, by all classes of the community has increased very considerably in the last fifty years, and while this article of food is condemned in toto by some dietetic enthusiasts, it is overvalued by the majority.

Seeing that we are face to face with an unsatisfactory condition of health and physique in the general community, which is undoubtedly based on faulty habits of diet, it will be useful to try to arrive at a just estimate of the rightful place which meat should occupy in a diet best calculated to promote health, long life, and efficiency.

We may roughly divide up foods into two main categories—those which supply the cell-engines of the body with fuel for the provision of heat and energy, and those which build and repair the tissues of the body.

The former class includes the starchy foods, sugars, and fats. Our concern now is not with them but with the building and repair foods, of which meat is the most widely used.

REPAIRING THE DAILY DAMAGE

A constant supply of suitable building material is necessary, not only during the years of growth, but throughout life, to make good the constant breaking down which is far over going on in all the tissues of the body.

This breaking-down process goes on at the same rate in all normal individuals irrespective of the activity they exhibit.

The clerk who spends his day in the office requires no less new building material than the navy, and the athlete requires no more than the sluggard. This is contrary to the generally accepted idea among the laity.

On the other hand, greater activity of the body calls for an increased supply of the fuel foods to meet the increased expenditure of energy. We must, however, realise that building foods such as meat can and do serve as fuel to some extent, and especially the more fatty kinds of meat. Some fuel foods also provide adequate building material.

It is nevertheless grossly extravagant and harmful to use a building food such

as meat as a fuel substance for the production of energy. The building material contained in the fuel foods is, generally speaking, not so good for some of the bodily requirements as that of the special building foods.

Various kinds of material are required for different structures in the body. That needed in greatest amount is known as protein substance. There are various kinds of protein, varying in quality and usefulness. The best kind is contained in meat, fish, fowl, eggs, and milk. It is very necessary to health that our bodies should be provided with a definite quantity of this best kind of protein-building substance daily.

This quantity, in the light of modern research, is nothing like so great as scientists used to deem necessary. This applies also to the inferior types of protein, which are supplied by foods like peas, beans, cereals, nuts, and other foods.

Of the total amount of protein for the day's ration about one-third should be first-class, and two-thirds of a less good quality. The foods supplying first-class protein are expensive foods, compared with those which supply an inferior type.

POISONING THE BODY.

There is very little danger of one not getting enough protein from a good mixed diet. Most people eat too much of it. This applies principally to the well-to-do classes, who consume an excessive amount of meat foods.

The body has no arrangements for storing protein foods in excess of its requirements. Any excess has to be got rid of by the liver and kidneys, and these long-suffering organs become overworked and damaged.

Flesh foods, eggs, and most kinds of ripe cheese readily undergo putrefactive changes. This is familiar to everyone, as it occurs in the larder. Similar changes occur in them within the bowels, and excessive consumption of these foods leads to excessive putrefaction of the contents of the bowel and leads to serious infection and contamination of the nutritive fluids of the body.

SECRETS OF GOOD HEALTH

VI.-LEARN MORE ABOUT FOODS.

By **SIR W. ARBUTHNOT LANE, M.B., M.S.**

The Americans have founded a chair of dietetics in Johns Hopkins University at Baltimore, which is held by Dr. E. V. McCollum; another in Columbia University, New York, whose professor of food chemistry is Dr. H. C. Sherman, and there is a very important food investigation bureau in Washington.

Other centres for the study of nutrition exist there, perhaps the most important of which is in Wisconsin, where Dr. Steenbock is doing excellent work on the A and D vitamins. In this country we have no university chair for the study of nutrition, yet surely our medical



Sir F. Gowland Hopkins.

students in our hospitals and schools have the same right to be supplied with the knowledge so essential to them in the proper performance of their duties as medical men as have the students in Canada and the United States.

That this is a crying need must be apparent to the members of the general public. The work required is not intended to criticise the excellent teaching in our medical schools, but to supplement and perfect it. This requirement must be met without delay.

In Great Britain there are two re-

search stations dealing solely with the investigation of the feeding of large animals, one in Cambridge and one in London. In fact the pioneer work on vitamins was done in this country. The general principle of an accessory food, or vitamin, was firmly established by scientific experiment in 1912 by Professor Sir F. Gowland Hopkins, the most distinguished living bio-chemist. The fact that B vitamin is a chemical substance was first shown by British subjects working as researchers in the Public Health Department in the Federated Malay States. And this work was recognized by the award to Dr. Fraser and Stanton of the Dineson medal by the Royal College of Physicians.

The bio-chemists are endeavouring to extract definite substances, or vitamins, which are known now only by their effect on health and are demonstrated to be substances which arise when certain substances are separated from the food

which a year ago Professor Brown had not succeeded in isolating the active vitamin A, but with the care and accuracy which characterises British science the observer would not commit himself to a positive statement.

It is almost impossible for the layman to realize the difficult and laborious work entailed in the attempt to separate a vitamin as an actual substance, made all

THE MOST VALUABLE FOODS.

VITAMIN A. (Substance to Disease.)	VITAMIN B. (Nerve Tonic.)	VITAMIN C. (Anti-Scurvy.)
Cod Liver Oil	Cereals, comprising the whole Grain.	Oranges Lemons
Egg of Fish	Dried Seeds, such as	Grape-Fruit Tangerines Tomatoes
Butter Egg Yolk	Peas, Beans & Lentils	Raw Greens Raw Spinach Raw Carrots
Mutton and Beef Fat	Milk Egg Yolk	Raw Liver Raspberries Blackberries Peaches
Fatty Fish	Internal Organs (Heart, Liver, etc.)	Most other Fruits Greens cooked short time without salt
Green Carrots Tomatoes Margarine (of Ani- mal Fat)	Outmeal Root Ve- getables Milk Yeast	Salted Pota- toes Raw Milk Liver cooked short time
Whole- meal Flour		

o - Contains some Vitamin. oo - Rich in Vitamin. oo - Contains more Vitamin.

the more difficult by the fact that the vitamin is so readily destroyed in the process, which means beginning again.

Though the actual vitamin has not yet been prepared in a pure form, most potent extracts are now easily obtained, and the characteristic properties of each can be recognized. The day cannot be far distant when the vitamin will be shown as a definite entity. But as far as the health of the people is concerned the final isolation of the vitamin is not essential. They have only to eat those foods which contain them, and to avoid those from which they are absent or are present in an amount insufficient for the preservation of health.

Our dietitians have described in the clearest manner possible the actions of the several vitamins now recognized, together with their distribution in the foods which are so readily accessible to the public and so absolutely essential to health. Therefore there is no reason why the members of the community should not keep their bodies healthy by comprising in their dietary just such foods as go to form a square meal. This *The Daily Mail* is endeavouring to effect in the series it is publishing.

NOVEMBER 2, 1926.

SECRETS OF GOOD HEALTH.

VII.—PRODUCING A C3 RACE.

By SIR W. ARBUTHNOT LANE, M.B., M.S.

If there are any members of the public who are in any doubt as to the necessity for the methods which the New Health Society is adopting to improve the physique of our people and to free them from disease, the remarks made by Lieut.-General Sir Matthew Fell in a speech delivered at the Council dinner of the British Medical Association will give them plenty of food for thought, and perhaps fill them with sadness and depression.

Sir Matthew Fell stated that the number of applicants for enlistment is very greatly in excess of requirements; that 25 per cent. of the men who pass the recruiting officers are being rejected on medical examination, and that the proportion turned down at sight by the recruiting officers is very much higher.

This means that more than two-thirds of the young men who try to go into the Army, and are presumably and probably above the general average in physique, are C3. Can any statement be more damning or more conclusive of the utter futility of the present state of ignorance of the rules of health?

Out of this mass of what is practically and essentially an unhealthy, badly fed and diseased community our hospitals are supplied with thousands of applicants for outdoor or indoor treatment, who throng the doors of the various institutions in the hope of obtaining relief to their suffering.

Yet some are ready to criticize the New Health Society for attempting to stem this torrent of depreciated vitality, miserable physique, associated unhappiness, and consequent degeneration and disease.

DRINK AND CRIME.

Is it any wonder that our people are discontented with present conditions, and that they resort to drink and crime to ameliorate their mental and physical depression?

Instead of tolerating opposition to the wise aims of the society, the public should insist on their being supported, not only by public subscription but by State aid.

The medical profession as a body should be in the van of progress instead of quibbling about signing names to articles by which it is hoped to help and instruct the people. They should avail themselves of any opportunity of helping the New Health Society to carry on its beneficent work, which is the most important endeavour that has ever been undertaken to improve our race.

The society has no quarrel with the B.M.A. and would gladly welcome their help and co-operation and that of any other body to carry out a duty to humanity, which cries out for their assistance, as is demonstrated by the appalling statement of facts made by Sir Matthew Fell in his address, the substance of which has long been known to the medical profession.

Instead of begging for funds to build new hospitals, new asylums, and so on, let the authorities insist that the medical profession shall teach them how best the present condition of physical degeneration of the people can be met by the most ample instruction in the laws of health and by the provision of proper diet.

The last is rendered difficult, if not often impossible, by the gross cost detailed by the carriage of fruit and vegetables to our large centres of population, where our people are herded in ignorance and are not getting their fair share of the happiness of life which is their due.

B.M.A.'S LECTURE

How does the B.M.A. propose to provide instruction necessary to meet the terrible situation and so kindle the minds of the people to the essential laws of health, and teach them how to improve their physique and vitality and that of their offspring?

Its Council has decided to give a single popular lecture next year, in which the public will be invited to do anything be more utterly futile? The time has passed for criticism, which does no good, but only gives up bitter animosity.

The Government, or at least that portion of it that is supposed to deal with the health of the nation, might take a leaf out of the book of that great reformer Mussolini, and do for our people as it ought to do. Let our governing bodies realize their responsibility and act promptly and efficiently, knowing that they will be supported and encouraged in every possible way by the vast majority of the British public in any action which they may adopt, however thorough and radical it may be.

SECRETS OF GOOD HEALTH

VIII.—HOW TO PREVENT COLDS.

By SIR W. ARBUTHNOT LANE, M.B., M.S.

The common cold, or acute inflammation of the mucous membranes of the nose and throat, is one of the minor plagues of civilisation.

This inflammation, of which the signs—excessive discharge, soreness, sneezing, and coughing—are only too familiar and render us such a nuisance to ourselves and to our neighbours, is due to the successful attack of virulent germs.

These germs are to be found in the noses and throats of most of us in the winter months, especially in the crowded cities. Whether we succumb to their attack depends on two factors—the virulence, or activity, of the germ, and the strength of the resistance that the defensive forces of our body can put up against the attack.

The microbes which give rise to nasal and bronchial catarrhs are conveyed from one person to another by coughing, spitting, sneezing, infected handkerchiefs, or even by talking at close quarters.

They cannot survive in air and sunlight, and are absent from the air of ocean wastes and mountain summits. Men living almost entirely in the open air are free from colds, no matter what exposure and hardship they may undergo.

TOO MUCH FOOD, TOO LITTLE AIR.

What, therefore, is the explanation of the greater prevalence of colds in the winter months in civilised communities?

It probably lies in the fact that people in the winter months tend to shut themselves up and seek the comfort of stuffy, overheated rooms, where the virulence of the infective germs is increased and the resistance to disease is lowered by stagnant, polluted air, and by deprivation of sunlight.

Added to this, the outer air is more polluted with smoke and soot, which cause irritation of the mucous membranes, and so render them more susceptible. People take less open-air exercise and tend more than ever to overeat in the winter months. These bad habits lead to a poisoned condition of the blood and so to a lowered resistance.

The more general the epidemic of colds the more virulent become the infective germs. Few people regard the common cold as anything more than a nuisance, and take very few precautions to avoid infecting others. A little thought and care to avoid this reprehensible carelessness of other people's welfare would do a great deal to lessen these epidemics.

Infection is conveyed principally in rooms and in badly ventilated public vehicles, where the air is stagnant and the sunlight never penetrates. Sunlight, if it is to do any good, must come into a room through an open window. Ordinary window glass prevents the most useful rays—the ultra-violet—from passing through.

DON'T CODDLE YOURSELF.

Draughts tend to prevent colds, not to cause them, unless one exposes oneself to a cold current of air when overheated, or so coddles the skin by habitual overclothing that the natural heat-adjusting mechanism of the body becomes weakened and fails to act.

The body should be capable of adjusting itself promptly to sudden changes of temperature, and will do so if kept in proper training. This can be done by frequent exposure of the skin to fresh air and sunlight, by the habit of bathing in cool or cold water, and the wearing of porous, loose-textured garments next the skin.

Warm woollen and heavy garments should be reserved for outer clothing, to be donned to meet unusual exposure to low temperatures. Exercise should be taken in the cold air with light loose clothing by all who can raise the body temperature by brisk walking, or the playing of a game.

HOW TO KEEP WELL.

For the rest we can keep our blood clean and active by eating the foods that make for health—milk, oranges, green vegetables, good wholemeal bread and good butter in plenty; meat, fish, eggs, and cheese only in moderate amount. The waste products of the body must be freely got rid of by ensuring activity of the bowel and by the cleansing action of liberal draughts of water.

To sum up. While avoiding as far as possible the depressing effects of sudden exposure to a lowered temperature by the use of suitable extra clothing, try to habituate the body to moving cool air by day and night—keep the feet warm and the head cool.

Expose large areas of the skin as often as possible to the open air and the sun.

Keep the body clean internally as well as externally, and if, alas! you should succumb to a virulent dose of infection, treat it seriously and isolate yourself as far as possible during the early stages.

Any chronic obstruction to free breathing through the nose or unhealthy condition of the teeth or tonsils should be treated under medical advice. These conditions considerably increase the liability to "catch cold."

SECRETS OF GOOD HEALTH

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Seeing that we are face to face with an unsatisfactory condition of health and physique in the general community, which is undoubtedly based on faulty habits of diet, it will be useful to try to arrive at a just estimate of the rightful place which meat should occupy in a diet best calculated to promote health, long life, and efficiency.

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Flesh foods, eggs, and most kinds of ripe cheese readily undergo putrefactive changes. This is familiar to everyone, as it occurs in the larder. Similar changes occur in them within the bowels, and excessive consumption of these foods leads to excessive putrefaction of the contents of the bowel and leads to serious infection and contamination of the substance of the body.

These two eggs furnish a very concentrated protein substance of first-class quality, and if they are used with moderation (say, two eggs or two ounces of cheese) provide a good substitute for a generous helping of meat. The simple home-made cottage cheese and the cream cheese are cleaner foods from the point of view of putrefaction within the bowel than the ripe cheddar, stilton, or gorgonzola. Milk and cheese provide just as good protein as the flesh foods. Hence these dairy products should be more extensively used in place of much of the flesh food now consumed.

It is generally accepted by dietetic authorities that a diet of cereals, fruits, and vegetables, supplemented by a liberal allowance of milk (1-1½ pints) with a little cheese and a few eggs, is the most satisfactory one that man can adopt.

MEAT NOT ESSENTIAL.

We have to recognise a widely popular belief that a man cannot be strong or do a good day's work without meat. There is no scientific basis for this belief, and there is abundant evidence to the contrary. It is a belief based on tradition and misconception of the properties of meat. It is a belief so firmly established, however, that it is unlikely that man will ever abandon it.

There is no physiological reason why he should, provided that the public are educated to estimate it at its proper value, use it for its proper purpose, and are also taught to consume more freely that excellent substitute, milk, which, while possessing equal virtue, is free from some of its drawbacks.

A safe practical rule is to use flesh foods only at one meal in the day. If this is found difficult or impracticable, the meat and fish allowance for the day, which should be roughly four or five ounces of meat or six to eight ounces of fish, should be carefully divided between two of the principal meals.

These foods should never be used as "filling" foods—this is the office of cereals and vegetables. They are more likely to be harmful to the constipated and, contrary to general belief, to those in indifferent health. The young and vigorous can use them more freely, but even for the young they are not a physiological necessity.

There is a school-house for boys of nine to eighteen years of age, well known to the writer, where flesh foods are never on the table, but where milk, fruit, salads, nuts, and potatoes and whole-meal bread are provided very liberally. The boys are in magnificent condition, and are even superior in achievement in work and sport to those of other houses in the same school where meat is provided daily. Such evidence is conclusive and could be multiplied indefinitely.

SECRETS OF GOOD HEALTH.

X.—A MUCH-NEEDED REFORM.

By SIR W. ARBUTHNOT LANE,
Bart., C.B.

In a previous article attention was called to the vital and far-reaching importance of the experimental research made by Dr. Carrel in the Rockefeller Institute in 1911, when he showed, by growing living tissues on a microscope slide, that *there is no such thing as death of a tissue provided it is nourished and drained at regular intervals.*

The public should realise that every single cell in the body goes through precisely the same cycle as does the entire body in the process of nutrition and digestion and evacuation of the products of digestion.

Just as the products of digestion in a single cell must be removed at regular intervals in order to ensure its vitality and growth, and indeed its life in perpetuity, so the more thoroughly and regularly drainage of the digestive system of the whole body is effected the healthier it will be and the longer will be the life of the individual in comfort.

The vital importance of attention to the regular, systematic evacuation of the bowel was urged most strongly on the public in the previous article, and especially on parents. It is presumed that parents, since reading it, have most carefully, with their doctor's aid, considered their own diet and habits, and have thoroughly investigated the diet and habits of their children. They should also have found out exactly what lavatory accommodation is supplied at their boarding schools, what time is allotted for this most important physiological function, and also what instruction is given to the pupils on this vital subject.

A GENERAL COMPLAINT.

It is not in schools alone that there is an inadequate lavatory provision, and this is particularly true as regards the accommodation for women. The New Health Society has been inundated with letters from correspondents in which bitter complaints are made by women shoppers, by the male and female employees in shops, and by the public generally, of the great discomfort, mental depression, and illness which result from the present very serious deficiency of lavatory accommodation.

At present, the lavatory accommodation for women is often most inadequate and often hopelessly dirty, insanitary, and even disgusting.

Surely the question of sanitation in commercial establishments should come under the control of the medical officer of health, since nothing can be more deleterious to the health and well-being of the people than present conditions of defective sanitation. All the correspondents are loud in their praise of the magnificent efforts which *The Daily Mail* is undertaking to improve the health and happiness of the community, and by so doing to prevent disease and prolong life in comfort.

While innumerable complaints have been made, many speak very highly of the lavatory arrangements and accommodation for women in the establishments under the management of certain

Continued in Next Column.

Continued from Preceding Column.

well-known firms, who set a magnificent example in their determination to make their employees and their clients as comfortable, healthy, and happy as possible.

It is impossible for the present conditions of diet, sanitation, and exercise in our schools to continue as they are at present. Where the food and sanitation of the schools have been rendered efficient we shall have much less of the frequent outbreak of maladies of all sorts and shall have fewer complaints from parents.

The brains of the youth of the country, being fed with blood uncontaminated by poisons absorbed from an intestine whose contents are foul and stagnant, will react to the efforts of the educationist to the greatest advantage, a matter of the highest importance in the present battle of life.

Some optimists are in the habit of stating that our race is improving physically, that we never were better. That this is absolutely false and that the reverse is true can be demonstrated in the clearest manner possible by a comparison of the published description of the physique and teeth of the soldiers of Wellington and their wives, who were exposed to constant hardship, with our soldiers of the present day living in comparative luxury.

SECRETS OF GOOD HEALTH.

XL.—HOW TO BENEFIT FROM YEAST.

FROM SIR W. ARBUTHNOT LANE, Bart., C.B.

I have been inundated with inquiries as to the best way to use yeast extract, the distinct advantages of which I described in an earlier article. To supply these with additional authority I have asked Professor R. H. A. Plimmer, D.Sc., Professor of Chemistry in the University of London at St. Thomas's Hospital, to supply the information de-

scribed in the article, in the form of this valuable article of diet.

By the immense quantity of correspondence which reaches me on the subject of the health articles now being published by *The Daily Mail*, I am able to judge of the very great benefit which the public is deriving from the information thus supplied to it:—

By PROFESSOR R. H. A. PLIMMER, D.Sc.

Yeast is used for making beer and for making the dough rise in the baking of bread and cakes. Yeast is a tiny living plant, and millions of these little plants are contained in an ounce of yeast. The yeast plants grow and increase in number rapidly during the brewing of beer; in fact they multiply to such an extent that formerly the excess of yeast was considered to be a waste product and was thrown away.

Chemical analysis, however, revealed that yeast is a valuable food. Dried yeast was found to contain twice as much protein as beef or mutton. Farmers began to use it for feeding livestock and with excellent results.

RICH STORE OF VITAMIN.

Modern scientific work has proved that the chief dietetic value of yeast is in connection with its rich store of vitamin B. This vitamin can be easily extracted and prepared in a concentrated form, making a food which in large measure compensates for the vitamin B that has been removed from white flour in the process of milling.

Concentrated yeast extract is now a commercial article of food, and is sold under the name of Marmite. During the war Marmite was used largely for our troops in Mesopotamia as a source of vitamin B. In the Official History of the War, Volume II., the following statement appears:

Marmite is a pure extract of yeast made by submitting brewers' yeast to a special digestive process. The resulting product is almost indistinguishable from extract of meat. It has the distinct advantage over yeast that it remains practically unchanged even when exposed to the air in tropical climates, while yeast preparations deteriorate and in some cases undergo putrefaction-changes.

Life cannot be maintained without an adequate supply of vitamin B. The absence of this vitamin from the food has caused thousands of deaths from beri-beri in the Far East, and the disease has been prevented by eating foods rich in this vitamin.

CHRONIC ILLNESS.

In this country there are no deaths from beri-beri, but many people suffer chronic illness as the result of too little of this vitamin in the food. A connection between constipation and consequent colitis, chronic appendicitis, and innumerable other digestive troubles and diseases consequent on them, is now being traced to the smallness of the amount of vitamin B in the food.

This condition arises from the excessive consumption of white flour, sugar and meat, foods which contain no B vitamin. This shortage of B vitamin is easily overcome, as was shown on a large scale during the war, by a daily addition to the food of small amounts of Marmite. The best way of taking Marmite is to add a cup or more of yeast extract to your soup or sauce, or to use it as a condiment.

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1 METHODS OF GOOD HEALTH

XII.—THE WHITE MAN'S BURDEN.

EFFECTUAL EXERCISES.

By SIR W. ARBUTHNOT
LANE, Bart., C.B.

Constipation, or the habitual overloading of the large bowel, may be regarded as the White Man's Burden. Only the civilised man has to bear this burden. The native, like the baby, empties his lower bowel naturally at least three times a day.

This is partly a matter of habit and partly a matter of diet. In adult life to effect this efficiently necessitates a certain amount of exercise of the right kind.


In athletic training the importance of frequent discharge of the waste products of the body is generally recognised. Men know that the evacuation of the bowel after each meal makes them feel fit, and that it retards and lessens fatigue. Boxers are also aware of the advantages afforded by the normal action of their intestines.

But the ordinary citizen—even when he is not fat elsewhere—too frequently develops a prominence of the lower part of the abdomen which may be very conspicuous. It is a sure sign that something is wrong.

The prominence of the abdomen so constantly seen in civilisation is not only extremely inconvenient to its owner but it is also very ugly and disfiguring. Regular habits of evacuation, such as exist normally in native races, can be readily restored to the civilised man by care and attention to diet and exercise, unless there is some mechanical defect in his intestinal tract. These habits can be acquired by attention after each meal. Some patience and perseverance may be necessary in certain cases, or some drastic modifications may be required. Sound advice on this point has been given by the New Health Society in its monthly journal, and in many other publications.

BENEFICIAL EXERCISES.

Exercises especially intended to promote the normal functioning of the intestines are stated clearly in "The Culture of the Abdomen," a work strongly recommended by the society. The following describes one of the simplest and most effectual exercises. It is one that can be done by the delicate and feeble with ease.



knees about 12 in. apart, heels close to the hips (a pillow under the head prevents rush of blood to head); both hands flat on floor, arms by sides.

Raise hips about 2 in. or 3 in. from floor, and while body-weight is resting on head and shoulders and feet vigorously swing the body from side to side, keeping shoulders flat on floor and throwing each hip upwards alternately.

Repeat 20 times—10 to each side. Rest. Repeat this cycle five or six times—100 to 150 beats in all with five or six pauses.

The great advantage of this exercise is that, as the abdomen is held loosely, the movement exerts a deep and rolling action on the intestines, stimulating their muscular wall to action, and it is of great utility in remedying constipation. The effect is enhanced if the exercise is performed the first thing in the morning and is preceded by drinking a large quantity of hot water. Breakfast should follow this exercise at an interval of not less than half an hour.

EXERCISES IN THE STREET.

The remedy for undue deposition of fat is constant movement; that is, the retraction and release and the rotation of the abdominal wall periodically during the day.

For example, while a man is standing waiting for an omnibus for a few minutes, instead of wasting his time fretting and fuming he can quite imperceptibly retract and release his abdominal wall in such a way as effectively to stir up the abdominal organs and thus help to prevent sagging of the abdominal wall and stagnation of the contents of his bowel.

It is much more profitable to stimulate to action the abdominal contents by such simple means than to stand idle and impatient.

After a little practice a man can also do a circular or rotary movement of his abdomen by rolling the abdominal wall from right to left or from left to right, without such movements being perceptible to the casual passer-by.

Similarly, when a man is sitting in his office chair he can retract and release his abdominal wall backwards and forwards and rotate it in different directions. If he sits well back in the chair so that his back supports the lower part of his body rather than his shoulders, he will find that automatically he assumes a correct posture—his abdomen wall retracted and not sagging forward in a lump.

advantage and in the morning when the bowels labor. When lying in bed he can also perform the following movements:—Rest the back-weight on the shoulders and heels, tuck in the abdomen, and at the same time contract the muscles of the hips so as to arch the back. The contraction of the muscles of the hips is a very effective means of obtaining abdominal control, as by this measure the hips are held down.

Of course the breath must not be held but exhaled as the abdominal wall is drawn in and inhaled as it is released. These exhalations and inhalations should not be powerful respiratory movements, because the main purpose of this exercise is to activate the abdominal muscles and not to empty and fill the lungs.

These exercises are equally applicable to men and women. Exercises especially useful for women are described in "Sex and Exercise," published by Heinemann, to which the reader is referred for further information.

OCTOBER 10, 1900.

SECRETS OF GOOD HEALTH.

XIII.—NEED FOR CHAIR IN DIETETIC.

NOURISHMENT AND DISEASE.

By SIR W. ARBUTHNOT LANE, Bart., C.B.

Perhaps the thing that amazes the recently qualified practitioner most when he starts in practice is the very scanty information on the subject of diet which he received from his teachers during his whole career as a student.

The student spends an endless number of weary hours endeavoring to stuff into his brain a knowledge of the contents of the British Pharmacopoeia, trying to remember the names and the manner of preparation of a large number of drugs which he has to recognize and with whose qualities he is expected to be familiar when faced by questions in this subject.

He is bitterly disappointed, however, when he starts teaching patients and finds that the vast bulk of the knowledge

concerning the diet of his patients, and his knowledge of the relation of diet to habits and to health, on which whole his patients expect him to speak authoritatively and with authority, is wanting almost.

This too frequently results in his becoming a law unto himself, and in his individualistic way he usually prescribes such foods as he thinks will be appreciated and which he probably eats himself.

NO SPECIAL TRAINING.

It is an extraordinary fact that in Great Britain, where such wonderful pioneer work has been done and such great progress in dietetics has been made by Sir F. Gombard Naphtine and a number of other distinguished men, the knowledge of food values, by far the most educational factor in the career of the doctor, is represented by no chair at any of the universities, and that no expert dietetic or special course is allotted to the teaching staffs of any medical school to instruct the student. He has to depend on the very different and frequently contradictory instruction on diet afforded by the physicians and surgeons with whom he works.

Looking back on his student training, he recalls that his practical knowledge of dietetics was limited not only to the casual observation of the diet applied to the patients in the hospital, but to the fact that it did not seem to be in accordance with the teaching of the books as given by McCollum, which was studied later.

He soon learns that almost all the diseases which he is called upon to treat are due chiefly to errors in diet and bad habits consequent upon them, and that a large part of his teaching must consist in so balancing the diet of the patient that he shall be properly nourished and that his bowels shall be made to function normally by the administration of purgatives.

HARMFUL PURGATIVES.

Purgatives are so powerfully habit-forming that a minute quantity as little as the head of a pin is capable of so irritating and upsetting the machinery of the whole length of the intestinal tract as to cause it to evacuate some of its contents in what is obviously an unnatural and objectionable manner.

Such purgatives are very largely of a stimulant, directly and indirectly, in character is undoubted. The student may even realize that by eating chocolate or ice cream, dairy produce, bread, and preserving articles of animal origin, when the large bowel or sigmoid flexure becomes obstructed, the system will function in a normal manner and health will be restored to the sufferer.

SECRETS OF GOOD HEALTH.

XIV.—INJURIOUS MEAT.

By SIR W. ARBUTHNOT LANE,
Bart., C.B.

A large number of native races avoid eating animal food of all sorts, and are certainly more athletic, robust, and healthy than the members of civilised communities who live on a diet which consists largely of flesh in one form or another.

It is perhaps unnecessary to insist on the fact that those races who live on a non-animal diet are healthier and capable of expending more energy than are those who live largely on flesh.

It is quite open to anyone to assert that, while this is true in the case of the native existing in his normal surroundings, it does not apply to the white man living in a state of civilisation.

As an illustration of the fallacy of such a belief we know that Wellington, though hard pressed for men, took none under 5ft. 5in., and every man had to have perfect eyesight and perfect teeth. These men, before they enlisted, had been brought up on hard wholemeal bread, garden produce, and practically no meat. While serving they received 1lb. of wheat a day, which they ate as it was or panned up to make a coarse bread, and with a scanty quantity of wholemeal flour if it could be obtained.

Quite a large number of people have long excluded animal food, other than dairy produce, from their dietary, with marked benefit to their physique and health.

PUTREFYING FOOD.

The explanation of the advantage which this diet afforded to them is perfectly simple. Owing to our habit, which is practically universal in civilisation, of damming back the products of digestion in the large bowel, simple and obvious mechanical changes take place in the entire gastro-intestinal tract, perfectly analogous to those which ensue in the drainage scheme of a house when the outflow from the cesspool is controlled by grease and other obstructions.

There is also associated with this mechanical obstruction an ascent from the large bowel of harmful organisms, which then invade and grow on the contents of the small bowel. These contents are the digesting and digested food from which the tissues of the body derive their nourishment.

The extent of the infection of the food in process of digestion in the small intestine determines the amount of poisons absorbed into the circulation. As a large proportion of the people suffer from such a condition, it is clear that a similar result would inevitably result if

all such food were brought into immediate contact with the agencies which produce putrefaction were discarded.

On the other hand grains, fruits, vegetables and dairy produce placed in the same conditions do not develop deadly poisons, and are therefore not harmful. One is familiar with the fact that a single sardine or one anchovy which has been infected by these same agencies before being eaten can terminate the existence of the individual in a few hours, while foods such as cheese may be kept indefinitely without becoming poisonous.

These vegetarians realise that constipation and decomposition and fermentation of their food, and the gas formation which results, are all lessened most materially by the avoidance of all animal food, with infinite advantage to their health and well-being and happiness.

NOVEMBER 20, 1926.

SECRETS OF GOOD HEALTH

XV.—A PERFECT BREAKFAST FOOD.

By SIR W. ARBUTHNOT LANE,
Bart., C.B.

A very large number of correspondents seem greatly perplexed by the difficulty they experience in providing a diet acceptable to the members of the family unless meat is included in it.

The food intelligence of the average housewife must be very limited if, out of the abundance of fruit and vegetables that are accessible to her, combined with dairy produce, she is unable to provide a most attractive diet for those of her family who do not wish to eat animal foods, or who, owing to the defects which develop so frequently and so early in their intestines, should not eat them.

It has been pointed out that the soldiers of Wellington, with their wives, and the legionaries of Rome, subsisted on a pound of wheat daily, which they ate in that form or crushed and cooked. Occasionally the former got a little wholemeal as a luxury.

Taking a leaf out of the book of these very vigorous, robust, and brave people, who were able to endure hardships unknown to the soldiers of the present day, what can be more delicious, stimulating to the intestines, and capable of affording everything required for nutrition and health than crushed wheat made into porridge or eaten with milk?

It is very cheap and infinitely better food than the vast majority of foodstuffs now in the market. It has all the advantages of being very tasty and appealing.

A pound, however, of wholemeal, can be made into a loaf which provides her child with a large basis of these materials for breakfast it will provide a most efficient and health-giving diet and at about sixpence a pound. In this way the difficulties of obtaining real wholemeal bread will be avoided.

The wife of a policeman informed the baker from whom she bought the rolled wheat that she found that one pound of the wheat went as far as two pounds of oatmeal and was much more appreciated by her children. As the wheat cost sixpence and the oatmeal sevenpence she saved eightpence by this transaction.

The porridge may be made more attractive and varied by the occasional addition to it of a quantity of raisins or currants. Currants can be obtained at a very small cost. They are most nutritious.

SCARING THE PUBLIC.

Numbers of correspondents state that they experience insuperable difficulty in obtaining wholemeal bread, in spite of the efforts which *The Daily Mail* has made to impress on the public the hopeless insufficiency of white bread and the fact that wholemeal bread is a perfect food.

Some bakers frighten their customers by telling them that any rubbish is put into wholemeal bread and that the materials that have been abstracted from the wheat in order to produce the bleached ghost of white flour are fit only for pigs and cattle, and that for centuries they have been allocated to that purpose.

Doubtless this question will be decided by the health authorities publishing a definite statement on this subject in a more popular manner than they have done up to the present. Such a statement on whole meal made in *The Daily Mail* by Sir George Newman, as representing the authority that is placed by the Government in control of the food of the people, will do a great deal to enlighten the community and also to control the propaganda now being broadcast by those interested financially in perpetuating the use of white flour and white bread.

NOVEMBER 23, 1926.

SECRETS OF GOOD HEALTH.

XVI.—DISEASE AS A CRIME.

MOTHERHOOD'S NEGLIGENCE

By SIR W. ARBUTHNOT LANE, Bart., C.B.

If it is generally recognized that by eating proper food and following normal physiological habits it is possible to avoid all the ill-health and disease so common among members of a civilized community, and to ensure health, vigour, a resistance to infectious diseases, and a happier life by obeying the laws of nature, it is obvious that those who persist in neglecting them are criminal wrongdoers.

Who has the right to inflict a poor physique, frequent maladies, absence from duty, incapacity to do good work, misery, illnesses, and early demise on relations and on the public?

How many people call for the financial support of their relations and of the public for reasons that are entirely due to their gross ignorance and carelessness?

Have these people, because of their ignorance, stupidity, and neglect of their health, any right to bring into the world miserably degenerate specimens of humanity, when it is possible, by care and attention to diet and habits, that they can develop their physique and render themselves vigorous and healthy and fit persons to reproduce their species, and when they have produced them to be able to supply them with the only good food that nature can provide?

The sale of artificially produced infant foods is enormous and increasing. The innumerable illustrations of the results of such unnatural diet indicate too clearly the rapid and extensive degeneration which the physique of our women is undergoing, together with the necessarily associated low vitality of the male parent.

COCKTAILS AND LATE HOURS.

Can anything be more detrimental to the infant in the early months of pregnancy than the habits of a large class of the young women of the present day? At the time when every drop of pure healthy blood is of vital importance to the little mite that is struggling to develop they are drinking cocktails and eating all kinds of utterly bad foods, unsuitable to their nutrition and that of their offspring. They are exhausting the energy which they should conserve, to develop the functions of their bodies and the growth of their infant, in dances and other amusements which keep them up late in close, stuffy, ill-ventilated rooms.

No man, and especially no woman, should undertake the very serious responsibility of bringing a child into the world unless the health of both is such as to justify them in doing so.

Maternity is a whole-time job, and the woman who does not take sufficient care of her health during the entire course of her pregnancy, and does not supply the child with the food it requires to ensure perfect health, is a degenerate, and compares most unfavourably with the native woman.

CRIMES AGAINST THE CHILD.

With many women conscience is only too readily salved with the idea that their pleasures, or, as they prefer to put it, the claims society makes upon them, are paramount. A large number, moreover, are simply ignorant, stupid, and indifferent to their natural responsibilities.

For these reasons it is manifest that these people are wrongdoers if they are not actually criminal. They produce children of poor physique, who suffer during the whole of their lifetime from neglect in the nursery, in the preparatory school, and in the public school, and later in life from eating the bad food and following the worse habits of civilisation.

The time has now arrived, in view of the steady and evident degeneration of our race, when some whole-hearted endeavour should be made by every member of the community, male and female, to take an active share in restoring the vigour and health of the people, by dealing at once in a real and radical manner with the food and habits of people of all ages.

EXERCISES IN THE STREET.

In my article of November 13, I inadvertently omitted a reference to the excellent book from which I quoted practical hints given under the heading "Exercises in the Street."

These were taken from "Physical Fitness in Middle Life," by Mr. F. A. Hornibrook, published by Cassells, at 6s. The reader would assume that the quotations were taken from "The Culture of the Abdomen" by the same author, that book being already recommended by the New Health Society. The thanks of the society are due to the publishers for their generous permission to quote such health exercises, as well as to *The Daily Mail* for spreading such knowledge throughout the community.