HEALTH AT HOME TRACTS

ALFRED SCHOFIELD, M.D.

Ernest Hastings

HEALTH AT HOME TRACTS

1—12.

BY

ALFRED SCHOFIELD, M.D., M.R.C.S.,

ETC.

MEMBER OF THE NATIONAL HEALTH SOCIETY.

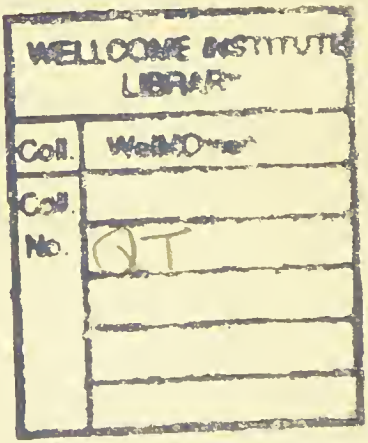
THE RELIGIOUS TRACT SOCIETY,

56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD:

AND 164, PICCADILLY

[1890]

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
STAMFORD STREET AND CHARING CROSS.



PREFATORY NOTE.

The desire of the beloved apostle was that his friend Gaius should prosper and be in health, even as his soul prospered. Christ is the Saviour of the body as well as of the soul, or rather of men, who have bodies as well as souls, and due care of the body is a Christian duty as well as concern for the welfare of the soul. The diffusion of sound information, in a popular and readable form, fitted to make the people sensible of their responsibility, and lead them to use all the means in their power to preserve their own health and the health of those dependent upon them, so that they may be able to fulfil in the best manner all the purposes of their existence, is therefore one important branch of the work of The Religious Tract Society.

In order to fulfil this part of the Society's duty to the public, this Short Series of Health at Home Tracts has been prepared. The work has been entrusted to a writer who has given special attention to the whole subject, and is well known to the reading public. The Series pretty well covers the whole ground as far as it can be fittingly done in publications of this class.

In every tract the moral and spiritual, as well as the physical needs of the readers are kept in view. Words of counsel are given with reference to the life and health of the soul as well as of the body, though the chief purpose is to give directions with reference to the latter.

The Tracts have appeared separately, and the reception they have already met with encourages the hope that in this collected form they will be still more widely read and more extensively useful.

July, 1890.

CONTENTS.

No. 1.—How to avoid Dying before the Time.

No. 2.—On Breathing and Ventilation.

No. 3.—Blood Poisons.

No. 4.—On the Care of Children.

No. 5.—How to Nurse a Sick Person.

No. 6.—What to do in Accidents.

No. 7.—On the Care of the Skin.

No. 8.—On Clothes.

No. 9.—On Cooking and Eating.

No. 10.—On Babies.

No. 11.—Common Ailments.

No. 12.—How to be Healthy in one Room.

HEALTH AT HOME.

No. 1.

HOW TO AVOID DYING BEFORE THE TIME.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

THERE is a widespread idea that no one ever dies until his time comes. In a certain sense this is true, but unfortunately it is too often used as a cover for our own carelessness in a way which is little short of criminal. Neither the law of God nor the law of England permits a man to put an end to his own life, nevertheless thousands do so indirectly. But let us see what is meant by "our time having come," and what connection it has with our duty to live as long as we can.

A friend of mine was arguing with a farmer one day, as they walked along a country road near Worksop, on the necessity of present trust in Christ for salvation; but to all his arguments the farmer would reply "that if he was intended to be saved, he would be, and that no one could alter the decrees of the Almighty, and that if he was intended to be lost, all the believing in the world could not save him." Seeing he was such a determined fatalist, my friend tried a fresh tack.

"Where are you going?" he asked.

"Home to dinner."

"To dinner! Ah! Do you believe, my friend, God has fixed the day of your death?"

"Of course I do, sir, the very hour."

"And the day of your funeral?"

"Certainly; and where I shall be buried, too."

"And no power can alter this?"

"None, sir, except there be a greater than the Almighty."

"And you are going home to dinner? Do not your meals cost you something?"

"A goodish bit, sir, for I'm a hearty eater as a rule."

"Why do you eat and spend all that money uselessly?"

"We must eat to live, sir."

"But listen, my friend; you tell me God has fixed the hour of your death, and that nothing you can do can shorten your life a single hour, there is therefore no need for you to eat at all; and would it not be wiser, instead of wasting all that money, to save it for your children, when you tell me that all your eating cannot add a day to your life?"

The farmer seemed struck.

"You must see the folly of such an argument," continued my friend; "but in the same way, though God, in His omniscience, may know all your future history, does it not strike you that it is as much folly to refuse the Bread of Life for your soul because of this, as it would be for you to abstain from eating because God knows the day of your death?"

We all acknowledge that God knows everything beforehand, and that it is our duty to nourish our bodies, but it is mere caprice and folly to say that because God is sovereign, therefore we are not responsible.

As a matter of fact, we are; and it is not piety, when through our own sin or carelessness we are brought to death's door, to calmly say it is God's will; it is far better, far truer, to own with humility that it is the result of our own negligence. People are too apt to shift the responsibility of such errors on God, and we desire to expose this error, and to enforce the true doctrine that "as a man soweth, so shall he reap," in matters physical as well as moral and spiritual.

Our appointed years are from three score and ten to four-score, and yet how very many of us never see seventy-five, and very largely through our own fault!

I would therefore earnestly beg the close attention of my readers to a brief practical study of this question; and there can be no doubt but that some may, by carefully considering what is here laid down, avoid dying before their time, that is, before old age has really brought their career to its close.

Premature Death.

Most people, as we have seen, die prematurely, but the number of those who do so is gradually decreasing as the knowledge of the means of preserving health and of the laws of health is spreading; and when the community at large vigorously grasps the fact that their lives may positively be lengthened by certain precautions, these will be more generally adopted. It is doubtless extraordinary to consider how much people will give, when they lie on a death-bed, to live another week, and yet how little they will do when in health to prolong their life for years. Let us try and realize that in this country alone, according to an eminent authority, it is calculated that 250,000 people die annually from clearly preventible causes, and 7,000,000 are unnecessarily ill.

Consider for one moment the vast amount of needless sorrow and suffering which these figures represent, to say nothing of the enormous money loss, both to the individual and to the nation, in the withdrawal of such an army from the work of the country. These figures will give some idea of the vast importance of the subject of this tract.

The five leading causes of death in this country are consumption, bronchitis, convulsions, inflammation of the lungs, and scarlet fever, and all of these are largely preventible.

What is Disease?

Before we consider a list of the leading preventible causes of premature death, we will see what these words, "life, death, health, and disease," really mean.

Life and death really always go on together, that is, life of the whole and death of the part. The cells of each individual body are dying daily, and it is calculated that about one twenty-fourth part of them perishes every twenty-four hours, and of material one ton passes through the body every year. In health, however, our bodies are so ceaselessly and perfectly renewed that we imagine they remain the same, and we are really unconscious of the incessant change going on. In health this change is effected unconsciously to ourselves and with perfect ease, and the balance of life is maintained; in disease, on the contrary, decay exceeds repair, and the balance of life inclines to the wrong side, and the processes of life go on with more or less pain and difficulty, until in death all repair ceases, and decay alone remains.

Causes of Death.

The limit of human life being from three-score and ten to four-score, one might expect a man, in ordinary

circumstances, to live to the age of 75; but, as we have said, nine-tenths do not. Many of the causes of premature death are wholly or partially preventible, and they operate in varying degrees according to the circumstances of different classes of people. Inherited disease or weakness, unhealthy and improper marriages, unsuitable clothing and food, excessive eating and drinking, immorality, idleness, and accidents, are causes which affect all classes. Against infection, impure air, dirt, and injurious climate, it is in the power of the well-to-do classes to take more effective precautions than their less favourably circumstanced fellows are able to do.

Inherited Disease.

This afflicts all classes, and though the inherited weakness cannot be wholly eradicated, it may very often be prevented from coming to actual disease by reasonable care. Two young ladies came up to town a short time ago with consumptive tendencies. Both were equally warned against extremes of temperature and exposure—the one took great care and is alive and well, the other was heedless and is dead. The operation of this cause then *is* partly preventible. Luigi Conari of Florence had a weak and feeble constitution, which he still further injured by every possible excess till he was forty. At this age he studied the subject of health and disease, with such effect that he reformed his life. At eighty-six he wrote one of the best treatises on health ever penned, and died over a hundred years old. Some readers of this tract may, we hope, be awakened to a sense of their responsibility in this matter, and be led to take the best possible care of the life God has given them. Should any person, however, have reason to think he is likely to be the

subject of hereditary disease, he should avoid all habits that are likely to favour that tendency.

Unhealthy Marriages.

This is clearly a universally preventible cause of disease and death. It is evident that consumption, scrofula, and other constitutional diseases are, by carelessness or ignorance in this respect, handed down from generation to generation with disastrous effects. It certainly does seem to be the bounden duty of every one to abstain from marrying any person with a marked hereditary taint. People in this unfortunate condition will be far happier in the long run in leading lives of single blessedness, than in bringing up families of sickly children. The records of the East End of London in this respect are simply awful, and hence the multitudes of diseased children and of early deaths.

Deafness, blindness, deformity, idiocy, not to mention commoner ailments, are often traceable to this cause.

Infection.

This is a cause which is preventible, in a greater or less degree, among all classes, the rich having it in their power to protect themselves from it more than the poor. Indeed, were it not for the beneficent action of the Board of Health, the ravages from the diseases due to this cause alone would be fearful. Great care is now taken of the public health; it is in private sanitation we are so dreadfully ignorant and behindhand. Every man and woman ought to have not merely a horror of infection, but a thorough knowledge of how to prevent it. By those who are able to secure protection for themselves, there should

be immediate and complete isolation under medical direction in seasons of danger. In other cases, notice should at once be given to the sanitary officer in order that this regulation may be strictly carried out. Let us all also remember two simple facts. Measles are infectious some days before the rash appears; and, on the other hand, there is danger of infection for a month or more after the patient has recovered from scarlet fever.

In country places, epidemics are still fearfully severe and very common, owing to neglect of the commonest precautions. In one of the worst epidemics of scarlet fever I ever saw, abounding with fatal cases, the common practice, in spite of all warnings, was to have a tea-party for the recovering child, to which all its juvenile acquaintances were invited, just when the danger from infection was greatest! I have broken up one or two of these festive gatherings with scant ceremony myself.

Where a case of infectious disease has occurred, the room should be disinfected by some competent person.

Improper Food and Over or Under Feeding.

It is a well ascertained fact that most people who can afford it, eat too much. This is the clearly preventible cause of gout, dyspepsia, apoplexy, and many other maladies. Wholesome food can always be obtained by those who have the means of purchasing it, but people whose means are very limited or quite insufficient, cannot always choose their food. They have just to eat what they can get. Many of the City work-girls, for instance, dine off a halfpenny worth of cheese and of pickles. Again, disease and death frequently result from an insufficient supply of food. The health is

weakened and undermined through prolonged under feeding, and at last the sufferers fall an easy prey to any complaint.

Improper food is a terribly fatal but largely preventible cause of death, especially amongst babies. It is calculated that about three-fourths of the deaths among infants are due to this one cause. Two sorts of improper food are given to babies—the one, wholesome enough in itself, but unsuited to any child under six months old, such as biscuits, bread, most babies' foods, corn-flour, and, indeed, flour in any shape or form, meat or solids of any kind; the other sort consists of absolutely indigestible food, such as cheese, shell-fish of all kinds, and spirits, especially gin. It cannot be too often repeated that no child under six months old should have any other food but milk, save by direct medical advice.

Many foods are unwholesome and liable to decomposition, such as dried fish and shell fish in the summer. Food is often eaten too rapidly, or at irregular intervals. In short, nothing pays better for oneself and family, from a health point of view, than careful attention to a regular, wholesome, and sufficient dietary.

Special attention should be given to cooking thoroughly all kinds of food, so that if it should turn out to be unwholesome, the risk of eating it may be lessened.

Improper Drink.

The use of improper drink, and the excessive use of intoxicating drinks, are clearly preventible causes of death. The evils resulting from drunkenness among the masses of the people are more far-reaching in their effects than those from any other cause of disease and death. Besides it is a peculiarly expensive cause of

death, for money is spent on drink which is sorely wanted for food and clothing.

What can we say about this awful subject? It seems vain to repeat that one-tenth of all deaths arise from it, that 120,000 die annually from this cause in one way or another, that its direct victims number one thousand a week, that it produces a very large percentage of paupers and of hospital patients. When will working men awake to see the terrible injury they are doing to themselves and children, and at such an appalling cost?

Disease results also from carelessness in the use of other drinks, even of milk and of water. Cholera and typhoid fever are especially often traceable to this cause. All town water should, if possible, be filtered, and most country water boiled as well; milk also is safer when boiled.

Tea is not so injurious as some suppose it to be, if it be taken in moderate quantities and be freshly made.

House cisterns and filters should be carefully cleaned periodically, or water, otherwise wholesome, becomes tainted in passing through them.

Impure Air.

Though the victims of impure air are few compared with the victims of intoxicating drink, the number in the aggregate is by no means small. It is in the overcrowded parts of large towns and cities where the people are most exposed to the evil effects of impure air. Think of the 150,000 poor work-girls of London alone? Consider those engaged in small laundries—working in the dog-days in a broiling atmosphere of heat and steam, every window tightly closed lest a speck of dirt should soil the shirts or collars. Consider their life,

and you will not be surprised at the ravages of lung disease amongst them. Look at the women and children in the ill-ventilated sweaters' dens in the East End of London. Can we be surprised at their languor and pallor, or ask in wonder, what is the cause? The lot of many of the poor is indeed a cruel one, and it is only adding to their sufferings, not relieving them, to blame them for causes of disease over which they have no control.

But the evil is in part preventible even amid a population of this sort. Thank God, all are not so treated. We have an increasing number of well ventilated workshops. The Government is not asleep on the subject, and we may hope that the happy time will soon come when these dens of disease will be abolished, and the sufferings of the poor from this cause lessened. Meanwhile let all who can secure their due share of pure air, by opening their windows at all suitable times, by getting thorough ventilation wherever possible, and by breathing the air in any open space at every convenient season.

Dirt.

What is dirt? Matter in the wrong place. It is a question whether we eat or breathe in most dirt. In either case it is distinctly unwholesome. It is a preventible cause of disease, for even the poorest can, as a rule, wash themselves, if not with soap, which is an expensive luxury to some, at any rate with water; and they need not swallow half so much dirt as they do. They have less control over the dirt or dust they breathe in, for this is in the air of their workshops and factories; and no one can help swallowing the germs and decomposing animal matter of close rooms as long as he is forced to remain in them.

A clean skin is a panoply against many diseases, and is of as much importance as a clean shirt, though such is not the general opinion. Clean hands are of great importance, at meal times at any rate, and to eat with unwashed hands is often a deadly peril. It is found in the painting and some other trades that the lead which poisons the men is not breathed but eaten, so many persisting in taking their meals with paint-stained hands. Dirt includes the subject of drains and dust-bins and other nuisances. Though there is considerable excuse for lodgers in these matters, yet even they could call in the sanitary inspector a great deal more than they do; and rooms however small can be kept scrupulously clean even by the poorest.

Climate and Locality.

By this first expression we mean extremes of heat and cold, of dryness and damp, of exposure to east winds and other vicissitudes. Some have the power of choosing and changing the climate they live in according to the season of the year: the greater number, on the contrary, must be content to live all the year round in our changeable and, to many persons, trying climate. Out of the five most fatal diseases, three are chest affections. Carelessness, in many cases, is the reason why people suffer from these. But in other and by far the greater number of cases, people are exposed to all weathers, and have to encounter sudden extreme vicissitudes of heat and cold, which are perhaps even more trying as there is no way of getting hardened to them.

The delicate girl who is failing under the early beginnings of consumption might in many cases be rescued could she be sent to a suitable climate, but amongst the

poor this is impossible for want of means; besides she may have to support her invalid mother and younger brothers and sisters, and hence must sit uncomplainingly fourteen hours a day over the sewing machine, or stand nearly as long over the ironing table, till she is carried off to the hospital at last, when it is too late to save her. The evil effects of climate or locality may often be obviated by due attention to hints given in this tract.

I do not think anywhere the value of money is more clearly shown than in its power to purchase in many cases the means of prolonging life and health; and yet how often is it abused by those who possess it. Hence we not infrequently find one surrounded with every luxury, ill in bed from her own folly, while the factory girl, in spite of all her difficulties, succeeds in her hard fight against disease.

By locality we specially mean town or country. Towns are increasing in size, and the country is getting less populous, in spite of its value for health, on account of the greater facilities for work in towns. The country is still, however, the great sanatorium for the poor and overworked, and those who can vary the town life with intervals of country or seaside, are warding off many diseases and spending their money to the best advantage.

Unhealthy Work and Overwork.

These fertile causes of "ill-health" are only partly preventible by those who are forced to earn their daily bread by the sweat of their brows.

Overwork is more common among workers with the brain than among manual workers, artisans and labourers. Innumerable nervous diseases are due to

mental over-exertion. They are not confined, however, to those who are obliged to work in order to obtain a living, but are found also among the much smaller class who voluntarily devote themselves to the service of their sovereign and country in work that taxes to the utmost the energies of the strongest. For personal ambition and a sense of duty lead many whose means and position raise them far above any material necessity to spend themselves and to be spent in public life. These, however, have nobler objects in view than even the preservation of their own health. They act with their eyes open, and they do not lose their reward.

Many occupations are necessarily specially fraught with disease and death. As long as we require bright cutlery, dangerous chemicals, phosphorus matches, and other unhealthy productions, so long some people must suffer in providing them; but none need enter these trades against their will. Those who do should be careful to use the apparatus provided in many workshops for safeguarding the health of the workmen.

The influence of occupation on health is well shown in this table. Taking the general mortality of men in the United Kingdom as 18 per 1000 per annum, we find the following rates of death comparatively in the different callings:—

Ministers of religion	9 to 10 per 1000
Farmers	12 „
Shoemakers	15 „
Grocers	16 „
Carpenters	17 „
Miners	20 „
Bakers	21 „
Butchers	23 „
Brewers	24 „
Cabmen	28 „
Public-house servants	32 „
General mortality	18 „

Idleness.

This fertile source of disease and death, in whatever class it is found, is, it is needless to say, wholly preventible.

It is the common cause of hysteria and its allied affections in both sexes, and it frequently is associated with errors of diet and other things. It only needs pointing out, the remedy is obvious.

Improper Clothing.

This cause is only partly preventible amongst those whose circumstances do not enable them to dress as they would; nevertheless many might dress more wisely than they do. The subject is also a most important one, for improper clothing is a common cause of disease and death. All we can do here, however, is to say what clothes ought to do, and what they ought not to do, and leave the application to our reader's common-sense. Clothes then ought to cover us, and to keep all parts of the body at an even temperature. Clothes ought not to compress any part of the body; they ought not to oppress any part of the body; they ought not to depress any part of the body.

In addition we may add they should be porous, should vary with the temperature and weather, should be suitable to one's work, should be clean; and in all cases possible, flannel should be worn next the skin.

Immorality.

This is a frequent and wholly preventible cause of disease and death amongst all classes. The remedy is self-evident. The moral law is as essential for the welfare of the body as well as of the soul.

Accidents.

Many accidents are wholly beyond our control; these are in the class of non-preventible causes. All we consider here are those that could be avoided.

Much may be done by a little more common prudence amongst all classes. Care on the railways, in streets, in public resorts, on the water, on mountains and elsewhere, would often save from an untimely death or from lifelong suffering.

The little graveyard at Zermatt, at the foot of the Matterhorn in Switzerland, is an eloquent protest against exposure to unnecessary accident. There lie side by side the victims of unwise and useless daring, who have died before their time. These remarks are not intended to discourage the attempts often made by brave men to save the lives of others or rescue them from injury in circumstances of danger.

We trust enough has been said in this brief summary to point out how largely our life and health are placed in our own hands, and are under our own control. There is undoubtedly a large number of diseases and accidents which no human skill or foresight can prevent. These we can only submit to; but it is the bounden duty of every man, and more especially of every Christian man, to take care of the precious gifts of life and health which God has entrusted to his keeping. Let none, however, think, on account of the needful prominence here given to health, that it is therefore the aim and end of life. After all it is the character, not the length of the life, that is the point; the quality, not the quantity; and it is for each one of us to see that he does not miss the purpose of his life, but that he seeks to fill his place in the world to the glory and praise of God. The task is impossible

save with Divine strength, but this our Heavenly Father freely bestows on all who are truly His children, and His true children we may all beeome by faith in Christ Jesus. Let us then put everything in its right order. Eternal life for our souls first, through faith in the finished work of our Lord and Saviour Jesus Christ, and a steady purpose, by the help of the Holy Spirit, of living to God's glory, by victory over sin and aetive serviee in some way for Him; and then by that which has oeeupied us in this traet, a right and eonseientious care over our health and strength, that we may not incur the guilt of eutting short our lives or throwing away our health by any folly or earelessness of our own. When siekness or death is really God's aet and will, we can only bow our heads and say, "It is well!"

HEALTH AT HOME.

No. 2.

ON BREATHING AND VENTILATION.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

The Breath of Life.

"And the Lord God . . . . breathed into his nostrils the breath of life; and man became a living soul."

All life is undoubtedly the gift of God, whether it be natural or spiritual, for time or for eternity; for "in Him we live, and move, and have our being." With regard to eternal life, *that* we know is obtained through a real acceptance of Christ as our Saviour by faith, by which we enter God's family (for to "as many as received Him, to them gave He power to become the sons of God, even to them that believe in His name"), being born, as the next verse tells us, "not of blood, nor of the will of the flesh, nor of the will of man, but of God."[1] And this new life, once received, can never be lost by the persevering recipient. So then while it should be our constant effort so to keep in spiritual health as to maintain this life in vigorous and Christian activity, there is not, as with the other "gift of God," physical life, the same fear of losing it.

[1] John i. 12, 13.

These tracts are written in the earnest endeavour, first of all, to enable us to take due care of this physical gift of God so as to maintain our lives in health and activity; and secondly, to strengthen us in various ways in that higher spiritual life, without which we can never enter the Kingdom of God.[1]

At present, then, we will consider the breath of life; why we breathe, how we breathe, what we should breathe, and what we should not breathe.

The Air.

The air, extending some forty miles upwards from the surface of the earth, consists of oxygen, the life sustainer of the world, diluted with four times its bulk of nitrogen, and a minute quantity of—what if by itself and in excess would be to us a most deadly poison, though it is the life of the vegetable world—carbonic acid gas.

We breathe this air in order to supply our bodies with oxygen, without which existence could not go on a single moment; and the way in which this gas is distributed to the body is as follows.

The Blood.

The blood, the vital fluid, is the carrier of this oxygen, as well as of all food, to every one of the millions of living cells of which the body is composed, all of which constantly take in the breath of life.

The blood, rushing through the body a thousand times a day, parts with the oxygen it carries to these cells each time it passes them, receiving from them in exchange carbonic acid gas.

After leaving the cells, the blood returns to the lungs,

[1] John iii. 3.

its countless little globules now laden with this poisonous gas; and here it circulates in an absolutely innumerable number of the tiniest and thinnest little blood-vessels on one side of the thin skin or membrane that forms the walls of the air-tubes of which the lungs mainly consist, and which communicate directly with the mouth, and which has a total surface of over twelve square feet.

How we Breathe.

When, then, the oxygen is breathed in, it rushes down into the lungs, filling all these air-tubes, and thence at once passes across the thin membrane and fills the air-globules of the blood; the poisonous carbonic acid gas which they had brought to the lungs in its turn passing out of the globules into the air-tubes in a reverse manner, and forming part of the air that is breathed out again, which is thus most injurious, being laden with this poisonous gas. Its deadly nature has been abundantly proved not only by experiments on the lower animals, but unfortunately on man as well; as in the Black Hole at Calcutta, in coal mines, near limekilns, and elsewhere, where it is suffered to accumulate in confined places.

Now *what* we breathe should of course be pure air.

Unfortunately we cannot see the air, and hence know and care so little about it. The air of a Scotch moor or of a London slum is alike invisible; and this is the reason so little attention is bestowed on a subject of such great importance, and why such tracts as these are needed.

Dirty Air.

There are plenty of people who are particular to the last degree as to cleanliness. They must have their

garments and their persons without speck or spot, and would on no account tolerate dirty hands or greasy clothes. These people also are very careful as to their food. They cannot eat off dirty plates or have their meals prepared by dirty people or in a dirty manner; they try in short to put off swallowing their peck of dirt as long as they can.

Now we find no fault with these people; on the contrary, we trust that all readers of these pages are amongst them.

But perhaps these same scrupulous folk are not aware that they constantly swallow and inhale air not only laden with the poisonous carbonic gas, but with fine particles of the sewage and effete animal matter of hundreds of their fellow-creatures, as well as other finely divided dirt of all kinds.

This dirt unfortunately, as a rule, cannot be tasted, but its effects are none the less injurious. The lungs of a countryman are very different in appearance from those of a townsman. The one, as nature made them, of a rosy pink; the other, of a greenish-black hue, often gritty, and full of bits of inhaled coal-dust and of other refuse. Dwellers in towns are quite sufficiently handicapped in the race of life in having to breathe the coal-dust that should be consumed, without other additions being made of a still more injurious nature.

Consumption and bronchitis are two of the greatest scourges we have; and although their great frequency is generally laid down to our unsettled climate, an enormous amount is due to the unnecesary and careless breathing of foul air. We should not think of setting decomposing food before our children, and yet, from ignorance or neglect, we often allow their tender lungs to be filled with decomposing matter and poisonous gases.

Ventilation.

To do what is right in the matter of ventilation, both for ourselves and for others, two things are needed—the first is to believe in its importance; the second, thoroughly to understand how to carry it out.

The process of obtaining a constant supply of pure air indoors is called ventilation.

Out of doors the air is generally circulating; and thus even in the heart of London fresh breezes from the country, moving at from ten to fifteen miles an hour, frequently come from the fields and flowers, and the air is being continually changed; the largest crowd cannot make the air close, and it is only when the air is allowed to stagnate that it becomes injurious. Hence the danger of courts and alleys with only one entrance, the building of which is now wisely forbidden. No, the evil really lies in the extraordinary folly we display in our dwellings, where, as a rule, with every arrangement for comfort and even luxury, none is definitely made for securing pure air for the breath of life, indoors.

Self-Poisoning.

It is certainly startling to find what numbers of people are thus poisoned in the finest air in the world. In the country, and in Scotland especially, the death rate from consumption is very high amongst the women in proportion to the men; and this is undoubtedly largely due to the indoor life of the former as compared with the latter; for any greater contrast between the air of a Highland moor and that of a Highland shanty it would be hard to conceive. It is for a similar reason that so many people derive small benefit from their seaside change. They spend half their time (their

nights, at any rate) in such small stuffy overcrowded and poisonous rooms that the good of the fresh breezes of the day is quite undone.

One season, when I spent two months in Ross-shire, and it happened to be very wet, the children all drooped and pined in the midst of the finest air in the world, on account of the closeness of the small rooms, and the fact that none of the windows would open at the top.

In the Hebrides, consumption is almost unknown, for the cabins there, built of unhewn stones, allow an abundance of fresh air to enter, while a great square hole eighteen inches in diameter in the roof carries off all the foul air. On a large estate on the mainland where this primitive state of things was with the best intentions done away with, and the shanties replaced with neat cottages, with walls and roof hermetically ceiled with plaster and whitewash, close-fitting windows and doors, the mortality speedily increased in spite of the greater comfort afforded.

In the Maternity Hospital in Dublin, the deaths used to average fifty per cent.; now, largely as the result of improved ventilation, they only number five. Such cases could be easily multiplied, but they all show how dangerous indoor air is as compared with outdoor.

Slow Death.

With regard to the necessity of providing pure air in our houses there is another thought. As to our food, we can go about and select it when and where we will, and eat it at certain times; as to our clothes, we can choose them when and where we will with equal care; but as to the breath of life, we are compelled by an inexorable law of nature to draw in whatever air we happen to be

standing in, about seventeen times every minute of our lives, day and night without ceasing, or about nine million times every year, whether it be pure or poisonous. What an amazing importance then attaches to this one question of ventilation!

Another fact also shows the vital importance of thoroughly understanding this subject.

The poison of carbonic acid gas is like those poisons (arsenic, &c.) selected by murderers for their victims, in that it is insidious and gradual in its action. By constant habit greater and greater quantities of it can be taken, profoundly injuring the whole system, though not absolutely destroying life.

Claude Bernard's well-known experiment with the sparrows abundantly proves this.

He put one in a glass globe containing pure air and sealed up the opening. After an hour it got feeble, and at the close of two, still feebler. Bernard then opened the globe for an instant and put another sparrow in. This bird died in a few minutes, being unaccustomed to the poisoned air, while the other bird lived in it for an hour longer. It was then taken out, and soon revived in the open air; but on being re-introduced into the glass globe, died at once, owing to the sudden change.

There are many rooms in which we live, and especially sleep, which get in such a state that a person introduced straight into them from the open air is nearly stifled, while we have got used to them.

It must never, however, be imagined that because we can get accustomed to poison, *it does us no injury.*

The same used to be thought of dram-drinking, where small quantities of spirits are constantly being taken, but the person is never drunk. This is now known to be the most fatal form of spirit drinking.

Blood Poisoning.

The constant breathing of impure air, produces blood poisoning of the most profound description, known as anæmia. In this terrible disease all colour goes from the face, and even from the lips and gums, the breath is short, and the blood itself watery, and the whole system a prey to other passing diseases.

It cannot be too widely known that in every room we owe our lives to the power the fresh air has of entering and the foul air of leaving it.

If a man enters a large dining-room and seals up door, windows, and chimney, he can exist one hour on the air it contains and no longer, and then he will die. If it be dark and he requires a candle, he will only live three-quarters of an hour; if a lamp, only half an hour; while if he have two gas burners, each of which uses as much oxygen as five men, he will only live *five minutes*.

Ventilation then is the process of introducing into our rooms pure air for inspiration, and getting rid of the impure air of expiration, freely and without draughts.

The Great Difficulty.

One very great difficulty exists with regard to all ventilation, and especially amongst that class whose health is really their wealth and capital, those who earn their daily bread by hard and honest work in towns.

We must remember that fresh air is cold, and that the impure air as it is breathed out of our lungs is warm, nearly blood heat, or 98°, and it is this fact which is the fundamental difficulty in ventilation.

The Royal Commission of 1885 on the Housing of the Working Classes wisely recognizes this, and says, "It must never be forgotten that the human body has a desire and a need for warmth, and that fresh air, which

is so necessary to the health of a well-nurtured body, chills the half-starved, ill-clad frames of men and women whose homes have been described."

The simple truth is this. The poor find out that by far the cheapest way of warming a room is by their own breath, and they therefore stuff up every crack and crevice, close door and window, and crowd closely together, rigorously keeping out that on which their very life depends—pure air; and were it not for the chimneys in most rooms, deaths directly from this cause would be far commoner than they are. Even at sea some of the foulest air in the world is to be found in the seamen's cabins in the forecastle, which are warmed by the same poisonous means. The difference between pure warm air and foul warm air, cannot be too strongly insisted on, and the fatal effects of living or sleeping in close rooms, warmed by the heat of one's own poisonous breath, too plainly pointed out.

Warmed by our own Breath.

It is on this account that people will not willingly submit to have their rooms ventilated. In one or two workshops in the City where large numbers of girls were employed, and the atmosphere was found to be intolerably close, a beautiful system of directly introducing fresh air, by means of Tobin's tubes, was arranged at great expense, but was soon found to be useless, because the girls would persist in stopping up the mouths of the tubes with bits of rag, &c. These girls had no wish to commit suicide, but were determined to be kept warm, and the only way to reconcile them to the necessity of breathing pure air, would be at the same time to heat the room artificially to supply the place of the hot poisonous breath. It is a matter of pounds, shillings, and pence, and the worst is that those who need this pure air most, are

those who have least of these three things to spare. If the room is to be kept fresh and pure, more coals must be burnt or more clothes worn, or both.

It is curious that, seeing the enormous importance of this subject, it has not yet been found possible to invent any simple way of warming the fresh air as it enters a room. Some few indeed who can afford it adopt a certain grate, which does this by admitting the fresh air at its sides; but we still think that in the vast blocks of model dwellings rising all over London, some way might be found of economically laying on warmed fresh air to every flat from a central furnace.

In our Board Schools, a wholesome horror of re-breathed air should be vigorously inculcated and its deadly effects shown by experiment, so that when the children grow up, nothing would tempt them to live in close rooms and breathe foul air.

A Brain Poison.

Carbonic acid gas, produced by the various functions of life in our bodies, and breathed out with every breath, is a powerful brain and nerve poison. Its effects are intensified when combined with the germs in expired air.

It is this too often, and not the sermon, that makes the people so sleepy in churches and chapels. It is this, and not the lessons, that makes children so listless and so fidgety in ill ventilated schools. It is this, and not the hard work, that makes people so dull and heavy when they awake in the morning. It is this, and not mere temper, that makes the wife or the work-girl who has been working in a close room all day so irritable.

Let us now consider very simply how this poison that we manufacture is to be got rid of.

The Chimney.

There is no doubt that the great safety-valve of most rooms is the open chimney, which is of far more importance as an air shaft than as a vent for the smoke. Were it not for the English love for an open fire-place, and hence an open chimney, it is hard to say what would become of large numbers of the population. No chimney ought therefore to be stopped up, and under ordinary circumstances no room should be without one.

Ventilation really consists of a double process—the removal of the foul air, and the admission of fresh. Now the chimney is principally of use for the former part of the work. Carbonic acid gas is very heavy, and with care can actually be poured from one glass into another. When it is first expired, it is of course heated and is lighter, and ascends to the ceiling. Now is the best time for getting it out of the room, and the best way is by an opening near the ceiling right into the chimney, with some simple valve (Arnott's) to prevent the smoke from coming out into the room. If this is not done, the carbonic acid gas cools and falls to the floor.

It is this that makes it so very dangerous to sleep on the floor in close rooms without open chimneys, and why in some cases dogs, being nearer the ground, die while men can enter without harm. When it has thus fallen, the draught to the fire-place and up the chimney quickly carries it off.

The Window.

The window is the second great means of ventilation. It ought, in the majority of rooms, to be so arranged *as to be always open,* by night as well as *by day.* It is impossible to overrate the beneficial advantages arising from this simple proceeding.

This can be done in various ways. One is by a simple window board about three inches deep, on which the lower sash shuts, so that while the bottom of the window is still closed, there is an opening between the two sashes, admitting fresh air in an upward direction: or perhaps in some cases better still a board can be fixed across the front of the lower window-sill about six inches high, so that the lower sash can be raised behind it, and a double upward draught formed—the one between the two sashes, the other between the lower sash and this board in front.

All windows should open at the top, and if at all large, a small pulley and a double cord should be fixed so as easily to pull the upper sash up and down without having to push and pull from the outside. The top of the window should be kept constantly open an inch or two day and night. The draught can be directed upwards in various other ways. The air can enter upwards behind a false cornice, so that when the window is apparently securely shut, an opening is always left above; or the window can be left open a little and a board just nailed across slanting upwards. An ordinary venetian blind serves somewhat the same purpose if partly let down.

With these simple contrivances no draught is possible, and the cold air, directed upwards, falls in a gentle shower all over the room. There are of course more expensive ways. An ornamental glass screen fixed on the lower sill so as not to rise with the window, is more ornamental than a board, and prevents any direct draught.

Tobin's tubes, already alluded to, are flat tubes against the wall, opening into the outer air below and into the room above, about the level of the mouth, in an upward direction.

The Door.

The third and worst way of ventilating a room is through the door. It is a capital saying, and should be enforced, that doors are made to shut and windows to open, not *vice versâ*. If a room is already sufficiently ventilated, there will be no draught rushing in at the key-hole, as can be seen by the flame of a candle held there. If there is not sufficient fresh air in the room, it will do its best to get in by the door, carrying of course with it all the smells, poisons, and sewer gas that may exist in any part of the house.

Ventilation is really self-acting. The poisoned air does its best to escape, and the fresh to enter; and if we do not absolutely prevent this by our wretched ignorance, these beautiful Divine laws will work harmoniously and without effort.

Let then our sitting-rooms, and above all our bed-rooms, be freely ventilated into the open air, and never suffered under any circumstances to become stuffy. To ensure this they must not of course be overcrowded; each person must be allowed *at least* 50 square feet of flooring in a room 10 feet high, and gas should never be used unless the rooms be very spacious; lamps and candles consume far less oxygen, for one single gas jet requires as much fresh air as five persons.

Dirt.

A great objection in towns against free ventilation is made by careful housewives on the ground of dirt. This is an important one, for there is no doubt that town air is laden with dirty matter of all sorts, and requires as careful filtering as our water. This can be done effectually by muslin or perforated zinc stretched across the opened window; and it is perfectly surprising the

amount of dirt that will thus be stopped on its way into the room.

We have now pointed out some of the benefits and ways of proper ventilation, but we have yet to mention one of the greatest advantages it gives.

Catching Cold.

Let us remember that the most fatal disease in England is consumption, then come bronchitis and inflammation of the lungs; and mark that one of the commonest ways these begin is by our "catching cold" from going from close unventilated rooms into the open air, and that the surest general preventive we can adopt against these diseases is always to have our rooms (and especially our bedrooms) fresh and well ventilated.

The ignorance that sits in close rooms with sandbags on the tightly closed windows, list round the doors, and shavings up the chimney, to avoid cold, only ensures catching it. While the enlightened common sense that lets the foul air freely out and the fresh freely in, is the surest safeguard against it.

God's two Gifts.

It is distressing to find how ignorant and prejudiced we are even in our enlightened age concerning God's best gifts and simplest laws. We have seen the result of voluntarily and foolishly shutting out His free gift to all, fresh pure air, the breath of life, even where it most abounds, from the bedroom of a Highland cottage. We have seen how the simplest laws that His wisdom has laid down whereby fresh air is ever seeking to take the place of foul, are frustrated and hindered, and especially by our increased skill, as we learn to make doors, walls and windows more air-tight than in the days of our forefathers, when the wind could enter where it

listed. It cannot therefore be a matter of surprise that with regard to God's best spiritual gifts and simplest spiritual laws that the same ignorance and folly prevails. His best spiritual gift is undoubtedly eternal life. It is as free as the air we breathe to all who will just receive it through the work and sacrifice of Christ. And yet, like the cottager in the Highland moor, here where it is freely offered us, where the Bible has the widest influence, we shut up our hearts against it, and prefer the poisonous vapours of superstition and infidelity to the truth of God. The simplest spiritual law relating to our soul's salvation is that this life is obtained by faith in what our Saviour has done; and yet we do not need to go to Asia to see nearly half the human race (some five hundred millions) trying to save themselves in one form or another of Buddhism, but we find the same thing everywhere here in England. Even as we hear the simple message in our churches, chapels, mission rooms, and in our very streets and parks, we too often resolutely refuse it, and shut the Saviour out with all the ingenuity of modern methods, and try, if in earnest at all, to go to Heaven our own way instead of God's.

Soul and Body Poisons.

Oh it is piteous to see so many thousands of English men and women careless alike as to body and soul, poisoning their bodies with the exhalations from other people's lungs, and their souls with thoughts from other people's minds, when God offers to both body and soul His free gifts—the pure air for the one, and eternal life for the other.

Thousands are now dead in body, and thousands lost in soul, through this culpable ignorance and careless neglect, for we cannot escape if we *neglect* so great

salvation? For them it is too late; for us and for our children it is not. Let us then earnestly give this great subject our most careful consideration, as to whether we are not at this very moment poisoning our souls with some false human ideas, instead of opening them to God's love, and to the mighty proof of it in the gift of His beloved Son to us as our Saviour; and then we must also consider our bodies, and whether we cannot, in carefully reading over these suggestions, find some way of adopting them in our homes, and get rid for ever of the dread of an open window in our sitting-rooms, or of admitting night air into our bedrooms.

And further, can we not carefully train our children first to accept God's great spiritual Gift, and then rightly to value and use His earthly gifts, freeest and best of which is pure fresh air; and thus shall enable them to avoid these fatal errors that have directly and indirectly destroyed so many around us, and give to them the best legacy a parent can give—

"A SOUND MIND IN A SOUND BODY."

HEALTH AT HOME.

No. 3.

ON BLOOD POISONS.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY

Germs.

This tract deals with some sections of an army so dangerous, so numerous, so widely distributed, that it is perpetually attacking with fatal success large numbers of the human race. Till recently these foes were merely matters of speculation; but since the introduction of more powerful microscopes, they have been seen, their shape is known and drawn, and fresh forms are being discovered every day.

The numbers of our tiny foes are perfectly appalling. Every thing on the face of the earth where man is found is covered with germs—our clothes, our houses, our streets, the air, the earth, the water. Below the depth of a yard in the solid earth they are not found, nor above the snow line in lofty mountains, but practically they exist everywhere, and increase at an almost incredible rate per hour. A large majority of them

is absolutely harmless to human beings in health; but though the number of those that are strong enough to attack and overcome a healthy man is comparatively small, the number immensely increases if he gets ill; and if he dies, myriads more attack him, leaving in a short time nothing but a bare skeleton.

Blood poisons are of two kinds—living and dead. The dead are chemical poisons, which being received into or formed in the body, cause various diseases. Before, however, considering either the living germ or the chemical poisons of the blood, we must first of all very briefly see in what way the blood itself moves and reaches in turn every part of the body.

The Circulation.

Three different systems of pipes in the body convey the blood to every part; they are called arteries, capillaries, and veins.

Arteries are strongly made elastic tubes or pipes through which the bright red (or arterial) blood flows laden with fresh oxygen and dissolved food towards the different parts of the body. Soon after the main tube leaves the heart, two branches are given off for the head, and two for the arms; and then running downwards, the tube terminates at length in two branches, one for each leg. When an artery arrives near the part it is intended to nourish, it breaks up into a perfectly inextricable maze of hundreds of tiny channels, far smaller than the finest line that can be seen by the naked eye—called capillaries, whose walls are so thin that a brisk exchange takes place between the blood within and the tissues outside; the latter receiving what the blood brings, and returning in place the used-up air or carbonic acid gas and other refuse.

These pass still onward in the blood current, which, however, is now beginning to return in a slower stream to the heart. The capillaries soon reunite in a single tube, not so thick as an artery and called a vein, which conveys the bluish blood back again. These veins are easily seen at the back of the hand, in the wrist, and elsewhere; the arteries can be felt beating deeper down (as in the pulse), but are not necessarily seen. Some of the blood, as from the heart to the feet and back, has a long way to go; but on an average the whole round is accomplished in less than a minute. When it returns to the heart, it arrives at the right side (having started from the left), and from the right side this impure blood is then passed by another system of vessels through the lungs, to be purified with fresh air before being returned to the left side of the heart, and sent out again. The food is mainly added to the blood just before the returning current reaches the heart.

The heart itself is a two-sided pump, both sides acting together, so that the one squeeze or beat sends the blood from the right side into the lungs, and from the left side out into the body.

Understanding then the general principle of the circulation, it will be seen how quickly any substance once introduced is carried over the whole system: and we are now in a position to consider the action of some of the leading poisons both chemical and living. We will take the former first.

Alcohol.

This is a powerful blood poison, although, like many other poisons, such as opium, &c., it is a most valuable medicine in small quantities. The latest researches in physiology have clearly shown that it has but little

claim to be considered a food in a strict sense. It has a twofold effect on the tissues of the body. On all nerve tissues it has a paralyzing, and on all other tissues an irritating, effect. We are aware that this description is not perhaps quite scientific, but nevertheless it is accurate enough.

The *immediate* effects of the excessive use of alcohol; the extra beating of the heart, the flushing of the face, the heat and sweating of the skin, the confusion of the mind, and the subsequent loss of consciousness,—all these and many more are due to progressive nervous paralysis. On the other hand, nearly all the *permanent* effects which bring in so many sorts of disease and suffering, and may eventually end in a miserable death, are due to its irritating effects on the different structures of the body. The distinction between its direct and indirect results is important. The poison is carried all over the body by the blood very rapidly after being received into the stomach. One of its properties is that it is a great preservative. Any animal substance placed in spirits of wine is preserved from decomposition. This appears at first sight a good quality, but is really a very bad one for us; for our bodies are alive, and they do not want preserving as if they were dead, but to be continually rebuilt and renewed, and the old material burnt up. Now alcohol hinders this, and hence the blood becomes darker from the amount of dead material which is preserved instead of being burnt up. The parts that suffer most from its secondary or hardening effects are the digestive organs. Alcohol hardens animal tissue not only on account of its irritating qualities, but on account of its love for water, which it draws out of any damp substance near, thus making this substance so much harder. In this way, after a time, the stomach of a drunkard becomes like a piece of very thick wash-

leather, and loses by degrees nearly all of its digestive powers; and, if the spirit be taken neat, it may eventually be ulcerated as well. Most serious changes take place also in the liver, which shrinks up until the greater part of its functions is hopelessly destroyed. In this condition death invariably ensues from incurable dropsy. The blood vessels themselves suffer greatly from having to convey this poison about the body. They are all thickened, rendering it more difficult, by giving less room, for the blood to flow, which, in the case of the brain, is especially serious. All excess in alcohol is therefore carefully to be avoided on medical grounds as well as social grounds.

Gout Poison.

The poison that produces gout is urate of soda, which is a substance composed of innumerable very sharp crystals like bits of glass. It is caused by too much rich, sugary, or animal food, such as old port, beef, and general rich living. It also occurs in a wasted and badly nourished state of the body, when it is known as poor man's gout. In these cases, however, the cause is more frequently the amount of beer that is taken. This crystalline substance, then being formed in the body itself, is carried round by the blood, and by it left generally in that part of the body farthest from the heart, namely the great toe. As the blood here gets rid of it and it is poured into the flesh, the pain is of course excessive, the toe gets red and swollen, and an attack of gout comes on. More and more of this urate of soda continues to circulate, and possibly the finger gets affected or some other part of the body. Not only, however, does gout attack the joints, but, like alcohol, these particles have an extremely irritating effect, and

thicken the walls of all the tubes themselves very much, so that it is now much more difficult for the heart to pump the blood through. This strains the heart and injures it. The lungs too get their share of this poison, and the breath often gets short and difficult.

There can, I think, be no doubt that if less beer or wine were drunk and less beef eaten, that gout would soon become a rare disease; although, as it is strongly hereditary, it would take a generation or two to get it out of the blood altogether. Once an attack occurs, it is very apt to recur, and is eventually the cause of incurable disease. Like most real blood poisons, it affects more or less every organ of the body.

Rheumatism.

The poison in this dread disease is supposed to be lactic acid, but we are by no means so sure of this as we are of the poison of gout. Anyhow, animals fed with lactic acid get rheumatism, so that this poison will produce it.

This acid is largely formed by imperfect digestion; but in order that the disease may be developed, it seems necessary there should be exposure to damp and cold as well. Damp produces it even more than cold. We call it a dread disease, because when it attacks the young, as it so often does, it very frequently flies to the heart, and by forming deposits upon the edges of the beautifully made valves, prevents them from closing properly ever afterwards. The result is as follows: The heart propels at every beat say four table-spoonfuls of blood. Now if one of these leaks back again because the valve does not shut close, it is evident, to get the right amount of blood properly round the body, the heart must beat more frequently or send more at a

time. Owing to the beautiful principle of compensation in nature, this accident, which would at once otherwise lead to fatal results, is met in this very way. The heart does get both larger and stronger, and a person with heart-disease of this nature may thus live on to his full term ; but he will never be perfectly strong.

It is therefore a dread disease, because it is a disease of youth, and as a rule the results are life-long. Besides its effects on the heart, it of course attacks the limbs ; differing from gout, however, in showing a preference for the larger joints of the body, such as the knee. As in gout, there is intense pain, and general fever occurs all over the body, with profuse sweats, by which it is believed that nature is endeavouring to get rid of the poison through the skin. Every joint of the body may in turn be attacked by rheumatism, for here again it differs from gout, in moving from one part to another, instead of keeping generally to the one spot. The older a person is when he has the first attack of rheumatism, the less danger is there of heart disease. One bad feature of rheumatic fever is that it tends to return again and again, and each time weakens the person more and more.

So far we have only spoken of one sort of rheumatism —rheumatic fever, but there are many other sorts scarcely less formidable.

Rheumatic Gout, &c.

There is rheumatic gout, which, instead of attacking a joint and leaving it at the close just as it was before, deforms it more or less, producing curious thickenings of the finger joints and elsewhere, and in the end making the joint quite stiff, and creaking like a new boot. Then again there is simple chronic rheumatism, constant weary pain in some joint or joints, or in the

bones of the body, often worse at night in bed than in the daytime. Then there is museular rheumatism, that does not touch the joints or bones at all, but lays hold of the museles, espeeially those of the baek, when it is ealled lumbago.

The great feature of all sorts of rheumatism is the pain attaehing to it. Fortunately an antidote to this poison is now found, and one that ean speedily relieve the pain, though as yet no way has been discovered of preventing the disease from reaching the heart, where its ravages are generally painless, and henee all the more dangerous; for pain is one of our greatest safeguards, ealling our attention to any injury that is being inflicted on us.

Ricketts.

Ricketts is also believed by most to be due to a poison eireulating in the blood of ehildren through an exeess of starehy or floury food, and a defieiency of animal diet.

We must remember we are born flesh-eaters and not vegetarians. Milk is an animal and not a vegetable food, and eontains a great quantity of nitrogen, that material which mainly builds up the growing body; hence children need, strietly speaking, more animal food than adults, only not neeessarily in the form of meat.

If a ehild when weaned is kept too exelusively on flour and babies' foods of different sorts, and does not eontinue to take a large amount of milk in the day, or to supplement it with porridge, beef-tea, or broth, and later on with pounded meat, it is likely to develop ricketts, which ean be reeognised by some of the following signs. The ehild's wrists and ankles will be mueh thickened, as if there were braeelets round them

beneath the skin. This is caused by the irritation produced at the growing ends of the bone. A row of knobs may be felt down each side of the breast-bone in front, from the same cause. The head will be found to perspire profusely at night, and the child will probably kick the clothes off. As the disease goes on, a little cold in the chest may be developed; and the bones being soft, the legs will bend and the child become bow-legged or knock-kneed, and perhaps walk on the side of the foot. The ribs may bulge outwards and the child becomes pigeon-breasted, and its forehead will be square. This disease is common, through mistaken feeding, amongst both rich and poor; and the best cure, in addition to the needed medicine, is a properly varied animal diet, with plenty of milk and oatmeal as well; and in addition salt water baths, to harden the soft limbs; and very likely the child will be required to be kept off its feet altogether for a while to let the bones straighten. This disease is all the more serious, as the deformities it produces are permanent and likely to produce, especially in women, serious difficulties and dangers in after life.

Skin Eruptions.

There is a large number of obscure poisons, the nature of which we do not as yet exactly know, that circulate in the blood and produce a great variety of skin eruptions. One of the most familiar is also one of the most harmless—nettle rash. This arises commonly from some poison that resides in shell-fish or decomposing food entering into the blood. The curiously figured eruption that results is doubtless an effort on the part of the body to throw off the poison by the quickest channel. Many skin eruptions, indeed, are the result of parasites, and not of internal poisons at all.

Whenever, however, the whole body is covered, or when it occurs symmetrically as on both arms and legs, and in the same places, we may be pretty sure it arises from some blood poison.

Infectious Fevers.

The various infectious fevers, scarlet fever, measles, small-pox, chicken-pox, typhus fever and typhoid fever, afford good illustrations of blood poisons. This class of disease is so important, and it is so necessary that all should understand how to deal with its infectious character, that we will specially consider it.

Those fevers are most dangerous which are accompanied by any skin eruption, because they are as a rule most "catching," that is, something—"the germs of the disease"—passes from the diseased person to those around. This is what is meant by the infection spreading.

The greatest natural preventives against infection, those that destroy the disease germs the most readily, are: Fresh Air, Water, Heat. Close air and all dirt favour the disease. Hence in every case of fever keep yourself very clean; have the windows open, and see that all food and drink are clean and served in clean vessels, and let no milk or water for drinking stand in the sick room. These are general precautions to avoid the disease, but to prevent its spreading the following special rules should be attended to:—

Separate the sick person from all others the moment you suspect the disease to be infectious; and, if possible, place him in a room at the top of the house, and as far from the rest as possible.

Take out of the room all curtains, carpets, bed-hangings, and all unnecessary furniture, leaving it quite bare; for all these things will receive and retain the germs of the disease perhaps for years.

Let the fresh air freely into the room. Keep the window frequently open, and light a fire to make a draught up the chimney and burn up the foul air. If it is very cold and there is too much draught, have a window board about six inches broad fixed to fit the lower window-frame so that the window shuts down on it and can never be closed further. A constant current of air then enters the room between the two sashes.

Outside the door a sheet kept constantly wet with carbolic acid solution (one part to fifty of water) must be hung so that no draught laden with the germs can pass into the house from the room.

Only one person should take care of the sick person. She should wear a cotton dress, which should be slipped off at the door whenever she leaves the room, which should be once a day only for a period of two hours.

All discharges from the sick should be received into vessels containing diluted carbolic acid or some other disinfectant.

Permanganate of potash costs sixpence an ounce, and is a good disinfectant, but stains all linen. It is used in the quantity of one tea-spoonful of the powder to two gallons of water. Carbolic acid is stronger. It does not stain when diluted (1 in 50), but has a disagreeable smell.

Sanitas is a pleasant disinfectant, having an agreeable smell, but is not quite so strong as carbolic acid. Of these three, carbolic acid is the most generally useful for all purposes.

Soft linen rags should be used, and then burnt, instead of ordinary handkerchiefs.

No food from the sick room must be eaten by any one else, and all crockery, &c., used in the sick room must be put in a vessel with diluted carbolic acid, and pushed outside the door.

All the clothing and bed-clothes sent to the wash from the sick room must first be soaked in carbolic solution.

After the person is well, application must be made to the Sanitary Authorities at the Vestry or Town Hall, to properly disinfect the room with the fumes of burning sulphur.

Scarlet Fever, etc.

Scarlet Fever is one of the most catching of all fevers, and in its case all the above directions must be most faithfully carried out. The signs are a sore throat, a fever, and a rash on the chest, of small red points close together.

If you cannot give the person a separate room, and all the above care, he had far better go away to the hospital than infect all the rest of the house and neighbours. The disease is very infectious after the rash has gone, for a period of three or four weeks, or even more, when the old skin is peeling off. During this time the person should be well rubbed all over with carbolic oil. A person who has had scarlet fever is not safe to mix with other people sooner than from six weeks to two months.

Small-Pox is very fatal, but thanks to continued vaccination, is now quite a rare disease. The person feels a pain in the back, and spots appear on the face and arms like small shot. All people in the house should be vaccinated immediately, and the person should be at once removed to the Small-Pox Hospital, if there is one; if not, nursed as directed in a separate room and with every precaution.

Typhoid Fever is an infectious disease of quite another character. The disease is not carried directly from the person; all the germs pass away in the discharges, which are highly infectious. The great point in this

disease therefore is to have them thoroughly disinfected before leaving the room, and to be sure that all milk and water is boiled before use; for curiously enough this disease is generally received through food or drink. All W.C.'s and drains should be washed down with carbolic solution or chloride of lime. There is not here the same need for personal isolation, but the greatest possible need for the perfect disinfection of all articles used in any way by the sick person.

Typhus Fever is like scarlet fever, and requires the same precautions. It is highly infectious. The eruption is in purple blotches, and the person is generally more or less delirious.

A person infected with measles is not generally, but should be isolated like those we have named. It is most infectious before the rash appears at all, and hence the infection has generally already spread to some extent before the disease is recognised. After the rash goes, the disease is not nearly so infectious as scarlet fever.

Chicken-Pox is a trivial disease as a rule, save for the danger of marking the face if the eruption is very deep.

German Measles is usually a slight complaint.

Cholera, Diphtheria, &c.

There are, however, other serious infectious diseases without a marked skin eruption, such as cholera, diphtheria and whooping-cough.

Cholera is frequently conveyed by water or milk. If at all prevalent, both should be boiled, and the greatest cleanliness in person and home should be observed most scrupulously.

Beware of bad drains, of bad fish, fruit, or vegetables. Anything that sets up even simple diarrhœa at such

times is to be dreaded, and a doctor should be seen at once.

DIPHTHERIA is a dangerous, disease; here the poison germs fasten on the throat. The person should be isolated as directed in fever and the doctor at once sent for.

In all infectious cases the neglect of any practicable precaution to prevent the spread of the disease, the paying of needless visits to the patients, is morally wrong and worthy of severe condemnation.

We cannot enter into further details here about this interesting and important subject; nor need we say much about remedies, for we think this is the doctor's province.

ONE POISON MORE.

We may, however, before closing, say just a few words about a more fearful poison still.

Just as widely spread in the souls as germs are in the bodies of our poor human race is the terrible, insidious disease of sin; recognised plainly enough in its defilement and destruction of the human soul, but nevertheless still denied by some because invisible. It dooms its victims, if not delivered from its power, to a never-ending banishment from God and His heaven; and its ravages are absolutely universal, for all have sinned and come short of the glory of God. The great point is first of all to recognise its existence, and then when we know and feel that we suffer from the complaint, not to rest until we have seen that the Great Physician can without doubt do everything for us. Let each reader of this tract consider this disease so much more terrible than all the rest. It needs but little self-examination to see how deeply we are infected. A person who is wounded does not deny the wound because

so much of his body is still sound and untouched; nor is it rational for us as sinners to deny our sins because in many things, it may be, we are truthful, because in many respects we are kind. It is far better, far wiser, to fix our mind upon the springs of our being, and see whether it is or is not true that *I* "have sinned, and come short of the glory of God."

Its Cure.

Observe it is not a question whether we have sinned as much as others, but whether we have sinned and have come short of God's standard of perfect holiness and purity.

We know we have, and it does not excuse us to feel that this is equally true of others.

It is a poor and malign pleasure if we are dying in hospital of some fatal disease to find a satisfaction in the number of other victims around. Better far concentrate our thoughts on our own case, and seek the good Physician while He can be found; and then when He has cured us, we can, both by our wish and His, spread His fame amongst our fellow-sufferers, and persuade them to try the same remedy, showing ourselves as examples; and thus, instead of dying together, we and our fellow-sufferers may live together.

His great remedy is freely given, and it is absolutely certain to cure every variety of spiritual disease, for the blood of Jesus Christ God's Son cleanseth from all sin. It can cleanse yours and mine, though they may be widely different in detail. We have not even to go and fetch this medicine; here in God's own words are the full directions concerning it:—

"Say not in thine heart, who shall ascend into heaven? (that is, to bring Christ down from above). Or who

shall descend into the deep? (that is, to bring up Christ again from the dead). But what saith it? The word is nigh thee, even in thy mouth, and in thy heart; that is the word of faith, which we preach,

"That if thou shalt confess with thy mouth the Lord Jesus, and shalt believe in thine heart that God hath raised Him from the dead—

THOU SHALT BE SAVED."[1]

Take this remedy then, dear reader, and be cured of all disease of sin; and then when you know that your own sickness is healed by the blood of Christ, go and tell others the good story, how Christ Jesus made you whole.

"Physician of my sin-sick soul,
To Thee I bring my ease;
My raging malady control,
And heal me by Thy grace.

Pity the anguish I endure,
See how I mourn and pine;
For never can I hope a cure
From any hand but Thine.

I would disclose my whole complaint,
But where shall I begin?
No words of mine can fully paint
That worst distemper, sin.

It lies not in a single part,
But through my frame is spread;
A burning fever in my heart,
A palsy in my head.

Lord, I am sick, regard my cry,
And set my spirit free:
Say, canst Thou let a sinner die,
Who longs to live to Thee?"

[1] Romans x. 6-9.

HEALTH AT HOME.

No. 4.

THE CARE OF CHILDREN.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

THE Bible contains many precepts on the training of children, bearing for the most part, it is true, upon their moral and spiritual natures, as one would naturally expect in the Book that treats of our eternal destinies. Nevertheless the Word of God fully recognizes the value of physical culture, and nowhere perhaps more so than in that passage in Timothy, which unfortunately in its translation has been made to bear an opposite meaning to that in the original.

"For bodily exercise," says our Authorized Version, "profiteth little, but godliness is profitable unto all things,"[1] a statement apparently intended to show the worthlessness of all physical training and to favour ascetism and the neglect of the body. But now observe how the Revised Version reads, correctly rendering the words of the Apostle, and completely altering the sense

[1] 1 Timothy iv. 8.

of the passage, "For bodily exercise" (or training) "is profitable for a little; but godliness is profitable for all things, having promise of the life which now is, and of that which is to come." The meaning of this is obvious. So far from casting a slight upon physical culture, St. Paul goes out of his way to state that it *is* profitable, but only for a short time, that is, for the present life; godliness, on the contrary, being of value to all eternity. Now this is a truth of great value and power, and while it keeps physical training in its right place, as of mere temporal and not in any way of eternal value, it does give it a very definite place and is a positive statement in its favour.

A sound mind is intimately connected with a sound body, and without the latter the former can never find its fullest expression. The spiritual health too is more or less affected by the bodily condition. Let us then consider the subject of child-culture in relation to mental and spiritual as well as bodily health.

Physical Culture.

The waste of child-life is very great; the number of those that grow up imperfectly developed, is also enormous. The deaths that occur are in no way justified by that now common cant phrase, "The survival of the fittest." Were children *all* body, and our work only to try and rear the biggest and finest, just as we grow potatoes or pineapples, it might have some meaning; but seeing that after all a man is judged by his brain power and moral qualities, there can be no doubt that it is not necessarily the fittest that survive. Over-development of body is often associated with dwarfing of mental power, rather than its excess, and if we put the physical side of the question forward some-

what prominently, it must be quite understood that all for which we plead is its due consideration in conjunction with the rest of a child's nature.

The physical wants of children may be summed up in these heads—warm clothing, plenty of food, abundant exercise, and sufficient rest.

Clothing.

The clothing of all children should allow the freeest motion of every limb and the full action of the lungs. It should be of uniform warmth, and not leave vital parts exposed. Unfortunately this is too often forgotten, and children are dressed in a fashion that their parents would not endure for a moment if applied to themselves. You will see any Sunday afternoon the husband and his wife walking out comfortably covered all over, while with blue legs and purple arms the little girls trot by their side in their muslin frocks, often cut low, and exposed in such a way that unless they were little furnaces, it would be impossible to maintain their bodily heat; as it is, they are half clothed, and many fall victims to the senseless way in which they are turned out.

For all children, flannel next the skin, loose over the body, but well fitting round ankles and arms, is a needful protection against disease caused by exposure; and money is much better invested in good underclothing than in trying to make children like fashion pictures.

Clothing for Boys.

For boys, first of all, flannel next the skin, then knickerbockers and a blouse form an admirably healthy dress, which can be followed by a sailor's suit later

on. Of course the woollen stockings are held up by suspenders, the garter being now practically abolished. A straw hat or a cap and a pair of strong broad boots with low heels complete the outfit, and are in every way suitable.

Corduroys are warm, cheap clothing, and if not made too tight, form capital working clothes.

The less collar and buttoning up about the neck the better chance of developing a well-formed chest. In cold weather, however, that part must be protected in children, not by mufflers or comforters, but by the clothes, for it cannot be too much insisted on that children require more warmth than adults, not less.

Clothing for Girls.

Again there can be no doubt that a combination flannel under-garment is the most comfortable and healthy arrangement. The legs ought especially to be thus protected, and not left bare, or with a single covering of cotton. Over this there should be a stout quilted bodice, on which the lower garments can be buttoned, and then a plain dress over all. The stockings of course are suspended. A sailor costume is a capital one for girls, and most healthy. The reason woollen clothing or flannel is so good is because it retains the heat of the body better than any other material, and isolates the body from changes in the surrounding temperature, whether of heat or cold. It also absorbs all superfluous moisture, and is lighter for its warmth than any other material. If not white, the danger is that the dirt may not be seen, and the garments may be worn for too long a time, but this danger can be easily obviated. Fine flannel does not irritate the skin, and even the tenderest children can

get used to the stockingette flannel now so much used, which moreover shrinks far less in washing than the ordinary sort. In our English climate especially all the protection that flannel can give is needed, and it is far better to spend the money in warm clothes than in large fires.

With regard to little girls especially, the absurd practice of leaving the arms and legs bare in cold weather cannot be too strongly condemned. It has carried off hundreds to early graves, and predisposes to many varieties of disease, and especially to early consumption. It retards the circulation and digestion, lessens the vital heat, and is therefore a most cruel and pernicious practice. Warm woollen stockings are invaluable, and woollen mittens tend greatly to keep the hands warm. Flannel night-dresses in winter are also very good.

Light-coloured clothes are cooler in summer and warmer in winter than dark; dark colours absorb heat from the sun in summer, and from the body in winter.

Nothing tight should be worn round a girl's body, and, above all, no tight corsets, nor tight boots or collars or tapes should be used.

Naturally, girls have no marked waists, and to attempt to form one by forcibly compressing the lower ribs is a cruel practice. A well-fitting bodice is all that is needed for the figure. Corsets on growing girls are a great evil in another way. They confine and restrain the growth of all the muscles of the back, and, by thus seriously weakening it, produce curved spines, round shoulders, and weak backs. No girl can have a graceful figure who has a flat or crooked back. The true secret of a beautiful figure is in a strong spine and well-developed muscles. This gives a poise to the head and an easy carriage of the figure. A capital

exercise to produce this is to teach girls to march about carrying a light vessel of water on the head without spilling it.

Hair, Eyes, and Teeth.

The hair should be kept short in both sexes in childhood, though the head need not be shaved, as is sometimes done. The eyes of children should be carefully watched, and no reading or sewing by twilight or by a bad light allowed. The proper position for reading is with the back to the light, so that it falls full on the page. Near-sightedness is often caused by over study, bad print, and imperfect light. It is seldom found in children before their education begins, but often becomes rapidly developed afterwards. The desks are often badly placed for reading, the book being far too low. The result of near-sightedness in children is generally a squint, which tends to become worse and worse, until at last, if neglected, the eyesight goes altogether in the bad eye.

Any child therefore that is suspected of being short-sighted or that squints, however little, should at once be fitted with suitable glasses; and it is a curious fact however careless children are in other respects, their glasses hardly ever get broken.

Another matter of great importance with children is their hearing. The ears of children are a constant source of trouble. Beware of neglected colds in the head in children, as they often lay the foundation of permanent deafness. Omitting to dry the hair after washing it is a common cause of this. Deafness is a frequent result of measles or of scarlatina. It may arise from a "box" on the ears, or from a constant discharge which has gradually eaten away the inside of the ear.

Children's ears again are often injured by putting peas, slate pencils, and other articles into them, and still more by attempting to get the peas, &c., out with hair-pins and other instruments of domestic surgery.

The teeth are matters of great importance to children. A child with bad teeth has a bad digestion, poor appetite, and is in constant pain.

Children from their earliest years should be taught always to brush their teeth with a soft brush, night and morning, with plain water or a little soap.

Sweets and hot cakes are great enemies of good teeth. So are nuts, penholders, and string. The Americans, who are very fond of the injurious eatables mentioned, have the worst teeth and the best dentists. It is a great mistake to suppose the care of the milk teeth is of no importance. If they are lost early, the jaw contracts, and when the permanent teeth appear, they are too crowded, and soon decay in consequence. The first four permanent double teeth are peculiarly liable to decay, and should be examined early in all cases that they may be saved in time.

We have already mentioned that the hair should be kept short. This is most important for cleanliness and for the consequent avoidance of the many troublesome diseases that are prone to affect the heads of children. The hair-brush should be soft, so as not to irritate the scalp, but not too soft, and should be freely used.

This is of the greatest importance, not only in keeping the hair in good order, but glossy; for constant brushing draws down the natural oil that is at the roots into the fibre of the hair and gives it a bright lustre. If the hair is very crisp and harsh, a little of the finest olive oil is the best pomade. Curl papers and curling-tongs are both injurious to the hair, the latter being by far the most so.

Long heavy fringes are bad for the head, besides being ugly. As a girl grows up, the hair is best kept in a long loose plait down the back, and not twisted on the head till absolutely demanded by her age.

Shoes.

One word about children's shoes. They should be shoes and not boots, for two reasons. They give full freedom to the growth of the ankle-joint, instead of restraining it in stiff leather; and they do not stop the circulation, as boots too often do, forming as it were garters round the ankle. Of course no child should ever wear a shoe that pinches him. See in the first place that his stocking is broad and long enough, and then let the shoe be broad-toed and long enough when he stands up to stamp in it. They should be elastic, and always made to measure. The inner side of each shoe should form a straight line. The heels should not be high, and should be carefully watched that they are not worn down at one *side*.

Food and Growth.

Leaving clothes, we now come to our second requirement—good food. This is absolutely essential for proper growth. Few people are aware that a growing boy of ten or twelve requires as much food as a labourer through a long day's work. Growth is not so much a matter of caprice as is generally thought.

The ordinary rule of growth is that a child should increase 2 lbs. in weight for every inch in height between three and four feet, and 2½ lbs. for every inch between four and five feet.

Height is dependent to a large extent on birth and

surroundings, and is closely connected with weight. In these respects the more favoured classes have the advantage over the less favoured to an enormous degree. The reasons are that they spring from tall and better developed parents; and they are better fed, less worked, and more exercised. That is, less indoor work and more games and field sports. Those who are referred to as the more favoured classes are the boys in the great public schools and universities; the less favoured are from board schools, apprentices, and young workmen.

The growing time is a very trying time for health and strength. A child should grow from two to three inches every year; if it is much more or less, it is suspicious. All sudden growth should be watched, and lessons relaxed, and especially when there is increase in height without increase of weight, which often leads to extreme delicacy.

Children therefore, to grow well, should be well fed. Of course, some are over-fed, but far more are under-fed. Children do not require so much meat in proportion as adults, but a great abundance of wholesome farinaceous food. They should not be fed on pastry and rich dishes, but on abundance of bread, milk, eggs, and cereals (rice, barley, oatmeal, &c.) in every form. As a rule, a child should be allowed to eat as much as he will of plain nourishing food. Parents have some very curious notions on the subject of eating.

It is as cruel a thing to compel a child always to clear his plate, as it is at other times to refuse him more when he wants it. If you think the child is simply greedy, give him dry bread, but give him something. How often a child sickening in some fever has, by refusing food, even when sorely pressed, taught the mother wisdom.

Again, children often have a hatred and sometimes even a horror of certain articles of food. Fat, underdone meat, eggs, pork, liver, and other things are often hated by children, but a certain amount of fat or butter is desirable. In such cases it is unwise to press them beyond a certain point. Food eaten with aversion or under threats is pretty sure to disagree; and often, as we have seen, a child really knows far better what is suited for him than the too conceited and obstinate parent.

Children should not be allowed to go too long without food, especially in the middle of the day. If they cannot come home to dinner, make sure they have a good substantial lunch, and see that it is eaten, and that money that may be given to get it is not spent in other ways.

Another mistaken idea is that sugar is bad for children. It is, on the contrary, one of the nourishing articles of diet, and, taken pure with food, is quite wholesome. Not so, however, in the form of sweets eaten at all hours of the day, and of more than doubtful composition.

Three good meals a day are best for children, and early dinner.

Children should eat slowly, and use their teeth well. All raw foods and starch foods should be very well masticated. Watercress and lettuces are good for children.

For drink, pure water at dinner; at other meals, plain or flavoured with tea, coffee, cocoa or milk, as wished.

One of the most cruel and thoughtless practices is to allow the child to taste his father's beer, and to accustom children to the use of malt liquors. They are not only bad for them, but too often form the first stepping-stone to a habit that tends to grow till it is beyond all control.

Bathing.

A child in good health should always have a cold bath in the morning in summer and a tepid one in winter. He should always feel warm after it, and should not have it when very hot or very cold, or just after a meal. Cold baths should not be taken at night. Sea-bathing is very good when the child comes out of the water warm. Timid children should never be forced to go into the sea. It is astonishing the amount of cruelty that is practised on children by otherwise affectionate parents through mistaken ideas of one sort or another.

For washing purposes, a warm bath at night, a flannel instead of a sponge, and plain curd soap, is best. If this is followed by cold sponging, the benefit of it is greatly increased, and especially if a tablespoonful of salt has been dissolved in water first (say a quart).

If young, the child should then be well dried, and afterwards briskly rubbed with the hand all over. There should be no dawdling, but the entire operation should be conducted smartly and briskly, the feet standing on cork or carpet, not on oil-cloth.

Exercise and Rest.

We now come to the third great requisite of healthy child life—good exercise. Without this the best of food, care, and clothing is thrown away. Indoors, let the children's room be as bare of furniture as possible, and let them play and romp as much as they like. Do not keep children prim and quiet, the time for that will come all too soon. Let there be as much active out-door life as possible. Here is the inestimable value of the country for children. The great evil in towns is

not so much the air as the enforced indoor life. A short run is better than a long walk before breakfast. Children are too dependent on food to be able to take a long walk on an empty stomach. Long straightforward walks are indeed not so good for children as varied exercise, such as playing about the fields or garden in their own way. Walks are too monotonous, and hence often too tiring. In playing about, children can sit down when tired. A pony is, of course, admirable for children, and a donkey is not to be despised; riding increases the growth and circulation. Skipping, playing ball, running and jumping are all good. Lawn tennis is of the very greatest value for girls, and is far superior to croquet in every way. Cricket is better than football for boys. Bicycling and tricycling are good for boys, but the latter only to be used in moderation by girls, for whom rowing is very much better. It is good to let children make a noise while playing, shouting and laughter being capital exercises for growing lungs, however trying for bystanders. Swimming is a fine exercise for both boys and girls. Encourage your girls especially in every possible form of out-door life and recreation, only taking particular care in their cases against over fatigue, and especially against emulating the feats of their stronger brothers.

Gymnastics are not always very safe; it is a remarkable fact that a large number of those who excel in gymnastics are found to have over-strained their heart. Drill is most valuable for boys and girls, and gives a good figure, while gymnastics almost invariably produces rounded shoulders, unless properly directed.

Children especially need regular and sufficient sleep, a point of absolute necessity to the growing brain. The hour of retiring to rest must be regular and early, and to ensure refreshing rest the bed-room should be cool

and airy, and all active brain work should be stopped at least half an hour before bed-time.

Education.

We now turn from the bodily to consider briefly the mental training of children. Let us see first what this means and involves. A child's brain is an epitome of its ancestors. If you teach it nothing at all, it will nevertheless develop a distinct character of its own, with peculiarities derived from its parentage. You have therefore no virgin plot to cultivate, but a soil already thickly sown, and your duty is quite as much to cultivate the natural good already there and to repress the evil as to introduce fresh seed.

No age is too young to begin it at. From the earliest year the good should be developed, the evil repressed, and, above all, the will, if with bad tendencies, broken before the child is old enough to feel embittered by the process. Love should be the main-spring in everything, but unfaltering firmness as well. Few orders should be given, but those few always carried out. A child can be thoroughly trained in obedience by the time it is three years old, so that the after work is only light.

Again, the parents should themselves set an example of all they teach, whether it be love, truth, or justice, for children are keen observers. No child should be punished in anger or unjustly, but the cause of the punishment explained and clearly understood by the child. Orders should never be accompanied by threats of what you will do if the child does not obey you. You assume that it will obey you. Punishment is better than threats of inflicting it. Do not teach children to think you are perfection, otherwise it will be a great

shock when they find you are not. In this, as in every other thing, teach the children nothing but what is true. I do not say it is good or wise for children to know all the truth about everything, but never allow yourself to teach or tell them anything that is not true.

Before regular school life begins, draw out your children's minds to think, exercise them in every way as you would their bodies. Never, however, try to make them clever or precocious. If you have a showy child, do, as you value that child's future, keep it back in every way; a premature bloom only means early decay. Do not lament if your child is not a genius; remember that for any undue development in one direction a corresponding weakness exists in another, and it is far better to have a good all-round character, free from any vicious tendencies. As far as possible, let the early lives of your children be passed in the country, and draw out all their faculties to observe and, as far as possible, understand the works of God. Answer all their childish questions as freely as possible, and encourage them to ask more.

Remember that the brain is the last organ to be developed in the human body. Let then the education proper not be begun too early or too vigorously, and let it be only continued as the child is able to bear it. Look out for nature's red flags of danger. Sudden sleeplessness, continued headaches, sudden growth, or sudden stupidity—in short, any sudden change is a time for great caution. Little should be done in the way of formal teaching under seven years of age. Be sure the school-room is light and airy, the teacher just and kind. Try and make your child in every way as far as possible lead a happy and enjoyable life, and do not drive it into a premature old age. A healthy, happy childhood is the best preparation for a long and useful life.

All education should be a "leading out" of the mind, a teaching to think and reason correctly. Teach your child as far as it can be taught common sense, and suit his studies to his future in life. While they are children, too, the elementary facts of physiology should be universally taught. It is a disgrace for a man to understand a steam engine, and yet to be ignorant of the simplest facts in his own body. As far as possible, make instruction interesting or even amusing.

Spiritual Education.

With all your care, however, of the bodily and mental culture of your children, you will yet fail if you neglect their spiritual welfare. Even a child longs and yearns for something above and beyond material things, and here it is a joy to know that we have absolute truth to teach our children. "Thy Word is truth;" only be sure it is God's Word you teach, and not your own thoughts about it. You cannot begin too young to teach your children "God is love," and then a little later on, "God is light," the first to awaken their heart, the second their conscience.

Then show how God has shown His love in all His gifts, best of all in giving His Son to be our Saviour and His Spirit to be our teacher. A child can be truly converted to God. Teach your children individual faith in Christ as their Saviour, and teach them to try and please Him above all others. Let them see in you a bright example of your precepts, and when you tell them God is their Father, let them have a high ideal of the meaning of the word from your own character. And thus seek worthily to train your children into Christian men and women, not only for this world but the next, teaching them to be unselfish, for

even Christ pleased not Himself, to live not to themselves, but to Him who died for them, and thus you will be doubly rewarded, for the very character of your teaching will help you as well as them, and you will know that you have done your best to discharge to God the great trust He has committed to you in giving immortal souls into your hands for training.

HEALTH AT HOME.

No. 5.

HOW TO NURSE A SICK PERSON.

BY ALFRED SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

It is said that about seven million of preventible cases of sickness take place in this kingdom every year. This fact alone sufficiently justifies the task we are undertaking in this series of tracts—to make more generally known, in plain and simple language, what are the preventible causes of disease and death, so that some of these seven million cases, at any rate, may not occur.

Our remarks shall not go beyond the range of home nursing and amateur nurses, for it is very evident that hospital and trained nurses should not require the simple hints we here present to the reader.

The Room and Furniture.

First of all the sick-room. Too often there is no choice as to this. As far as possible, however, where there is, the following points should be borne in mind. For infectious cases, it should be at the top of the house,

if possible; for all others, the quietest room there is, but never one on the ground floor or basement.

The best aspect is S.W., so as to get the afternoon, but not the morning, sun. The room must be light and cheerful; the paper of the same character. A glazed paper that can be wiped without injury with a damp cloth is the best. There should be as little furniture in the room as possible, especially if the case be at all infectious or very severe.

The bed should be placed between the fireplace and the door, unless a draught is to be carefully avoided. A good wash-handstand, a table, and a chest of drawers, with an easy chair for the nurse, a couch for the invalid when better, is all the furniture that is absolutely necessary.

A square piece of carpet is best, with the boards varnished round, and nothing under the bed.

Flowers, if not strong scented, are not injurious in the sick-room, unless they are kept till they become stale.

The Fireplace.

The room should have a fireplace; and again, if the sickness be at all infectious or bad, a fire should be lighted and kept burning, in summer as well as winter, not on account of the heat, but because of its purifying effect in burning up the exhausted air and drawing in fresh.

A fire is of the greatest value in this respect, besides being somewhat of a companion, and always giving a cheerful air to the sick-room.

Care should be taken, especially in any brain cases, that no unnecessary noise be made with the fire. No fire-irons are needed; a piece of wood makes the quietest poker, and the coals are best wrapped up in small bundles in paper and put on by hand.

The Bed and Bedding.

The bed should not be more than 3 feet 6 inches wide. If the illness is a very long one, two 3-foot beds are best, side by side, so that the patient can lie on one one day and on the other the next; or a double bed, when the two sides can be used in the same way. The objection to a double bed is, of course, the difficulty of lifting the patient when needed, and of changing the large bedclothes.

The bed should stand with its head against the wall, but never its side.

A good spring-bed, with hair mattress, is perhaps the best and cleanest. If a hair matress is not available, a flock or wool one should be used. If there is no spring-bed (and they are made very cheaply now), and there *is* a feather-bed, then put the feather-bed underneath, with the mattress on the top, but on no account should you let the patient lie upon the feather-bed itself.

On the bed should be a waterproof, then a blanket, next a sheet smoothly stretched out and well tucked in. Then, if the case be at all a long one, a sheet folded in half and laid crossways underneath the patient, and called a draw-sheet.

Two or three pillows in pillow-cases, and not rolled up in the sheet, the top one, at any rate, being of fine down or feathers, should be provided.

The upper bedclothes should always be light—a sheet, a blanket or two, and a light quilt, and, if needed, an eider-down or ordinary quilted coverlet over all.

For use on the bed, if it is a long case, a small light table with very short legs, six inches long, should be provided for meals, and a bed-rest; or a short wooden chair, to turn upside down, and place with its back supporting the pillows, will do instead.

Ventilation.

In the sick-room ventilation is of the very first importance. The air must be kept perfectly fresh, and always at the same temperature. A thermometer should be hung on the wall on a level with the patient's mouth, and should not rise above 65°. The coldest time is two o'clock in the morning, the hottest three o'clock in the afternoon, and care should be taken particularly at these times that the thermometer does not fall or rise much.

The top of the window should be kept open, with a little of the blind let down to prevent a draught. If the blind be a venetian one, its laths should be turned up so as to direct the air upwards.

Three times a day the patient's head should be covered, and the window thrown widely open, top and bottom, for two or three minutes.

A little gauze should be stretched across the top of the open window to keep the dirt out, if in town, and insects out, if in the country.

The room must never be allowed to get at all close; whenever it smells or feels stuffy, the window must be opened more widely.

The door should usually be kept shut, as the air from the house is never as good as the air from out of doors.

The room should be kept clean and tidy. It should not be dusted, but wiped with a damp cloth, and all dirty articles put outside at once, and especial care taken that dishes, plates, cups and saucers, and bits of food do not accumulate on the table.

The Nurse.

And now we come to the nurse herself, who, most probably, is the very person who is reading this tract.

What is required in a siek-room is, knowledge without fuss, and sympathy without sentiment.

Let us observe the following points in a good nurse. She should be always bright, not giddy and given to noisy laughter; but eheerful and hopeful. She should be quiet in her manner, but deeided and firm in all she says or does. She should be gentle, too, in voice and toueh, and speak quietly but distinetly. She should not whisper. She should not rush or rustle about the room. On the other hand, she should not glide about like a snake, and suddenly appear, to the patient's terror, in unexpected parts of the chamber. She should walk firmly and naturally. She must not, on any account, wear creaking boots. She should be serupulously elean in her hair, face, hands, and nails, and in her dress.

This should be of washing material, but not much starched. An apron promotes cleanliness; a cap is a matter of taste merely. She must take a real interest in the patient, whieh she need not try to coneeal, but at the same time *no anxiety* must be shown, whatever is felt. On this aeeount near relatives, unless gifted with great self-control, make bad nurses. She must faithfully and loyally earry out the doetor's orders, whieh she must be sure she clearly understands. She must not worry or fuss the patient with over-eare or over-attention. All she does ought to be done naturally and quietly, and without making anything of it. Food must be given at regular intervals; as a rule, not oftener than every four hours, and the patient must not eonstantly be worried to take a drop of this or a bit of that. In handling the patient, espeeially in dressing a wound or any painful operation, she must be firm, but very gentle and kind, and never show any disgust or reluctanee to do whatever is needed. Medieines must be given regularly, exaetly as ordered,

only, as a rule, the patient is never to be waked up to take them.

She must be very careful, smart, and clean in putting on and taking off any application or poultice, fomentation, &c; and most careful to remove at once from the patient and from the room anything soiled or offensive.

When not wanted she should sit down quietly and read or work, and not keep wandering about the room, or always watching her patient. The heat of the room and the ventilation must be attended to. If special food is not ordered, she must not keep asking "would you like this," or "that"; but either use her own judgment, and bring up clean and well-cooked what she thinks will suit, or find out in conversation what the patient's tastes are. Only as much as the patient can eat at one time should be brought up.

Unless the food is specially ordered, if the patient objects to it, she should not press it, but take it away, and substitute something else.

Visitors.

Do not let friends or visitors come at meal times, and when they do come (the afternoon is the best time) put them in full view of the patient (not by his head) so that he can see them without fatigue, and set the chair, especially in any cases that are serious, or possibly infectious, between the door and the bed, and not between the bed and the fire-place. In the first position the current of air is from the door to the bed, and the visitor thus gets nothing from the patient; in the latter it is from the bed to the fire-place, laden with all that comes off the bed and patient.

Arrangement of Patient.

Always take the greatest possible pains to make and keep the patient thoroughly comfortable. Settle the

pillows and the head, if needed, every five minutes till the patient is thoroughly satisfied. However wearisome, unreasonable, or exacting the patient may become, never, under any circumstances, lose your temper. Do not pile the pillows directly one on the other, but let the lower pillow or pillows be more forward than the upper. Regulate the height and number of the pillows carefully, according to the wishes of the patient and the directions of the doctor. As a rule, in chest complaints and in heart complaints, the head should be high, while in many surgical cases and in some head troubles the head should be laid perfectly flat.

Bedsores.

Be sure and keep the lower sheet well stretched, perfectly flat, and free from all crumbs. A little carelessness in this respect, in a prolonged illness, and the consequences are frightful. First of all the skin, where the greatest pressure is on the back, becomes red, then dark-looking, and then gives way, and a deep bedsore is formed; the worst feature of which is, that being often painless, its existence is not even suspected by an untrained nurse until it is well formed. You should therefore, to prevent this calamity, which is regarded as a reproach on nursing, not only attend most scrupulously to the dryness and smoothness of the under sheet, but rub the patient's back night and morning with spirit and water in equal parts to harden the skin.

Notes of the Case.

In any prolonged case you are most strongly advised *not* to trust to your memory, but to keep a memorandum book on the table. Head each page with the day of

the month, and then on the day note down everything of importance. This will include the temperature, morning and evening, the times and quantities of food, the hours for medicine, &c. Any peculiarities about the patient should also be noted.

Little Things to be Observed.

You must train yourself carefully to observe, and accustom yourself to note little things. For instance, notice whether the patient is restless or quiet; in pain or not, and where the pain is, and its character; the expression of the face; the state of the tongue, whether dry or moist; the state of the head, whether it aches; whether the patient suffers from nausea or not; the amount and character of sleep, whether it is calm and refreshing, or restless and disturbed. Observe the way the patient lies in bed; whether naturally, or curled up; or very low, as if sinking through it. In the case of fits, mark their length and character, and the parts affected most. Notice the breathing, whether regular or irregular, slow or quick, quiet or noisy, easy or difficult. In bronchitis and lung diseases, observe the amount and the character of the expectoration. It is a favourable sign, especially in female patients, when they become anxious about their personal appearance. The moment you begin to see a woman tidy herself and begin to do up her hair, you may be sure she is better. Not long ago a distinguished physician, on his morning visit to a lady of title, stopped as soon as he entered the room, and turning to the anxious friends in waiting around, said, "She's better!" He then went to the bed and examined her, and came out. He was naturally asked how he so quickly knew her state when he entered the room. "Simply because," said he, "she had a ribbon in her hair."

These, then, are a few of the lesser things to note about a patient. Of course, all these small details need not be inserted in your memorandum-book, but the more important ones certainly should. It not only saves your poor head, but when the doctor comes, shows him at a glance the state of the case, and saves all that whispered question and answer, and talking in undertones, that is so trying to the patient, and which he always interprets unfavourably to himself.

Washing the Patient.

Keep your patient perfectly clean. Wash his face and hands as often as may be needed in the day, and the body all over every morning, if he is able to bear it; in others, half one morning and half the next; but the doctor's opinion should be asked for on this point. In doing this, much water should not be used lest the bed should be wetted; a small part of the body only should be exposed at a time, but every bit of it should be scrupulously gone over. A little piece of mackintosh will save any danger of wetting the bed. The body should be well dried.

As this is necessarily somewhat exhausting to the patient, food should be given either just before or just afterwards.

Changing Sheets, &c.

One of the chief things to learn is, how to change the bedclothes without disturbing the patient.

The upper sheet is changed very simply. If the weather is warm you lay the clean sheet over the soiled one, having first taken off the blanket, and then drawn the latter away. If the weather is cold, and you cannot take off the blankets, you join the top of the soiled sheet to

the bottom of the clean one with three safety pins, and then drawing the soiled one down out of the bed at the foot from under the blanket, leave the clean one in its place.

To change the draw sheet, you gently turn the patient on to his side, and roll up the soiled draw sheet as far as the patient's back. You then half roll up the clean one and place the roll close against the soiled one, and then turn the patient gently over the rolls on to the clean draw sheet. The soiled sheet can now be withdrawn and the rest of the clean one unrolled, and the whole thing is done.

If there be no draw sheet, and you require to change the lower sheet, it can be done in two ways. If the patient can raise himself up at all, it can be done by rolling it from above downwards; if not, from one side to the other lengthways.

In the first case the fresh sheet is half rolled up across the bed, and the patient made to sit up rather low down in the bed. The soiled sheet is then rolled up across in the same way down to where he is sitting, and the roll of the clean sheet laid close beside at the upper part, being of course spread out, and the pillows replaced over it. The patient then just sits up a little higher in the bed, so as to get on to the clean sheet, and then he may lie down while the soiled one is being removed from his legs, and the clean one unrolled in its place to the bottom of the bed.

In any prolonged case, the mattress should be turned both over and upside down every day or so. Of course this can only be done if the patient can get up at all, or if there is a second bed. If there be a double bed instead of two single, a capital plan is to put on it two single mattresses so that when the patient is lying on one side, the other mattress can be aired and turned.

Food, and how to give it.

As a rule, the doctor gives definite instructions as to this, but a few hints will make them more readily understood. Where there is fever, and in all typhoid cases, the diet must be liquid only. In all cases milk is the best food, cold or warm, plain or diluted, with soda or lime water. A quart in the twenty-four hours is the average quantity that ought to be taken, and is sufficient in itself to keep a person alive.

Beef-tea is a very deceptive article of food; it is expensive and not very nutritious. To make it really life-supporting, a little prepared food (Ridge's, Mellin's, &c.) should be added to it. Strong beef-tea is a pound of lean meat to a pint of water: weak, to two pints, cut small, and gently simmered for four hours.

Three-meat tea is good, made from equal parts of veal, beef, and mutton. Chicken-broth is stronger than any other meat tea. There are various forms of beef essences, all best made at home, if possible. Brands' essence is nourishing, and good for very weak cases. Liebig's is useless as a food, though a capital stimulant, like a cup of tea. Where there is no fever, plain freshly cooked and digestible food can be given. There is very little nourishment in jellies made with gelatine, but a good deal if made with isinglass. Ripe fruit, free from core, pips, and rind, can generally be given, and plenty of liquids to quench thirst. Toast and water, lemon and water, barley or oatmeal water, are all very good thirst-quenchers, so is weak claret and water. Ice, of course, in fever, is invaluable. If the patient is at all exhausted, he should be fed patiently and slowly by the nurse, and not too much at a time. A patient inclined to be sick should not be allowed to drink, but only to sip, or to take his liquid in teaspoonfuls. With

children, especially, no cakes or sweets left by visitors should be eaten without permission.

Poultices and Fomentations.

The great point in making a poultice is, to see that everything is very hot. The bason should be scalded out first, and placed on a table near the fire, the water should be boiling, and poured on a small handful of crushed linseed-meal (of which all poultices are made, unless otherwise ordered) in the bason, stirring being continued vigorously in one direction all the time, until the whole is evenly blended into a soft mass. This should then be gently tipped on to the folded linen, lint, tow, or cotton-wool that is to form the basis, and quickly spread till it is about an inch thick; the edges should be squared off, leaving a margin of backing an inch broad all round. This should then be folded over the edges of the poultice the surface of which may be quickly oiled over to prevent it adhering, and then applied directly to the skin of the patient. If the skin is very sensitive a layer of net or gauze can be placed on the meal, so that it does not actually touch it. In no case should the meal adhere to the skin when the poultice is changed, which should be every two hours, unless otherwise ordered. The old poultice should never be taken off till the new one is prepared. Always remember the danger in poulticing is, not in putting them on, but in taking them off; for there is great danger then of the patient taking cold. When the last one is taken off, a layer of cotton-wadding should always be put in its place. If the poultice be covered on the outside with oiled silk, it retains its heat longer.

Fomentations consist of flannel wrung out of *boiling* water in a towel till nearly dry, and then placed on the part and covered with oiled silk, and changed about every

five minutes. Properly applied, they are one of the most powerful ways of relieving pain that we possess.

Sometimes the poultice is ordered half mustard, which is then mixed with the meal.

If all mustard, the mustard is mixed with cold water and spread on brown paper, and kept on for 20 minutes or half-an-hour. In poulticing babies for bronchitis, it is always better to put the poultices on the back of the chest, which does not impede the breathing, than on the front of the chest, which embarrasses it very much.

Sponging in Fever.

This is a most powerful means of reducing high temperatures, and often of saving the patient's life.

The water should be cold (or if this is objected to, just chilled), sometimes iced, the sponge small, a small part of the patient exposed at a time, and sponged over and over again till it is quite cool, then continued on another part, and so over the whole body. The process should take about 20 minutes. No drying, as a rule, is needed, as the burning skin dries itself as quickly as it is wet. Before sponging, and after sponging, the temperature should be taken, and always in these cases in the mouth, as the cold sponging of the arm-pits often makes the patient appear cooler than he is.

Baths of All Sorts.

A hot bath is 100°,	and should be used	for	10 minutes.
A warm bath is 95°	„	„	15 minutes or more.
A tepid bath is 85°	„	„	15 minutes.
A cold bath is 65°	„	„	5 minutes.

The first is a great restorative and sedative instead of sleep; the second is suitable for prolonged use and for

cleansing; the last is a powerful tonic for those who are strong enough to bear it. No sick person should take a bath except under direct medical advice. If children are afraid of the water, they can be carried in a blanket and immersed in it.

Baths can be given in bed. A dozen soda-water bottles filled with boiling water, and well corked and covered with stockings wrung out of boiling water, and laid round the patient stripped, under the bed-clothes, make a capital vapour bath. The bed-clothes can be raised on wicker cradles, or by a couple of corkscrews, screwed right into them, and hung from above. Simple apparatuses are made for giving hot-air baths in bed, which cannot be described here. There are also blanket baths, with a thin blanket wrung out of boiling water and wrapped tightly round the patient, which are very good for children; and "packs" of all sorts.

In bronchitis, croup, asthma, &c., steam in steam-tents is invaluable. The latter you can make in five minutes. You want four long broom-handles, some string, two sheets, and a dozen large pins. You tie the broom-handles firmly to the four corners of the bed. You throw one sheet lengthwise over them to form the roof and two ends of the tent. You pin the other sheet round, leaving about three-quarters of the side open next the fire.

You then let your bronchitis kettle with a long spout, placed either on the fire or on a spirit-lamp, discharge the steam on a level with, or below (not above), the patient's mouth.

Temperature.

The proper heat of the body is 98½ degrees. In taking the patient's temperature, you must first shake the mercury in the thermometer till the top of it

is down to this, and then insert it *under* the patient's tongue for three minutes, making him close his lips and breathe through his nose. If for any reason you cannot do this, put the bulb in the arm-pit for five minutes, with the arm closely pressed to the side.

General Hints.

Give all stimulants exactly as ordered. If a patient seems suddenly failing, slow sips of cold water will often restore him. In extreme emergencies, there is nothing to rely on like brandy in small doses. Be very careful your patients do not lie with their arms and shoulders uncovered. Patients before now, in bed, perhaps, for a broken leg, have got inflammation of the lungs from carelessness as to this.

The Lessons of Sickness.

So far all that has been said might almost as well apply to an animal as a human being. But we are not mere animals; we are men and women made in the likeness of God. But both nurse and patient have lost that likeness, both are sinners, both by nature careless and forgetful of God, both careful and busy about many things, and both have, it may be, neglected that "one thing needful," which alone is of eternal value.

And hence God, in His goodness, frequently blesses a time of quietness, of enforced rest, of leisure, for reflection, reading, and prayer, so as to completely alter the current of the lives of nurse and patient to all eternity.

Whatever you shut out of the sick-room, do not shut God out. Read a few verses from the Bible every day

to your patient, and many for yourself, and ask for the teaching of the Holy Spirit. Review your life, consider whether you really know Christ as your Saviour, settle the whole question of your soul's salvation, and then use the quiet time to consecrate yourself more to His service. Pray to God to bless your care of the patient, to give you the needed wisdom, tact, and patience, and as your patient is able to bear it, as God may teach you, faithfully show him the way of life. If both of you, nurse and patient, learn the lessons He can teach in the sick-room, you will both of you bless Him for the quiet time He has permitted you to spend together.

HEALTH AT HOME.

No. 6.

WHAT TO DO IN ACCIDENTS.

BY ALFRED SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

It is well known that the next best thing to absence of body in a railway accident is presence of mind. Failure of presence of mind at a critical moment may be followed by disastrous consequences. Knowledge, however, is one great source of presence of mind, for here distinctly knowledge is power; and whether we are called upon to undergo a stiff examination, to undertake a complicated task, or to act in a sudden emergency, it is the knowledge of what to do and how to do it that gives much of the coolness at the time.

The hints given in this tract will be extremely simple and practical; no attempt will be made to teach medicine or surgery, our aim being simply to impart sufficient knowledge to prevent that miserable paralysis that is often felt when we are longing to do something, but for the life of us cannot think what to do.

The only thing perhaps that stops us is the too prevalent idea that "A little knowledge is a dangerous

thing," which has so often proved a real stumbling-block in the way. It is not true in these matters, at any rate. It is a little conceit that is a dangerous thing. All knowledge is useful, and we are of use in times of sudden need just in proportion to the amount of our knowledge; and, provided we do not undertake to do more than we know, we shall not find it dangerous to use the stock at our command. So far, then, from our wishing to add a new element of danger in imparting a little knowledge on the subject, we believe, that although our notes are necessarily brief and elementary, no one will read them through carefully and master them without finding himself very much cooler and more useful when the next emergency arises.

We will give a few general directions first, and then take up the leading emergencies one by one.

When any accident occurs, let the patient lie down or sit.

If the person be at all faint or insensible, keep him lying down flat, loosen the things round his neck, and do not let people crowd round him, but keep them away so as to give him plenty of air.

Do not move him at all till you have quite understood his injury.

Have a good look, if possible, at the affected part before doing anything.

Be as quick as possible in finding out what is the matter.

Until the patient is removed to his home or to a suitable place, let your aim be only to stop any bleeding for the time and to prevent injury in moving.

Avoid needless questions and pulling about.

Unless the case be plainly trivial, send for a doctor at once.

Do not *drag* clothes off an injured part, but carefully rip them up to examine it.

When you have to remove the clothes, take them off the injured side last. Always begin on the sound side.

If the patient appear very low, give two teaspoonfuls of brandy or a little plain water with a few drops of sal volatile.

Get the person removed home, or to a hospital, or some suitable place as quickly as possible.

How to stop Bleeding.

We will now consider the most common emergencies one by one. In hemorrhage, if the blood be bluish and dark it is from a vein, if bright red and coming in spurts it is from an artery. The latter is far more profuse and dangerous than the former. In all cases you must act decidedly and quickly.

The first thing is to see where the blood is really coming from, and at once to fold up a bit of rag, handkerchief, or any other cloth, and press on the spot with your thumb steadily until you can get a bandage ready.

Pressure on the spot where the blood comes from is always the first thing. Never stand to look at it, or hold a basin to catch the blood, but make at once a determined effort to stop it.

In most cases in a minute or two the blood will cease to flow and will clot. The pressure must not be taken off, but another neat pad must be made by folding up a piece of rag and then placed over the first, and a bandage put round the part.

If, however, the blood still flows round your thumb and from under the pad, if venous, look out for garters or tight strings above the wound anywhere, and cut

them. Always also raise the limb and expose the part freely to the air; by these means you lessen the flow of blood, and make it clot quicker. Should it, however, continue to flow in jerks, you must, in addition, at once press on the artery higher up from which the blood comes.

If the blood comes *from the head*, firm pressure against the skull with a piece of cork in the pad is generally enough, if well secured.

If *from the face*, the blood-vessel should be held tight between one of the fingers (inside the mouth) and the thumb (outside).

If *from the neck*, as in cut throat, press the artery you feel beating below the cut firmly against the back of the neck.

If *from the arm*, press the artery above the wound with the fingers against the bone till the bleeding stops; or knot a handkerchief loosely round the limb, and then with a stick twist the handkerchief round and round till it squeezes the artery tight.

If *from the forearm*, press in the same way on the arm artery; or put a pad in front of the elbow, and bend the arm up firmly on it.

If *from the thigh*, press the artery in the centre of the groin firmly down with both thumbs on to the bone.

If *from the leg*, put a pad under the knee, and bend the leg forcibly on it.

An india-rubber band, tube, belt, or brace stretched firmly round the arm or leg above the wound stops the bleeding at once.

Internal Bleeding.

Bleeding may come on suddenly from the nose or mouth. If from the nose, and not excessive, it may do

good rather than harm, and relieve headache and congestion. If, however, it continues and is sevcre, do not allow the person to hold his head down over a bason, but make him sit up with his head erect, and hold his own nose firmly for five or ten minutes, while you slip a cold door-key down his back. This attitude and slight shock is often enough to stop it. Should bleeding continue, or blood run down the throat behind, soak a handkerchief in common turpentine and let the fumes be sniffed up. The arm raised above the head also stops it. If it still persist, send for the doctor at once.

The blood may come from the mouth. If in any quantity, its source is probably either the stomach or lungs.

If it is from the stomach, it will be rather dark, mixed with food in large quantities, and vomited up after a severe pain.

If from the lungs, it will be very light, mixed with froth, and coughed up, and in lesser quantity.

In either case, all you have to do is to lay the person down under an open window, loosen all about his neck, keep him quitc quiet, and to stop thc bleeding—supposing the doctor is not at hand—give him a teaspoonful of turpentine in a littlc milk, and let him breathe in turpentine from a soaked handkerchief.

Wounds.

These may be clean-cut, torn, bruised, stabbed, poisoned, or gunshot.

The first thing is to stop the bleeding as already dirccted.

The next is to cleanse the wound gently, as far as possible without disturbing any blood clot that may have formed.

The next is to bring the edges of the wound as closely as possible together, and secure them there by little strips of plaster, the skin being well dried first.

Then apply the dressing of a pad and bandage.

Then support and keep the injured part at perfect rest.

And then attend to the person's general comfort.

Clean-cut wounds heal quickly and easily if all dirt is removed, and the edges are brought *close* together. The pad should be dry, or soaked in a little olive or carbolic oil, and if the wound does not become unpleasant the dressing may be left for three days.

Torn wounds cannot be closed up, but require cleansing, and the pad must be constantly soaked in plain cold water.

Crushed wounds and stabs are to be treated in the same way.

In poisoned wounds suck or wash out all the poison first, and dress with carbolic oil.

In gunshot, and all other *serious* wounds, all you must do is at once to arrest the bleeding and send for a surgeon.

Fractures.

In no case do persons receive more injury from the well-meant ignorance of bystanders and friends than in broken bones. They are probably made to try and stand, and perhaps to try and walk a few steps, or the broken arm is pulled out of the coat sleeve. Let us try to understand what we ought to do. In the first place, remember, simple fractures, when there is no wound, are not serious and soon heal; but compound fractures, *i.e.* when there is a wound leading to the broken bone, are dangerous to life. Now careless and ignorant handling generally makes what was a simple fracture into a compound one.

In all cases, therefore, when you have any reason to suspect broken bones, from the pain or the helplessness of the limb, be very gentle and make the person keep quite still. Cut the clothes off the part. See where the fracture is, but move the bones only so as to place the limb in a straight line in its natural position, and then put splints on the inside and outside and back of the limb and secure them firmly round it by bandages above and below, so that the broken part is fixed and quite immovable. Splints can be formed out of umbrellas, boards, cardboard, sticks, rolls of newspapers, cricket stumps, rolls of rushes, bark of trees, and can be tied on with anything.

Thus secured, the patient can be moved with safety on a board, stretcher, or even carried in the arms.

When a jaw is broken, tie it firmly up by a bandage under it, and to the top of the head.

When ribs are broken, put a broad roll of flannel or linen round the part, and let the patient sit up till the surgeon comes.

When a collar-bone is broken, tie the arm to the side, with a large pad in the armpit, till the surgeon comes.

In the case of any other fracture, apply splints as directed, and be sure that they are secured above and below the broken part.

Treat any case when you *think* the bone is broken like this; and even if you are wrong you have done no harm, and have certainly made a mistake on the right side.

A surgeon must of course always be sent for at once.

Dislocation.

In this case, some limb is suddenly put out of joint by over-use or by an accident. At first you probably

think it is a broken bone, because the limb is fixed, and cannot be moved without pain. But then you remember that though when the bone is broken the limb is helpless, it is not fixed, but very moveable at the broken place, and that it is your business to fix it up in splints.

This is evidently something different. Bear in mind that a breakage may occur anywhere in the bone, but that dislocation can only occur *at a joint*, and you will soon find the joint where the pain is most complained of distorted and enlarged. You do not need splints here. If it be the shoulder you can support the arm in a sling. In any case you keep the person at rest, and send at once for a surgeon to set it.

Always if in doubt as to whether it is a broken bone, or only a dislocation, act as if it were broken, and put on splints. Do not try to set the bone yourself.

Sprains and Strains.

A sprain is a wrench to a joint; a strain is over-exertion of a muscle. In a sprain, which happens most frequently to the ankle, if at all severe, always send for the surgeon. Neglect of this precaution may lead to serious results.

Not long ago, a lady, alighting from a cab at a London exhibition, twisted her foot. She was at once seen by some who had passed ambulance examinations and were on duty there, and they pronounced it a sprain, and ordered the proper treatment. The only thing they neglected was, to tell the lady to consult a surgeon as soon as possible. When at last it got so bad that she did send for one, he told her that the achilles tendon was ruptured, and that she would be lame for life. Please therefore remember that in every serious injury the

surgeon must be sent for, and you are in no way to think that any hints here given are intended as substitutes for professional aid. The treatment is only "*until* the doctor comes."

In the case of sprains, therefore, you let the part have complete rest, laying it on a pillow. You elevate the leg (if it be the ankle), and you apply cold either in the form of ice (broken in pieces in a sponge bag and resting on the joint), or sponge with cold water or with spirits and water. If the pain is still very bad, very hot fomentations may relieve it.

In a case of strain or cramp of the muscles, rub them steadily with warm oil.

Burns and Scalds.

Both are burns, but the one kind is caused by dry heat, the other by moist.

If a person's clothes are on fire, the one thing to do is to lay him flat down on the floor with more or less gentleness; but in any case let him lie down at once, then roll him over on to the burning part of his clothes, and cover him as he lies with a thick rug; and lastly, if needed, drench him with cold water. On no account should a person on fire be allowed to run about for a single instant.

With regard to treatment in slight cases, a little flour dusted on the part at once, so as to form a crust, is very good.

In more severe cases, any burnt parts of dress, &c., should all be cut off first, and the wounds dressed with strips of rag soaked in sweet oil and then covered with cotton wool. The blisters that form so quickly should never be broken, but if large pricked at the lowest part, and the shrivelled skin left, never cut away. The surgeon,

of course, must be sent for at once. The person must be kept warm, and be given some hot drink.

Scalds require the same treatment, only as much of the scalding liquid should be washed off at once as possible.

Burns from strong acids or alkalies, such as vitriol, or spirits of salt, or caustic soda, potash, or lime, should first be drenched with water, and then, if it be an acid, bathed with soda and water; if an alkali, with vinegar and water.

Burns of the face are best treated by painting with olive oil with a feather or brush.

Poisons.

In all these cases you of course send at once for the doctor, but as he is sometimes a long time coming, and promptness of action is often a matter of life or death, a few very definite instructions are absolutely necessary.

Find out at once (if possible) what the person has taken.

If it is a strong acid as vitriol, spirits of salt, &c., give soapsuds, plaster from the wall or ceiling, chalk or soda in water.

If it is a strong alkali, such as soap lees, caustic soda, lime, or potash, give a glass of vinegar and water. Afterwards give in either case a tablespoonful of olive oil.

If it is any other form of poison give two teaspoonfuls of mustard in a cup of warm water, or any other emetic that may be handy; or get half a teaspoonful of sulphate of zinc and give it in water. Carefully preserve all bottles and all vomited matter, as the case may be one for legal investigation.

Bites, Stings, Bruises.

Tie something round above the bite at once. Suck the wound if poisoned, if your lips and tongue are sound and not cracked; bathe the wound with very hot water.

If a bite be from a supposed mad dog, burn the bite as well with a hot cinder or a fusee.

When any one is stung, apply ammonia (sal volatile) to the part, and extract the sting if left in.

To bruises apply cold water, or ice, or spirit and water lotion to prevent discoloration.

Injuries to the Eye.

If something gets into it suddenly, keep the eye quietly shut a short time that the tears may wash it away, but on no account rub the ball round and round.

If the substance is still there, take firm hold of the lashes of the upper lid and draw them over the lashes of the lower one two or three times.

If this does not remove the speck, draw the upper lid well down and press down on it with a pencil till it is turned inside out, when if the black speck is seen it can be brushed off. If this does not suffice send for a surgeon.

A black eye is best cured by cold applications as for a bruise.

Injuries to the Ear.

Foreign bodies in the ear if firmly fixed should be removed by a surgeon. On no account syringe, if it be a pea or a bean, or it will swell up. If an insect, pour warm oil into the ear.

Fits and Insensibility.

Fits are of two sorts, epileptic and hysterical. In epileptic cases the person often gets injured in falling, bites his tongue, and the fit often occurs when alone. Excitable young women are most liable to hysterical fits, the subjects of them neither hurt themselves nor bite their tongues, and the fits generally occur in company. In both cases, the worst possible thing is to wrestle or struggle with the persons attacked, as is usually done. Leave them quite alone flat on the floor or bed, and do not attempt to raise them.

In epileptic cases, just see that the person does not injure himself, hold a bit of india-rubber or cork between the teeth; in hysteria, dash a little water on the face, or give smelling salts.

Insensibility may occur without a fit, from injury to the skull or brain, from drink and other causes. You may have to decide before the doctor can come whether a man is drunk or dying, and it is exceedingly difficult. Open the person's eyes, and if both pupils are very small he is very likely asleep. Wet a towel, and gently slap his cheeks; you will suddenly see the pupils enlarge. This shows he is now awake, though possibly still insensible. If they dilate very much, and there are general signs of drink, he is probably drunk; if one pupil remains small, and the other large, it is probably an injury to the brain. If both remain small and cannot be altered, he is probably drugged.

Of course, these rules do not always hold good. Your duty is clear: send for the doctor in all cases at once. Meanwhile, let the subject of the fit lie quite still, loosen all about the neck, give him nothing to drink, and watch him carefully.

Stroke or Paralysis.

This is also called an apoplectic fit. In this case the person is always more or less paralysed, or even sick. Send for the doctor at once. Give the person fresh air, let him lie quietly with his head a little raised; loosen all tight clothing, put hot bottles to his feet, keep the room quiet, and give nothing by the mouth.

Fainting.

This is a common and an alarming occurrence. If you see a person turning deadly pale and about to "go off," you may prevent him doing so by steadily pressing his head down between his knees, till his face is quite red. . . If he has fainted, let him lie flat on the floor. On no account allow him to be raised. Loosen all round the neck, and let him have plenty of fresh air, a little cold water in the face, and smelling salts. A teaspoonful of brandy and water may be given if the face is very pale.

Drowning.

Here the action must be very prompt, and you must have a clear idea what to do at once. First turn the body over on the face, and let any water escape by the mouth. Then wipe the mouth and nose dry; apply ammonia to the nose, or put a feather down the throat, rub the chest with hot cloths or beat the chest well with the end of a wet towel. If in a short time breathing does not commence, adopt immediately the following method:—

Place the patient on his back with a firm cushion under the shoulders. Draw his tongue out of the mouth and fix it with an elastic band over it, and under

the chin, or a piece of tape. Take off the braces and all tight clothing, kneel or stand behind the person, grasp his arms above the elbow and draw both arms well back over the head, and keep them at full stretch so as to expand the chest while you count ten rapidly; then bring the arms forward and downwards, and press the elbows well into the sides of the chest, and hold them there counting ten again. Then repeat this slowly, about fifteen times a minute, until a natural breath is drawn, when you at once proceed to warm the patient, and rub his legs and arms up towards his heart. Put him in blankets, if possible, during this treatment. When he can breathe, give him a little brandy.

Be sure his tongue is well stretched out during your efforts, and that people do not crowd round. As in every other serious case, this is only "until the doctor comes."

Choking.

If a person is bad, seize his nose at once with one hand and push the finger of the other hand right down the throat and try to hook up or push down the obstruction. If unsuccessful, slap the back vigorously, or tickle the throat and try to bring on vomiting.

Fevers.

When a person is suddenly seized with a fever, all you can do until the doctor comes is to put him in a room apart in bed. Apply cold to the head, and give him milk only as food.

"In the Midst of Life we are in Death."

More accidents might perhaps be enumerated, but we think these are the leading emergencies likely to

be met with in common life. And they are quite numerous enough; and to most of them, at any rate, we ourselves are liable every day that we live. "In the midst of life we are in death."

Surely thinking over all these accidents must lead us to pray the Psalmist's prayer—

"So teach us to number our days, so that we may apply our hearts unto wisdom."

In one sense there is only One who can number our days, even He who numbers the hairs of our head; and He in whose hands are all our lives, has Himself repeatedly warned us of the uncertainty of life, and taught us the need of seeking salvation at once. In reference to salvation, He says—

"Now is the accepted time, to-day is the day of salvation."

God never promises to any one of us a to-morrow; but He bids us seek His face *now*, He tells us to accept salvation *now*.

Truly, it is strange we should need any bidding. It is not necessary in the race for earthly wealth, still less for bodily safety; but when the wealth is heavenly, and the safety that of the soul, we seem to need much urging. It is not, therefore, amiss, even at the end of a tract like this on accidents, to urge each one not to rest until he has believed the record—

"That God hath given to us eternal life, and this life is in His Son."

But we say, "We have not got it." So, Abraham Lincoln might give to all American slaves freedom, but some might not get it by voluntarily continuing in servitude to their old masters for various reasons.

Let all men know now, therefore, that since Christ has died for our offences, nay rather, risen again for our justification, the service of all men to suit Satan is purely

voluntary, their subsequent punishment the result of this fearful abuse of their freedom of choice.

Do think well over these closing words, and see that you accept God's gift of eternal life in Christ, that He is your Substitute and Saviour, and that by His atoning blood, you are cleansed from all sin before God, that you are partaker of His Spirit.

Then, whatever accident may befall you, it cannot touch your life; whatever emergency may come, it cannot separate you from the love of God which is in Jesus Christ our Lord, and whatever sudden danger may arise, you will have no difficulty in retaining your presence of mind, knowing that "your life is hid with Christ in God."

HEALTH AT HOME.

No. 7.

ON THE CARE OF THE SKIN.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

The Value of the Skin.

In the book of Job we find the skin regarded as identical with the life—"Skin for skin; yea, all that a man hath will he give for his life," and in a very deep sense this is true; for just as the wall is the defence of a fortified town, and when it is passed the town is taken, so is the skin the vital fortification of the body, to which it is such a powerful defence that, when it is gone to any great extent, the life goes too. Hence it is that burns and scalds are more serious in proportion to their extent of surface than to their depth; it being less serious to lose a certain amount of flesh and even of bone than a large amount of skin. In injuries, too, especially about the hand and fingers, when they are maimed or crushed, the great point that decides whether it is better to remove or to leave the injured parts, is the amount of skin by which they remain attached, for on this the life

depends. Skin, when once removed, is uncertain in its growth. As a rule, it rapidly covers again the bare and unprotected surface; at other times, it is almost impossible to make it do so, and as a last resource, modern surgery now plants in the breach little dots of healthy skin, cut from some other part or from some obliging friend, and the growth eventually repairs the protecting wall. But the skin has many more uses besides this.

Uses of the Skin.

It is the beginning and end of all physical beauty, which literally is but skin deep. Whatever strength may be in muscle, there is no beauty in its bare appearance; only when clothed with skin does it tempt the sculptor's chisel. Whatever loveliness exists in the damask cheek, the ivory forehead, the well-rounded arm, the graceful figure, all these indisputably vanish with the skin. Nothing makes this truth more painfully evident than the contemplation of a skinned rabbit.

Again, the skin is an organ of expiration, and, indeed, of respiration. It expires a certain amount of carbonic acid gas, like the lungs; and it also absorbs a certain amount of oxygen, where it is very thin, as in the cheeks, for it is this gas which makes the blood there such a bright red.

Again, it is an organ of transpiration. No less than one pint of water on an average passes out daily by the skin, while only half-a-pint is expired by the lungs. Water is always evaporating from the skin. It is only when it is produced in excess under exertion that it is seen, and we call it perspiration.

Then again the skin is a secreting organ. It produces a peculiar oil which is also a protective, as well as a natural preservative, for the hair. Besides other

minor uses, it is sufficient to say that it also serves the important functions of the organ of touch, and of the regulation of heat.

Organ of Touch.

All feeling of touch is in the skin, but in very different degrees in the various parts of the body. For instance, if the skin is touched in the back with the two legs of a compass $2\frac{1}{4}$ inches apart at the same time, only one touch is felt; whereas in the tongue or fingers, however little the legs are separated, two touches are felt. If a small portion of the skin be scraped off, and the raw surface be touched, a feeling of pain is felt, but the sense of touch is lost.

The tips of the fingers and the tongue have the finest sense of touch, which, however, may be lost if the object touching them be very cold or very hot. These delicate faculties of touch are the sentries of the body that give immediate warning of the character of the substance with which the body is brought into contact. Animals are endowed with a far more subtle sense of touch than human beings are, and especially those which wander about at night. Cats, tigers, and others of the feline race, are very sensitive in the stiff hairs protruding from the face (or whiskers), by which they discern the character of any near object before it actually touches the skin or fur at all.

The skin is also the best regulator of the body, the compensating balance of the human chronometer, or the governor balls of the human steam engine. When this power is lost the person dies. In one or two cases where people have been varnished all over, it is probable that death was due to this cause, rather than to any poisons retained in the body.

If the external air be cold, the skin contracts and tightly closes all the little blood-vessels, thus preserving the heat of the precious fluid by keeping it from the surface; while on the other hand, if the weather be hot it allows the blood-vessels to expand, and, by bringing the blood to the surface, controls the heat of the body by evaporation.

Let us now look a little closely at the construction of this wonderful covering, before we pass on to the practical question of its care under various circumstances, and we shall be filled with wonder at the wisdom of the Great Creator even in the smallest details.

Construction of the Skin.

In the first place there are really two skins, an outer one and an inner, in which are all the nerves, blood-vessels, and the organ of touch, the upper skin simply serving as a protective covering to the delicate true skin beneath. Now, in order to have some faint idea of the marvels which our bodies really exhibit, let us just consider the structure of this outer covering only. Being only the outer case, one would think that it would not contain anything very interesting or wonderful. Let us see.

In the first place it is alive; that is, all but the very outside of it.

Then it is composed of from a dozen to twenty or more layers of living cells, packed side by side and layer on layer, just like the bricks in a wall. Each of these cells not only is born, grows, matures, ages, and dies out, eats, drinks, breathes, but frequently moves, and certainly works, not only in doing its share in supporting the general structure, but in some special calling.

History of a Skin Cell.

The life-history of one of these cells is interesting. Born by the process of the parent cell squeezing off a part of its own body, and commencing an independent life, the young cell forms one of a row of similar ones in the deepest layer of this outer skin and next the true one. Here the young cells are laced on the banks of a small blood-vessel, which supplies them regularly with fresh air and their share of whatever food (solid or liquid) the person takes. If, for instance, the individual be of intemperate habits, alcohol is freely handed round to these cells (to their great hurt) with other things. The cells here are very busy carrying on a most important chemical industry, for to them is intrusted the manufacture, from certain materials they take out of the blood stream, of the colour of the skin. Of course, if the person be fair, and the skin nearly colourless, they are not hard worked, though when there is much heat, or the sun is shining on the skin, they get very active, and produce the clear brown known as "tan" colour; at other times, for some reason or other, they arrange the extra colour in little circles called freckles. But where the skin is dark brown, or copper, or yellow, or black, their work is, of course, immensely increased. After a time they become parents by squeezing off part of their bodies in their turn, and these now occupy the border of the blood-vessel, their parents having to mount a row higher and nearer the surface.

We have spoken of their bodies. It must be understood that each of these cells is composed of an irregularly-shaped, jelly-like mass, and is smaller far than the smallest speck that can be seen with the naked eye. The parents have now to depend for all their

nourishment on their offspring next the blood stream, who pass on what they can spare. Soon the parents become grandparents, then great-grandparents, and being further from the source of food, now get less and less of it, and as a natural consequence get smaller and smaller. Just before they die of starvation, however, they set to work with a noble purpose and manufacture a peculiar bony substance, partly, it is suspected, out of their own bodies, that gives firmness to the substance of the skin, to the outside of the hair, and forms the substance of the nails. Then they die, shrivel up, and, reaching the surface, lie in countless thousands in fine dust which can be shaken out in clouds at night from the innermost garment, and scraped or brushed off the skin. This forms the bloom on an infant's cheek; and next time you see this fine body-dust, reflect that it consists of the unburied corpses of your faithful servants who have died of starvation. Such, then, are some of the wonders of one of the least wonderful structures of the body, the outer or scarf skin.

We have just named the hair and the nails. These too are very beautifully made. Each hair grows like a hyacinth or a tulip, from a bulb deeply planted in the true skin, from which it continually keeps growing, and at the same time, dying away at the end. The surface of the hair is, as it were, thatched with cells overlaying each other like tiles, while the centre is not hollow, but filled with a sort of pith. Straight hairs are round, while wavy and curly hair is oval. Hairs do not grow straight out of the skin, but at an angle, so that they can be made to lie down flat. In the head they generally all radiate from one centre, and number about 100,000. It is calculated that four sound hairs will support a pound weight. The whole body is covered with hair varying, however, greatly in length and

quality. The hair of animals serves, of course, all the purposes of clothing. In man, it is principally an ornament.

The nails are beautifully modified natural outgrowths of the horny substance of the skin, and are of great use in giving firmness to the finger tips and in grasping small objects.

The Pores.

The pores are another structure connected with the skin, and one concerning which the vaguest ideas are current. Some imagine them to be little holes in which the hairs are inserted; others, again, believe they are perforations through the skin and opening into the body, through which the perspiration comes, the skin being thus a sort of sieve. Both these ideas are erroneous—indeed, the pore, as popularly understood, does not exist in reality. There are no holes in any part of the skin leading inside the body at all. Even the mouth and other passages only open into the lining skin or mucous membrane; and a substance in the throat is no more inside the body than a person in the Thames tunnel is in the River Thames. The real "pore" is a tiny orifice guarded by lips, which is the mouth and only opening of a small sweat gland which has no communication internally at all, but is just coiled up at the other end like a watch spring. The pores never open by hairs, but always between them. They are really like little lungs, and breathe in oxygen, and keep the skin red, and breathe out a little carbonic acid gas, and altogether about a pint of water a day. They are very numerous, and exist all over the body, though they are most numerous where most perspiration occurs, especially on the palms of the hands and the soles of the feet. It is of the utmost importance

for health that the mouths of these glands or pores should be kept open and free from all obstruction.

Perspiration.

We have alluded to a natural grease that lubricates the skin. This comes from curious little glands that specially manufacture it, two of which are found beside each hair, opening on either side of it somewhat below the surface of the skin.

It is from these that the oily part of perspiration comes, the watery portion being the outflow from the pores. We can see the water and oil that comes out of the skin, and we can prove that carbonic acid gas is given off by a very simple experiment. If a hand is confined in a vessel for two hours, it will render the air of that vessel so impure by the carbonic acid gas it gives off, that a candle plunged into the vessel will go out.

The network of blood-vessels beneath the skin, of which we have already spoken, is so close and so incredibly fine, that it is almost impossible to pierce the skin anywhere with the point of the finest needle without wounding one of these tiny vessels and causing bleeding.

With regard to absorption, it is doubtful if any watery solutions penetrate the outer skin. Any greasy substances, however, well rubbed in, reach the tubes of the oil and sweat glands, and are carried into the neighbouring little blood-vessels, and thence over the body. The process is, however, very slow where the skin is thick and hard, and most rapid where it is very fine and soft, as under the arm-pits.

Though, however, the skin does not absorb readily, it allows all sorts of substances to pass through it by the pores, which, although closed, can take up anything

in the surrounding tissues. Considered as a whole there are many different sorts of skins, differing widely in their quality. There is a very thin, fine, transparent skin, which, like Dresden china, is very fragile and very beautiful. A far more serviceable skin, especially if it be soft and elastic, is a thicker one, rendering the possessor somewhat sallow. In many diseases the skin gets hard and brittle, besides tending to break out into various eruptions. In all skin diseases a doctor should at once be consulted, for it is important to find out as early as possible whether the eruption is due to some local trouble in the skin itself or to some constitutional poison in the blood. Roughly speaking, a general eruption springs from blood-poisoning, a purely local one from causes in the skin. It may be well to consider a few of these further on; but we will first discuss the general care of the skin.

Cleanliness.

"The use of the skin," said a young lady the other day, in answer to an examination question, "is to be kept spotlessly clean." Amongst all its other uses, if this one only is remembered and fully carried out, this Tract will be of great service. It is undoubtedly generally true that cleanliness decreases as we near the skin. The collar and cuffs may be frequently changed, the shirt not so often, the vest more seldom still, and the skin only thoroughly washed perhaps once in a fortnight. This is no fancy picture, but is too common to excite surprise; and to it further details may be added. Not infrequently some unclean article called a chest-preserver, a waist-belt, or a liver-pad is worn saturated with perspiration, without any change for months, or even years, with the constant result of

producing an unwholesome and irritable eruption over the part, besides other injuries. The modern system of large baths in even small houses is an incalculable boon for the middle classes, while the public baths in most towns are so well appointed and managed, as to bring an easy and ever ready means for a good cleansing all over at least once a week within the reach of all. There are at least three impurities that need constant removal. First of all, there is the dried-up scarf skin constantly being produced on the surface of the body; secondly, there is the continual secretion of oil and water all over the surface to be got rid of; and, lastly, all the dirt that falls to our share in this dirty world.

Baths.

The cold bath is a fine tonic for all who can stand it —that is, who feel a warm healthy glow on coming out. There should be no lingering in it, no cooling down; just in and out and a good rub after, and the skin is not only to a slight extent cleansed, but the whole system is braced up for the day. Amongst cold baths we may consider sea-bathing. When it is not too cold, an early bathe and swim is most healthful; but for weak people, the best time to bathe is midway between breakfast and lunch, about eleven, rather than before breakfast. One or two warnings may, however, be given. Sea air and sea water are both bad for delicate skins and complexions, and particularly for any skin diseases. Sea-bathing is unsuited for people with feeble circulation, who cannot obtain a reaction afterwards. In sea-bathing great cruelty is often shown towards children; to hear the appalling screams that issue from some bathing-vans, one would think murder was being committed. The fright that children thus

get deprives the bath of all benefit, and often lays the foundation for subsequent illness.

Warm baths are of course principally for cleansing. They should range about 100°, and may be used for twenty minutes at a time. If taken away from home, the precaution of a cold shower after should always be taken, or, if not available, at any rate a cold sponge. A warm bath is soothing and helpful for weak constitutions or when one is tired, and is best at night; a cold bath is stimulating and invigorating for strong constitutions or when one is fresh, and is best taken in the morning. There are many persons by whom a tepid bath will be found to be the best. Children should be accustomed to a morning bath or sponge, and a weekly hot bath at night, with the greatest regularity, as the habit, once formed, is invaluable through life. It is a great mistake to think that, as children grow up, the daily bath can be dispensed with to advantage. An excellent plan, in winter, for those who require the chill off the water, is to wrap up a bottle of hot water in a blanket over-night, and the water will be found sufficiently warm in the morning for a sponge. A daily soaping all over is not required, and with strong soap is not good for the skin. There is a great advantage in putting a handful of salt in the water used for cold sponging after a warm bath, and it is said, on good authority, to be an excellent liver stimulant.

Clothing.

Labouring men and porters, who stand more in need of baths and washing, have often cleaner skins than clerks and people in business. The reason of this is because they perspire frequently and excessively, and thus a good deal of the effete matter is washed away by a natural process. This is a fortunate circumstance; but

this natural process should not be relied upon. Moreover, as the clothes worn next the skin form the natural towel in these cases, they need, of course, all the more frequent changing. With regard to clothes, no cloth clothes or any garment that cannot be washed should ever be worn next the skin. The best substance for the innermost garments, from head to foot, is some material made of wool; the only objection that can be urged against woollen garments is that, inasmuch as they do not show the dirt as plainly as white cloth or linen, they are often worn too long. They should, however, be changed at least every week.

Toilet.

The skin requires, however, often something more than merely keeping clean. If the skin is at all delicate the face is apt to get hard and dry, wrinkled, spotted, or otherwise disfigured, and often from causes entirely preventible; and we are convinced a careful attention to the following instructions may greatly increase the personal beauty of many of our readers. The best lotion or wash for a tender skin, and especially for the face, is *pure rain-water*, or failing this, pure soft water, or failing this, boiled water, distilled water, or artificial soft water, which last can be made in any town where only hard water is laid on by putting at night in the ewer so much of Maignen's "Anti-Calcaire" as will lie on a halfpenny, and in the morning the water will be found beautifully soft and fit for the most delicate skin. For women no soap should be used for the face but pure curd soap, and for delicate skins prepared oatmeal, and once a week very hot water and a little curd soap. The worst thing for the face is hard water, and tar, carbolic, or strong yellow soap.

Many people, especially boys, positively scrub the outer skin, which is very thin on the face, completely off with hard towels and flannels. Such rubbing may do no harm for once or twice but is not to be recommended for a constant practice. Another way of making the skin of the face coarse and pimply is to use face powder. In many faces the skin is a little greasy and damp from a too free action of the glands, and powder is used to alter this glazed appearance. These glands, however, though choked with the grains of powder, refuse to "dry up," and put forth more vigorous efforts still, and a crop of pimples is frequently the result. In such cases sponging the face with lemon juice and glycerine, or even a little vinegar and water, is much more efficacious. A teaspoonful of sal volatile in a quart of water is also a very good lotion for the face in such cases.

Sometimes little black specks on the face mark when the tiny orifices of the sweat glands are choked with dirt; pressure on them with the nail or a watch-key will force the dirt out without water and friction.

The Turkish Bath.

If there are very many such spots, or if from the occupation followed ordinary washing does not thoroughly cleanse the skin, the Turkish bath will do all that is desired. This great luxury and purifier and beautifier of the skin is imported from the East, and in its English form is most safe and useful. Besides being by far the most effectual cleanser and pore-opener that we have, it is a general restorative and tonic of the highest value. Fortunately, Turkish baths are found where they are most needed, in great cities, for it is on brain-workers and residents in towns that they confer their highest

benefits. They are not nearly so generally used as they should be, partly on account of their cost, which is, however now much less, and partly from fear of taking cold afterwards. This is, however, an ungrounded fear. A person is far more likely to take cold after an ordinary bath in the public baths. The great advantage of the Turkish bath is, that it not only removes more thoroughly than any other agent all the external dirt, including all our deceased servants, but it stimulates the skin itself to act, and in the confined life of cities it is this that is needed to be in health. Turkish baths, then, cannot be too highly recommended, and one taken weekly will be found beneficial in every way. There are some cases, however, in which they are dangerous, and medical advice should be first taken by any one who intends to take them.

All exercise is good for the skin, and it is because this is a necessity for working men that their skin suffers so little from their habits and infrequent changes of clothing.

The hair should be cared for. Baldness is much more common amongst young men than women, and amongst the upper than the lower classes. This is partly due to the false idea that continual bathing the head and brushing it with hard brushes is good for the hair, and partly to the use of the chimney-pot hat, which is the worst enemy for the head ever devised. People are seldom bald excepting on that part which is above the level of the brim of the hat.

Skin Diseases.

The names of skin diseases is legion. They may be roughly divided into local and general—into infectious and non-infectious.

All eruptions with a fever are infectious.

Ringworm—small circles with raised red edges slowly increasing—is infectious.

Scabies (the itch)—small pimples with yellow heads, commencing in the hands and spreading up the arms—is infectious (common among grocers).

Eczema—raw patches covered with yellow crusts and common in children—is not infectious, but the child can inoculate fresh places by scratching.

Nettlerash, prurigo (small white pimples with intense irritation), acne (small hard shotty pimples on the face, &c.), are not infectious at all. In all skin diseases, however, a doctor should be consulted at once. Erythema is a redness or flushing of the skin, more or less permanent, and is very distressing when it occurs on the face. It is caused by indigestible food, such as pork, by stimulants, by tight lacing, and by certain forms of debility. Perhaps we have said enough now about the skin, and about the beauty that consists in maintaining it in a pure and healthy state.

The Beauty of the Soul.

Let us consider for a moment, before we close this tract, a beauty that is not skin-deep, that will not fade with age, that is not the caprice of birth, and hat all may possess if they will. It is the beauty of the soul, it is that ornament of a meek and quiet spirit which is of great price in the sight of God; it is that obedience of heart to the Divine will, that humble child-like faith that is lovely in the eyes of God. There is, indeed, a certain moral beauty apart from Christianity. It is beautiful to be truthful, loving, sincere, unselfish, but it spoils all this beauty to have it accompanied by a pride or an indifference that turns its

back to its Saviour; that in response to His loving call "If any man thirst let him come unto Me and drink;" "Come unto Me all ye that labour and are heavy laden, and I will give you rest," only turns a deaf ear. God can only have true beauty in the courts of heaven, and only those are truly fair who accept their Saviour's love, who trust in simple faith in His precious blood, and who have the beauty of the Lord their God upon them. How often we see this inward beauty when Christ is possessed and loved, transfiguring even now the plainest face, and giving it a charm it did not naturally possess. Those who truly accept Christ are thus not only saved from eternal destruction, but as they know Him, as they follow Him, so does the very fashion of their countenance alter, and a beauty that is not skin deep is seen in the face. Next time you gaze at yourself in the glass, ask, How does my soul appear now in God's mirror? Am I beautiful in Christ's beauty? Am I accepted in Him? Are all my black sins hidden for ever from God's sight by His cleansing blood? Is the fairest among the thousand, and the altogether lovely, the beautifier of my soul? It is better to be a David, a man after God's heart, than to be a Saul, head and shoulders above all his fellows and in the full pride of physical beauty. Let us, therefore, while duly caring for and valuing every gift that God has given us, not neglect that greatest and best of all, the beauty that may be ours through the finished work of Christ Jesus and by the power of the Holy Spirit.

HEALTH AT HOME.

No. 8.

ON CLOTHES.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

The Purpose of Clothes.

The purpose of clothes, from a sanitary point of view, is to cover the body in such a way as to preserve it from feeling the external changes of temperature, and also to afford a general protection to the skin from wet and injury.

Man is the only animal compelled by the absence of natural clothes to make artificial ones. The only part of us that is naturally clothed is our heads; were the hair as long and thick all over the body, or still better of the nature of fur, we should possess a naturally perfect clothing.

A common idea is that clothes warm us. This they never do, of whatever material they may be made. It is we who warm them. It is the same with the bed, which is another form of clothing for night use, it does not warm us, but we warm it. The fact is our bodies are exactly the right heat as they are, without any clothes, and if the temperature of the air were always about

90° we should require no clothing for sanitary reasons; but as it is not we want a material to isolate us from surrounding influences.

A Perfect Clothing Material.

To be perfect, such material, worn next to the skin, should possess the following qualities.

It should be a bad conductor of heat, that is to say, it should allow heat to pass very slowly through it in either direction. The effect of this is that in summer, when the sun is hot, it does not allow its heat to permeate through and warm our bodies too much; while in winter, when it is cold, it does not allow the heat of the body to escape and be lost; or, in other words, we call it cool in summer and warm in winter.

In the next place, such a material should be porous —it should absorb moisture, and at the same time not retain it, but allow the exhalation of the body freely to escape. As minor qualities, it should not be very inflammable; it should be comfortable and not too heavy.

But one material, as indeed is now becoming well known, fulfils these conditions, and that is the natural covering of the sheep, wool.

The Value of Wool.

It is coolest in the summer. Flannel shirts are worn on summer tours. Sir Joseph Fayrer says that in India at all times flannels should be worn next to the skin. Cricketers wear it.

It is warmest in winter. It is worn by inhabitants of cold regions. Winter garments are nearly always made of it. The greater the cold the greater necessity

does it become. Again, it absorbs moisture without retaining it. A flannel never feels cold and clammy like a linen or cotton garment, and it is not impervious to air like a mackintosh.

It is not inflammable—it smoulders, but burns with difficulty; indeed, it has been proved in fires that while those in cotton dresses have been burnt, those in woollen have escaped, or if they had woollen underclothing only, that part which it covered escaped, or was burnt far less severely than the rest.

Properties of Flannel.

It is the most comfortable substance to wear next to the skin. Respecting this there may be of course difference of opinion, but this is generally owing to some unsuitable form of manufacture being worn. Wool is now used as the material in making an immense variety of clothes. One sort of vest is like a fishing net with meshes half an inch wide; this is a useful garment for the summer. Another is knitted like a stocking and may be had of any thickness and fineness; this shrinks but little and wears well. Ordinary flannel is a third sort, and may be had of any thickness or fineness. The guide, in selecting an inner garment, is to remember that it should always be rather loose in fit and in texture, being thus warmer and healthier.

Again, wool is the lightest material for clothing in proportion to the warmth it gives when dry, and thus for every reason it is the best for underclothing. As it absorbs an immense amount of water, it becomes extremely heavy when wet; hence, as has been remarked, waterproof, though it has its drawbacks, is better than an ulster on a wet day, the weight of which it is almost impossible to bear.

Underclothing.

Finally, it is impossible to overrate the value of wool for underclothing. It is a sure protection against many diseases and the best possible safeguard against cold; and when we consider that a single cold week causes an increase of 2000 deaths in London alone, we see what an important matter this is.

The colour of flannel or woollen cloth is only of importance as regards outer garments. Those next the skin may be any colour, provided it is not very bright and likely to be poisonous. But the power that clothes possess of absorbing heat varies immensely with their colour. Black absorbs more than twice as much as white, and red between the two. Light coloured clothes are warmer in winter and cooler in summer than black ones. Those who work vigorously generally instinctively dress in flannel, and they could not do better, as it absorbs the perspiration so readily.

We have already pointed out that loosely fitting clothing is warmer than tight, as it allows the presence of a body of warmed air between it and the skin; we have also said that loosely woven material is better than closely woven, because a larger body of air is confined in the meshes of the former. We may now add that the same amount of clothing in separate layers gives more warmth than in one, that is to say, two thin jerseys are warmer than one thick one—this again is in virtue of the air between the two.

Cotton and Linen.

At night, except for quite young children, linen or cotton forms a better dress than wool, the bed clothes forming a sufficient protection against cold, while if

wool has been worn all day, cotton, as has been pointed out by an eminent sanitarian, gives the skin a night's rest from the constant friction during the day that is very grateful and soothing.

Cotton and linen are both good conductors of heat, though linen is the better. They readily conduct the heat away from the body when the atmosphere is cold, and conduct it to the body when the atmosphere is hot, tending in short to make the bodily heat vary with the surrounding temperature instead of being at a uniform standard. This is just what clothing should not do. Their power in losing heat is seen from the fact that while woollen fabric heated to 150° loses 10° in 12½ minutes, cotton loses the same amount in 9½ minutes, and linen in 7¼ minutes.

The advantage of linen and cotton is that they are easily washed, are soothing to the skin, and are white, which wool never is. Silk is too expensive for ordinary attire, but is very soft and luxurious, though not to be compared with wool from our point of view.

Paper is a warm article of clothing, not nearly so much used as it might be. The wearing of paper spread over the chest and buttoned under the coat answers the purpose of an overcoat, while a sheet of paper over the bed equals an extra blanket. It makes a capital extra lining for boots, waistcoats, &c.

We may now briefly consider the various common articles of clothing from a health standard. We will begin with the dress of men.

Male Attire.—The Hat.

The head is the only part of the body that is naturally clothed, and save for cleanliness and fashion needs no other covering. Indeed, it is far better bare than crowned with the chimney-pot hat.

A tight-fitting tall hat is often really dangerous, owing to the compression of the temporal arteries. Apart from its appearance, its cost, its uselessness, it is too heavy, too hot, and produces headaches and baldness. All head coverings should be light and well-ventilated; the ordinary hat weighs more than twice as much more than a proper head-covering need do, while the want of ventilation produces a great and undue susceptibility to cold. An ordinary cap, a soft felt hat, in extreme cold a fur cap, are all sensible head coverings, devoid of danger. In the summer a straw hat is admirable, both extremely light and well-ventilated. The worst of the tall hat is that it has to be worn by those who work most with their brain, and who therefore need to keep their brain cool—a fashion that would oblige day labourers to wear chimney-pots and allow men of business to wear wide-awakes, would be less pernicious than the present one.

The Dress Generally.

Night caps are neither useful nor ornamental, except in extreme cases when bald persons have to sleep in more or less of a draught.

The neck should be but lightly covered, and left free of all constrictions. Mufflers and neck-wraps are sometimes causes of cold and bronchitis. A beard is of course a great protection, unless it be frequently wet and imperfectly dried, when it easily becomes a source of danger.

With regard to the body, the ordinary dress worn by men fairly fulfils the requirements of health. It is not picturesque as a rule, but it is suitable to our climate. The chief fault amongst working men is that the inner garments are worn too long, and as a rule

there are too many of them. Then again many men are too fond of chest preservers, of coloured felt or flannel, which are never changed at all. The knitted woollen vest with long sleeves is a capital garment. So is the outer jersey or guernsey of sailors and fishermen. The coat and waistcoat of civilized life is a sensible attire for a variable climate, for if very cold the coat can be buttoned up, if warmer it can be left open, if hot it can be discarded altogether. The worst thing men wear about their bodies is a belt round the loins. Braces should always be used in preference to belts, which latter are frequently the cause of most serious injuries.

It may be taken for granted that any garment that compresses any part of the body is injurious. Men have but very little waist naturally, owing to the narrowness across the hips, compared with women; and the habit that working men have of tightly buckling a belt round this part when hard at work is most injurious, and may lead to serious strains.

It is true that the whole of the muscles of the lower part of the body are peculiarly weak in Englishmen, and liable to strain; and while the muscles of legs and arms are quite up to the statues of Grecian athletes, those of the trunk are very defective. It is doubtless, therefore, with a view to support that this belt is worn; only to be safe it should be at least a foot broad, and reach right down to the hips properly shaped, and only be worn when there is great strain on the muscles, as the only way to strengthen them is not by rendering them useless by a belt, but by moderate and continual exercise.

Boots.

No garters should be worn on the legs. The practice amongst workmen of tying the trousers with a piece of

string below the knee keeps the upper part clean, and is not injurious if not too tight; but garters produce varicose veins and ulcers of the leg. Men's boots are as a rule sensible, only the boot of the countryman is generally as unyielding as if made of cast iron, rendering perfectly useless all the elaborate muscles of the foot, and reducing the toes to a mere ornamental fringe, and not always that; for in one of these boots one could walk just as easily without toes as with them. A proper boot should follow the natural shape of the foot, should be elastic in the waist and sole, and have broad low heels. The rigid sole, of course, does away also with the necessity of calves to the legs.

Bright-coloured socks or stockings should always be avoided, as even now they too often contain poisonous dyes. Leather leggings are better than waterproof.

Women's Dress.

We will now consider the clothing of women, and begin with this remark, that the chief errors which are to be found in it are the result of the vagaries of fashion. In one or two respects even ordinary clothing greatly errs, but it is undoubtedly in fashionable dress that the greatest danger lies.

Bonnets.

Inasmuch as the hair of women is more plentiful than that of men, the need for head-coverings is less. Hence, as a rule, bonnets are light, and less protective than hats, and rightly so. The hair can be, and often is, so arranged as to form a natural cap, and the head thus requires no other covering. In the north of England tens of thousands of women never wear any head-covering in summer, save on high days and holidays,

going backwards and forwards to their work with a small shawl over the shoulders, which in case of rain or in winter can be drawn up over the head; and nowhere can finer heads of hair or fewer headaches be found.

Were we speaking on taste in dress, we might discuss the question of bonnets, and that at a great length; but considered from one point of view, the crude and unsightly nature of the adornments that may cover it is of small moment; the only thing we need to speak of is the shape. A hat is, as a rule, better than a bonnet, in that it shades the eyes and does not sit so closely to the head, allowing more ventilation. The modern poke-bonnet of little children affords rather too much covering for health, and is too heavy, often to a cruel degree.

The Dress as it should be.

Respecting the neck, a serious fault still very common is to wear the collar far too tight. This is especially noticed when a woman faints, or is in a fit, when the relief afforded by loosening the collar and top of the dress is often very marked. Women are far worse in this respect than men; and another inch in the bands of the dress and in the collar would be a great benefit to many. The evil is not so much in its preventing the flow of blood to the head, as in hindering the return of blood from it, producing congestion of the brain and severe headaches.

Coming now to the clothing of the body or trunk, we will first consider what is a typical dress from a health point of view, and then consider what is generally worn. First of all, then, next the skin a fine woollen garment should be worn, preferably knitted rather than woven, being more elastic and shrinking less, and therefore lasting longer, though more costly in the first instance.

This garment may be so arranged as to protect both arms and legs and still be all in one. In this form, which is the best, it should fit loosely everywhere, save where it surrounds the arms and legs; there it should fit closely but not tightly. The thickness of it should vary with the season, but it should always be worn, and when once used will be found to be a perfect luxury, and a great safeguard against chills and rheumatism, and it will do much to neutralize the ill effects of any folly that may be displayed in the outer attire. Over this should be worn a well-fitting, but not tight, flexible corset; and over this again a bodice, from which can be suspended the necessary lower garments or skirts. Then a stuff, or cotton, or cloth dress, according to the season, made high but loose at the neck, in the armpits, and on the arms: and, if possible, in the "princess" or one-piece style, rather than with separate skirt and body. Add to this stockings held in place by suspenders, and broad boots with low heels, and you will have attained a high standard in the art of dressing from a hygienic point of view.

The Dress as it is.

Now consider by way of contrast what is generally worn. In the first place, linen or cotton is put on next the skin, made, moreover, so absurdly loose as to lie in great creases or folds. As a rule, this garment affords no protection to the neck, being cut too low near to the breasts.

The garment we have described is incomparably superior to this, and needs only to be tried to be universally adopted, especially now that wool is spun almost as fine and thin as silk. An American lady has written very truly and forcibly on the purposeless way in which

most women clothe their bodies, as follows:[1] "Many garments have no sleeves, and what sleeves there are either come to an end a few inches below the shoulder, or they are loose and flowing at the wrists, so as to expose the arm as far as the elbow to the cold air. As to the legs, the clothing, which should increase in direct ratio to the distance from the body to the feet, diminishes in the same ratio. Thin drawers, thinner stockings, and wind-blown skirts, which keep up constant currents of air, supply little warmth to the limbs beneath. The feet, half clad and pinched in tight boots, are chilled in consequence. The trunk of the body has as many varied zones as the planet it inhabits. Its frigid zone is above, on the shoulder and chest; for although the dress body extends from the neck to the waist, most, if not all, of the garments underneath are low-necked. The temperate zone lies between the shoulders and the belt, for that region receives the additional covering of undervest, corset, and chemise. The torrid zone begins with the belt and bands, and extends to the limbs below, for all the upper garments are continued below the belt, so that the clothing over the whole hip region must be at least double what it is over any other section. But it is more than double, it is quadruple; for the tops of all these lower garments have a superfluous fulness of material which is brought into the binding by gathers or by plaits."

Now, when we consider that the most fatal disease in our country is consumption, and the next bronchitis, and the third inflammation of the lungs, and when we remember that the most delicate part of the lungs, and that most frequently the seat of early disease, is the region that lies between one inch above the collar-bone and three inches below it, we see at once the

[1] "Dress and Health."

enormous danger eonneeted with this upper frigid zone. We have said nothing whatever about the low evening dress, which leaves the whole of the upper part of the ehest and arms absolutely bare, save for a strap over the shoulders, the result of whieh from a health point of view is simply frightful, many deaths being direetly traeeable to this single eostume—but have written only of the ordinary dress of every one in every-day life; and we again earnestly plead for an under-garment of wool if possible, of the eombination form and high-neeked, as the only effieient proteetion against our treaeherous English climate.

The Corset.

The eorset that oeeupies the temperate zone, though already the subjeet of essays and papers without number, eannot be passed by without a word. Made of flexible material, it is a useful support to the yielding form of women, though an unmitigated evil to growing girls, in hindering the growth of the museles of the back and producing weakness and eurvatures in that region. To adults its great evil is not so much in its use as in its abuse. Corsets can be worn without tight lacing. We are quite aware that no one acknowledges to laeing too tightly, but the matter can easily be put by eaeh reader to the proof. Let a tape measure be passed round the narrowest part of the corset, and then round the narrowest part of the body, when the eorset has been removed. If the latter measure exeeeds the first, the person undoubtedly laees tightly, for to say nothing of the thickness of the corset, which should therefore measure an inch or more (instead of less) than the waist, some allowanee should, strictly speaking, be made for breathing, in which the lower ribs expand, if they are allowed, to a eonsiderable degree.

Compression.

Now, what are the real evils of compressing these lower ribs by corsets and thereby forming an artificially small waist. In the first place the particular part of the body that has been selected for squeezing down to seventeen or eighteen inches is, unfortunately, the most important in the body. If the stay-lace wound about this part could be drawn so tight as to pass through the body, it would pass clean through the stomach, liver, and spleen; it would divide the bases of both lungs and just miss the heart above, the kidneys below. It would divide the main blood-vessels and nerves of the body. It would also cut right across other organs, such as the pancreas and duodenum. Now it is a literal fact that even a moderate amount of compression indents the liver with the shape of the ribs, produces shortness of breath, palpitation, and dyspepsia, while if carried to excess the ribs may be dislocated, the liver nearly cut in two, and the severest diseases set up.

The natural size of a woman's waist varies from twenty-four to twenty-six inches, and all the generations of tight lacing have not been able to make it smaller. In fact, to do so, some of the organs must of necessity be left out, for there is no superfluous room in the human body, everything is as tightly packed as it can possibly be consistently with health. Nothing can be more serious than constant pressure on liver and stomach. The paralysed state in which the lower half of the lungs are kept by this constant pressure is the source of numerous lung diseases, besides preventing healthful and vigorous exertion. The practice also interferes greatly with the circulation, as is seen by the red nose produced by it in many cases.

Depression.

Coming now to "the torrid zone," we discover another evil in the heavy woollen skirts and underskirts tied round the waist, and hanging from it. The evil here is not compression, but depression, an evil of quite another, but scarcely less serious, description. It has been found, for instance, in the bodies of many labouring women accustomed to wear two or three heavy woollen skirts that, although guiltless of corsets, many organs of the body have been injured and moved considerably out of their proper place by the dragging weight.

No strings should, indeed, be fastened about the middle of the body, but a well-fitting bodice of some stout material should be worn, over elastic corsets sufficiently supplied with buttons to hang all the lower garments upon. This is a far better plan than braces.

Great care should be taken to see that the clothing is not tight under the armpits, or on the arms.

Boots.

For the feet thick or thin woollen stockings are the best, or at any rate of a mixture of wool. Cotton stockings are not good, even in summer. All stockings should, of course, be suspended from the aforesaid bodice.

As to boots, the modern French article is quite on a par with the Chinese boot. The only article worth calling a boot and pretending to be a rational covering for the foot, is one in which the instep or tread is as broad as the tread of the foot, and where the toe follows to some extent the natural outline. Some square-toed boots are even greater delusions in their way than pointed toes, as the former may be very square at the

end, and yet too narrow higher up. The greatest point is to see that the boot is as broad as the foot at the tread. The curve of the inner side should be very slight, and the heel of the boot must be low and broad to give comfort in walking. Attention to these matters and the wearing of woollen stockings will preserve from chilblains, corns and bunions. The waist of the boot, and the soles, as has been said before, should be perfectly flexible, any rigidity destroying the natural spring of the foot. In closing these remarks we would urge our readers to choose their dress judiciously, to curtail all extravagances of finery and display, and to be assured that it is far better taste and far more important to study quality than appearance. Let the bonnet or hat be plain, and serviceable enough to stand a shower. Let the dress be of good material and not too heavy or weighed down with useless paniers and trimmings. Let the underclothing especially be sound and clean. Let the boots be strong and well-shaped. Let everything be good of its kind. It is a matter of regret that we do not all dress more plainly and according to our occupation. When this is done the result is much more picturesque as well as serviceable.

Clothing for the Soul.

We have been discussing the subject of covering for the body, but the soul has need of covering also. Our spiritual need is as real as our bodily need. Our spiritual need arises from sin. We need a covering for the soul which shall at once hide our sins and fit us for appearing before God. Our first effort, when we come to know our need, is to provide a covering for ourselves —to work out a righteousness which shall avail us before God. We try to cover up our sin beneath our

moral and religious clothing, but we shall not and cannot prosper. "He that covereth his sins shall not prosper, but whoso confesseth and forsaketh them shall find mercy." Is it not true that more than half of us are trying by something we can do to hide or put away our sins? Is not a great deal of church-going, of almsgiving, of district visiting, of self-mortification done with this very object? I am afraid so.

But though we cannot cover our sins, God can and will cover them for us, and by His Spirit give us assurance of His favour. "Blessed is the man whose transgression is forgiven, whose sin is covered." How does God cover sin? By the only thing that can cover it—the blood and righteousness of Christ. This blood was shed for every sinner, and the moment we trust in Christ God covers up all our sins out of His sight. Christ is "the end of the law for righteousness to every one that believeth."[1] God is love, and the moment we know this and see how He has loved us in giving His only-begotten Son to die for us, we cease to fear Him or to need "filthy rags" of our own making wherewith to hide from Him.

We can come to Him destitute of any righteousness as we are, and "of God," Christ will be made unto us "wisdom, righteousness, sanctification, and redemption."[2]

[1] Romans x. 4. [2] 2 Corinthians i. 30.

HEALTH AT HOME.

No. 9.

ON COOKING AND EATING.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

On Cooking and Eating.

It is impossible to exaggerate the importance of our present subject, which we shall try to treat in a thoroughly practical manner, avoiding all hard words and needless details.

There is little doubt that amongst all classes and especially those who are hard worked, bad cookery is one great cause of drunkenness. It might be supposed that if a man married a cook, he would be sure to get good cooking. Most good cooks, however, require plenty of materials to cook with, and find it is one thing to serve up a dinner in a large house with an unlimited amount of everything at hand, and quite another to learn to keep themselves and their husbands in sufficient appetising food well cooked, besides paying for rent and other things out of the wages of ordinary working men. It is certain that as regards temporal things no greater kindness could be shown to young women, than to teach them plain cooking, and especially the use of vegetables of all sorts.

Perhaps before entering on details the following extract from a little book called "Luck and Management," will illustrate the need and value of such knowledge amongst the labouring population :—

A Story from Life.

"We left Adelaide White trudging wearily home with her bundles, her boy, and two herrings. It was late, and she was tired, so she just blew up the fire, toasted the fish, made tea out of the kettle that had simmered all the afternoon, took one dish out of the cupboard with a few cold potatoes, another with some pieces of bread, and set them both on the table with a third plate of very warm butter—and the supper was ready. Milk there was none, for what had been left from the morning had been put in a dirty jug and had turned sour.

"Fred White came in, but dusty and very cross. He tossed his coat into the nearest chair, threw his hat into another, gave one dissatisfied glance over the table, the soiled cloth, the unappetising meal, and sat down without a word.

"Adelaide gave her husband his cup of tea, took another for herself, with one of the crusts of bread and a potato. Both the herrings, with the least dry bread and the lion's share of butter, fell to White's share; it was an arrangement he was accustomed to, and doubtless thought quite natural and right. But to the poor wife, whose crust was very unappetizing, it seemed hard that Fred should begin grumbling over his food. He had looked in at Watson's on his way home, and had found such a cheerful family group gathered round a supper table so different to his own, that he could restrain his feelings no longer. He started up with

something like an oath on his lips, and muttering that, 'When a fellow did mean to do his best he didn't have half a chance,' left the house.

"No need to ask where he was gone. His wife knew only too well. No need to warn her what she has to expect when White's heavy uncertain steps are heard along the street. This sort of thing happens often—every year more often. He is only a good deal worse to-night than usual, for the weather is hot and thirsty, and the stuff he drank was prepared not to quench thirst, but to excite it.

"Next morning, as Mrs. Watson was locking her door, preparatory to starting on her weekly day's shopping, the doctor, who was an old acquaintance of hers, stopped on her threshold.

"'Thank you, no, Mrs. Watson, I'm busy and can't come in to-day,' he said. 'I want you to go round to see Mrs. Fred White. She's a friend of yours, I think. White has met with an accident at work this morning, crushed one of his fingers and sprained his wrist. I'm afraid he won't do much work for some time to come. From all I hear he'd been drinking heavily overnight, and that this morning he was muddle-headed and clumsy.'

"Of course Mrs. Watson would go in. Poor Adelaide was sitting in the midst of an untidy room, the remains of breakfast on the table, the week's washing just begun, crying with her head in her hands. There was nothing in the house. Fred would eat nothing but meat. He hated slops. The doctor had ordered him broth, and how was she to get broth, she'd like to know? That was all very well for rich folk; as for the children, they'd got a piece of bread and a scrape of dripping, and think themselves lucky to get as much. She didn't know where even bread was to come from after this

week. She hadn't a shilling in the house, and they wouldn't trust her in the shops any more.

"It was nearly half-past twelve when Mrs. Watson came in again, with little Ted by her side, carefully holding something done up in brown paper.

"'I've brought you a drop of potato-soup for Mr. White, Addy. I chanced to have just a cupful left from last night, as much as he'll eat, and you haven't much time for cooking yourself. And Ted's brought you a present of one of my pasties. It's nothing but a bit of crust, with potato and onion and sweet herbs inside, and a mouthful of bacon to give it a relish; but the children like it better than bread and dripping, and I don't know that it costs any more. And as you were out of groceries, I thought may be the children could have a dish of porridge when they come in, as it doesn't take long to make, so I brought a penn'orth of meal with me.'

"Who could refuse presents so kindly meant?

"Before Addy could determine what she should say, there was a saucepan on the fire, and Mary was stirring the meal into the boiling water. And then, when the children came, they were so pleased with the nice hot porridge and treacle; and father came down to see what was going on, and delighted Ted by eating a piece of the pasty he had brought. But the soup was the best success; for White (as may be supposed) had not a fine appetite after his accident, and onion pasty, though excellent in itself, was not quite to his taste just then. The potato soup—though it was only made of potato and turnip and a scrap of onion, with water, and pepper and salt and dripping, with a little sago and milk added—tasted first-rate, and served up with a nice piece of toast, it left nothing to be desired.

"Many days after that Mary Watson's cheerful face

appeared at the Whites' door; and if she came empty-handed she brought a pair of hands that could work the most wonderful transformation. She would take scraps of vegetable that Addy thought only fit for the dust-bin, peelings of turnips, half a carrot, with a small bone from a chop and a bit of bacon rind, and before you knew where you were, there was a teacupful of broth ready to be thickened with flour or sago, and to make a capital dinner for Fred, who wasn't allowed too much solid food all at once. Another time she would take the pieces of bread, and soaking them in water would add the dripping and treacle that might have been spread on them, with a half-pennyworth of currants, and there was a pudding fit for a king. One day she persuaded Adelaide to take in half-a-quartern of flour instead of a loaf, and with nothing but baking powder and cold water, she boiled big light dumplings for the family supper, to be eaten with treacle or hot dripping.

"Every day Addy found herself wondering at the number of cheap foods she had never thought of buying, had never even heard of. In the house where she had lived before her marriage, every one believed that meat was the only thing to do you any good, and that the more you ate, the better you were. Addy kept that belief still, only as meat was not always come-at-able, she did not eat much, and she fell back then on white bread and butter. As for vegetables, she never thought of them being anything better than luxuries—things you buy to eat with meals when you've a few pence to spare. It was quite a revelation to her when Mary first made her a present of two-pennyworth of dried haricot beans, and told her that they were really more nourishing than meat.

"Fred White is now one of the steadiest and soberest

men in his yard, thanks to the lessons his wife learned during his illness."

We make no apology for such a lengthy extract, for we believe the incidents recorded represent an actual state of things which to an extent altogether unsuspected is the source of great misery, disease, drunkenness, accidents, and crime.

It seems absurd at first sight to say that bad food and cooking are responsible for crime; but the true history of hundreds of working men shows that the first commencement of drinking arose from disgust at home driving them to the working man's club—the public-house; and I am firmly convinced that when the cookery of the working (and indeed all) classes is remodelled, that a great step will have been taken in the temperance cause.

We intend, as we have said, to write practically and to the point in this tract, only it will be necessary in order that we may understand our subject to give first a few details respecting the varieties of food, and the process of digestion.

Physiology of Food.

The four magic letters C. O. H. N. represent the four leading elements in all food.

C. Carbon (the main ingredient in coal) is the fuel of the body, and preserves its heat and does its work. Two foods especially contain this letter, one is animal, the other vegetable. The one includes all fat, butter and cream, which contain Carbon in large quantities and keep up the heat of the body; hence in Arctic regions enormous quantities of fat are eaten to keep the lamp of life burning. The other form of carbon is found in all flours, starches and sugars. These, which form a large proportion of our food, carry on the work of the body,

giving out as they are used up the necessary force for the purpose.

O. Oxygen is the breath of life, and though this really enters into all that we eat, we mainly receive it direct from the air by the lungs instead of by the stomach.

H. Hydrogen, again, though also forming a part of starches, sugars, fats, &c., is one constituent of water, of which by far the greater part of the body is composed. *Without water* there can be no life; any tissue that becomes dried dies at once. Hydrogen (in combination with oxygen) may be taken to represent the fluid of the body.

N. Nitrogen is an essential element of all animal life. It forms a great part of the body cells themselves, and hence serves as food to repair such waste of these cells as is perpetually going on. This substance is found principally in animal food, whether meat, fish, flesh, or fowl. It also occurs in smaller quantities in grain, corn, beans, peas, etc. Speaking, therefore, roughly and generally, we may say—

C., Carbon, such as fat, butter, &c., is for the heat of the body.

Carbon, such as sugar and starch, is for the work of the body.

O., Oxygen is for the breath of life.

H., Hydrogen, contained in water and all fluids, is for the liquids of the body.

N., Nitrogen, contained in meat, some cereals, and peas and beans, is for the repair of the body itself.

In addition a small quantity of some mineral is required in food, such as salt.

Vegetarianism.

One most important point must be here noted. Before 1838 it was believed Nitrogen could only be

supplied to the body by meat, and hence all vegetables occupied only a secondary place as food, but since then it has been discovered that many sorts of grain supply it to the body in large quantities, and hence it is perfectly possible to keep the body in health on vegetable food only. There is therefore now *no ground* for the great prejudice that still exists against vegetable food in the minds of Englishmen, and although it is probable we were never intended to be exclusively vegetarians the fact remains that the introduction of proper vegetable food and cooking into the working homes of England would deal a great blow at the curse of drunkenness and introduce a powerful element not only of health but domestic happiness. The daily amount of these foods required by a man in health may be represented by ¾ lb. each of beef-steak, bread and potatoes, 2 ozs. of butter, nearly a pint of milk and a quart of water.

Digestion.

One word now about digestion. Digesting is only another word for dissolving. Seeing that all food is carried round to the different parts of the body in the blood, it is evident no substance that cannot be perfectly dissolved is food. Corks, stones and insoluble substances are therefore not foods, neither are the stones or skin of fruit, the rind of potatoes, etc., the woody fibre of vegetables; these are all cast out as refuse and cannot be dissolved in the body.

Understanding this, we shall see that the more soluble a substance is the easier it is digested. Every process of cooking is for this purpose. We cook our food to make it more soluble. We cut it up and clean it for the same object. We have a substance in the mouth that changes all starch and flour, which is insoluble, into sugar which is

soluble, as can readily be proved by chewing a piece of bread till it becomes quite sweet. We possess another fluid in the stomach, the gastric juice, that does the same for the meat, dissolving it in the same way; then after that we have another fluid that dissolves the fat.

Different sorts of foods take very different periods for digestion. Such indigestible things as geese, pork, salt beef, take 4 to 5 hours to digest; lighter food, fowl, mutton, etc., takes 3 hours; while game, venison and tripe only take about an hour.

A great deal too depends on how a thing is cooked; roast meat takes longer to digest than boiled, and while a peeled and boiled potato takes 3½ hours, one baked in its skin only takes 2 hours. Potatoes should never be peeled before cooking.

Again, the way in which food is cut greatly helps digestion. No food should be eaten in flakes, like salmon, lobster, etc., but all food should be cut small, and across the grain.

We will now consider a few of the principal articles of food, one by one, and shall be indebted for some of our remarks to an excellent paper on "Food and its use in Health," by Sir Risdon Bennett, that is well worth reading.[1]

Milk.

This is an absolutely perfect food. It contains all the four letters C. O. H. N., and in their proper proportions, and it can repair and carry on any function of life perfectly. It can now be obtained perfectly pure in our large towns, thanks to our excellent sanitary laws, but is not nearly so much used by adults as it should be. It can be taken in about fifty different ways. It can be drunk hot or cold, plain or flavoured. It can be

[1] In Cassell's "Book of Health."

largely used with tea, coffee and cocoa, and not merely a few drops put in. It makes a large variety of capital soups. It can be eaten solid in the form of curd by letting it go sour or by curdling it with rennet, and the whey that is left is also nourishing. Buttermilk and skim-milk contain perhaps the most nourishment for the money of any food. Skim-milk is a most powerful flesh former, and contains all the nourishment of the food, except the fat, and is very cheap. I have kept a person living for months on skim milk alone, without a crumb of bread.

Condensed milk is a most valuable article of food and is highly nutritious.

Butter and Cheese.

These are nourishing and palatable forms of fat or body warmer; but the poor might spend their money to greater advantage as they are not very cheap or digestible. Cold bacon, dripping, and treacle are all cheap and nourishing substitutes for butter. Cheese is made from the flesh-forming parts of milk; butter from the body-warming parts, or that containing C. Cheese is a highly nutritious article of food. One pound of double Gloucester cheese contains as much nourishment as three pounds of lean beef, veal, or bacon, as nine quart bottles of Bass's pale ale, or six quart bottles of Guinness's stout. Rich cheeses, such as Cheddar, contain a large amount of fat as well. Cheese of moderate richness is easier to digest than that made of curds alone. We must distinguish between great nutrition and easy digestion. The two do not always go together; and, though cheese is so highly nutritious, many cannot digest it at all. Toasting it makes it still harder to digest.

Eggs.

These, like milk, contain all the different foods the body requires, the white being principally N., or flesh-forming, the yolk mainly C., or body-warming. When new-laid eggs are not more than a penny each, they are a most economical food. The ways of cooking them are unlimited.

Meat.

Meat contains a large amount of N. in its lean parts, which is thus the most powerful flesh-former known, and C. in its fat or body-warming parts. In England more meat is eaten than in any other country, except perhaps America. Too much or exclusive meat food leads to many serious diseases. The Americans, rich and poor, eat as much meat as they like, and suffer greatly from stomach complaints.

English meat is, of course, the best; but New Zealand mutton and American beef, though of less flavour, are quite wholesome. Beef is the most strengthening, but requires a good digestion. Mutton is the most generally useful, and can be cooked in every possible way. Pork is indigestible; veal and lamb are less so. Few amongst the English working population have any idea of the value of bones; and, indeed, they cannot well utilize them until they establish on their hobs that capital institution—a pot-au-feu, or common stock-pot. This, made best of earthenware, contains much that would be otherwise entirely wasted, such as the stalks of vegetables, cold potatoes, scraps of meat, and all the bones and a little oatmeal. Slowly simmered down on the hob or by means of an oil lamp, these form a capital stock for nourishing soup—an article of food almost unknown to the British working-man, like the art of stewing, by which it is prepared. The French labourer is far ahead of us here.

Fish.

This forms an important and an economical article of diet. It is principally a flesh-former, owing to the N. it contains. Of white fish the most digestible and the most nourishing are brill and turbot; next follow soles, whiting, and plaice. Fresh haddocks are a good and nutritious fish. Salmon is still more nourishing, and not so indigestible as is generally assumed. Fresh herring and mackerel are very nourishing, though, being oily, are harder to digest. Dried fish should be carefully chosen, as it is frequently decomposed. Shell-fish, excepting oysters, are more indigestible than other kinds.

Bread.

Coming now to vegetable food, bread still holds the first rank, and is veritably the staff of life. It contains a large amount of N., or the flesh-former, and a still larger amount of C., or the body-warmer. Whole-meal bread is more nutritious than white, which is only formed of the inside of the corn; but much brown bread is only flour mixed with bran, and is not so nutritious as the genuine whole-meal. Oatmeal cannot be made into bread like flour, but is even more nourishing, and its use as porridge, so common in Scotland and Ireland, should be widely extended in England. Two lbs. of bread contain 3 ozs. of flesh-former and 20 ozs. of body warmer, and cost 5*d.*; while 2 lbs. of oatmeal contain 4 ozs. of flesh-former and 24 ozs. of body-warmer, and cost 6*d.* Against this, 2 lbs. of beef contain 7 ozs. of flesh-former and only 4 ozs. of body-warmer, and cost 1*s.* 10*d.* A full-grown man requires daily 5 ozs. of flesh-former and 20 ozs. of body-warmer. Consider these figures, for here we come to

one of the great objects of this tract, and that is to enforce the value and economy of a vegetable dietary. Dr. Parkes fed a labourer on $1\frac{3}{4}$ lb. of oatmeal and a quart of milk a day at a cost of 5*s.* 3*d.* a week, and kept him in perfect health. Remember, 1 lb. of oatmeal costing 3*d.* gives as much strength as 3 lbs. of meat costing 2*s.* 6*d.*, or 6 quarts of stout costing 5*s.*

The most economical and best working food for a hard labouring man is a combination of this vegetable food with animal fat. Bacon and beans, or bacon and greens, oatmeal and bacon, bread and dripping, are all good foods. Any working man can get a good savoury dinner, and as much as he can eat, for 4*d.* or 5*d.*, and any one who wants to know how, has only to go to one of the numerous and admirably conducted vegetable restaurants to learn the way. Haricot beans and broad beans are both extremely nourishing. Indian corn is cheap and nutritious, and might be far more largely used than it is; but it will not make bread. Rice is not nearly so nutritious as corn. Lentils and dried peas, or pea flour, are both very nourishing.

Vegetables.

Potatoes are principally valuable on account of the C. they contain. They are thus body-warmers; but it must be remembered that at least three-fourths of them are water. The very best way of cooking them is by steaming them in their skins. Cooking by steam is excellent also for preserving the juices of meat, fish, &c., and, once a proper steamer is bought, the whole dinner can be cooked with less watching and at less cost than in any other way.

Green vegetables are very valuable for the potash and the salts they contain, which are very necessary for purifying the blood. Watercress is very wholesome

in the spring. Most ripe fruits are wholesome, and generally contain a good deal of C., or body-warmer. Sago, tapioca, and arrowroot are light, but not very nourishing.

Sugar is of the utmost value as a food, and is easily digested. Eaten in excess as food, it produces acidity and indigestion.

Cooking.

Now, with regard to cooking food, boiling, as a rule, means spoiling. It should be abolished almost entirely, and simmering, or very slow boiling, substituted for it. Very little fire is really wanted for cooking, which can often be done with nothing but an oilstove. It is very important that vegetable foods, especially rice and other grains, be very well and slowly boiled. The little hard grains require to be thoroughly swollen and burst to make them digestible. With regard to meat, in all cases where it is required to retain the juices, whether it be boiled or roast, let it be done, very briskly at first, for a few minutes, then slowly afterwards. When, however, it is desired to extract the juices, as for soup and stews, it should be done slowly from the first.

There can be no doubt that variety of food secures the best health. Every effort should be made by the wife to secure a constant change for her family, and to make the food appetizing and stimulating to the stomach. Thus, onions with meat are good; puddings, fruit tarts, or stewed fruit, a little cheese, even a few raisins or figs, all supply the want which perfectly plain food fails to meet.

These small means of promoting health must not be despised, for the smallest thing that makes a man value his home and enjoy his meals is worth consideration.

Meals.

It is a good rule to take three meals a day, and it is exceedingly foolish to let the stomach fast above six hours at a time while working. After the principal meal, in order to ensure proper digestion, some leisure should be allowed. One of the best signs of robust health is the ability to eat a hearty breakfast. Every effort ought to be made to eat a sufficiency of nourishing food. It is lamentable to think how many, amongst young women especially, fall victims to diseases which attack them in a half-starved condition, brought on voluntarily by foolish dislike to meat, and by not taking a sufficiency of good vegetable food to supply its place. No human being can exist on weak boiled tea and a little white bread and butter.

Soup is good food for all ages, just because it is warm, and hot food is more nourishing than cold, and also because, properly made, it contains C. O. H. N.

An immense number of soups can be made of animal and vegetable food, without butcher's meat. Dripping, bacon, milk, or eggs will do as well, and they are all animal foods. We give two receipts for good soup, one with meat and one without.

With Meat.—Cut some meat into pieces, and stew for two hours. Then add to the meat and broth flour of any kind to thicken it, and as much milk as you can spare. Let it stew another hour, and flavour with salt.

Without Meat.—1 quart of water, ¼ pint of green or split peas, 2 potatoes, 1 onion, 1 lettuce. Mix half a teaspoonful of sugar, 1 ounce of dripping, 1 tablespoonful of flour or oatmeal, and pepper and salt. Simmer till all is quite tender, and add a quarter of a pint of milk.

Soup is more digestible if bread be eaten with it.

Food for the Soul.

Food, as we have seen, may be wholesome or not, life-sustaining or useless. And as it is with the body, so exactly it is with the soul.

If you look at Genesis xliii. 11, you will see Jacob had plenty of honey, spices, myrrh, nuts, and almonds. All very good and nice things in their way, but yet he had not the only thing that could sustain his life—corn.

He had to go to Egypt for that. There he tried to buy it, but he was forced to take it for nothing.

There is a great soul famine in this world, and Satan offers us all sorts of dainties to keep our souls quiet and in his power. This world can supply us with its pleasures—a little honey, spice, myrrh, nuts and almonds—but the bread of life, the corn of heaven, the only food for our souls, it cannot give us. We must go to our Heavenly Father through Christ, the true Joseph, for that, unless we would die of starvation. He not only has but is the bread of life. He has and is the water of life. God in His word says, Come, buy wine and milk without money and without price. It is the gift of God. While rightly seeking to care for your health and improve your earthly comforts by any hints in this tract, will you not see that your soul also has the right food? Christ said, "I am the living bread which came down out of heaven."[1] Let us feed on Him by faith.

Only by coming to Christ, feeding on Christ, and living in the Spirit can we obtain life eternal, and advance in spiritual growth.

[1] John vi. 51 (R.V.)

HEALTH AT HOME.

No. 10.

ON BABIES.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

Obviously, this tract is primarily for mothers, and for all who have the special care of very young children. There can be no doubt that an enormous number of babies die who might live if proper care were taken of them. Even in public institutions, and in comparatively recent years, this needless sacrifice of life has gone on. We are told, for instance, that a few years ago, at a large London workhouse, every infant died before it had been in the house a year. Errors respecting infants are so numerous and so exceedingly hard to correct, from being perpetuated by tradition, that it will need many vigorous tracts to destroy them all. We shall be content if we deal a heavy blow at some of the worst.

Heredity.

It is a wonderful thing to bring a living soul into this world, and an immense responsibility; for we cannot alter the fact that, for good or ill, the child will

be more or less an inheritor of its parents' characters; and the training that every mother should bestow on her child is far more a matter of the careful and wise cultivation for God and eternity of the character that is already stamped upon the infant, guided rather by the painful light of long experience in wrestling with one's own faults, than of implanting fresh virtues.

A child is indeed an epitome of its parents; and I often think that the recognition of this would lead us to exercise a little more patience and a little more wisdom in our treatment of them, as we recognize that the faults they show did not originate with themselves.

We have not, however, much to say in this tract respecting the moral culture of infants; but chiefly concerning their physical training.

Some of our remarks will be very simple; but such is the ignorance on this subject, that they all are needed. Our girls are taught very little, if anything, about the art of rearing young children physically, and neither before nor after marriage do women receive any hints as to the training of children mentally. The young mother approaches her double task in comparative ignorance, and unless she is gifted with more than the average of common sense, or blessed with counsellors of more than average wisdom, the result is more or less lamentable. The young life is either sacrificed outright, or the child is stunted, ill-developed, and bears all through its life the painful result of the maternal ignorance.

Before Birth.

Birth is really the second stage of the child's existence, and for many reasons it is important to recognise this fact, which is also insisted on by English law. The

first stage of life is, however, to a large extent a passive one. The child's wants are, at this period, in every way so perfectly met by the mother, that the whole complicated machinery of its little body (as has been pointed out by Dr. Cheadle) is perfectly idle. It neither breathes, nor digests, nor thinks. The most important condition which at this period determines the child's health and growth is the health of its mother. A truly healthy baby can only spring from a truly healthy stock. Some through their parents' health alone, and *no* carelessness, are born but to die; others to live for a hundred years. Each human being is made to live for a certain period of time. Accidents may, of course, carry him off sooner; but, presuming him to die of old age, the length of his life can be found, as a rule, with wonderful accuracy, by adding together the age of his father and mother, and his four grandparents at death, and dividing the result by six. If the answer comes out above sixty, from two to five years may be added; if below, the same number deducted, in order to produce the result accurately. Thus, supposing the ages of the six ancestors amounted to four hundred and twenty-one, a sixth of this is seventy, to which add another four years, and seventy-four is the life-power of the person. In another case they might only amount to three hundred and eight; this brings fifty-one, from which deduct three years, and the life-power is forty-eight. This formula is given by Dr. Richardson; it is, I believe, wonderfully near the truth.

At Birth.

At birth, all the baby's machinery begins to work almost at once. Its eyes open, and perceptions begin to be conveyed to its brain by sight and hearing. It

begins to breathe for the first time, and the whole blood-stream pursues a fresh course, and is purified by fresh means. Its stomach now receives food, and all the complicated processes of digestion that we cannot fully understand, begin to work.

As we have said, the condition of the infant at birth depends mainly on its parentage, next on the condition of health of the mother before it was born. These being favourable, and the parents of average size, the baby will measure from twenty to twenty-one inches long, and will weigh nearly seven pounds, part of which weight will soon be lost, but made up again by the end of the first week.

A baby requires little food at first, *no butter or sugar*, and no laxatives. It should in every case be put to the mother's breast as soon as possible, and nursed, at any rate, for the first month, even if it be impossible to nurse it longer.

Nursing.

There is nothing in the world to equal mother's milk as a food for a newly-born child. It is from one-third to one-half less rich than cow's milk, and, for this reason, so much the more digestible. We shall consider suitable substitutes presently. The mother should, of course, be healthy, and should lead a regular, healthy life, with plenty of nourishing food. Stimulants are not generally required during nursing, and it is important to remember this, as the habit of giving young mothers stout and strong beer has sometimes laid a most disastrous foundation for their subsequent married life, as well as for the baby's constitution. The best milk maker is milk, the next best is, perhaps, cocoa. Nothing that tastes very strongly, such as onions, should be eaten; all rich food should be avoided.

With regard to the times of feeding the child, it should, in the first place, be fed regularly, and not always when it cries. This is of the utmost importance to both parent and child. For the first three months, every two hours in the day-time, and every four at night, is quite enough; and after then, if the child be strong and well, every three hours in the day and every six hours at night. The amount of milk that is yielded by a good nurse is about four tablespoonfuls in each breast every two hours. At first a child exhausts one breast only, later on, both. A child should, as a rule, be allowed to suck until it shows it has had enough. A child would then, if under three months, drink about a pint a day, and about a pint and a half, over this age.

When a child has sucked, its mouth should always be washed to prevent the formation of thrush, which is a small white plant that grows about the tongue and sides of the mouth. The nipples should also be well washed, and then hardened by sponging them with brandy. Of course, nursing is a great tie to a mother, who must be in at the regular hours, if she would do justice to her child; for if the food be given at too long intervals, the child takes it too quickly, and all sorts of stomach disturbances, often really dangerous at that tender age, are caused.

Substitutes for Nursing.

Occasionally, through worry or overwork, the mother's milk is too poor, or some sudden shock or other cause may stop it altogether, or it may become scanty and insufficient. In these cases it is better partly to suckle a child than not at all. There is absolutely no foundation for the popular idea that it is wrong to give the cow's milk and the mother's milk together. If the

milk be scanty, a better plan than giving the breast in the day and the bottle at night, is to give them alternately, or the breast twice and then the bottle once, according to the amount of milk.

Bottles.

Setting aside wet-nurses for the time as being, though far the best, too difficult to find readily when wanted, the great question, on the failure of the natural supply, is, what should be put in the bottle? In the first place, the bottle itself should always be kept perfectly clean. A boat-shaped bottle, with a calf's teat, is kept more easily clean, though inconvenient in other respects, and hence it is completely driven out of the field by other shapes. The bottles with long india-rubber tubes can be placed in almost any position without being upset, hence the mother can leave the child to suck by itself. This, though a convenience to busy mothers, is not a good plan, as too often it leads to the child gulping down quantities of air through sucking at the bottle when empty. If the long-tubed bottles are used, they must at once be emptied each time, well rinsed, and kept in soda and water. The milk, which is better, if it is always, as a rule, obtained from the same cow should be perfectly fresh and sweet; the least sourness is very bad for the child. It should not be kept in the bedroom, and the jug should be scalded and made perfectly clean. The least dirt, or drop of sour milk, will soon turn a whole quart. All the milk used should be boiled first. The proportion of water should be one-third, and if the milk be rich, a little more at first; and a small quantity of white sugar may be added. It should be given at blood-heat.

It is very dangerous to keep the milk warm at

night by a small light; the milk in this case constantly turns sour. It should be kept quite cold, and warmed only when needed. Nothing whatever but milk and water should be given to the child, if possible. After the first three months, only one-third of water is needed to two-thirds of milk. Should the milk disagree with the child, and heavy curds be brought up, then a little lime-water may be added, which may be increased, if necessary, until nothing but lime-water instead of water is added. Sometimes when the milk is "on the turn," a pinch of bicarbonate of soda will put it right. The quantity of cow's milk to be given is from one to two pints a day during the first six months. If it be found to be too heavy, as is shown by curds being brought up or passed, some change must be made. Condensed milk is lighter than cow's milk, but contains such a quantity of sugar that it often produces skin eruptions, and makes the child fat rather than strong; nevertheless, with some it agrees fairly well. Barley-water (two teaspoonfuls of pearl barley to a pint of water; simmer slowly to $\frac{3}{4}$-pint, and strain) and cream is very light. The artificial human milk prepared by the great London dairies is most highly to be recommended, and will nearly always agree with the babies.

If the child appears starved and hungry, and needs something more, some approved prepared food can be safely tried, and the full directions given with it implicitly followed.

Improper Foods.

Ridge's food, biscuits of any sort, and other milk foods, must *not* be given till after the child is nearly six months old, since, before that age, it is absolutely incapable of digesting any sort of flour. More deaths

occur from feeding young children on bread and flour foods than from any other single cause. It is calculated that 100,000 children die from preventible deaths yearly, and that ninety per cent. of these are from improper feeding. One constantly hears, "Oh! yes, poor little dear, it seemed hungry, so I gave it a little bread and milk," or "a little biscuit." Sometimes, even worse. In the East End and elsewhere, young and ignorant mothers show the kindness of their hearts by giving their offspring a taste of everything, including a drop of beer, till one wonders that any survive the process at all, while cases are not infrequent where the infant's diet is varied with such succulent food as periwinkles, or a little cheese, and a drop of gin! Can we wonder that among the working classes in crowded cities 500 out of 1000 children die before they are five years old? When they are properly cared for, only 10 die out of 1000! After feeding, there should be no tossing or violent rocking of the child, or it is sure to be sick. Do not on any account feed the baby too frequently; it is a great and a common mistake. After the first six months, the child will go at night, from eleven to five, without food. Let me again, before leaving this subject, warn mothers against drinking spirits while nursing. It is found, on excellent authority, to be a frequent cause of convulsions in children, owing to the alcohol getting into their system; and it is also a cause of emaciation. Indeed, considering the medium by which such materials pass to the child through the milk, it is cruel to the child if the mother drinks freely of stimulants.

Food after Weaning.

If possible, a child should not be weaned in summer, but about the sixth month the amount of nursing should be decreased; and, after the first teeth are well

through, about the seventh or eighth month the child may be weaned. It is a great mistake for mothers, for any reason, to continue suckling as long as fifteen or eighteen months.

After the sixth month a child can take Ridge's food, and plain flour foods, rusk, and biscuit. Rusks and tops-and-bottoms are very good at first; bread should not be given at first, until the child is well accustomed to the finer food. At eight or nine months the child can begin to take a little broth or beef-tea. Milk should always be the child's mainstay for the first few years of its life. Sugar is good for children, *with* their meals, and after one year a little meat may be given once a day. Oatmeal is very fattening, but rather heating. The diet should be light and nourishing. Light-boiled eggs are very suitable, and there is no objection to a little *ripe* fruit.

Animal Food.

The great danger a careful mother is apt to fall into, when her child is between six months and two years old, is giving the baby too much farinaceous and too little animal food. We are apt to think flour foods can take the place of milk, but though they present somewhat the same appearance they are in reality very different from it. Milk is a truly animal food, and contains plenty of material for building up the child's body. Now a child requires, seeing it is growing rapidly, far more animal food in proportion to its size than a man, and this is most conveniently given in the form of milk. At eight or nine months, however, a baby may have a little beef-tea, and at fifteen months, a little underdone meat scraped into fine pulp, and moistened with beef-tea. A suitable dietary for a child of two years old is as

follows: A breakfast of bread and milk, porridge and milk, or an egg; a dinner of meat, fish, or chicken, with a little mashed potato, and a light milk or egg pudding; a tea of bread and butter and milk, with a little treacle; and for supper, bread and milk. The child should continue to take at least 1½ pints of milk in the day.

Dress.

It is said that a child to be in perfect health requires five things—

Perfect cleanliness.

Abundance of pure milk.

Abundance of pure air.

Abundance of warm clothing.

Proper exercise and rest.

We will consider now the way in which a child should be clothed.

There is no doubt that there is room for a greater reform in infant clothing than even in that of adults. As much as possible of it should be flannel. A flannel binder round the body is very useful during the first few months. Napkins should only be worn when the child is being carried about; at other times its legs should be quite free; no waterproof should be worn over the legs. A fine cambric should be next the skin, as we have no flannel yet quite fine enough for an infant's skin. A flannel garment should then be worn all over this and long enough to cover the feet. The cruelty in infant clothing is the enormous amount of material they are compelled to drag about. Starched frills, long trailing skirts, a ponderous hood, quilted and lined, tightly tied round the child's throat, a huge cloak with an equally huge cape hanging from its neck, too frequently completely smother and choke the baby, which forms the innermost core of the vast roll of clothing.

A baby indoors wants nothing but the binder, the cambrie shirt, the flannel gown, and, if needed, a warm shawl. No tight-fitting linen or cloth dress, with its dangerous strings or pins, is required at all. For out of doors an extra-soft woollen gown, and on the head a soft light woollen hood. The child's face should always be uncovered, and no thick veil or handkerchief to keep the flies off ever allowed. As a rule, save perhaps on Sundays, the working man's baby is far more sensibly clad than the rich man's.

At the age of four months, the child's clothes should be short. The change, however, should not be made in wintry weather.

These should also be flannel, and the sleeves loose, the neck high, but not tight. The sleeves must not be short. The legs should now be protected with woollen gaiters, and no infant should be allowed to go about with bare legs and arms, with the ridiculous idea of hardening them. At night, they should be all in flannel. As to shoes, a baby should wear soft woollen socks: no stiff boots or shoes should be allowed excepting when absolutely needed out of doors. Indoors the shoes should be the softest possible.

Light and Air.

An infant requires an immense amount of light and air. Fresh air and sunshine not only invigorate and promote the growth of their young bodies, but they also kill and destroy all germs of disease. Light is a great factor in forming good blood. No infant can thrive, even with every care, in a dull and sunless room, while on the other hand, they do thrive wonderfully when they have plenty of light and air, and are often grossly neglected in other ways.

No infant should be brought up in a cellar, or on the ground floors, if possible, in towns. The room should be on the first floor or higher, and should be sunny; whenever practicable, it should have a fire-place, and plenty of access for fresh air at night. The room should be as bare as possible, and be kept scrupulously clean. Young infants should not be taken out of doors during the first month; and for the first time a fine warm day should be chosen. Of course, if it is winter time, they should not go out until they are older. Long exercise in a perambulator soon chills a child; the nurse's arms are far better and warmer, and the continual exercise for the child as she walks about is very good for it.

Older children should be kept out of doors as much as possible, and, well wrapped up, they can endure most weathers, excepting east winds and rain. In summer, a child should be kept indoors in the middle of the day, and let out morning and evening.

Washing and Bathing.

All infants should be bathed at first in warm water about 95°, gradually reduced to 70° by the end of the first month. The water should be soft, rain-water is best, and curd soap should be used, a soft flannel for the soap, and, when it can be procured, a Turkey sponge for the water. Very little soap should be used to a baby's skin, as it destroys the secretion of the oil glands, and renders the body liable to cold. The baby should be bathed before his breakfast. After the first fortnight he can be put in the bath, instead of being washed on the knee. He should not remain in it long, and be quickly dried with a warm soft towel, and then rubbed all over with the warm hand, and dressed.

Cold baths should not, as a rule, be given to infants till they are eighteen months old. The best way of giving them is to put them in a warm bath, and finish up with a sponging of cold water. As they get used to this, they can stand in warm water, and be sponged more freely with cold, and in hot weather the bath can then be taken cold altogether.

Great care should be taken never to frighten children at their bath, by plunging them over head, or with too much roughness, and especially in sea-bathing.

A tepid salt-water bath is very invigorating.

The child should never be allowed to play about and get cool before the morning bath, but should be taken straight to its bath out of bed. Great care should be taken thoroughly to dry children after their bath, or sores and chaps soon appear. When quite dry, the parts liable to friction can be powdered.

All the little folds of the body, between the toes, &c., should be dried just as carefully as the more accessible parts, and always kept clean.

Growth.

During the first year children grow faster than at any other time, and gain about eight inches; so that if twenty at birth, they will measure twenty-eight. They also nearly treble their weight. If seven pounds at birth, they will weigh about nineteen at the end of the first year.

During the second year they will only grow half this height, and gain about as many pounds as they do inches, though in these matters children differ widely.

Children begin to walk between twelve and eighteen months. Heavy weak children should be kept off their legs as long as possible. Children begin to talk about the second year.

Teething.

The commencement of dribbling is always an interesting event in the nursery, being a pretty sure forerunner of the cutting of the first tooth. The milk teeth are twenty in number, and the first that should arrive are the two middle teeth on the lower jaw; these are generally cut about the seventh month, the two front teeth of the upper jaw about the ninth, and the other two front teeth of the same jaw just afterwards. The remaining two front teeth generally come at the close of the first year; at the same time the first four double teeth appear, so this is a troublesome period in child history. The last four double teeth appear about the twenty-fourth month.

If teeth are cut out of their proper order, it is of no importance, provided they are not too long delayed.

If they are backward, a little phosphate of lime given with white sugar will soon bring them on.

During teething, children are specially liable to convulsions, bronchitis, diarrhœa, and general nervousness. It is the later teeth that give the most trouble. It is a good practice to give the children a hard substance to gnaw at, but lancing the gum is not generally required, or beneficial.

Easy cutting of teeth is a good indication of general good health.

Babies' Disorders.

The ailments of children spring, in nine cases out of ten, from the stomach, and from errors of diet. Diarrhœa is a very common sign, but is generally thought to be a disease in itself. It should never be allowed to go on, and if there be any evidence that the food is not being

digested, an appropriate change will at once cure it. Medical advice in any case should be sought at once. Diarrhœa is frequently combined with flatulence, which is very common amongst children, and particularly those that are bottle-fed. This arises either from the decomposition of undigested food in the stomach, or, as is very frequently the case, from the positive swallowing of air in sucking an empty bottle, or in other ways.

Constipation is not uncommon, but should never be relieved with strong drugs. A little cold water is an excellent purgative; combined with a little glycerine, it is stronger. Domestic remedies should not go beyond some simple salve, castor oil, or liquorice powder. The bowels in children can easily be regulated by food. A little oatmeal water when young, or a little porridge when older, will soon cure constipation.

Fits of screaming in the night often occur during teething, but should not be soothed with elixirs or sleeping draughts.

Vaccination is best done before the teething sets in, and should always be carried out thoroughly, as small-pox is very fatal in children. Care should be taken that the lymph is obtained from a healthy child, or fresh from the calf. This latter is, however, uncertain in its action, and the former, when it can be relied on, is best. A child ought not to sleep alone during the first few months of its life, but afterwards it should always sleep in a cot, and not in a bed. When in bed with its mother, its face should always be turned away, for fear of being over-laid, and the face ought on no account ever to be covered.

The Object of the Training of Children.

And now we come to the great question. You have done all that can be done in the way of health for

your child. It is growing up strong and hearty. What is it all for? What do you intend your child to be? Oh, it shall follow its father's trade; or if a girl, I will make her a good wife and mother. What, no more than that? Well, is not that enough? many mothers do not do so much as that!

No, it is not enough. Are you going to train your child for this world or the next, for time or for eternity.

These are questions that concern every mother, and unless rightly answered, her training and care may all be thrown away, and herself and child lost after all. See to it that you yourself are on the right way, that the Saviour is your Saviour, and ask Him for His Holy Spirit to give you strength and wisdom to train your child up at His feet. Begin with the simplest stories of the Saviour's love—the lost lamb and other gospel stories. Teach them there is One who loves them more than yourself, and teach them early the habit of prayer to Him. And pray for their early and decided conversion.

By coming to Christ yourself first, and then by endeavouring to bring all your family to Him, you will do a good work for the Master—your labour will not be in vain; and hereafter you, though you have never done any public service for Him, will yet, in virtue of your labours as a believing mother, hear His "Well done, good and faithful servant, enter thou into the joy of thy Lord."

HEALTH AT HOME.

No. 11.

COMMON AILMENTS.

BY ALFRED SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

THIS tract is intended to help you to recognise as early as possible, some of the leading symptoms of the more common diseases. You have often heard it said, "Oh! if it had only been taken in time," when alas! it was too late; and in thinking it over you have been rather puzzled as to what this "taking in time" really meant, and perhaps once or twice you have hurriedly sent off for the doctor, maybe in the middle of the night, by way of "taking it in time," when after all there has been nothing the matter.

Now it is not our intention to lead you to believe by anything that may be said in this tract, that you can *treat* disease, or even determine in every case what disease it is, or whether it is dangerous or not —these things can only really be told by the doctor; but we think we may be able to give you some help, by a simple explanation of certain complaints, in forming a judgment as to when to send for a doctor, as to what simple domestic remedies it is safe to use

until he comes, and as to the real importance of many of the directions he may give you.

A few general remarks will be useful first before we speak of diseases separately.

The question of expense when sickness comes is of course a very important one to those whose means are limited, and must be considered. The present custom of many is to go to the chemist for everything. This is both a foolish and an expensive habit, and is only adopted by very ignorant (but not neeessarily very poor) people. Many people neither know, as a rule, what they want the medicine for, nor what medicine they want, and after not only spending a good deal of money uselessly on pills, draughts and patent medicines of various kinds, but wasting the precious early days of the disease when alone it is perhaps curable, they send at last for the doctor, only to learn to their bitter regret that they have left it too long, and perhaps also have actually injured the patient by their ignorant use of powerful drugs.

If you have to pay a private doctor you invariably put off sending for him as long as you possibly can, naturally enough, on the score of expense, in spite of all you have heard and all you have vowed about "taking things in time." There is little or no excuse for such carelessness now. All over England there are not only working men's clubs of every sort to which competent doctors are attached, free hospitals for the very poor where the best advice can be obtained for nothing, but Health Assurance and Provident Societies that can be joined by women and children as well as men, and where some very moderate payment of about a penny a week regularly will ensure your always having, when sick, a competent doctor to attend you. For there are plenty of good and clever doctors, well

educated, attached to these societies, and their number is increasing every day. If you hear any complaints about any of them, remember the ignorance and prejudice of many persons with whom they have too often to deal; and if you read this tract, and intelligently answer the doctor's questions, and carry out his instructions, and not merely rest content with taking his medicine, you may be sure he will be so pleased that he will be encouraged to show you every attention; which it is impossible to do in the face of ignorance and carelessness. Nothing so hampers a doctor in his treatment, and checks his sanitary efforts as the terrible ignorance and indifference with which his most important orders are received. He often finds that any old woman standing by who makes a suggestion is more attended to than himself; and many a good counsel and much wise advice remains unuttered because he feels that it is useless to give it in the face of ignorance and prejudice. If you follow him to the houses of the well to do, you will be surprised at the many directions he gives them besides prescribing medicine, and you will often see indeed that he never prescribes any at all, and yet his patients seem just as pleased, and pay his fee just as cheerfully, showing their belief that good sanitary advice is often of more value than drugs.

The difference of his conduct towards the rich and poor is not because the one class is rich and the other is poor, but because the well to do are generally better educated and understand more the value of his advice, whereas the prejudice and ignorance of the poor prevent them from listening to it. If you have a doctor, trust him, and listen intelligently to every word he says. He does not know everything, and he is not infallible, but if he is a good honest man he is doing his best to grapple with the difficult problem before him,

about which at any rate he knows more than you do; and if you follow his remarks with an intelligent interest, and truly carry out his rules, he will treat you with every bit as great care as if you were the richest, for every doctor worthy of the name loves his profession, and nothing pleases him more than to have a really intelligent and obedient patient. First of all then have a regular doctor in health as well as disease—and remember every year that you stick to him he will become more valuable to you, for he will get to know more and more of your constitution.

We will now proceed briefly to consider some of the diseases you are likely to meet with in home life.

Diseases of the Chest. We begin with these first because so many people die from them, and there are few in our English climate who are not liable to them at some time or other. The first signs of anything wrong with the chest are a change in the breathing, and generally a *cough*. The ordinary rate of breathing in health is seventeen times a minute. If this is much increased without any exertion to cause it, and if the breath is difficult to draw or the chest seems tight, it is generally a sign of chest disease. All exertion hurries the breathing, and so does nervousness. What shows chest disease is the change in the breathing *without* any such apparent cause. A cough accompanies nearly every form of chest trouble. There may be a cough and nothing wrong with the chest. When we hear a cough the first and natural idea is to try and stop it, but this may be the very worst thing we can do. If there be nothing but the cough, and the breathing be quite easy and natural, it may be well to stop it; but if the breathing be at all altered, the chest tight, or much expectoration, the cough must not be stopped. In any case with every

troublesome cough let the doctor be consulted at once so as to decide whether it is caused by disease in the chest, or whether it may safely be stopped.

The principal diseases of the chest are bronchitis, inflammation of the lungs, consumption, pleurisy, asthma, and whooping-cough.

Bronchitis is an inflammation of the tubes of the lungs and is the commonest of all chest affections in this climate of ours. It is caused either by a chill striking the chest, through too much exposure or insufficient clothing, or through too cold air being breathed, or through the air being laden with irritating dust, as occurs in many trades. In *Bronchitis* the rate of breathing is always quickened, but generally there is not much fever; and the chest is either tight, the cough hard, the expectoration scanty, or the cough is loose and the expectoration profuse. In young children the disease is extremely dangerous, and a baby may be carried off by it in a day or two. Many men think even when they have got it badly that if they only put on enough coats and greatcoats they are safe in going out in any weather. As a matter of fact, in bronchitis the air a man breathes is of far more consequence than the clothes he puts on, and if he draws raw cold air down the inflamed tubes they are sure to suffer more. The *very best* medicine for bronchitis is to breathe air at one temperature (anywhere between 65° and 70°) until the patient is well. This will cure either infants, children, or adults quicker than anything else, only the air must be at the same temperature at 3 A.M. as it is at 3 P.M. This is one domestic remedy.

Another is, if the chest be tight and the breathing hurried, to put on a poultice half of linseed and half of mustard across the back of the body, *not* the front. By doing this you do not impede the

breathing. There is no danger in putting a poultice on, the danger is in taking it off again, as then the patient is liable to catch fresh cold, so remember when you take it off always to cover the chest at once with a layer of flannel or wadding. You can do no harm, till the doctor comes, with little children, if the breathing be difficult, by giving them ipecacuanha wine, half a teaspoonful at a time, occasionally, as an emetic.

Inflammation of the Lungs differs from bronchitis in that there is less cough and more fever. The breath is more hurried, the face distressed and flushed, the patient evidently very ill, and what little expectoration there is, is probably slightly streaked with blood. The doctor must be sent for at once, though here again if he is long in coming you will only be doing your duty, and can do no harm, if you put a good poultice on the back, of mustard and linseed. In these cases, as there is fever, the food should be principally liquid, and the temperature of the room should be kept very even. Although this disease is much more serious at the time, it does not become chronic and come back each winter like bronchitis. It is sharp and short, but leaves the patient very weak afterwards. If you neglect bronchitis in a child, and do not send for the doctor in time, it is very apt to develope into inflammation of the lungs.

Consumption on the contrary is as a rule a very slow disease that goes on and on, till it wears the patient out. It may occur in the brain or the chest or the bowels, but here we speak of the chest only. The patient is a little feverish, but not so much so as in the former disease, the cough is husky, there is a great deal of expectoration and often blood spitting. But it is in the patient's general condition that its effects are most marked, for it is a wasting disease. The body becomes

skin and bone, the perspirations are profuse and there is often a bright red spot on each cheek. Here is a disease that it is difficult to take in time, and yet if not taken in time it is fatal. The best plan if you have any consumption in your family is to take the children occasionally to the doctor to be examined, and especially if they have a slight cough and are wasting at all. The best cure is entire change of climate, and on the whole the safest plan for any who are discovered in time to have decidedly consumptive tendencies, but on whom the disease as yet has not made much progress, is to emigrate to New Zealand or the Cape. The best food for consumption is rich milk or anything of a fatty or jelly-like nature. Of course you know the virtues of cod-liver oil.

Pleurisy is a much less serious disease, and is known by a sharp stitch at the side, only coming on when a deep breath is drawn and always fixed in exactly the same spot. There is also generally a slight cough. This is a disease that requires to be taken in time. If not, the pain disappears, and the chest gradually fills with water. Call in a doctor at once, and if he does not come soon and the pain be bad, put on a little raw mustard on paper on the spot as long as you can bear it, and then put on some wadding and bind your chest tightly round with a bandage over the spot. This will give relief.

Asthma is a most distressing disease, but it rarely kills people. It generally comes on in very sharp sudden attacks of breathlessness causing the patient to fight for breath, which comes with a loud whistling noise. The best relief is plenty of fresh air, and for the patient to stand at the open window. Strong coffee is very good. The disease is chronic, and is seldom really cured unless a suitable air can be found, which, singularly

enough, is generally the smoky atmosphere of cities. Asthmatic people are often much worse in the country or at the sea-side. Certain powders that are burned and the smoke inhaled are of the greatest relief in these cases. The doctor will tell you of them.

Whooping-cough. This is another disease that comes on in paroxysms and lasts about six weeks and is most common in children. Try and teach the child that has it to manage its cough, if old enough, and to restrain it as much as possible. You should consult the doctor, as he has many remedies that moderate it and cut it short. The best you can use is gas-tar in some form or other. The blocks of fuel sold are soaked with it, and are better than coal if you have whooping-cough in the house. As a rule, the doctor will allow the patient to take plenty of fresh air while this disease lasts.

There are many *Diseases of the Head;* we will consider a few.

Headaches are common and come from many causes. For a bad sick headache the best cure is a cup of very strong tea, and if possible to lie down and sleep it off. For a general headache and flushed face, put the feet in mustard and water and it will be relieved. If it comes on at night try an extra pillow. If it is constant and severe in a child at school, consult the doctor at once. Bathing the head with very hot water indeed, will generally give relief, more so than ice.

Neuralgia, when of the nature of faceache, very often comes from some decayed tooth. See to this first. If it seems to come from the ear a little brandy on cotton-wool put in the ear may relieve it. If it shoots very much to the ear a poultice of plain linseed meal is the best remedy. The menthol cone is often a cure.

The *eyes* of infants are often full of a yellow discharge which if neglected soon makes them blind, and is the

most common cause of loss of sight. Send for the doctor in this case at once, and meanwhile bathe the eye well with a little warm water every half-hour, washing away every bit of discharge. Any inflamed eye is soothed by bathing. There is often a running from the *ear*. In this case too the doctor should be sent for, and meanwhile there can be no harm in washing it well and constantly out with a little *Condy's* fluid and warm water with a small glass syringe. Sometimes the head is hot, and very painful, the patient in a high fever, the cheeks flushed and the mind wandering. The disease in that case may be *brain fever*. The patient should be kept quiet in a darkened room, and ice applied in a sponge bag or bladder to the head, the doctor of course being sent for at once. This state of things often occurs in connection with consumption of the brain.

A cold in the head is a common cause, if neglected, of incurable deafness. It should be checked as soon as possible. Sniffing up camphor is good, sniffing at menthol is better and will often check it in time.

Sore throats are of many kinds. If on examination the throat is found to be red all over and a little swollen it is probably a common sore throat and will require binding up outside, and a little gargling with some alum and water. If it does not become better in a day or two, the doctor should be consulted. If one of the tonsils be much swollen and seems to be filling the throat up very much, and if outside the neck on the same side you can feel a lump, it is *Quinsy*. Though it is not dangerous it is very painful and lasts about ten days. In this case the patient must have liquid food, his throat must be protected outside, hot steam out of a jug must be breathed in, and the doctor must be sent for.

If there be one or two small ulcers on the side of the throat you must send for the doctor, as they will

probably require some local application. If you see any flat white patches on the patient's throat, like white leather, send *at once* for the doctor, for it may be a dangerous disease called *diphtheria*. In addition to the remedies he uses, you must be sure and carry out his instructions as to food, &c., for it is a question of keeping up the patient's strength. Be careful not to breathe his breath, and keep him in a room all to himself.

Thrush is a troublesome fungus that grows in the mouths of infants, which is easily removed by borax and honey applied over the diseased surface with the finger.

Bleeding from the nose has already been spoken of elsewhere. The best remedy is to hold the head well up, and if compressing the nose with the fingers does not suffice, sniff up the fumes of turpentine.

Convulsions are very common amongst young children, and are often caused by improper food. The best thing to do is to put the child in a hot bath and send for the doctor.

Leaving the head now and coming to the *stomach*, if there is a fixed pain below the breastbone, worse after food, and especially if the tongue be white, the patient has *dyspepsia* and should see the doctor. Sometimes there is vomiting as well. You must see that nothing is taken that makes the pain or sickness worse, and whatever medicine the doctor gives be sure you get from him positive instruction about the food, for here clearly, it is of the first importance. If the pain is very bad a linseed poultice may be safely put over the place. Sometimes a quantity of blood is brought up, showing the presence of an *ulcer in the stomach*. In this case there must be no delay, but the doctor sent for at once, as it is impossible to tell how

soon it may come on again, meanwhile give nothing to the sufferer but a little ice to suck.

The heart is near the stomach and often *palpitates* violently. This is frequently due to indigestion. If it continues and is very distressing you had better ask the doctor what to do, although it is rarely dangerous, and very seldom indeed a sign of heart disease. Pain in the heart is not always dangerous, and when it is really diseased it is often not known to the patient or made the subject of complaint.

A dull weight or pain in the right side is a sign of a congested or *torpid liver*, which leads to biliousness and nausea. When this is felt send for the doctor; but if the pain is bad a poultice of mustard and linseed and a dose of opening medicine will probably do good and cannot do harm. The liver often gets wrong from want of exercise, but always to say, whenever we are ill, "It is the liver," is ignorant and ridiculous.

Sometimes there are violent pains in different parts of the chest. Unless they are fixed in one spot they are only neuralgic and are not dangerous. An attack of *colic*, a severe pain in the stomach, is very hard to bear, and comes on so suddenly that something must be done before the doctor arrives. The best relief, if it is violent, is to get some boiling water and two pieces of flannel a foot square, put them in the water, then nip out one piece by the corner and wrap it in a towel, and wring it quite dry by turning the towel opposite ways, then put it on the stomach, and while it is there repeat the process quickly with the second flannel; then put it on and take the first off and dip it in the water and so continue changing the flannels at least every two minutes, and in a very short time the pain will be relieved. Sometimes a little ginger or peppermint and water will remove the cause. If there

be a fixed pain in the stomach that is worse on pressure, the patient should be put to bed, and the doctor should be sent for at once, it is probably *inflammation* of some sort.

Consumption of the Bowels generally attacks young children and is very fatal. You will find the child wasting, feverish and fretful, and a constant pain in the stomach, which is more or less distended. Of course the doctor should be sent for, but he cannot always cure the patient.

Constipation is a great and almost universal evil, and one which is wholly preventible. If in childhood the fixed habit of absolute regularity be acquired, and never allowed to be broken through, it will last throughout life, and when a dose of medicine is needed, always remember that as a constant remedy castor oil always aggravates the complaint. The diet is one great means of cure, and a glass of cold water or an orange or stewed apple before breakfast, porridge and treacle and brown bread and coffee at breakfast, and prunes and stewed fruit at dinner are all good.

Diarrhœa should never be allowed to go on unchecked. If a teaspoonful of raw arrowroot in a little water fails, it is best to send for the doctor.

Rheumatic Fever is a serious and dangerous affection common in children and youths. The patient becomes very hot and perspires and is in pain more or less all over. He must at once be put to bed, and if possible between the blankets, instead of the sheets. He must have plenty of milk, which is the best food in rheumatic fever, and the doctor be sent for at once. The pain in any particular limb or joint is best relieved by wrapping it in cotton wool. Be sure and carry out all the doctor's instructions with respect to this disease, for it is a very dangerous one, and often produces heart

disease. Every care must be taken to avoid a second attack. The older a person is when it occurs, as a rule the less frequently is the heart affected.

Rheumatism consists of pains without fever or perspiration, and is a chronic and very common complaint, especially in men exposed to the weather, as cabmen, policemen, &c. It is called by different names according to the part of the body which it attacks. If in the back it is called lumbago, and is very troublesome. Your doctor may try many medicines before he cures it. One of the best domestic remedies is dry heat. Stretch a piece of flannel over the back, and iron it well with a hot flat iron. Strong liniments, such as are used for horses (embrocations), are very good also. But even when cured the pain often comes back in damp weather.

Gout is a painful disease common among rich and poor. The rich sometimes get it from eating too much, the poor from drinking too much beer, and eating too little food. The big toe of one foot gets suddenly very much inflamed, red-hot and shining, with intense pain. Of course it may attack any other part first. You should consult the doctor both to relieve the pain and cure the disease. I think you will find that on the whole the patient would rather have heat to the part than cold. It should be wrapped up warm in cotton wool or fomented in hot water. Be very careful here to attend to all the doctor's directions about the diet.

Sometimes a patient complains only of pain in the right side of the stomach, he is languid, a little feverish, but not much, but seems very ill, and there is diarrhœa. The disease may be *Typhoid Fever*. Anyhow, send for the doctor and see. If it is you will be struck with the minute directions he will give about diet, and how everything in the shape of solid food is

to be avoided. The reason of this is that the disease consists of small internal ulcers, and if solid food is eaten death often ensues. You must therefore follow his directions with the greatest care, and watch particularly in the second or third week, when the patient gets hungry and sometimes reckless, that he does not get up and help himself. Many deaths occur in this way, and also from friends bringing food to hospital typhoid patients on visiting days.

Jaundice is a disease which you can tell at once by the yellow colour. If it comes on very suddenly it is not generally so dangerous as if it comes on very gradually. It generally arises from a chill, and the doctor will soon cure it if that be the cause. Meanwhile the patient should be put to bed on a milk diet.

Erysipelas is known, wherever it occurs, by a red blush that generally starts from some small wound or sore, and spreads every day, often combined with high fever. Cooling lotions are generally liked most, and the doctor should be consulted.

Anæmia or bloodlessness often occurs in town life, and is generally the result of living and working in badly ventilated rooms. It results especially from sleeping in close bedrooms. It is not only a dangerous disease itself, but renders a person very liable to catch any other disease. It is very common in London and large cities. The face and lips become pale or blue, the breath is short, the heart palpitates. The cure is by medicine, country air, plenty of meat and exercise.

Fevers with eruptions are nearly all infectious, and the doctor should at once be sent for, as the patient may have to be taken away.

Paralysis generally comes on suddenly after a fit. In the fit you can do nothing but lay the patient in a bed

or on the floor with something under his head, and loosen all about his neck and see that he does not hurt himself. If he be paralysed after you will see perhaps the mouth all drawn to one side and perhaps the arm and leg on the other side will be quite powerless. Here again the doctor is indispensable.

Sometimes lumps or *tumours* begin to grow in various parts of the body, either close under the skin or deeper down in the body. They may be painless or painful. If they grow rapidly without any redness or inflammation they may prove serious, and in any and every case a doctor should be seen about any lump in any part of the body, *particularly if near the groin*, whether it is painful or not.

If you have any one long ill in bed, look at the back from time to time to see that no *bed sores* are being formed. They soon come in these cases, and are very troublesome to cure. The best way to prevent them is to harden the skin well by rubbing it over with spirits and water, and keeping the under-sheet free from all creases.

Of course you are not likely to meet with all these troubles, but you will hardly go through life without coming across some of them, and it will be well if at such times you are wise enough not only to send for the medical man, but to turn to God and ask Him to bless the means used. Listen to this true story of what occurred the other day.

A little girl called Katie, daughter of a Christian gentleman, was at the point of death with inflammation of the brain. In this case the doctor had been sent for, but in spite of the use under his directions of medicines, wet packs, &c., the fever continued dangerously high. Father and mother prayed hard for her recovery, but still the disease progressed. A highly successful and

very clever doctor came in, just as the feet and legs had turned cold as marble. In a few minutes more the child must have died. But the adoption of extremely vigorous measures—including the plunging of the lower limbs into almost boiling water and mustard restored the circulation and saved the life. Did not God hear the prayer for that child's recovery? And will you let one of yours lie sick, and not know enough of God to be able to cry to Him in the time of need? The way to get confidence and belief in prayer is really to know that God is our Father by faith in Christ Jesus, and to act on this belief, for it is only through this we can really become children of God. Never forget then that a Greater One than the doctor holds the issues of life and death, and that God will hear the prayer of faith from any one who knows Him enough to trust Him.

HEALTH AT HOME.

No. 12.

HOW TO BE HEALTHY IN ONE ROOM.

BY ALFRED T. SCHOFIELD, M.D., M.R.C.S., ETC., MEMBER OF THE NATIONAL HEALTH SOCIETY.

"As well for the body as the soul."

THE only true God is full of love for all His creatures. He loves *us;* not only our souls, but ourselves—body and soul; and He would have us all understand how best to care for our bodies as well as to learn how He has cared for our souls. Both our bodies and our souls are exposed every day to terrible dangers, and the nearer we get to God in our ideas of religion the more we feel that His will is that both should be cared for and kept in health, as precious gifts from Himself.

Our Saviour went about doing good, and healing the bodies as well as the souls of the people, and those are most like Him who try and do the same.

In this tract, then, while not failing to point out briefly how God has provided for our souls, we will especially try to show in what way our bodies can be kept in health, in a certain condition of life: for this tract especially concerns that numerous and important

section of our population who have to live—father, mother, and children, in one single room.

And as we want you, who have so to live, to read this tract and understand it, our remarks shall be as short, as plain, and as much to the point as possible; but while we confine them mainly to questions of health, we shall not quite forget appearances as well, for, however humble, we should all like to make our home look as well as we can.

There can be no doubt those who have to live in one room are at a disadvantage; for it is far easier to preserve the health of a family in two rooms than in one; in four than in two; and in a small house than in four rooms. You know as well as I do that for the four to six shillings a week which you are paying for your single room in any great city, you could in small towns get a whole cottage and garden; but unfortunately you must live near your work. At the same time, do not forget these nice cottages, and if you have the opportunity, with a young family, of removing to a country town, you will be very wise for their sakes to take advantage of it. Town-bred people are rarely so healthy as country-bred, and London would be very different from what it is if it were not for the fresh blood brought in by the crowds of country lads and lasses that flock up to town every year.

But though it is harder to live healthily in one room than in more, it is of far greater importance to you to do so, than to those who can afford to live in a whole house. Your health is your only fortune, and one you *cannot afford* to lose. A rich man has the means of paying a doctor's bill, and for a change to the seaside if he himself or his family be ill, but *you* have not.

If you are ill all your money stops, excepting your

club pay, if you are in a club; while if the wife or children are ill, you have many extra expenses, besides having to get help in, and not enough money to meet them. No. Of all people in the whole world, you, who live in one room, need most to keep your health, and yet for you it is undoubtedly most hard to do so. Let not this, however, discourage you, but *determine* that you will do all in your power to hold fast the only fortune you have got.

Perhaps you have not thought much about the question of health. I know many people consider all these matters questions of Providence, and that they have just to take what comes. This is a mistake; you do not think so about your work. On the contrary, you take great pains to find out the best paying and most regular work, and try and keep at it. Now do just give a few minutes' thought to the great question as to whether you can, by any of the suggestions thrown out in this tract, live in the one room which constitutes your home more healthily, more comfortably, and more economically than you do; and perhaps the better health, and therefore fewer expenses, that will be the result, may end in your being able to save enough to live in two rooms instead of one, which after all is an immense advantage, for it is a very great inconvenience to be obliged to sleep and eat in the same room.

To live healthily anywhere, we must have pure air, pure water, sufficient warmth, and cleanliness. Let us consider these points.

If you are fortunate enough to afford a flat in a model dwelling, you should, if you are young and active and able to climb the stairs, choose the highest one, as having the best and purest air. If you have two rooms, you should *choose the larger of the two* for your bedroom, and the smaller for the sitting-room, as you spend

more time in the bedroom than in the other room, and it is all the more important that this room should not be overcrowded.

If you have but one room remember this, that in order to have the best ventilation, the smallest amount of space necessary for each person is five feet square of flooring, providing the room be ten feet high; or six feet square if it be eight feet six inches high. Thus a room ten feet square might contain husband and wife and two children. This is, however, the closest packing that is advisable, and you will have much better health if you allow six feet square in a room ten feet high, and seven feet square in an eight feet six inches room. The extra sixpence or threepence rent for the larger room will be saved in health as well as in comfort.

In taking a room in an ordinary tenement house, you should, if possible, choose one on the first or second floor front; or if you cannot afford this, choose the second floor back, rather than the first floor as being further removed from the closet.

Respecting underground bedrooms, you will remember that "the penalty on the landlord for letting or suffering to be occupied any vault, cellar, or underground room occupied as a separate tenement in which any person passes the night is £1 per day or less, after warning."

In taking the room you should particularly notice if there is any nuisance in the house for which the landlord is liable, in which is included "any state of the premises injurious to health, any W.C. in a foul state or injurious to health, any accumulation (ashpit, &c.) injurious to health, or any of the rooms so overcrowded as to be injurious to health." If there be any such, you ought to give notice to the inspector of nuisances at the town hall or vestry hall, and the room will be cleaned

or repaired, the W.C. cleaned or renewed, the filth removed, and the nuisances taken away by the landlord, *without a penny of expense to yourself.*

If there are bad smells, and the drains are out of order, or any typhoid fever about, you should at once let the sanitary officer know; and he will attend to the matter.

You ought to see particularly that the cistern you get your water from is clean, and in good order, and that the overflow pipe from it (and from your sink if you have one) does not run into the drain, but into the open air. You have a right to insist on your water being pure as well as your air. It is far better not to have a sink waste-pipe at all than to have one that runs into the drain, however well it may be trapped. Sinks are a common source of blood poisoning by sewer gas.

We will suppose now that you have got a clean light room not less than twelve feet square in which you and your wife and two children are to live (of course, if there are no children, a smaller one will do, and if there are more a larger one is needed). The next thing then is to furnish and, as far as it is in your power, to decorate it. It is best to use two colours in distempering the walls—say a dark brown below, a light blue, yellow, or pink above. You can do this yourself at a very small cost. Then cut out of a piece of stiff brown paper a pattern for a dado or border (some one will show you how), and this gives a finish to the room if painted on in a dark colour about four feet from the floor, just where the darker shade of the wash below joins the lighter one above; the colour should match or contrast with the darker wash. This is cheap and also durable, if you mix the wash so as not to come off on your clothes when it is dry. Any plasterer will tell you how. The ceiling you should

whitewash. All old paper, of course, should be stripped off the walls first, even if you are going to paper them again. If you decide on doing this, instead of having colour wash, you ought to try and get a glazed paper that will stand a damp cloth; glazed colour or enamel paint still better. The cost of either of these is very moderate. Wallpaper (unglazed) can be had at a farthing or a halfpenny a yard! If you use unglazed paper the walls must be swept down regularly, instead of wiped, for it is astonishing how much dirt settles on them. Avoid any very bright colours, especially green, for fear of poisonous materials, though the paper should be light and pretty. Now about the floor. A capital plan, in the first place, to preserve health and keep out the dirt, after first stopping up all the rat and mice holes by the fire and in the wainscoting with plaster and powdered glass, and seeing that all rotten bits in the floor are replaced with sound wood, is to caulk up all the seams between the boards with oakum carefully.

Oakum is old tarred rope which you can probably get for little or nothing. It should be stuffed tightly in with a blunt knife, so as to fill up all the cracks level with the wood, that no dirt may ever get into them. You will take all this trouble because you are a wise man and not a fool; and you have realised that your good health is your only fortune, and is too valuable even to risk, much less to lose, by allowing any dirt to lodge in any place you can get at.

If the boards are at all good and smooth, your best plan is to rub turpentine and beeswax well into them; or to size, stain, and varnish them which is a little more expensive. If you do this, you will save the constant scrubbing of the boards, with the damp rising all up the children's legs, as well as all the hard work on the

wife, who will only have to wipe them with a damp cloth to keep them clean.

If you can afford a bit of oilcloth, get a square that will just reach to the edge of the bed, not under it, and another strip to the door to save the polished boards. On no account put down old bits of carpet which are simply receptacles for dirt.

You can have no idea of the value of attending to these simple matters first, before occupying your room.

Now what about furniture? Well, if you can get it good and second-hand it is best; only it must be clean and free from insects. Strong chairs costing no more than four shillings and sixpence each new in the country (arm-chair, six shillings and sixpence) are known to have lasted forty years, but it is not easy to get London-made goods that will wear so well. Do with as little furniture as you can, for every bit of furniture *takes away so much air space from the room.*

You must have a bedstead. Never sleep on the floor, however poor you may be. Sell the bedding rather than the bedstead. An iron bedstead is the most suitable (never have a wooden one), and the iron laths should be covered with a piece of canvas rather than with oilcloth, as it lets the air through. Then you want a good mattress (no bed) of hair, fibre, or even straw, but not of woollen flocks which harbour too much dirt. If possible, get a wire spring mattress or one of wood laths that also spring. The cost is moderate. They are very comfortable, healthy, and clean, but require a thin second mattress over them.

You should have no hangings round the bed, they collect dirt; or, if you must have them for the sake of appearance, let them be of washing-chintz that can be kept clean.

A coloured counterpane or a striped Austrian blanket

makes the best bed covering. If you cannot afford a pair of good blankets underneath, have one, and instead of another paste together sheets of brown paper till they equal a blanket in size, but perforated for ventilation, and you will find it will keep you wonderfully warm. The sheets should be of soft twilled unbleached cotton.

The bed, if possible, should not stand with its side against the wall, but with its head against the wall out into the room. Before we leave it, a word about making it. A moment's reflection will show that the bedclothes we sleep in for hours must be thoroughly well aired; therefore, let the wife throw all the clothes down on the foot of the bed in the morning; open wide the window and let them be aired well for at least an hour before remaking the bed for the day. Wash yourself and the children at night rather than in the morning, so as to leave the day's dirt in the tub rather than between the sheets. But we must finish furnishing the room before we talk of washing.

If you can afford it, a couch is of great use, and can be turned into a nice children's bed at night. You will want besides, a good chest of drawers, a strong deal table with a washing top that will do to cook on, the legs you can easily stain and varnish yourself, and then with a small table cover to slip on, it will look quite smart. If possible, the washstand should be one with a hinged lid that can be put down during the day, and serve as a second table. You must have one or two cupboards either ready fixed (clean and without holes) or bought to fit any recess near the fire. We have now nearly finished. Your firegrate should, if possible, have a fire-brick at the back to throw the heat into the room, instead of being made of iron to absorb it. And then when you have three shillings to

spare you can invest it in an eeonomizer that will save your coal bill wonderfully. It is simply a piece of sheet-iron made to hook on the bottom of the grate, and fill up all the space down to the hearthstone; so that no air can enter through the bottom bars, but all must come into the fire through the front bars. This saves eoal by making less draught. The ashes, too, make no mess, falling behind it, and you need only clear them away *once a week*, as they are not unwholesome and keep the grate warm. Of eourse, you should sift them well with a little wire einder sifter, and burn all the einders. Another plan for making a slow fire is to slip a bit of sheet-iron, or even eardboard, in the bottom of the grate so as to bloek up the bottom bars. Another is to fill the grate with fresh eoal, then put the paper on the top, sticks and a few einders and light it, and it will slowly burn *downwards*, and last a long time. The bloeks made of coal-dust and tar, and sold for a halfpenny, are a cheap, healthy, and slow-burning fuel.

With referenee to the deeoration of the room. You should have as many pietures as you ean afford, but all in frames which ean be washed; and if you have any texts or mottoes up, let them be varnished over; and let none be hung too high to be easily wiped with a damp eloth. Remember a damp eloth is the best duster, or at least tell your wife so, for a good half of this traet is more for her than you. With a damp eloth you ean wipe the walls (if of glazed paper), the pietures, the furniture, the floor, and the square of oil-eloth, whieh, by the way, should be strong and thin, and is mueh better than earpet in a single room. If this is too eold for the feet in winter, a strip of clean drugget ean be laid over it. The oileloth should not be nailed down. If you ean afford it, put a pole

with a pair of glazed chintz curtains, which are easily kept clean and look cheerful, across the window. It is not necessary for health, but it improves the appearance of the room. The best blind by far is a venetian, the next best is a green holland one. Outside your window have a flower-box, and look after it well. All through the summer, with the window open, the sweet smell of the flowers will be wafted in.

Two more very useful articles of furniture that are hardly ever seen in London are worth getting. They will complete the general furnishing. One is a folding screen. You can make one or buy one for a few shillings plain, and let the children paste pictures on it. This screen can be put round the washstand, and thus make a separate room for you to wash in. It can be placed round the fire, and hung over with clothes as a clothes horse; it can keep all draughts off the children while they are being washed. In very close days you can put it near the door, and set the door wide open without making your room public. In short, it has many uses; therefore, if possible, get one.

The other contrivance is a frame of wood, four feet square, and hung near the fire-place a foot from the ceiling by its four corners to four hooks. This frame has a piece of thin cord stretched from side to side every six inches, and forms the best and most convenient place for drying and airing clothes you could possibly have. It is overhead, out of the way, and yet just within reach. It costs little, and forms an admirable present for your wife, especially if she has to wash at home.

As regards your larder, your dry stores, sugar, tea, flour, &c., should be kept in one of the cupboards by the fire or on a shelf above them; but your meat, and milk, and fish, &c., should, if you can possibly afford it,

be kept in a small lock-up safe just outside your door, if it is a respectable house, or hanging outside the window, fixed as high as you can reach it, and not inside the room at all.

And now that we have seen how the room should be furnished, a few general remarks may be added.

Your light ought never to be gas. Gas takes as much air to keep it alight as five men can breathe, besides being expensive. Your best and cheapest light is a *safety* lamp. Only mind you get Rippingille's.

If you cannot cook on your fireplace, and your wife is always grumbling, give up your beer and pipe, and save up and buy her a small American cooking-stove that will stand just in front of the fireplace, burn any sort of slack coal, and cook you capital little dinners. Then again, if you have been in regular work all the winter, and have saved up a little, buy a Rippingille oil-stove for summer cooking, and save all firing. These delightful little oil-stoves will cook away on a chest of drawers, or on a shelf just outside your door, a nice little dinner with about a pennyworth of oil, heat an iron on washing days, and boil water, and are the handiest things in the world. Only mind you get Rippingille's.

A flat-topped kitchen fender is useful, and makes a seat for the children in winter, and a stand for dishes, &c., during cooking.

Now just a word about pure air, pure water, and cleanliness, and then all you will have to do will be to put in practice as much as you can of the advice given in this tract.

Your nose is your own sanitary inspector, therefore use it. When you come in from your work, observe if there be any unpleasant smell, or if the room be stuffy. If so, open the window more. You ought to keep the top of your window open, and

then, if you have a venetian blind, keep this let down six inches, with the woods turned so as to direct the air upwards as it enters, and then you will feel no draught; or if you have not got one, nail a board across the window frame, in the same way as one of the laths of the blind, slanting outwards and upwards, so as to serve the same purpose. With this you need not fear getting cold by having the window open at the top at night.

Your room should never smell stuffy. If you want to be thoroughly refreshed by your sleep, and kept in health, keep your window open, as we have said, a little all night. It is true—very true—that night air is dreadfully injurious, but then it is the night air of your bedroom that is meant, not the air out of doors. Why, you must breathe some air at night surely? And what air is there at night but night air?

Keep your window, therefore, always a little open at the top, and widely open at the bottom as well whenever you can, and do your best to have the air of your one room as sweet as the air out of doors, at any rate.

Keep your window-panes always bright and clean; and, by-the-bye, I hope you have chosen a room into which the sun shines. This is most important for health, and it is not too late to mention it now. Children, as well as your window plants, want the sun to make them grow, besides which, sunlight destroys countless numbers of those germs of disease that are always floating about in the air. Pay sixpence a week more rent if necessary to get the sunny side of the street.

The next thing is how to get pure water. Well, unless you are fortunate enough to have a tap right on to the main, you have to get it out of a cistern. You must see yourself that the overflow-pipe of this cistern

discharges into the open air over a trap, or you will probably get blood-poisoning some time or other. This cistern must have a cover, and should be emptied and well cleaned every three months.

The water you drink should be kept in a covered vessel in your room, and should never be used after standing all night, as it absorbs all sorts of impurities.

If you can afford a little glass charcoal filter, it is a nice ornament and a great protection against impurities. Boiling the water first is of course still safer; and if you have a charcoal filter, the charcoal itself should be washed and scraped from time to time to keep it sweet and clean.

Without general cleanliness your trouble and expense with the room and furniture will be in vain.

Every alternate morning, the piece of oilcloth should be wiped over with a damp cloth, while the boards should be wiped all over with the same, together with the walls, as high as the dado, if they will stand damp; if not, with a dry cloth. On the other mornings the floor and carpet should be merely swept. All fluff and dust will be burnt in the fire. Once a week all the walls should be brushed down, and everything that will bear it scrubbed with Sapolio or some such soap.

You will find nothing less than this will keep the place clean, and it is infinitely better than only having a scrubbing-day once a fortnight. You will greatly improve the health and sweetness of the room if you keep a bottle of "Sanitas" in the house, and on the alternate days put a little in the water when you damp your cloth.

Bear in mind that from the bodies of four people in the course of a year nearly 36 lbs. of dead animal material come either from the breath or skin, and all

this falls about your room; and that is the reason why you must constantly be wiping all your furniture, your picture-frames, and the tops of your cupboards, doors, and window-frames with a damp cloth, as the dust that settles when a family live in one room is far, far more injurious than that in an ordinary house. If you possibly can do your washing out of the room, it is a great advantage. If not, do it as early in the week as possible.

All your dirt and kitchen refuse you should burn in your fire, or, if too damp, if there be cabbage-stalks, for instance, you should throw them in under the grate till dry, and then burn them. If you keep a stock-pot of earthenware on your hob, you can throw into it not only bones and bits of meat, otherwise wasted, but cabbage-stalks and other bits of fresh vegetable, and get a capital nourishing soup without expense. You should never put them in the dustbin or ashpit.

You should hang wearing-apparel up as much as possible on hooks and pegs, with a cover over it to keep the dust off, instead of packing it away in drawers, so as to get well purified.

Everything about your fire-grate should be kept well blackened, whitened, and cleaned. Nothing makes a room look better than a bright clean hearth, and you will find the "Economizer" I have spoken of a great blessing. Of course, whenever you want a very brisk fire, you can unhook it for a time.

You can have no idea how far cleanliness goes in making a good husband. One day I was talking to a cook lately married, and telling her how far good cooking at home went towards keeping the husband at home at night; and she said she found cleanliness went even further, and always took particular care to have the home clean, tidy, and bright in consequence.

The two together—good cooking and cleanliness—are, of course, best of all.

There is no reason why with due care to little things you should not enjoy pure air, pure water, cleanliness and warmth, which go far towards making a good home. As you know, however, they do not go all the way.

A man may be very steady, very tidy, very thrifty, making the most of his hardly-earned wages, a good husband, a good son and a good father, a good workman and a trusty friend, and yet he may still lack the "one thing" needful. Do you know what that is, my friend? When our Saviour used those words—"one thing thou lackest"—what did He mean? In this case the young man had not only an excellent character, but riches as well. What then did he lack? He had not yet Christ. He had not yet a Saviour. Have you Christ? Do you know not only that Christ Jesus loves those who have to work hard for their daily bread, and has chosen chiefly the poor in this world, rich in faith, but that He has chosen you, that you have chosen Him, that He is *your* Saviour, and you are His child.

How bright life in a single room can be if Christ has His place there. It would indeed be a happy thing if this tract were to lead you to heaven. It can only do so by pointing you to Christ. He died for you on the Cross, as you have often heard already. But it is not enough to hear or even to read. You may read this tract through, but if you do not carry out its suggestions you will be no better. You may read your Bible, but if you do not believe what it says and act on its principles it will do you but little good. You must put your trust in Jesus Christ yourself as your Saviour, and believe that He has died in your stead, and borne all your sins, and that it is worth while to try and follow in His steps.

But you say, "I cannot know that. It nowhere says Jesus has borne *my* sins. How do I know it is for me?"

In the same way that you know this tract is for you. It is written for those who have to live in one room. You live in one room, hence this tract is for you, and on reading it you find it just suits your case. Now just read carefully John iii., iv., and v., and see if Jesus does not just suit the case of your soul. He gave Himself for sinners. You are one, and entitled to the full benefit of His sacrifice and death. And you are invited to love Him because He first loved you. And these are His own words, "If ye love Me keep My commandments."

Nothing can make a really happy home but the knowledge by both husband and wife that Christ is their Saviour and Friend, that He has died for their sins, that He is a welcome Guest in their little home, that they are training up their children in the right way. No fear of the public-house then. And if cleanliness be kept in its right place—next to godliness—then the home will be as bright and clean and healthy as the heart, and all will see in your one room a picture of what a Christian's home should be like.