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# HEALTH OF WORKING GIRLS

BEATRICE WEBB M.D.

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HEALTH OF WORKING GIRLS





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# HEALTH OF WORKING GIRLS

*A Handbook for Welfare  
Supervisors and others*

BY

BEATRICE WEBB

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Sometime Student of Newnham College

SPECIMEN

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## FOREWORD

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For many years the health of the working girl has been a subject which has engaged public attention, and by legislation and social activities efforts have been made to protect and care for the young industrial worker. During the period of the war, however, a rapid advance has been made in this direction, probably due to the fact that a higher value has been put on the working woman. Her importance as the potential mother whose function it may be to make good the fearful loss of human life which has taken place during the past three years, and the part she has to play in producing munitions, equipment, food, and exports, have become recognized, and have brought home the fact that the working girl is one of the most important factors in a nation, and that consequently every effort must be made to keep her strong and in good health, and fit for the work she has to perform.

A book full of practical suggestions and hints on the care of health is urgently needed, and should be of the greatest assistance to Welfare Supervisors and Social Workers, who are daily coming into contact with these industrial workers, and whose duty it is to see that everything possible is being done to ensure a high standard of health amongst them. Dr. Webb has given us in a small compass an immense amount of helpful information, expressed in such a way that from cover to cover our interest is not allowed to flag. I am,



of course, not in a position to judge of the medical aspect of this book, but the point which impresses me most is that Dr. Webb thoroughly knows the working girl, and adopts towards her an attitude which shows real understanding and sympathy. When this book becomes well-known amongst Welfare Supervisors, and the advice given in it is faithfully carried out, I think Dr. Webb will receive the grateful, if unexpressed, thanks of many of the girls whom she is out to help.

HILDA MARTINDALE,

H.M. Senior Lady Inspector of Factories.

## PREFATORY NOTE

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This book is the outcome of various lectures to Welfare Supervisors given by me in the University of Birmingham and elsewhere. It is an attempt to do some little towards meeting the new conditions arising from the war, which have not only brought many hundreds of thousands of women and girls into factories, in addition to all who were there before, but which have led to the coming of the Welfare Supervisor with her great opportunities for help. The work is based on long and varied experience in dealing with girls of all classes, in hospital, in private practice, and in detailed investigations into the health of munition workers, carried out for the Health of Munition Workers' Committee of the Ministry of Munitions. The root idea of the book is my strong conviction that a doctor's best work is to keep people well, to raise as far as possible the everyday level of health, and it is with a view to helping Welfare Supervisors in this work that the book is written.

My grateful thanks are due for valuable suggestions to Dr. Thomas Wilson, Professor of Gynæcology in the University of Birmingham; to Miss Martindale, H.M. Senior Lady Inspector of Factories; and to Miss Helen Madeley, Warden of the Birmingham Women's Settlement.

BEATRICE WEBB.

EDGBASTON,  
*April 12th, 1917.*





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# HEALTH OF WORKING GIRLS

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## CHAPTER I

### Indigestion

The question of digestion is one of the most important in relation to the general health—that is, to a condition of body and mind which enables us to do our work and take our pleasure, to eat and sleep, without pain or weariness or depression; which gives us a sense of vigour, of courage, and of content. A healthy mind in a healthy body is the most valuable possession we have. To the woman who earns her living it is the very basis of her existence; her capital; all she has to draw upon.

Health questions are much to the fore nowadays, mainly because we have got away from the happy position of those who are not aware that they have any health. “Blessed is the nation that has no history!” might be paralleled by “Blessed is the people that has no health questions!” But we have wandered far from the paths of physiological righteousness during the long ages of civilization, and now we are beginning, slowly and painfully, to make our way back to them. The question of health becomes more and more serious as larger and larger numbers of us come to live in towns. In the middle of the nineteenth century three out of every four people in England lived in the country; to-day



four out of every five live in towns—a very grave position which only garden cities can remedy. Health means so much; not only power of work, but happiness; for the unhealthy woman who is happy is very rarely found outside the annals of the saints. But the consideration of health needs to be kept within sane bounds. Is there a more contemptible person than the woman who makes her health her idol, who cannot come here because she might catch a cold, who cannot go there because she would not sleep after it, who cannot help a neighbour because exertion brings on headache, who cannot do anything for anyone but her miserable self, because she is “so delicate and easily upset”? Health is more than a personal question, it is a social question. The woman who has poor health cannot do her share of the work of the community, but becomes more or less of a burden, either on her family or on the public. The world needs the strong and the healthy, and never more than in these days of extreme national stress. “Gentleness and cheerfulness, these are the perfect duties”, says R. L. Stevenson, and it is very difficult for any but the healthy to be persistently gentle and cheerful. Health is a race question—a point which in recent times of developing independence has tended to be overlooked, but which now begins to come forward. I belong to myself is a fairly common sentiment; but a much truer view is expressed in “Ye are not your own”, in “No man liveth unto himself”. The children of to-day are the parents of to-morrow, and no more solemn duty lies upon the race than that of handing down a heritage of healthy minds in healthy bodies, of giving children such a start as will enable them to do their share in the world’s work, to serve faithfully their day and generation.

**Indigestion** is very common—perhaps the commonest complaint doctors hear from women, and very much more common than in men, perhaps three times as common. It is in the vast majority of cases avoidable, and probably nine cases out of ten need never arise, being due to causes within the sufferer’s own control. It is more easily avoided than



cured; but most cases can be quite easily cured by the sufferer herself, by avoiding the mistakes which have brought about the mischief.

The symptoms vary much. Among the commonest are: (1) A sense of fullness, of weight, of discomfort arising after meals, about the waist on the left-hand side or in the middle, that is, in the stomach — a term which the wage-earning woman is apt to apply to the whole of the abdomen. (2) Pain in the stomach, that is, about the waist and shooting through to the back, which pain may be a dull ache or a violent sharp stab, and which may come on within a few minutes after food, or as much as three or four hours later. (3) Flatulence; that is, a distension of the stomach or bowels with gases which press on them and so cause pain. (4) A general sense of tiredness and heaviness, of not being up to the mark, which is often accompanied by a bad complexion and dull eyes.

"Prevention is better than cure" is a very good old saying. Most illnesses, most diseases ought never to occur. It is infinitely more important to keep people thoroughly well than to get them well when they are ill, for if their everyday level of health is a high one they will much more readily throw off the few illnesses they do get. In this most important work of helping to keep workers in first-class health, Welfare Supervisors have before them a great and an increasingly great future. To live a healthy everyday life should be the first physical aim of everyone, and is possible for almost everyone if they know how to set about it, and have enough sense and moral backbone to stick to it. It is bad to be thinking about health, but good to lay down some simple rules and let them become a steady habit requiring no thinking about.

The process of digestion is essentially the conversion of the various foods, mostly solid, into a liquid or into an emulsion which can pass out through the walls of the digestive canal and into the blood-vessels. This is brought about by digestive fluids which are secreted by glands in relation with the interior of the digestive tract, and the food is moved on from one stage



to another by the action of the muscular walls of the tract. Indigestion may therefore result from a failure in the digestive glands or from a failure in muscular action.

The common causes of indigestion are rather numerous, but are all within the power of an ordinary person to avoid.

Bad teeth make the first stage of digestion very difficult, and generally lead to mastication being cut short or omitted entirely. While in the mouth the food should be broken up very fine, in order to allow it to mix freely with the digestive fluids secreted by the salivary glands, which turn the insoluble starch of such foods as bread, potatoes, rice, and oatmeal into sugar which is soluble and readily absorbed into the blood. If this first stage is omitted a great strain is thrown on the other digestive organs, both from absence of fine division of the food and from the presence of unaltered starch, and nothing which can be done later on really makes up for the lack of digestion in the mouth, and such digestion is impossible without proper teeth. There is great carelessness about teeth, and in many large towns it is rare to see a wage-earning woman of thirty with a complete set of teeth. The front teeth matter little since knives and forks have been invented, but it is common to see women who are quite content to have no grinding teeth at all so long as the front teeth, as the only ones which show, are in fair condition.

Hurrying over meals always means that the first stage of digestion is badly done. The American Quick Lunch Counter is responsible for a good part of the American dyspepsia. It is difficult for the stomach to deal with masses of food which have been bolted without the preliminary fine grinding, and every mouthful should be taken dry and thoroughly and slowly ground up, the whole solid part of the meal eaten in this way, and the accompanying fluid taken at the end. If liquids are taken into the mouth at the same time as solids, the salivary fluids are not secreted freely. The late Mr. Gladstone's personal rule, and no doubt a factor in his vigorous longevity, was to grind each mouthful thirty times. This is quite an easy habit to acquire, and does not imply spending unduly



long at table, as any ordinary breakfast can be treated in this way in fifteen minutes, while half an hour is ample for a two- or three-course dinner or supper. Getting up late, a hurried breakfast and a rush to work starts many an attack of indigestion. The rule as to masticating thirty times applies to such soft foods as porridge, bread and milk, rice pudding, not for grinding, but that the food may remain long enough in the mouth for the salivary fluid to convert the starch into sugar.

Worry is a potent factor in causing indigestion. That the appetite fails and the digestion is upset during times of great anxiety or unhappiness is common knowledge; but the same factor comes in to a smaller degree in ordinary everyday life, the digestive glands being in very close relation with the emotional condition, so that to cultivate cheerfulness and serenity of mind is a great help to digestion. It should be recognized as bad form to introduce disagreeable topics at meal-times, to talk over losses or anxieties or annoyances; and everything that can be done to make canteen or mess-room meal-times orderly, serene, and cheerful is to the good. This is well realized in relation to invalids, but not always recognized as of great value to the tired worker. From the point of view of digestion, a rest before food is much more important than a rest after food, as during a rest after work and before a meal the energy is turned off from the channels in which it has been running, and is available for the digestive glands and muscles, and enables them to prepare for dealing with the food. If, with a dinner-time of an hour and a half, the first half-hour could be spent in real quiet rest, sitting down for those who have been standing at work, the second half-hour on the meal, and the third in a gentle stroll, or for the very young girls a not too vigorous game in the open air, the meal would be much better digested than it can be when taken as soon as possible after leaving the work-room.

The modern custom of having four, five, or even six meals a day involves a considerable disturbance of digestion, and though it may be indulged in with impunity by the "five-meal, meat-fed men" of New Zealand with their active, open-



air life, it adds to the difficulties of the town worker. Three meals a day usually pays best for the majority of people, and no doubt our ancestors of five hundred years ago fared very well on two. The stomach has not accustomed itself to the modern change, bodily rhythms being very slow to alter, and still requires about five hours for the complete digestion of a good meal; and if more food is introduced before the completion of the process, confusion and a call for special effort results. The ideal meal-times would seem to be a breakfast before beginning work, a midday meal some time between twelve and two, and an evening meal between seven and eight instead of at the much later hour often obtaining in wage-earning families. With such meal-times should go a break of fifteen minutes in the middle of the morning and in the middle of the afternoon, for the double purpose of a rest and of a good drink of from half a pint to a pint, which in the morning might with advantage be coffee or cocoa, and in the afternoon tea, weak and freshly made. Such hot drinks, taken without food, would help in the final stages of gastric digestion. The carrying of buns, cakes, biscuits, and sweets into the factory, to be eaten at odd moments, needs to be discouraged.

Poor food is a cause of indigestion, and by poor food is not necessarily meant cheap food, as all the really important foods are comparatively inexpensive, with the exception of milk—or were so in pre-war time, and will be so again after the war—while on the other hand many of the most costly foods are very poor. Good plain simple foods which grow in our own country are best suited to our needs, and there is much to be said for the dictum of a famous surgeon: "When the Almighty put a man to live in this country He meant him to eat the things which grew about him, and not to fetch things from all over the world!" and this is one of the lessons the war is teaching us. Fancy foods, highly spiced foods, tinned foods are less easily digested than plain home-grown foods. The factory girl is apt to rush out, buy tinned lobster, fried potatoes, pickled cabbage, and a jam tart, eat it all in



ten minutes, and wash it down with a cup of strong stewed tea, and then wonder that she has "such bad indigestion"!

Want of air tends towards indigestion by lowering the vitality of the whole body, and an open window day and night goes far towards a healthy digestion. No appetite for breakfast often means that the person has been sleeping in a shut-up room, and is largely the explanation of the custom of coming to work without breakfast, and having a breakfast break after an hour or two at work at the factory. Want of exercise weakens digestion by allowing all the muscles to become soft and unequal to their work, the muscles of the stomach and intestines suffering with the rest; and all sedentary workers, and even most who work standing, would be much the better for a sharp walk of a mile twice a day, and some hours of open-air exercise on Saturdays and Sundays.

Constipation is often associated with indigestion and intensifies its evil effects, setting up a vicious circle in which indigestion leads to constipation, and constipation to further indigestion. It is a very common and very serious evil, far worse in town than in the country, far worse in women than in men. Unless the indigestible residue from the foods eaten is passed out from the bowels by a daily complete evacuation, changes take place in it which produce powerful poisons which are absorbed by the blood and so carried all over the body, to lead to mischief in all directions, to headaches, anæmia, tiredness, painful conditions of joints and muscles mistakenly called "rheumatism", and ill-health in general. It is a dangerous habit to allow several days to go by and then take a purgative, and in most cases there is no need for drugs if certain aids to daily evacuation be carried out steadily.

Of these aids the most important are:—

1. A fixed and absolutely regular time for the action of the bowels, usually best either first thing in the morning or last thing at night, so as to be as little as possible subject to interference with the bodily rhythm which it is sought to set up. This rhythm is very easily set up in infancy and



early childhood, and should become a lifelong habit, but can be acquired in adult life at the cost of perseverance by those whose early education has been neglected in this respect. This is probably the most valuable of all the defences against constipation.

2. Water is needed in much greater quantity than most women habitually take, and half a pint of cold water taken before breakfast, in the middle of the morning, and before supper, together with three other half-pints of fluids taken with meals, gives the minimum three pints a day needed by every woman for the healthy working of the body.

3. Certain foods are helpful. Oatmeal, barley meal, or maize meal porridge and cakes, with syrup or brown sugar; wholemeal bread and currant bread; all green vegetables and salads; all fruits, fresh or dried. During war-time certain of these are unavailable, but an extensive use of oatmeal, barley, and maize is not only possible but desirable, and goes far in the direction desired.

4. Corsets should be very short, soft and easy, otherwise the abdominal muscles are weakened and become unable to help properly during the action of the bowels. For strengthening these body muscles all bending, turning, and twisting movements of the body are helpful, together with outdoor exercise in general and skipping in particular.

5. Strong and stewed tea accounts for much constipation, the tannin of tea being so well known in this connection as to be prescribed by doctors to check diarrhoea; while weak, freshly-made tea which has not stood on the leaves for more than two minutes is a safe drink for most women.

6. Pills and salts as commonly taken do nothing to cure constipation, giving only temporary relief, and indeed lead to further weakening of the intestinal muscles, which lose their own initiative and come to depend on violent stimulation. They are much better avoided, and are unnecessary if the above measures are faithfully carried out.



## CHAPTER II

### Teeth

Modern teeth are a departure from the normal, decay and toothache having come with civilization.

Egyptian mummies of three thousand years ago show usually thirty-two perfect teeth; the skulls of those of our own race from five hundred to one thousand years ago all show thirty-two perfect teeth, and even to-day it is common to find among the people of Neolithic descent who live in the black country of South Staffordshire, women who in middle life possess thirty-two teeth which are remarkable for their beauty and perfection in every respect. The problem of the rapid deterioration of modern teeth is now receiving serious attention in school clinics and in some factory clinics, and anything which can be done to turn the race back from this particular downward path is well worth doing.

The causes of modern decay seem to be in the main two. The chief cause is undoubtedly the change during the last hundred years in the character of the foods commonly eaten. The food is now too soft, too much altered by cooking. The coarse, dry, hard food, the tough food of earlier times, gave the jaws and the teeth ample exercise, and therefore a good blood supply. Such food also scoured and cleaned the teeth, so that bacteria had much less chance to grow. Five hundred years ago in England the food of the majority was hard, dry, coarse brown bread, hard oatcake or rye cake, with occasional tough meat such as salt pork. Want of proper work always lands a person or a part of a person in serious trouble, any part not used becoming feeble and practically disappear-



ing. Wisdom teeth are now disappearing; in many cases they do not come at all, in others they decay at once, because the jaws are now too small for thirty-two teeth. The smallness of the jaw would not matter if the remaining twenty-eight teeth were healthy, but the mischief seems to be progressive.

Another cause is found in the unhealthy conditions of modern town life, the work in shut-up rooms, the deficient exercise, the want of enough sleep.

The extent of the trouble is very great. Two large Council schools in a big city, specially examined, showed in the one case 96 per cent of the children with decayed teeth, in the other 98 per cent, while the average of all Council school children throughout the country shows between 80 and 90 per cent with decayed teeth.

As man eats all kinds of food, he possesses teeth for dealing with all kinds. Cutting teeth have a sharp chisel edge for taking bits out of hard foods or vegetables; tearing teeth are strong and pointed, for tearing bits of tough meat, and remind us that teeth came before knives, as fingers before forks. These are teeth such as the cat and the tiger possess. Grinding teeth have broad and shaped surfaces, fitting into one another as do the millstones of a mill, and these are such teeth as the cow and the horse have. The total gives eight cutting teeth, four tearing teeth, twenty grinding teeth, which last under modern conditions suffer most.

Inherited bad enamel, which chips easily, and so exposes the much softer denture to the action of the bacteria, is one cause of early decay in small children's teeth. The only thing to be done in such families is to take extra care of the teeth from the first day they appear. Bad feeding has much to do with early decay, little children being put on to soft foods as soon as they cease to live entirely on milk, and never having any food of a character to develop the teeth and jaws. The common boiled bread and milk, rice pudding, porridge and milk would be better replaced on three occasions out of four by slices of hard dry bread, oat cake, barley cake, rice cake, spread with butter, syrup, or jam, and followed, only when all



the food is eaten, by milk to drink. This rule carried out through all the growing years would go far to secure good sound teeth.

Another bad practice is the giving of pieces of cake, biscuits, soft bread, and sweets at odd times apart from meals. A little of these is left sticking to the teeth and forms a medium in which bacteria flourish. Where it can be afforded, the best plan is to let each meal end with a little fresh fruit, which leaves the teeth free of damaging particles of starch or sugar.

The effects of bad teeth are numerous. One of the worst is indigestion from insufficient mastication; another is anæmia from poisoning of the stomach, and subsequently the blood, by toxins given off from septic teeth and constantly swallowed.

Tubercular teeth often lead to tubercular glands in the neck, and these in turn to tuberculosis of the lungs.

Many headaches in young girls are due to irritation of nerve endings by carious teeth. Many women suffering from indigestion go to a doctor asking for medicine, and come away with a prescription for the supply of artificial teeth; and one great surgeon has been known to say that he has never seen a case of displaced kidneys in a person with sound teeth. Most cases of neuralgia of the face are started by decaying teeth, and can be cured by the proper care of the teeth. There is a curious reluctance to own up to toothache, and patients invariably describe themselves as suffering from neuralgia, the doctor's reply to which is a prompt request to be allowed to look at the teeth.

Care of the teeth should begin as soon as the first tooth comes, and by the time a child has its full first set, at two years, the tooth-brush should be used at least twice a day. Now that tooth-brush drill has been installed in Council infant schools we may begin to hope for better things. A solid powder is much better for cleaning the teeth than a liquid dentifrice, as the former exerts a scouring action. Fancy powders are sometimes harmful, while plain chalk or camphorated chalk is always good. Rinsing the mouth is quite as



important as brushing the teeth, and may with advantage be done with some mild antiseptic, such as sanitas well diluted.

Having teeth filled is almost unknown among the poorer wage-earners, who usually let them go until nothing can be done except to extract them; and it is most desirable that they should be taught to regard a dentist as good in proportion to the number of teeth he does not take out. They need to learn that money is better spent on the dentist than on the doctor, and that if, unfortunately, teeth have been neglected for so long that nothing remains but to take them out, that £5 or £10 spent on good artificial teeth is one of the best possible investments, even if it means saving for many months, and abstaining from all new frocks and hats, tram rides, and chocolates for a year.

## CHAPTER III

### Anæmia

Anæmia is a very common disease among growing girls of fifteen to twenty, and among young women of twenty to twenty-five. It may occur later, but anæmia among older women is commonly due to special causes which do not often affect the growing girl, such as great loss of blood at the birth of a child, excessive monthly loss due to uterine disease, Bright's disease of the kidneys, lead poisoning, cancer, or abscess.

Anæmia has been until quite recently an ill-understood disease, less in its effects than as to its causes, but it has now become a matter of common knowledge among doctors that the root cause is a toxin or toxins absorbed into the blood, and either weakening or destroying the red blood cells. The trouble is much more common in towns than in the country, and often attacks girls of the wage-earning classes soon after they have left school and gone to work in a factory, office, or shop.

The blood is commonly thought of as a fluid, but is really a straw-coloured fluid such as is seen in a blister, plus very minute living cells, most of them red, but a few white, which are known as blood cells, and which are so small that a drop of blood on the end of a pin contains about four millions of them. In anæmia the blood looks pale and thin because the proportion of red cells to fluid has become smaller, and because the cells themselves have become paler, and also in many cases fewer in actual number. The red cells carry the oxygen which is everywhere needed for all living processes, and unless



the oxygen supply is sufficient no part of the body can be properly fed. Anæmia is a disease which is easily detected, as so many of its effects are obvious.

The face is usually pale, owing to the diminution of colour in the blood circulating in the skin. In some cases the cheeks may have colour, in others the skin may be so thick that it is difficult to know whether the pallor is that of a thick skin or of anæmia; but certain regions act as a reliable index, regions with a free blood-supply coming very near the surface. These regions are the lips, the gums, and the lining of the eyelids, and pallor in these means anæmia.

There is often a puffy, solid appearance, particularly of the face, ankles, and legs, and the girl may look fatter and be heavier than she was before she developed anæmia, but the appearance is due to a watery unhealthy condition of the tissues. The muscles are flabby, the arms feeling soft, like a baby's, and there is commonly complaint of aching legs at the end of the day, aching arms if work involves arm movements, and an aching back if there is much standing or sitting upright. Cold hands and feet are common, as the blood is not carrying enough oxygen to keep up the combustion of food materials and of tissues by which bodily heat is maintained at normal temperature. The heart muscle is ill-fed and unable to keep up a good circulation through the regions where this is most difficult, that is, through hands, feet, and the bottom of the back.

Shortness of breath is one of the first indications of anæmia. The girl cannot run any distance, cannot run up two or three flights of stairs, cannot play a vigorous game, cannot lift heavy things, or do continuous hard work. She describes herself as being "out of breath directly!" This comes from the inability of the red cells to carry enough oxygen to meet any extra demand for effort, and the quickened and deepened respiration is a response to this call for more oxygen.

Palpitation accompanies the shortness of breath, and may be very distressing. It means that the heart is trying to make up, by beating more quickly and powerfully, and so



driving the blood more frequently through the lungs and through the body, for the deficiency in oxygen. As the oxygen is absorbed from the air in the lungs an increased circulation of blood through the lungs helps matters.

The appetite becomes poor, fickle, and fanciful. The girl does not care for plain foods, but craves for unusual or tasty things, often for vinegar or other acids, hence her demand for pickles. It is sometimes said that a girl is anæmic because she drinks vinegar, but the truth is that the girl drinks vinegar because she is anæmic, her stomach not being provided with good blood, and therefore being unable to supply effectually the gastric fluids needed for digestion.

Headache is very common—a dull, steady, all-over ache lasting days or weeks, or even months; not bad enough to take a patient girl off work, but bad enough to destroy all her zest in life. Neuralgia and toothache are also common, the ill-nourished nerves needing little provocation to set up pain. The girl is always tired, gets up tired and goes to bed tired, even when the work is quite light. She is very sleepy, wakes heavy and sleepy even after a full night's sleep, and is ready to fall asleep any minute of the day if quiet and sitting still. A mild degree of depression is frequent. Nothing seems to be worth while, everything is too much fag, life looks grey, and it is very hard to rouse up enough to enjoy anything. The one wish is to sit still and do nothing, not even talk!

In the case of clerks in an office or responsible girls in a factory, loss of memory is often a serious trouble, and the girl is complained of as having lost her power to reckon quickly and correctly, and as having become stupid about understanding or carrying out orders. The above is a typical picture of an advanced case of anæmia, where the hæmoglobin index of the blood may be not more than 50 or 60 per cent of the normal; but some or all of these indications, in greater or lesser degree, are found in girls whose red cells show a colour index of 70 or 80 per cent of the normal.

The great outstanding cause of the anæmia of the young woman is constipation, a fact which a late famous physician



expressed by saying that if he were allowed only one drug to cure anæmia he would take, not iron, but Epsom salts. When the food residues which should pass out of the intestine daily are allowed to remain, harmful bacteria multiply in them and produce toxins which are absorbed into the blood, and which destroy the hæmoglobin of the red cells. It is these toxins which, circulating in the blood, reach the brain and produce headache, and all the symptoms of anæmia are due on the one hand to a deficiency of hæmoglobin, and on the other to the presence of toxins in the blood. These toxins of intestinal origin are very powerful. In addition to anæmia they are responsible for most of the painful conditions of joints and muscles which are erroneously called "rheumatism", and for much cardiac weakness in cases where there is no organic lesion of the heart.

Methods to secure a daily and complete action of the bowels have been dealt with in Chapter I. It may be briefly reiterated that they consist in—the establishment of a daily bodily rhythm as to the action; the taking of a proper quantity of water; the taking of suitable foods; the provision of ample air and of open-air exercise.

Want of air is a large contributing factor in the anæmia of the city worker. The anæmic girls are girls shut up in factories, warehouses, offices, and shops, often crowded together with windows shut. Public opinion in work-rooms needs educating in the matter of windows, and one strong sensible girl can influence many, while a head girl or forewoman can insist on a wide-open window, for which the rest will eventually bless her, however much they may resent it at first. Some necessity, or fancied necessity, of the work is often given as an excuse on the part of the management for not having the windows open. It may be a real necessity, as in cotton mills, where a hot damp atmosphere is essential to the spinning and weaving of the cotton, or it may be some question of delicate fabrics or papers which must not be exposed to dust; but the sooner we learn that the health of the workers must be the first consideration, the sooner we



shall find out how to get over the technical difficulties as to material which at present lead to shut or nearly-shut windows. At present it is necessary to say: you may not be able to do as you wish as to windows while at work, but you are mistress of your own bedroom, and a long night spent with your head on the window-sill will do a good deal to counterbalance the bad conditions of your place of work. Now that Welfare Supervisors have come, and come to stay, we may look for steady improvement as to air in factories. The anæmic girl should push her bed right up to the window, open the bottom sash or the casement to its full extent, draw away blinds and curtains, and lie with her face as nearly on the window-sill as she can get it. After a few nights she will be warmer than ever before, as the cold night air induces deeper breathing, more oxygen enters the blood, and more oxidation of tissue occurs. Every working girl whose work is indoors should spend at least two hours a day in the open air, and should make a far better use than is generally made of Saturday afternoon and Sunday. Part of the Saturday free time too often goes in cleaning the house, or in cooking or sewing, leaving simply a part of the evening for a stroll in the shopping streets of the town. If something on the lines of the Girl Guides could be worked out, so as to induce working girls in general to spend all the daylight hours of their Saturday half-day in country camps, it would be an inestimable boon. Undoubtedly, too, better use needs to be made of Sunday, and there is much in favour of the Continental plan by which Church services are over by twelve, and it is then proper to go out into the country or the parks for the rest of the day. Saturday camps might with advantage be extended during most of the year into Saturday to Sunday-night camps. After the war there will be vast numbers of military huts and camping sites which might be used in this way.

The inside of trams should be avoided by anæmic girls, who would do much better to go to work, either on a tram top or on a quietly-ridden bicycle, or by walking. Far too



much use is made of trams, and few girls would be the worse for two or three miles walking in the course of the day.

Bad teeth are a potent factor in causing anæmia, and it is often impossible to cure the disease until the mouth has been put into a thoroughly healthy condition. In especial, every trace of pyorrhœa, that is, a septic state of the tooth sockets, must be removed, even if it implies taking out teeth which in themselves are good.

The anæmic girl can in most cases cure herself by taking up and steadily carrying out the manner of life above suggested, but her recovery may be hastened by giving in addition a little extra food for the blood in the shape of a readily absorbed form of iron. For this purpose the following is often a very successful prescription which a Welfare Supervisor may feel justified in advising:

Citrate of iron and ammonium, 1 ounce.

Cold water, 1 pint.

One dessertspoonful to be taken three times a day, in half a pint of cold water, for three months.

With this should also be advised a daily dose of Epsom salts sufficient to induce a thorough evacuation of the bowels.



## CHAPTER IV

### Headaches

Headaches are very common among women and girls, much more so than among men, and for this there is no sufficient reason, as women have a right to be as healthy as men, even though less strong muscularly. By the working girls, headaches are far too patiently endured. It is common for a doctor to find that among the symptoms mentioned by a girl seeking advice headaches are not included, though a direct question brings the answer that they occur for certain hours of each day, at intervals of a few days, every week-end, or at every monthly period. This seems to be taken for granted. Women are noted for patient endurance, and it is certainly a great thing not to make a fuss, not to live thinking of one's health; but this can be carried too far. We need all the health and strength possible to do our duty in the world, to be helpful and cheerful, and it is best not to sit down to headaches, but to get up and fight them vigorously. Most headaches are avoidable, and can be got rid of by the sufferer herself, leaving a few brought about by uncommon causes which only a doctor can treat.

The commonest cause is probably toxæmia, a condition in which poisons, usually of intestinal or dental origin, are constantly circulating in the blood. This generally gives dull frontal headaches of many hours or many days duration, accompanied by heaviness, sleepiness, and mental inertia, as in the case of a person who has been drugged. Many women recognize these headaches as having their origin in constipation, and when they occur treat them by drastic purgatives,



or make a regular habit of taking such purgatives once a week. Prompt relief follows the use of the purgative, but it does nothing to prevent the recurrence of the trouble. Certain famous proprietary pills, made of aloes, ginger, and soap at very small cost and widely advertised, owe their immense popularity to the fact that they temporarily relieve the condition of toxæmia due to constipation, while the proprietors owe their enormous fortune to the fact that the need for the pills recurs perpetually. The avoidance of the toxæmic headache, then, implies the avoidance of constipation, a subject fully dealt with in the last chapter.

Another very common cause of headaches is anæmia, whether of toxic origin—which makes it a special case of the above described—or due to excessive loss of blood, or to deficient blood formation in girls who are chronically short of food and air and light. The avoidance of this kind of headache is the avoidance of anæmia, as previously described. It is particularly apt to occur in young girls who have lately left school and gone to work.

Eye-strain is responsible for much serious headache in people who may have no idea that anything is wrong with their sight. Vision may seem to the girl herself to be all right. She can read easily, do fine work easily, see clearly at all distances, and yet, owing to small defects in the eye, necessitating constant correcting efforts on the part of the intrinsic muscles of the eye, there may be so much strain as to cause frequent severe headache. It is girls who are doing fine close work, especially if in a flickering light or in a poor light, who are most subject to such headaches. Often the eyes feel tired or ache after some hours of work; often there is an indescribable, but easily recognized, dull, tired look in the eyes. Such headaches are entirely prevented by wearing correcting lenses; but the lenses need prescribing by a doctor who is an eye specialist, and the common plan among wage-earners of going to an optician's shop and being tested there, may result in glasses which are no good whatever, and even in glasses which may do definite harm. In all departments



of medical work for which specialists exist—for the eyes, the nose, throat and ear, the skin, for the diseases peculiar to women—it is well to consult these specialists rather than general practitioners. Perhaps in the case of the last-named diseases it may be wise to consult first a medical woman in good standing in general practice, who will hand on the patient to a specialist in gynæcology if necessary or desirable.

Carious teeth often cause not only toothache but headache, especially in girls of feeble constitution, and overcrowded, irregularly-placed teeth may have the same effect. Keeping the teeth scrupulously clean, and going to the dentist for filling at the earliest hint of pain or decay, or if the teeth are crowded, will prevent this class of headache.

Deficient air-entry to the lungs may cause headache. This deficient entry may be due to the bones of the nose being bent out of position so as partly to block the air-way. It may be due to a partial block further on, from adenoid growths behind the nose or from enlarged tonsils. In these cases, if the block is of long standing, dating back to early childhood, the bridge of the nose will be seen to be broadened and flattened, a danger-signal which should always lead one to look for adenoids or enlarged tonsils. Mouth-breathing and snoring are other danger-signals pointing in the same direction. Such headaches are often worse on waking in the morning than at other times, as the amount of air entering the lungs during the night is smaller than that during the day. The work of a throat specialist is necessary to the relief of these headaches, as the adenoids and tonsils must be removed.

Apart from deficient air-entry, bad air causes many headaches of the kind which are common on waking and which clear away in an hour or so, especially after walking to work or doing vigorous work in the house. These headaches come from sleeping in shut-up rooms. Later in the day they may arise from stuffy workshops or public buildings, and it is difficult to say which are the worse sinners in this respect, churches or theatres. Many picture-houses, having been more



recently built, since the importance of air has been better recognized, sin less in this respect. Pure fresh air in abundance is one of the best safeguards against headaches.

Tight collars prevent the free return of blood from the brain by pressing on the large veins, which in the neck lie superficially. Therefore the blood-vessels in the brain become overfull, and cause undue pressure on the brain substance. The present fashion of no collars above the level of the collar-bones is a very good one, though it would be better if not combined with a V-shaped opening over the breastbone.

Tight corsets and waist-belts hinder breathing at the bases of the lungs and hamper the heart's action, so causing headaches in two ways. It is commonly known that the tight-laced girl has more headaches than most others. In this type the pain is suddenly worse and becomes throbbing in character on stooping to fasten the shoes, as still more blood then accumulates in the brain, and giddiness is often a feature.

Certain drinks tend to headache, in especial alcoholic drinks, which often cause a first-thing-in-the-morning headache. Strong and stewed tea taken to excess gives headache, although a cup of tea of the right strength often relieves it. Cocoa is an excellent drink for those subject to headache, and may with advantage altogether replace tea for some months. It helps by virtue of the contained theobromine, a very powerful stimulant to the kidneys which increases the activity with which they excrete toxins from the blood.

A form of headache which stands apart from those described is migraine, commonly known as sick headache. The origin of this is in dispute, but it seems probable that it is akin to epilepsy, and implies a profound temporary derangement of the functions of the cortex of the brain. It is usually preceded by certain sensations, varying from person to person, but generally constant in a given person and generally associated with sight. There may be flashes of flickering light or zigzag lines of colour. The pain begins on one side of the head, and may be confined to one side or may spread over the whole head. It is intense, and is accompanied by extreme



exhaustion and by nausea and vomiting. The attack is usually over in forty-eight hours, and the patient then knows that she may expect to be free for an interval, which is often a fairly regular one. In some cases migraine is undoubtedly toxic in origin, in others it seems to be associated with small defects of the eyes, the nose, the ears, the teeth, or the generative organs. It is very difficult to treat, and the sufferer needs prolonged minute examination by a physician, an oculist, a nose and throat specialist, a dentist, and a gynæcologist before the condition is given up in despair, as it so often is. It affects educated and sedentary workers more often than open-air country people, and is most commonly found in families showing other forms of nervous instability. During an attack, all that can be done is to give a hot bath, a purgative, a cup of strong coffee or 10 grains of phenacetin (under medical orders), and to keep the patient in bed in a dark room and as quiet as possible, without any attempt at feeding until she feels a desire for food.

In factories in which lead is used, headache may be a danger-signal pointing to lead-poisoning, and in such cases the gums should be examined for a blue line at the junction of the teeth and gum, and if such is found the patient should at once be reported to the doctor or the authority concerned.

When all the causes of headache which it is within the sufferer's power to control have been eliminated, it will be found that a very small number of cases remains, and that these need a high degree of medical skill and care in treatment.



## CHAPTER V

### Common Colds

The name common colds is misleading, suggesting as it does that the cause of the trouble is cold or damp air. On the other hand, it must not be forgotten that our Continental neighbours regard this as a peculiarly English disease, and that in some way our island climate, wet, windy, and changeable, may be partly at fault. The trouble is certainly most frequent in the autumn and winter, but this is from special causes apart from weather. Getting the body very cold, especially by means of wet clothing or wet shoes, makes one more liable to the disease, but cannot produce it in the absence of the causative bacteria. Wet clothing in contact with the skin is rapidly dried by means of heat abstracted from the skin. In this way the body temperature is lowered to a considerable degree; and as power to resist bacterial invasion depends, among other factors, upon the maintenance of a normal body temperature, this lowering renders the person more liable to fall a victim to any bacterial invasion, whether of scarlet fever, influenza, pneumonia, typhoid, or anything else. The bacteria of common colds are always with us in towns, hence the frequency with which we succumb to them when in a condition of lessened resistance. The fact that wet clothing produces no ill effects if the wearer keeps moving briskly, depends on the counterbalancing of the heat lost by evaporation by the heat produced by muscular movement, so that the bodily temperature is kept normal. Sir Ernest Shackleton reports that on a South Pole expedition his party "caught cold" once and only once. This was on the opening



of a bale of clothing packed in England, no doubt by a person with a "violent cold". All the men in the hut at the time developed terrible colds. One man went straight out into the air and lost his cold in a day; the others remained in the hut, and their colds lasted several days. Nansen relates that on his North Pole expedition no one ever had a cold till they reached Norwegian waters on the homeward voyage, were met by a Norwegian steamer, with whose crew they mixed freely, when all of them developed violent colds at once. The "strangers' cold" of the islanders of St. Kilda, in the days when they were in touch with the mainland only by means of a half-yearly steamer, is a well-known instance of the same thing. The inhabitants all caught colds on each occasion, but owing to their healthy outdoor life were able promptly to kill off all the bacteria, and had no more colds until the coming of the next steamer.

The first question in relation to avoidance of colds is that of resistance. Some people have a high-resisting power and can kill at once all the bacteria of colds which attack them, so that they never take colds however many other people in the house may have them. Others can kill a good many bacteria, and only catch cold when there is a high degree of infectivity in the air. Others have very little power of killing the bacteria, and are said to be "always catching cold". Resistance varies in a given person in relation to general health. When run down, very tired or very worried, we take all diseases, colds included, more readily. Resistance to bacteria is definitely lowered during the menstrual period, and many colds are found to start at these times. Another instance is that of the girls who "come out in spots", that is, small localized inflammations of the skin, of bacterial origin, during the monthly period.

To increase resistance—in the phraseology of modern research, to raise the opsonic index of the blood—is therefore the first aim. There are three main helps to this:—

1. Abundant air. Those who live with open windows day and night, who sleep with their heads on the window-sill, have



never so many colds as the stuffy coddling people who are afraid of a draught; and many a girl who in war-time earns her living as a postwoman, chauffeuse, or farm-worker finds that she has left the colds of her work-room, shop, or office days behind her.

2. Cold baths taken daily are a great help. They act by improving the circulation through the skin, making it more efficient in ridding the body of toxins and in acting as a heat regulator; also by increasing the health and vigour of the whole body. A brief cold plunge is good for most, and as our cold water in town bath-rooms is never so cold as natural water, having been stored for many hours in a tank in the house, often above the hot-water tank, a cold bath is not a severe ordeal. For those who are cold and shivering after a cold bath it is worse than useless, but most of such girls gain greatly by standing in a little hot water and quickly sponging or splashing down with cold water, then standing in the hot water while rubbing with a big rough towel. The ideal bath consists of a hot scrub with soap and loofah while standing in a foot-bath with a little hot water, a cold plunge, then out again to stand in the hot water while rubbing dry. Cold feet very rarely follows such a bath as this.

3. Good simple food in abundance, and properly apportioned as to proteids, fats, and carbohydrates, is essential. In the case of the growing girl of fourteen to twenty-three, of the thin girl of all ages, great stress should be laid on the amount of fat. In the poorer quarters of London and of other great towns almost all the babies and young children have chronic colds, mainly from an excess of bread and sugar and a deficiency of fat in their food. On the other hand, too much food is to be avoided, many stout over-eating women having almost constant colds and bronchitis.

4. A regular daily action of the bowels prevents the blood from becoming poisoned by intestinal toxins, and so lowered as regards its power in killing bacteria.

5. Good clothing should aim at checking excessive loss of heat from the body, while giving as little extra weight to carry



about as possible. Under garments are best of cotton, so treated as to make it include much air, and two complete layers of such clothing is enough for girls leading healthy lives. Outer garments should not be long enough for the bottom to get soaked on a wet day, and should only come up to the collar-bones, leaving the neck as bare as custom allows. Muffling up the neck weakens it and imprisons bad air between the skin and the clothing of the trunk, so all furs and mufflers should be discouraged.

Having increased resistance to colds as much as possible, the next problem is how to avoid infection. Winter brings the shut windows in workshops, houses, churches, places of amusement; brings the shorter days with less chance of outdoor amusement, more sitting over the fire; brings the cold wet days when trams and omnibuses are more crowded and foolish persons shut the ventilators, which should be made fool-proof by being fastened permanently open. Thousands of colds are caught in a city from sitting in crowded trams with infectious people. It is far safer to walk or cycle in a good rain-coat and suitable hat, safer even to sit or stand on the top of a tram in the rain than to sit inside when colds are rife.

"A chill" is not a cause of a cold but a result. "Cold shivers down the back"—"a chill all over"—means that the mischief has been done some time before and the bacteria are in full activity. It is well to choose churches, picture-houses, concert-halls, and theatres which have the most open-window or other ventilation all the winter through. It is best to keep away from people with colds as much as work and duty permit. It is contemptible to be always thinking of health, but it is foolish to run into infection where duty does not call, and it is criminal to expose others to infection in order to give oneself the comfort or the pleasure of going to church or to a picture-hall. It is usually during the first forty-eight hours of a cold that infection is most powerful, and it should become a matter of public morals to abstain, at least during this period, from all public gatherings to which one is not obliged to go.



One of the best-known cocoa firms in England forbids any girl with a cold to come to work. She must stay away from its earliest onset until she is quite well. The same rule in every factory would save a vast amount of ill-health and many lives lost through pneumonia and tuberculosis. A person with a cold should not share a bedroom with anyone, but should be put in any room, such as a parlour, which may be to spare. If this is impossible, she should sleep close up to the half-opened lower sash of the window, with a rough tent enclosing her and the open lower part of the window. The top of the window should also be opened half-way, so that a free current will pass above the tent and its occupant to the other sleeper in the room. This is almost as good for the sufferer and for her room-mate as if the former were sleeping out of doors.

Colds generally infect first the mucous membrane of the nose, and the hot and swollen condition of that organ which promptly follows is an attempt on the part of the body to destroy the bacteria by an increased blood-supply and an increased secretion of mucus. In the case of those whose normal air-entry is blocked by adenoids and tonsils, and who consequently breathe open-mouthed, the onset may be in the throat, and in any case the infection will usually spread to that region, and often on down into the larynx, windpipe, and bronchial tubes. Decaying teeth harbour many germs, and among them those of common colds, and some cases of frequently recurring colds are caused by re-infection from this source.

Girls need to be taught never to touch food without first washing their hands, never to touch the lips without the same precaution. It is sad to see many factories in which there is no provision for washing hands before eating a meal, and all one can do in such cases is to urge the workers to use a knife and fork for eating bread and butter, cake or fruit.

If infected in spite of all precautions, certain vigorous measures adopted during the early hours of a cold will in most cases cure it at once. The success of these measures



turns on the fact that the bacteria are at first confined to the nose, where they are readily accessible to attack. A simple nasal douche of some mild antiseptic, such as Condyl's fluid, diluted with hot water to bring it to a temperature of 100° F., should be freely used every hour if possible. An excellent fluid for the purpose is glycothymoline, or its less costly equivalent, glycerine thymol, and a good handy remedy consists of one level teaspoonful each of common salt, common soda and borax, dissolved in one pint of water. The way to use the fluid is to throw the head well back and turned to one side, keep the mouth wide open, and pour the warm fluid into the nostril which is uppermost. It will then return through the other nostril, provided that breathing is kept up through the mouth. The same fluid should be used for gargling the throat, and this should be done as often as the nose is douched.

When the infection has entered the larynx and spread downwards, the bacteria can only be reached by a finely divided spray, drawn down into the lungs by deep respiration and applied every two hours. Such a spray is usually in the form of an antiseptic oil—eucalyptus, pine oil, or menthol—and is best applied by means of an atomizer, of which there are numbers on the market. The principle is the same in all, the compression of a rubber bulb forcing a fine spray of oil through a jet fitted to the nose or throat. At the moment of compressing the bulb a sharp deep breath should be drawn in. The jet should be applied in turn to the throat and to each nostril, and should be compressed at least ten times in each case. There are more powerful remedies, both for the nose and throat, but it is safer to leave these to be given under the immediate direction of a doctor.

A smart purgative should be given at once, and the bowels kept freely open for the duration of the cold. Hot drinks of half a pint of lemonade should be given every two hours during the first day. On the second and third days the drinks should be in the same quantity and at the same intervals, but half the lemonade may be replaced by tea,



coffee, or cocoa. This large quantity of fluid, containing stimulants to activate the kidneys, enables them to wash out from the blood the toxins produced by the bacteria.

A hot bath stimulates the skin and so leads to further excretion of toxins. It should be followed by going to bed with the window wide open and a hot bottle to the feet. Light foods, milk and water, bread and butter, and fruit are best for the first few days.

Ordinary handkerchiefs should be replaced during a cold by soft paper or by butter muslin, which can be burnt immediately after use, so safeguarding the laundress against infection.

Direct sunlight is one of the most powerful bactericidal agents, and during a cold, advantage should be taken of every ray, both out of doors and in the house. Colds are serious and are often taken far too lightly, but by carrying out the above suggestions as to avoiding them, the great majority might be escaped.

The complaint commonly known as **Feverish Cold** or **A Chill** (in medical terms, febricula), is not a cold at all in the sense of being an infection of the respiratory passages. It is characterized by a general sense of malaise, which the patient describes as feeling ill all over; by pains in the back and limbs—pains which come on rather gradually, are aggravated by movement, and are always worse at night. The temperature rises during the first two days to about 102° F., but falls rapidly under proper treatment. This condition is unfortunately often mistaken for influenza, a disease which, until its reappearance in the autumn of 1914, had been little seen in England for some years, though much had been called influenza which was not due to the influenza bacillus. Febricula is really a myalgia, that is, a painful condition of the muscles, distributed over a wide area, and is commonly due to a toxæmia of gastro-intestinal origin, producing what is called a gouty or rheumatic condition of the blood. If the errors of diet, of digestion, of elimination are not corrected it will recur very frequently, and this is the explanation of many



of the cases of people who are said to have had influenza several times in a few months. Febricula needs for its treatment careful dieting, including avoidance of meat and alcohol; hot packs to stimulate the skin, and the usual methods for securing free action of the kidneys and bowels. On the other hand, after influenza the patient needs free and generous feeding, so that it is particularly unfortunate to confuse febricula with influenza.



## CHAPTER VI

### Tuberculosis

Tuberculosis is the most widely spread of all diseases, being found among all races all over the world, and is the most deadly disease from which the human race suffers, so that Sir William Osler describes it as "The Captain of the men of death". The outlook in all civilized countries is now hopeful, as within the last forty years we have found out the cause—which up to that time was quite unknown—have found out how to prevent it, and have brought down the percentage of deaths from it in England to half what they were forty years ago. These are great achievements, and more and more we keep in mind the question asked by King Edward the Seventh, who when told that tuberculosis was preventible, asked, "If preventible, why not prevented?" In the future we may look to see it entirely stamped out in this country, as typhus, smallpox, and cholera have been. But it will mean a long hard fight in which all must join forces—the Government; the city council by means of its medical officer of health, its sanitary inspectors and health visitors, its sanatoria; the doctors; the district nurses; finally, every man, woman, and child in the kingdom. So fighting shoulder to shoulder the victory will be won, and in our own lifetime we shall see great advances. One medical officer of health who is keenly interested in this problem has been known to say that if he could be an absolute despot for thirty years he could stamp it out completely.

Recent returns show that in England and Wales the annual deaths from tuberculosis are about 60,000, more than



a thousand a week. This means that, taking the total number of deaths at all ages and from all causes, one out of nine is from tuberculosis. When the ages at which the tubercular patients die are investigated, the sad and startling fact emerges that between the ages of fifteen and forty-five years, one death in every three is due to tuberculosis. Thus are our people swept away during the most valuable years of life. The incidence falls very differently on different classes of the community. Taking together all employed persons of all ages, it is found that one in seven dies from tuberculosis, but when these deaths are apportioned according to occupations some striking differences come out. One out of every three public-house servants dies of tuberculosis, one out of every four clerks, one out of six shopkeepers, one out of fourteen gardeners, one out of sixteen fishermen, one out of twenty-two doctors and farmers, and one out of twenty-seven clergymen, this last class heading the list. The death rate is unequally divided between the sexes, about four males dying for every three females.

Owing to the fact that tuberculosis is a very slowly progressive disease, in which the average duration of the final illness is three years, it accounts for a vast amount of illness. For each person who dies in a given year there are three others on the downward track of the final three years, and many more who are slowly pulling back to health after long spells of disability and absence from work. In a large city in which a thousand deaths from tuberculosis occur annually, compulsory notification showed about ten thousand people affected by the disease. Put in another way, of every four people who are ill in England and Wales one is ill of tuberculosis.

This is not peculiar to England. In Germany, among workmen of ages between twenty and thirty, of all who are ill and come on their sick clubs, half are ill of tuberculosis; and much the same figures would no doubt be found in all industrial countries.

In addition to the cost in lives, in suffering, in sorrow,



there is an enormous cost in money. In England, about one pound out of every ten spent by the Poor Law authorities is spent in the relief of tubercular people, and the million a year so spent is a very small part of the total loss to the nation in money and services. "The most elaborate and complete measures against tuberculosis would only cost a fraction of the present total loss inflicted by this disease" (Newsholme).

Tuberculosis may attack any part of the body, but the commonest site of the disease is the lungs, and three out of four fatal cases of tuberculosis are lung cases. This applies to women and to young girls of wage-earning age; but in babies tuberculosis of the bowels is the commonest form; while in little children the disease most frequently attacks the joints, the bones, or the glands of the neck. The throat, the eyes, the skin, the membranes covering the brain and spinal cord may all be attacked, and the symptoms and signs of the disease necessarily vary with the region and with the kind of tissue affected. But whatever the site, the morbid processes are essentially the same, consisting of the destruction of tissue and the production of a toxin, tuberculin, which circulates in the blood, and which by its continued action kills the patient. The infectiveness of tuberculosis was known to the physician Galen two hundred years before the Christian era; but it was not until 1882 that Koch established the fact that it was due to bacteria, and so gave the first real start towards both prevention and cure. One or two classical and well-authenticated examples of infectiveness may be quoted:—

1. A father, mother, and four children all died of tuberculosis, and two other children of the family suffered from it.

2. A young man lost two brothers and a sister from tuberculosis, and had it himself at twenty, became a sailor, apparently recovered completely, and married at twenty-seven. His wife, a healthy girl at marriage, soon died, of what disease is not certain; he then married a second healthy girl, who died three years later of tuberculosis; he married a third healthy girl of twenty-five, who, after the birth of her second



child, died of tuberculosis; he married a fourth healthy girl of twenty-five, who died of tuberculosis. Finally, fifteen years later, he died of it himself. There are hundreds of similar cases well known, and every doctor meets cases where the infection is easy to trace. "Prevention is better than cure" is nowhere more true than in the case of tuberculosis.

The first and strongest line of defence is that of living a healthy life, so as to be able to destroy the tubercle bacilli as soon as they gain entrance to the body; and in these times of crowded urban life it is too much to expect that no tubercle bacilli will gain access. Post-mortem examinations on all the patients dying from whatsoever disease, in all the great hospitals of Europe, show that very few entirely escape an attack by tubercle, though in the majority of cases the attack has been repelled and the diseased tissue has completely healed. One great German pathologist has gone so far as to say that everyone has had a little tubercular trouble! Tuberculosis has been described as "a bedroom disease", and is rarely found among those whose custom it is to keep bedroom and living-room windows wide open all day and all night, without obstructing curtains or blinds. This one measure alone would do more to stamp out the disease than anything else, not excluding the costly, and most valuable, sanatoriums. **Open-air treatment** is well known in sanatoriums, hospitals, and private houses, and is annually saving thousands of lives; but **open-air life**, in so far as industrial conditions permit, would save from disease many thousands of those whom we try to cure by open-air treatment. Sunshine is also a very great help, as nothing kills tubercle bacilli more quickly, while at the same time it raises the general health resistance. Those who have once known the joys of sleeping out of doors rarely want to sleep under a roof again, while for those who cannot attain to being actually in the open, to sleep with the head on the window-sill is not a bad substitute.

Next to an ample supply of pure air comes a good supply of plain wholesome food, enough to keep the body up to the



normal weight for the height, build, and age of the person in question, and to allow for a vigorous life of work and play. The food need not, in ordinary peace-time, be costly. Full meals of such things as oatmeal porridge and syrup; whole-meal bread or cakes of oatmeal, barley or maize, with margarine, dripping, or fat bacon; cheese, herrings, Colonial meat, peas and beans, potatoes and green vegetables, are enough to safeguard against tubercle in so far as food is concerned. Such a dietary as the above costs little more than the bread and butter and tea, cakes, tarts, pickles, and relishes on which the working girl is too apt to feed.

Alcohol should be avoided, as it not only makes a person more liable to take infection, but less able to resist after infection, which no doubt explains the high tuberculosis mortality among public-house servants.

Tubercle bacilli harbour in dust and can live for long periods in dark, undisturbed corners, so all houses should be kept scrupulously clean and free from dust, and all floor coverings, curtains, and cushion- or bed-covers should be of material which is easily washed. It is especially important that in a house in which a tubercular patient lives, all cleaning should be by means of damp cloths and dusters, followed by polishing with dry ones.

Turning to prevention of infection, the preventions vary with the age of the person under consideration. In the case of babies and small children who take much milk the infection is almost always from tubercular milk, that is, from milk containing tubercle bacilli from cows affected by the disease. The way to overcome this is by action on the part of the State enforcing the periodical testing of all cows, a simple matter which would prove a complete safeguard. In the meantime city councils can do much by publishing lists of dairies where the cows are so tested. Sterilization of the milk is not desirable, as it destroys the contained vitamins and lessens the nourishing powers of the milk.

In the case of older children and of grown-up people the attack is usually through the lungs, the bacilli being air-borne



from the lungs of a person already affected, who passes them out in vast numbers in coughing, in expectorating, and even in ordinary quiet breathing. Towns are now taking this up, and everywhere one sees notices, in trams, in the streets, in railway stations, urging people not to spit. More and more one sees these notices being respected, and people who are compelled to relieve themselves by expectoration, but are not provided with pocket receptacles (as they should be), may be seen making use of the street gullies. Much might be done by teaching all people when coughing, from whatever cause, to aim at keeping at least a yard away from other people, and to hold always a handkerchief in front of the mouth. Paper handkerchiefs, not fancy Japanese ones, but neatly-cut pieces of any soft paper, or pieces of butter muslin where this can be afforded, are preferable to ordinary handkerchiefs, and should be burnt at once. Tubercular patients who have been to sanatoriums have been taught to use pocket flasks while at work and in the streets, and stout paper cups while in the house. All such utensils should either be burnt or should be emptied directly over the open drain in the yard, and flushed out by a kettleful of boiling water.

Persons in the early stages of tuberculosis of the lungs, when no destruction of tissue has taken place and no bacilli are free on the surface of the lung, are not a source of danger to others; and much needless cruelty is shown by former employers who refuse to take back such workers after treatment in a sanatorium, and much needless fear shown by prospective employers and acquaintances. A tubercular person who has been to a good sanatorium, and has learned what to do to save infection of others, is a much safer occupant of a house than many a person who has ignored or concealed her chest troubles and so has escaped being known as "a consumptive".

The person who has an open lesion, that is, one from which bacilli are set free in coughing and breathing, should always either have a bedroom to herself—the sunniest and airiest room in the house—and should sleep at the open



window, or should do what is much better still, have a sleeping shelter in the garden or back-yard. Such shelters, with canvas shutters opening fully on all four sides, can often be hired from the local health authority for a shilling a week, and are a great boon. It is often just the fact that a girl with healed tubercle continues to sleep out of doors while going on earning her living that makes all the difference between keeping well and relapsing—which is only too fatally easy unless great care is taken to maintain a high level of health. A person with an open lesion, if compelled to work, should choose light outdoor work; but if unable to get this, should keep near an open window in her work-room, and in the family living-room at home. She should deny herself all attendance at churches, meetings, picture-houses, theatres, and social parties indoors, as only so can she keep herself from infecting others. She should never give close personal attention to children, and should never kiss anyone or come into closer touch with them than is necessary. Such a person should have her own table utensils, which should be washed in boiling water.

Decayed teeth are often tubercular, which is an added reason for taking great care as to their cleanliness and as to prompt dentistry. Such teeth often infect the tonsils, which in turn infect the glands of the neck, whence infection readily spreads to the apex of the lung, which extends a little above the collar-bone, and which is a very common site for the onset of tuberculosis, because the air-entry there is apt to be less free than in other parts of the lung. The teeth and the tonsils often owe their infection to open-mouth breathing, which follows from partial blocking of the air passages by adenoids and enlarged tonsils. Whenever such breathing is seen in a child or young person, she should have advice from a throat specialist, who will probably advise operation. It cannot be too strongly advised that all operations on throats should be in the hands of experts whose whole time is given to this department of surgery. It is painfully easy to slice off the tops of offending tonsils while leaving the bases to



grow again and cause the same mischief at a later date, while what ought to be done is to enucleate the whole tonsil.

Breathing exercises in the open air or at an open window should be part of the physical education of every child, and open-air gymnastics, drill, and organized games should occupy some part of every day at school. Movements such as those of Boy Scouts and Girl Guides should receive every encouragement from Welfare Supervisors. What is possible should be done as to seats of proper height, and any devices which may save the worker from stooping over work, and so narrowing the front of the chest and checking free air-entry. Ample open-window or other ventilation in factories will naturally be one of the first cares of those who work for the welfare of the wage-earners, and in the future we may look to see great improvement in this direction as in many others.

Tuberculosis in a very early stage is a most curable disease. Quite half the people who have it recover without any special care, probably never know they have it, live as long as other people, and finally die of something else. But it must be clearly understood that this applies to very slight cases, and usually in people whose general health and whose financial position are in their favour. By the time a case has reached a doctor and has been diagnosed, it has arrived at a stage when the fight is going against the patient and in favour of the bacilli, and when a great deal of help will need to be given. Any cough which lasts a month should mean a visit to a doctor who has time enough to make a prolonged and careful examination. It is often fatal to wait; thousands of lives are thrown away yearly through waiting in the hope that the cough will stop. With an early diagnosis made, treatment has a chance. It means open air day and night, with every possible ray of sunshine, and the air need not be country air; town air is quite good when one gets enough of it, and in peace-time night air in a town is much purer than the air in the day-time, as fewer chimneys are smoking. It is far more the quantity of the air than the quality which matters to the tubercular, and to get well and strong in a



back garden or even a back-yard in a town is quite possible. Treatment means also as much good food—especially milk, all kinds of fat, and a good deal of meat—as the patient can digest. It means also rest, varied by graduated exercise under close medical supervision. Quite the best plan is for the patient to go to a good sanatorium for three to six months—preferably six—to begin with, after which she will be able to carry on at any rate a modification of the life she has been taught, and will realize that for at least three years she must live with the greatest care in order to consolidate her cure. In really expert hands the administration of a course of tuberculin, extending over a year or more, is of great assistance in building up the resisting power for the future and in quickening the rate of recovery. Medicines are of little if any use as regards the tuberculosis itself, with the one exception of iodine, which seems to have a specific action on tubercle bacilli. It is sad to see money wasted on valueless remedies which would be useful if spent on milk or eggs or cod-liver oil.



## CHAPTER VII

### Reproductive Functions

The consideration of the reproductive activities has an importance comparable to that of the consideration of the purely personal health of the girl or woman. The healthy working of the organs concerned has a large share in the maintenance of her everyday health and sense of well-being, and is essential to her happiness and sense of fulfilment in carrying on the race.

In the growing girl of from fourteen to eighteen, profound changes are taking place on all the planes of her being. On the physical plane much energy is being used in bringing about internal changes, and it is a time of instability and of little difficulties in many directions. There is special need during these years, particularly at fourteen and fifteen, for extra food of a good, plain, not over-stimulating kind and for extra sleep. It is just at this most critical period that the wage-earning girl leaves school and goes to work; and of all foolish ages for leaving school, and making the plunge into industrial life, fourteen is probably the most foolish. It is earnestly to be desired that in the period of reconstruction after the war, and while we are still accustomed to spending vast sums of money, we shall decide to keep all our children at school till sixteen, and at continuation school in day-time taken from the employer till eighteen. The young working girl of these ages employed in factories is usually sitting or standing nearly all day, and the sedentary worker turns naturally to vigorous amusements at the end of the day to work off her pent-up energy. It is largely this which accounts



for her shouting, screaming, and rushing about in the streets as soon as the factory gate closes behind her; and those who reprobate these forms of activity would be better employed in helping the working girl to good conditions for dancing, swimming, hockey, basket-ball, and for cycling trips into the country on Saturdays and Sundays. It is instructive to see girls who have worked from 6 a.m. to 6 p.m. in an ammunition factory, sit down for an hour over a leisurely supper in the canteen, then troop into the recreation hall of their hostels and dance incessantly till ten.

On the mental plane there is much unrest during the change from dependence to independence, much uncertainty of mind and temper. It is a time which calls for a large exercise of patient love and understanding on the part of the older women. Girls at this time need handling with much regard for their dignity, and there is no readier way to the management of a little person of fifteen who is earning her own living than to treat her as though she were twenty-five and a woman of distinction. Other methods may be equally good on further acquaintance, but the effect of such a manner on the part of a medical woman who has only fifteen minutes in which to find out a good deal about a little factory girl is instantaneous and most successful. It gives an instant response of dignity, frankness, and friendliness. Presumably the manner needs to be more than manner, needs to correspond to an inner appreciation of girls and a liking for them; but these are qualities to be assumed in those who have chosen to be Welfare Supervisors.

Psychically there is the greatest of all developments, from the purely individual, largely egoistic life of the child to the partly altruistic life of one who carries on the race, of one who is beginning to find out—"What's life but just our chance of learning the prize of love!" The happy girl is she who learns from those about her that love is "The spark from God's life at strife with death"; that love of all kinds, of lover, husband, children, friends, country, is the one great force leading the race out and up from the material and selfish towards what-



ever high destiny may lie ahead of it. During this time of war, when almost every woman and girl has a husband, a son, a brother, or "her boy" in the trenches, because he has been quick to feel that his material life mattered nothing in comparison with his ideals for his country, it should not be difficult to help the women and girls to corresponding heights. Each man in the voluntary army has, consciously or subconsciously, made the great sacrifice, which would seem to be the root cause of his light-heartedness; and it is for the women and girls to help themselves and the men by realizing that if love is degraded, "One of the lights of life, a very candle of the Lord, goes flickering out". They need helping to see that sex life is little spoken of, for the reasons which keep us reticent as to our religion or our love, because of its dignity, its sacredness, its belonging to the innermost, the best, that is the most unselfish in us, not because it is something of which to be ashamed. At the same time there should be no furtiveness, no dropped voice; it should be as simple to ask a girl concerning menstruation as concerning a headache or indigestion.

The reproductive organs consist of a small, muscular, pear-shaped, hollow body (the uterus), measuring about three inches by two, leading into a wider passage (the vagina), about four inches long, which puts it in communication with the exterior. From the wider, upper end of the uterus a narrow tube (the Fallopian tube) goes off on either side, and ends by an open mouth in the close neighbourhood of the ovary. The ovaries are small oval bodies measuring about one inch by three-quarters of an inch. These organs—uterus, tubes, and ovaries—are attached by ligaments to the floor of the body cavity in such a way as to have some freedom of movement. In the unmarried girl the vagina is partly closed at its outer end by a circular outgrowth from its walls, the hymen.

The functions of these organs are of two kinds:—

1. **Reproductive Functions.**—Each ovary contains at the birth of a child 32,000 ova, and up to the age of about fourteen its function must be a purely internal secretory one,



having relation to the general health. After the establishment of menstruation one ovum is set free each month, passes into the tube, so into the uterus, and out through the vagina. During what is known as the monthly period the lining of the uterus becomes detached, with consequent tearing of blood-vessels and hæmorrhage. The time-relation of the discharge of the ovum and the hæmorrhage from the uterus is now a matter of dispute, the former view that they occurred simultaneously having been discredited.

**2. General Functions.**—The uterus and ovaries, in addition to their reproductive work, provide secretions which pass into the blood-vessels and profoundly affect the general working of the body. The best known of these functions is that of helping to keep the small arteries at the right tone, that is, exercising the right degree of pressure on the blood within them, for keeping up a uniformly good circulation through all parts of the body. Disturbances of this proper tone give rise to various trying symptoms, such as headaches, indigestion, palpitation, and flushing of the skin. The reproductive organs are not alone in providing internal secretions for these general purposes of the blood circulation, much of the work being done by other organs which are active during the whole of life; but at the onset of menstruation they take on a share of the work, to give it up again at the close of reproductive life; and it is the adjustments consequent upon these changes which are apt to cause difficulties both at the onset of menstruation and at the menopause some thirty years later.

Normal menstruation begins when the girl is about fourteen, and goes up to about the age of forty-five. Contrary to general lay expectation, an early onset gives usually a late menopause; for instance, onset at twelve is apt to mean menopause at fifty-two or fifty-four. A late onset usually gives an early menopause, so that if periods begin at eighteen they may end at thirty-five. This ceases to be mysterious when we remember that Nature knows very well what she is about, and has always a keen eye to the race; in which connection it has



been truly said: "So careful of the race she seems, so careless of the single life!" From her good stocks she wishes to carry on as far as possible, from her poor stocks as little as possible, and she arranges the length of the period of reproductive activity accordingly.

The monthly cycle is that of the lunar month, twenty-eight days being the commonest interval from the first day of one monthly loss to the first day of the next. There are variations on this, from individual to individual, and periods of twenty-four to thirty-two days are not outside the limits of normality. Variations of the period in the same individual are more likely to be indications that something is not quite right. The duration of the blood flow is most commonly four or five days, but any number from three to seven in different individuals is compatible with normality, and some variation in the number of days in a given individual need not necessarily give cause for anxiety.

The extent of the loss is not an easy matter to estimate, and often leads to absurd questions to a girl, such as, Do you lose too much? A little reflection would show that the girl—especially the girl brought up in reticence—has no means of knowing what is too much. Yet it is an important point on which all women who are taking care of girls need to be quite clear. A good rough standard is set up by estimating the frequency with which changes of sanitary towels are required, twelve changes for the total of four or five days' loss being roughly normal. It follows that the sensible question is, How often do you need to change during the whole period? Another advantage of this form of the question is that it will give the girl herself a standard for future use.

Although menstruation in this country begins at fourteen, complete development and ideal fitness for motherhood is only reached at twenty-three. Why menstruation, with its difficulties and disabilities, should begin so many years beforehand is at present one of the inscrutable mysteries of Nature.

Dysmenorrhœa (painful menstruation) falls to the lot of many girls, and is acquiesced in by them with a patient



endurance, and by other people about them with a callousness, which suggests that there is something inevitable about it, if not something a little impious in trying to get rid of it. One still hears occasional reference to the primal curse of Eve. Any woman working among girls should get it firmly into her head that dysmenorrhœa is absolutely wrong, and should get up and fight it with all her might. It is no part of Nature's plan that pain should attend any normal function, and the outcome of some carefully conducted enquiries on this point among women and girls at two large munition factories was most cheering as showing that the great majority had no menstrual pain or disability. There are two main causes of dysmenorrhœa, the commoner being an excessive congestion of the blood-vessels of the uterus and its appendages during the few hours, in some cases the day or two, before menstruation. A certain degree of congestion normally precedes the loss, but if this is excessive it causes pressure on the nerve-endings in the uterus, and so sets up pain. The pain in these cases precedes the loss, and either ceases or becomes much less as soon as the flow has begun and the pressure on the nerve-endings has been relieved. The second, less common cause is excessive spasmodic contraction of the uterine muscles—a pain which is more violent than in congestive cases, and which is akin to muscular cramp in a limb or to severe colic. This mostly occurs on the first day, with or after the flow, and may persist through the whole period, or may cease and then recur on a later day.

Predisposing causes are found in anything which lowers the general health, such as anæmia, recent illness, anxiety, or unhappiness. These act by lowering the resistance of the nerves to pain, so that a degree of pressure which is ordinarily supportable becomes painful. This applies to the nerves in all regions, so that under such circumstances toothache, headache, painful muscles, painful fibrositis are all more common or more severe. Menstruation in itself has a lowering effect on the general resistance of the body in more ways than one. Pains in regions apart from the reproductive are more common



then; the opsonic index of the blood is lower, and infections more readily gain the upper hand; the temperature rises a little; there is often a sense of languor; often a little instability of nerves and a tendency to feel less able than usual to cope with life in general. Why these manifestations should be we do not know. They appear to serve no useful purpose, and yet one hesitates to call them pathological.

The treatment of dysmenorrhœa, in the congestive cases, which are the great majority, is often very successful, and few things call forth more fervent gratitude or bestow more kudos than the prompt, almost dramatic, relief from incapacitating pain which often follows the faithful carrying out of certain simple lines of treatment. There are many girls who work on through almost unbearable agony for one or two days in every month—girls who dread the next period as soon as the last has passed; girls who can never make an engagement for the week of the period, who are thrown back and checked in whatever line of interest or pleasure they have laid out for themselves, whose life seems to consist of pulling up from the depression and exhaustion of one period in readiness for the next. Such girls of the working-classes mostly suffer in almost total silence, forced on by the necessity of earning a living, and rarely give in unless, as often happens, fainting and sickness compel them to take a day or two away from work and stay in bed. After every such absence they return, while still weak and shaken, knowing they may be met by the foreman or the head of the office with the intimation that someone must be found for the work who can be more regular. To help such girls is one of the keenest pleasures a doctor knows, and it is a satisfaction to be able to hand on to Welfare Supervisors a scheme which has been proved very useful in practice, and which has been gradually built up by experience. The first indications are to cure anæmia if present, and to build up the general health in every way, and this will be a work of time. Dentistry may be needed, better food may be called for, more open air, more healthy exercise, longer hours in bed. Time and patient investigation must be spent



on the girl, and all the circumstances of her life, in so far as compatible with going on with her work, arranged for the best for her. It will be found that a certain number of girls will do best if taken entirely off meat, tea and coffee, and put on milk, eggs, cereal and vegetable foods, and fats in abundance. While carrying out measures directed to the general health, the following plan should be adopted for the monthly period:—

1. For three mornings before the loss is due, a good dose of salts, together with a pint of hot water, should be taken before breakfast, and this whether there is supposed to be any constipation or not. Constipation will often cause uterine pain, from the pressure of a loaded rectum on the congested uterus, but even in cases where there is no constipation the action of the salts will relieve the congestion of the pelvic organs by the removal of fluid from their tissues.

2. A very hot hip-bath should be taken at the onset of the pain. The water should reach to the level of the top of the hip girdle, and should come half-way down the thighs. The patient should sit up in the bath, as a general hot bath is not desired. The water should be as hot as can be borne, and further hot water should be added during a period of ten minutes. Still more relief may be afforded by adding a teaspoonful of mustard to each gallon of water. This hot bath lessens the pelvic congestion.

3. Immediately on getting out of the bath a mustard leaf should be applied over the site of the worst pain. This should be put on with three folds of thin linen, such as a pocket-handkerchief, between the mustard and the skin, as in this case it will be possible to keep it on for twelve hours or more without feeling more than a comforting heat, whereas if put directly down on the skin it will probably have to be taken off in twenty minutes, and will give much less help. Painting the skin with strong tincture of iodine is another way of producing much the same effect. This is an effect produced by acting on the nerves of the uterus.

4. On leaving the bath a whole pint of very hot tea,



poured out at once into a pint mug so as to keep it hot, should be drunk. This helps not only by the hot fluid but by the caffeine in the tea. If coffee is preferred this may be substituted.

5. With the tea it is permissible to give ten grains of phenacetin, but this must be safeguarded. Neither the prescription nor the bottle of tablets should be given to the girl by a Welfare Supervisor or other lay friend, as it is not a safe drug for a girl to have at command, and careful doctors prefer in the case of an ordinary girl to give her simply the dose required for the next period without telling her what it is. Welfare Supervisors keeping this drug for handing out in single doses to the girls, should keep it locked up out of sight.

6. After these measures, it is desirable to lie down for two or three hours with a hot bottle to the feet, plenty of warm coverings, and in a quiet room.

The above measures constitute a counsel of perfection, the whole of which can only be carried out at home; but even if the girl is at work, and feels she must keep at work, it may greatly relieve her to carry out as much of it as is practicable.

Gin and all other forms of alcohol should be avoided. Alcohol does help at the time, in the same way as the tea, and more quickly, but it leaves the nerves less resistant for the next attack of pain, and there is also always the danger that a habit may be set up. The great majority of cases are either entirely cured or greatly relieved by these measures, that is, by the measures directed to the general health in conjunction with those directed to the local condition. The plan should be steadily tried for three months, and if it fails, the girl should be seen by a doctor, who has many other remedies to advise. In this connection it may be suggested that a medical woman should usually be chosen, as many girls find it easier, and also because medical women tend to take dysmenorrhœa more seriously and energetically than medical men, unless the latter are specialist gynæcologists. If the general practitioner fails to help, she will herself take the patient to such a gynæcologist.



### Amenorrhœa

Amenorrhœa (a cessation of menstruation) often occurs in single girls, and may last for two or three months, for many months, or for years. It is in itself no cause for alarm, being Nature's plan to save the girl a loss she cannot afford. It is therefore seen in the anæmic girl, who is often much alarmed by it. It is best to reassure her by explaining that it is Nature's way of helping her, and then to set about curing the anæmia, when the periods will return. It is well to tell her this, and then advise her to put the whole question out of her mind, and give herself to getting well and strong. Pregnancy should not be the first thought when a thin, white, ill-developed girl comes complaining of missed periods, but the possibility should be kept in mind. The girl who trusts the Welfare Supervisor well enough to come to her with this difficulty is ready to tell her if she has cause to think herself pregnant.

### Menorrhagia

Menorrhagia (excessive monthly loss) may be of two kinds. There may be very heavy loss for a few days, necessitating changing up to fifty or sixty times in a five-days period, or the loss may be less heavy on any one day, but may last ten to fourteen days out of each twenty-eight. This may be due to deficiency of lime salts in the blood, and if so there will probably be chilblains in the winter; and something may be done to help by means of foods directed to supply this deficiency. These are milk, oatmeal porridge, and whole-meal bread, and the girl should be encouraged to eat as much as possible of these. It is a very grave matter, soon making the girl too anæmic and weak for work, and needs prompt medical advice, as it may be due to so many causes, and treatment is neither easy nor short.



## Metrorrhagia

Metrorrhagia (loss of blood from the uterus apart from monthly periods) may be slight or may be great. It is seldom seen in girls, or in women under thirty-five, but is an extremely grave symptom when it does appear, and calls for immediate examination by a gynaecologist. It may be due to some quite simple and easily removable cause, such as a polypus; but it may be due to cancer of the uterus, and nothing short of a most careful examination by an expert can decide the point. A delay of a week in making the diagnosis of cancer may mean the loss of a life, as operation, and that of the most far-reaching kind, is the only chance, and the earlier the operation the greater the chance. Women who are passing through the menopause have a fatal habit of thinking that small irregular losses of blood from the uterus are "only the change" and may be disregarded. It is true that they may be due to fibroid tumours or to polypus, both of which can be satisfactorily treated; but they may be due to cancer, and such women cannot be too strongly urged to see a gynaecologist at once. In any women of any age suffering from irregular losses from the uterus, treatment of any kind whatever without complete internal examination cannot be too strongly condemned.

## Pregnancy

As the so-called "working girl" is sometimes a young married woman, the question of pregnancy may be allowed to come within the scope of a book on the working girl. Pregnancy is not a disease, and, except in the last month or two, offers no bar to a life of ordinary activity; and many well-to-do women who regard themselves as unable to do most things during pregnancy would really be much better for working, as most working women have to do, during most of the nine months. Factory work is not suitable for the



pregnant woman during the last three months. It is too continuous; the hours are too long; the rooms are often overheated, under-ventilated, noisy, and crowded. It would be good to have legislation excluding all women from factories during the final three months of pregnancy, and for at least the first three, or better the first six, months after delivery of a living child which continues to live. With these provisions the pregnant woman could usually go on with her own particular work during the first six months of pregnancy, but it would be well to keep an eye on her, and be ready to change her to lighter employment should her own prove too heavy.

Much standing is bad at any time during pregnancy, and often leads to varicose veins in the legs. These have a distressing way of giving trouble with each recurring pregnancy, even if quiescent during the intervals, and the general indifference which the women show towards them tends to their becoming worse and worse. They cause much aching and weariness, and in some cases are a danger to life, as the skin over a vein near the ankle may ulcerate and open up a vein, in which case the patient may bleed to death in a few minutes. It would be well for Welfare Supervisors to get all pregnant women to show the condition of the legs, and if varicose veins are present, elastic webbing bandage should be applied in such a way as to give proper support from the instep to the knee. This should be put on in the morning before the woman gets out of bed, and should be kept on till she goes to bed at night. It will be found to give immense relief.

Constipation is a common difficulty of pregnancy, and one which it is most desirable to overcome. If allowed to go on it poisons the blood, and may lead to grave disaster at the time of delivery. Two or three pints a day of water, suitable foods, green vegetables and fruit, so far as can be afforded, will all help, and a little of some safe and simple laxative, such as liquid cascara, may with advantage be taken each night.



It is bad to have such women working among dangerous machinery, even though such machinery is adequately fenced for ordinary needs. Such women are often liable to sudden attacks of faintness, and in some cases to fits, and serious accidents may occur.

Work involving heavy lifting, pushing or pulling is unsuitable, as the strain on the abdominal muscles may cause undue pressure on the uterus and may lead to miscarriage. There are exceptional women of very fine physique, such as many of the women of the Black Country, to whom this may not apply, but it is generally true.

Pregnant women should not be allowed to work in lead, as lead-poisoning leads to miscarriage. Women who wish to terminate a pregnancy in this way are well aware of the fact, and take lead compounds for the purpose—a most dangerous practice, for themselves as well as for the undesired child. A common practice is to buy diachylon plaster, sold for cuts and wounds, roll the mixture up into pills, and go on taking them till the miscarriage occurs. In such women a blue line will be found at the junction of the teeth and the gums, and this is a danger-signal which should lead to the women being persuaded to see a doctor. There are various other methods of procuring abortion which it will not come within the scope of the Welfare Supervisor to prevent, except in so far as she can bring moral influence to bear, and this she will do less by what she says than by what she is.

### Abnormal Sexual Activities

There are certain dangers and difficulties arising out of sex activities of which workers among young girls should be aware, as they may be able to help a girl who badly needs it, and may save other girls from following a bad example. Excitation of the generative organs by the child or girl herself, known as masturbation, is a habit which may be set up at any time from early infancy. It is very exhausting, especially to the nervous system, and very damaging to health



and to happiness. The trouble usually arises through some accidental irritation of the external genital organs, as by lack of thorough washing or by insect parasites. This naturally leads to rubbing of the parts. This is found to produce pleasurable sensations, all natural functions being attended by more or less satisfaction, and is therefore repeated time after time until the habit obtains a strong hold and is very difficult to shake off. Bad nurses know that a baby or small child may be made to soothe itself in this way; bad companions may teach the habit. There is also the temptation due to sex life coming into play too early for marriage, and the temptation to those unmarried in later life. The tendency is part of the price paid for a celibate life—an instance of the fact that those who run in the face of Nature will always be made to pay for it in one way or another, though the price may not necessarily seem too high. The sufferers from this habit need, not scorn but help. They are often pallid, dull-eyed with dark rings round the eyes, morose and shy, and if children or young girls, often seem unable to look one straight in the face. It would be disastrous to confuse with these the ordinary anæmic, shy, diffident girl, and in every case it is much better to suspect too little than too much. But where the trouble is known to exist, as much help as possible should be given in the way of cold baths, swimming lessons, ample outdoor amusements, many interests, the cutting off for a time of meat, tea and coffee, the giving up of any alcohol taken. Hindrances to getting right are found in a sedentary life, alcohol, sensational sex stories, pictures, and cinema plays. One good straight talk from a trusted friend will be a great help to many a girl, but after that silent help is best. In some cases the auto-stimulation is psychic only, but the lines of help are the same in all cases.

Welfare Supervisors should in large factories secure a patrolling of the lavatory corridors by a respectable woman, and should see that the appalling custom still prevailing in some factories, of having no interior fastening on lavatory doors, does not obtain in those in which they are working.



With so much working of night shifts as the war has brought about, the dangers of crossing yards and going round corners have been increased, and it is best to make a rule that a girl shall never go alone to the lavatories, but shall always take another girl with her. This is the common custom among respectable working girls—a custom taught in early life by careful mothers, who do not let a girl go across the dark courtyard of her home alone, not knowing what she may find when she reaches the common lavatory shared by several families.

Special care is needed in old factories, hole-and-corner factories, built and added to time after time, with passages here, stairs there, and turns and corners everywhere. The modern factory, built in large clear rooms and long straight passages, is much more easily overlooked.

Foremen required for the accurate setting of machines and tools for women have much power in their hands which is not always honourably used; but during the war women have learned to set their own machines, and have become more self-sufficing in every way, while increased wages have made them economically independent; and there are good reasons to hope that when the war is over the position of women will be found to have changed greatly and permanently for good. Talking, talking at large on vital matters seldom does much good, but the convictions of honourable, right-minded and unselfish women who are working as Welfare Supervisors will diffuse among their girls, who will accurately judge them and value them, not by what they say, but by what they are.



## CHAPTER VIII

### Venereal Diseases

Venereal diseases rank third among the diseases that kill. They are the causes of much painful disease of the uterus and its tubes—disease which often lasts for many years; of a great deal of poor health, lassitude, misery, and incompetence; of many miscarriages; of many childless marriages where children are urgently desired; of many blind babies; of general paralysis of the insane, and of locomotor ataxia. It is a long list, but it gives but little idea of the mass of suffering of body and mind and soul which arises from these diseases. The part which the Welfare Supervisor can play in the struggle against venereal diseases is twofold. She can help to keep her innocent girls from accidental infection, and she can help her women and girls who are suffering from the disease to get proper treatment as promptly as possible. She can also help by raising the tone of public opinion in her factory on the whole question of sex morals. To this end she must know, in broad outline, what the diseases are and what the courses they run.

They are infective diseases, precisely as are influenza, diphtheria, or tuberculosis; that is, they are caused, and caused solely, by minute living organisms passing from the body of one person to the body of another. The parts most commonly affected by the disease are the reproductive organs, and infection therefore usually takes place through sexual intercourse; but the germs may pass out through any cut surface or any abrasion of the skin or mucous membrane of the person suffering from the disease, and may pass in through



cuts and abrasions in the skin of another person, in whom the disease will then be set up. Therefore innocent persons may be infected, and all doctors and nurses attending venereal cases run risks from possible infection through small pricks or scratches on the hands. Similarly those living with or working with diseased persons run risks of accidental infection.

The venereal diseases are three, two of great importance and one of little importance. They have come down from times of great antiquity—we know they were a scourge in ancient Biblical times—and so far no nation has found any satisfactory plan for dealing with them, either for prevention or for cure. Now we have clear light on their causation, and have recently found methods of treatment which promise speedy and permanent cure, we may be much more hopeful for the future. Statistics as to the numbers of people suffering from these diseases are very unreliable and very depressing, and the whole problem is the darkest anyone can have to face; but by workers whose aim is to raise the health level of the community, whether they be doctors, nurses, or welfare workers, it has to be faced, and faced sanely and quietly. In dealing with such problems it is to many people a help to keep the mind in watertight compartments so to speak; to deal with the facts of a case, the actual practical things which have to be done, as one might deal with a case of diphtheria, in one compartment; in another compartment the questioning, questioning to which there never comes an answer, as to why these things should be. This is not an attempt to evade one's share of the suffering this mysterious problem must bring, but a means of so directing our energies as to make them as helpful as possible. When driven nearly to desperation, comfort may come from the realization that it is not one's own world; that each of us is responsible only for her own particular bit of it, for following the light as she sees it. A certain attitude of mind is essential in all women who are to deal effectually with those suffering from these diseases—an attitude which finds its expression in "Who art thou that judgest another man's servant?" in "*One* person I have to



make good—myself!” and for all women brought up in the comfortable classes: “Well may the castle stand that never was stormed!”

**Syphilis** is a chronic disease due to a micro-organism, the *spirochæta pallida*, which has only within the last few years been discovered.

The typical course run by an untreated case of syphilis is as follows:—Infection takes place when any discharge containing the organism comes into contact with any abraded surface of mucous membrane or skin, whether of the external genital organs, the vagina, the hands, lips, or any other part. The organism passes into the tissues, and apparently nothing happens for at least ten days.

Primary symptoms appear in from ten days to about six weeks. These are often slight and apparently unimportant. There is a small, red, raised spot at the site of infection, and the nearest lymphatic glands become hard. They are the glands which drain the part concerned, and they are endeavouring to deal with the infecting organisms and kill them. The spot does not give pain, it dies away in any time from a few days to several months and often leaves no trace. There is then another interval, during which nothing is seen to be happening.

Secondary symptoms appear about two months after infection, and generally begin with a low, dull red, copper-coloured rash, widely spread over the body, but generally sparing the face except the forehead. This rash is not irritable or painful, and the patient may pay little attention to it. The palms of the hands and the soles of the feet may show the rash, and these are regions seldom affected by other rashes. Occupational rashes may affect the hands and so cause uncertainty, but it is unlikely the feet will be affected by such causes. The hair is liable to become dry and to fall off. At this stage the sufferer begins to feel really ill, is pale, unhealthy-looking, and tired. Small superficial ulcers appear in the mouth, on the tonsils, in the throat, and soft raised patches, mucous tubercles, may be seen around the orifices



of the body, the mouth, nose, and rectum. Inflammation of the eyes is common at this stage. There may be pains in joints and bones from inflammation of the membranes covering them. At this period the patient is suffering from a profound toxæmia, and feels very ill all over. These symptoms gradually die down during a period of from six to eighteen months, and this stage may be the end of the trouble.

Tertiary symptoms may, however, arise, most commonly from three to five years after infection, but in other cases ten, twenty, thirty, or forty years later. The commonest symptom is the formation of local tumours (gummata), which have a strong tendency to break down into ulcers. Their most common sites are the covering of the bones, the liver, and the brain. Similar thickenings occur in the mouth, nose, throat, or rectum, where they lead to deep and spreading ulcers. In many cases the walls of small arteries are attacked, and this often leads to death from hæmorrhage in the brain. Recent discoveries have shown that a certain combination of gradual paralysis with insanity, known as general paralysis of the insane, is a late manifestation of syphilis, as is also the most distressing and long-enduring disease, locomotor ataxia. For these two diseases of the nervous system it has hitherto been impossible to do anything, and the patients have died after years, sometimes many years, of suffering.

Syphilitic women have many miscarriages, but many infected children are born. Most of these die in infancy, this being one of the common causes of "wasting disease", which figures as the diagnosis in the case of so many sick babies.

The only known treatment of any avail—by mercury and iodides—has until quite recently been terribly long, requiring constant attention and the taking of drugs for about two years. It is this fact, coupled with the common carelessness of the poorer people as to their health, which has resulted in so many remaining uncured. They have come to hospital for a few weeks or few months, until they felt much better, and have then disappeared, to go on infecting others. Now we



seem to have in our hands a remedy: Salvarsan, one of the mercury compounds, which is much more powerful than anything hitherto known; and it is claimed that three injections into the blood of Salvarsan, followed by six months of rubbing with mercury ointment, effects an absolute cure. It has been claimed that the injection of three doses of Salvarsan, at intervals of a fortnight, has effected complete cures; but in no disease is it scientific to speak of permanent cures till more years have passed over the patients' heads than we have seen since the introduction of Salvarsan. In any case it is an immense advance, and much may be hoped when the fact becomes generally known that a prompt remedy exists. This should make a great difference to the readiness with which patients will seek advice, as it is so much easier to keep secret a very short course of treatment than a two-years course. It will make an immense difference, too, in the spread of infection by cutting short the period of infectivity, and from the fact that it is possible to induce people to be careful for others for a few months who become careless before a period of two years has gone by.

The question of compulsory notification and compulsory isolation till cured is a very difficult one, on which the most thoughtful minds of the most experienced physicians and social workers in the country are unable to come to an agreement. All other infectious diseases have been checked, and some entirely stamped out by these methods of compulsory notification and isolation, and on broad lines it would seem that the same plans would be helpful here. But the one great difference remains: other diseases are regarded as pure accidents or misfortunes, by many as an act of God, for which the sufferer has no personal responsibility. This is often a mistaken view, but it *is* the view. On the other hand, venereal diseases are known to arise in the main from conduct which falls below the moral standard of the community, and it is feared that compulsory notification would lead to much evasion of treatment by proper authorities and much resort to unqualified quacks. One point in this most difficult



problem is clear: the line decided upon must be identical in every respect for men and for women, and all it is possible to do must be done to set up one moral standard for men and for women.

**Gonococcal disease** (*gonorrhœa*) is a very widespread venereal disease due to a micro-organism, the gonococcus, which readily attacks mucous membranes. It is usually conveyed from the infectious person during sexual intercourse, and the symptoms are usually manifested from two days to a week after infection. It causes inflammation of the affected mucous membrane and a thick white discharge, and at the same time the glands draining the region become enlarged and painful.

The part usually affected in women is the vagina, and unless promptly taken in hand the disease spreads upwards into the uterus and the tubes, causing inflammation and discharge wherever it reaches, and in many cases extending through the tubes into the body cavity, where it sets up peritonitis which may be fatal. In many cases the peritonitis is less severe in character, and produces a slow chronic inflammation, causing many months or even years of pain, and so sealing up the open ends of the tubes as to bar the passage of ova into the uterus, and so make pregnancy impossible. This is one of the commonest causes of sterile marriages and one-child marriages.

Attacks of peritonitis may recur at intervals for many years, as the bacteria remain alive and dormant for long periods, and may be waked up into activity at any time. Many attacks of what women describe as "stoppage of the bowels", or as "inflammation of the bowels", are recurrent outbreaks of gonococcal peritonitis.

A common symptom of gonorrhœa which occurs in the early stages is pain and smarting on passing urine, and a frequent desire to empty the bladder. If a girl is noticed to be leaving the work-room very often, and if on being questioned she relates the symptoms of frequent and painful passing of urine, everything should be done to urge her to



see a doctor at once, and if at all possible a doctor who is a gynæcologist.

The child of a mother suffering from gonorrhœa at the time of its birth runs great risk of becoming blind, from infection of the eyes during the passage of the head through the vagina. Thirty per cent of all cases of blindness are due to this cause. Hence arises the custom of insisting to all midwives and maternity nurses that the baby's eyes must be washed with antiseptic lotion the moment it is born.

The number of girls who are infected with gonococcal disease during the first few days or weeks of married life is great, and there is perhaps no one other cause which gives rise in women to a greater aggregate of suffering, from personal pain and ill-health extending over many years and from childlessness.

**Venereal Sore**, the third venereal disease, is a highly infectious ulcer of the external genital organs, due to a definite micro-organism (a bacillus) quite distinct from those of syphilis and of gonorrhœa. Its effects are limited to the region of the infection, and to the lymphatic glands of the region; it produces no special effect on the general health, and no lasting ill consequences. Its importance is therefore very small as compared with that of the two great forms of venereal disease, but it calls for mention as it may be confused with them.

The problem of safeguarding girls against accidental infection in factories where large numbers of women of all classes are working together is a difficult one, and great care and watchfulness are required, together with some plain common-sense advice to individuals when occasion offers.

No one should ever sit down on the seat of a public lavatory in factory, railway station, railway train, restaurant, or elsewhere. An abraded skin, hardly noticed, may be readily infected, and safety lies in taking up a position which avoids all contact between any part of the skin and the seat. Drinking-cups, spoons and forks, imperfectly washed or handed from one person to another at canteen meals or other public tables, may convey infection if there are little cracks in



the lips or in the tongue or mouth. The only real safeguard against this is very thorough washing up with almost boiling water, and excellent arrangements to this end exist in the canteens of some Government hostels for girls, and no doubt in other hostels.

Tools which are put in the mouth, such as glass-blower's pipes and weaver's shuttles, should never on any pretext whatever be used by more than one person. Methods should be invented to make these practices unnecessary.

Towels may convey infection, even face and hand towels in factory washing-rooms, and it would be much the best plan for each worker to bring a towel of her own and a bag to keep it in.

As a Welfare Supervisor gains in experience she will find ways of minimizing risks of infection, and will also acquire some facility in recognizing danger-signals. She will naturally be very careful indeed, in any expression of opinion, as an outspoken diagnosis which afterwards proved to be wrong would be disastrous to her position. It is a safe rule to go into a factory looking for good and not for evil—a rule which leads to a juster appreciation than does the opposite procedure, only too common among a certain offensive type of "good woman". It is an attitude, too, which leads to greater powers for good; for human nature in general, and girl nature in particular, tends to rise towards the highest expected of it.



## CHAPTER IX

### The Taking of Medicines

A widely spread and highly dangerous habit has arisen, and is rapidly growing, of taking medicines, recommended by advertisement, by friends, or prescribed by doctors in bondage to the custom of seeing large numbers of patients in a short space of time.

Voltaire described a physician as "a man who puts drugs of which he knows little into bodies of which he knows less!" The reproach, both as to the drugs and as to the bodies, has become much less true since the days of Voltaire, but still conveys a valuable reminder. How much worse is the position when the person who takes the drugs knows still less about them, and about the body into which she puts them, than did the physicians of Voltaire's day!

The growth of the practice seems to be due to a number of factors, of which the most important is the change from country to urban life, which in the last fifty years has transformed us from a nation three-fourths of which lived in the country to one in which four-fifths live in towns. Town life has produced a feebler race, poorer health, more aches and pains, more sickly children, and therefore more tendency to fly to something for relief. The spread of education, enabling all to read, has increased the power of the advertisement; and advertisements are everywhere, in newspapers, in trams, left in leaflets at every door, and sent in pamphlets through every post. Increased incomes are providing more money to spend on things beyond the sheer necessities of life. The perennial love of mystery is also a factor. Here is a wonderful thing



put up in an attractive bottle or box, with a fancy-coloured wrapping, and said to work marvels! What is a shilling and three-halfpence compared with the value of this mysterious cure-all!

Doctors are using drugs much less than they did fifty years ago, using less and less every year. A doctor who was much ahead of his time in this matter, Oliver Wendell Holmes, wrote: "I firmly believe that if the whole material of medicine could be sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the sea!" In our own day Sir William Osler, the present Professor of Medicine in the University of Oxford, and recognized generally as our greatest authority on these matters, has written: "He is the best doctor who best knows the worthlessness of drugs!" The worthlessness and the dangers are becoming more and more clearly known to doctors; and while certain drugs, skilfully administered, are of inestimable value in certain diseases, most doctors in the first rank would express themselves as perfectly able to carry on their practices with no more drugs than they could count on their ten fingers. There is a story of the late Sir Henry Thompson, at one of his professional dinners which were called octaves (eight o'clock, eight persons, eight dishes, and eight wines), that he put before his guests papers on which he asked each to write the names of the eight drugs which he would select if he were in future to be confined to eight. There was a wonderful similarity in the voting-papers.

There is great danger among the wage-earning classes of coming to depend on "tonics" or "a bottle of medicine" instead of on good food and drink, pure air, healthy homes, proper exercise and recreation, proper baths, and sufficient rest and sleep. Nothing will better bear reiteration to working girls than the saying that health does not come out of bottles of medicine but out of healthy living! It is rather difficult to get this accepted, as it is much easier to take pills and mixtures than to give up unwholesome food, to give up airless bedrooms, to get up early enough to take a cold bath



and a walk before work, to give up tight corsets; and so reliance comes to be placed on drugs, in the hope that they may provide a short and easy cut to health. At the same time the medical woman who will reserve a quiet hour, or even half-hour, for the first consultation for each girl who comes to her in poor health, will explain clearly to that girl the reasons for her advice, and will point out that any medicine, if given, is the least important part of the programme, will find a universal and most gratifying response in the faithful carrying out of all her tiresome upsetting of the patient's ways! Moreover, that girl will then send her cousins and friends from all quarters of the town for similar advice. The working girl is eminently teachable, but such work takes time.

There is danger of actual harm instead of relief following the ignorant taking of medicines. The body is very wonderful, and delicately made. It can as a rule take good care of itself if fairly treated, but finds it hard to deal with foreign substances put into it, and the only safe rule is the avoidance of all medicines except under direct medical orders.

Many babies are killed every year in every great city by being given soothing powders and syrups, containing opium, to keep them quiet when suffering from improper feeding and ignorant management. There are boxes of powders sold at a price which would keep the child in food for a week or more, while the total value of the powders is less than a halfpenny.

Constipation accounts for the very large fortunes of certain owners of proprietary medicines, the reasons being that such vast numbers of women suffer from constipation, and that the taking of purgatives gives only a temporary relief, to be followed promptly and regularly by a need for further doses, often in increasing strength. So the vicious circle goes on, and money pours into the pockets of the owners of the favoured medicines. If the money so spent went on green vegetables and fruit, or were saved up for a bicycle, while the girl attacked constipation by means of a regular habit, suit-



able foods, drinks, and exercise, it would be vastly more to the point.

A certain syrup advertised for indigestion is sold at half a crown a bottle, while the cost of the contents is less than a halfpenny.

Backache affords a fine source of income to other owners of proprietary medicines, owing to the fact that there is a deeply rooted idea that backache means disease of the kidneys, which is the very last thing it does mean. Pain in the back means, in the vast majority of cases, myalgia or fibrositis; that is, it results from weak or over-taxed muscles, from defective circulation, or from a chronic poisoning of the blood such as produces lumbago and sciatica. In women, pain in the back below the waist may mean uterine trouble, from displacement of or from inflammation of the uterus. Stone in the kidney does give pain in the back, but this is a rare condition, and is one for which medicine is useless. But it is easy to make people think they have disease of the kidneys, and there is a large sale for kidney pills, many thousands of people here and in America taking them who have no kidney disease whatever. Some pills which sell at about half a crown a box cost the maker a halfpenny for the ingredients. A very sad feature of this particular question is that girls who are suffering from frequent passing of urine and from some pain in the bladder may waste much time and money in these pills. Such bladder troubles may be the result of tuberculosis of the kidneys or bladder, a condition which demands a costly bacteriological examination and a long course, probably for two or more years, of highly expert treatment, and while the girl is taking somebody's kidney pills she may be slipping down into a stage from which recovery is impossible. In other cases the trouble is gonococcal, and again precious time is wasted during which the gynæcologist could give expert treatment.

Anæmia leads to the sale of many pills and mixtures, some of them quite good in themselves, but tending to centre the patient's attention on drugs as a means of cure instead of on



proper food, proper drinks, open-air exercise, and regular action of the bowels.

Certain pills find a ready sale at 2s. 9d. for thirty pills, the total cost of the ingredients of the thirty pills being a tenth of a penny, so that a pennyworth of ingredients sells for £1, 7s. 6d.

A well-known blood mixture sells at 2s. 9d. a bottle, while the ingredients cost less than three-halfpence.

Consumption cures provide a very saddening chapter in this story. Consumption kills more people than any other disease, and kills them mostly in the prime of life. No medicines whatever are known to cure consumption, yet in the early stages it is curable to a high degree by open air, proper food, and inoculation of tuberculin. The money spent on consumption cures, if spent on open air and milk, might save some of the early cases, and would improve the chances of those in later stages. The so-called cures usually owe their sale to containing something which alleviates cough, and so produces a false sense of improvement or of security.

Cancer cures often lead to a heartless exploiting of most unhappy sufferers. There are doctors all through the civilized world who are spending their time solely in the search for a cure for cancer. So far the search has not been rewarded by such a discovery, but we know we are on the track, and the goal may be reached any day. At present there is one cure, and one cure only, for cancer, and that is early surgical operation. It is appalling to think of the amount of money drawn from those who can ill afford it by advertisers of "cancer cures". These cures are usually very much more expensive than other forms of patent medicines, and the friends of a working woman may be spending several guineas a month on them. Many of the so-called cures cause awful pain before life ends. The hope of cure makes the patient put off the only possible help—that of a great surgeon. The above are merely illustrations of the general truth as applying to advertised secret remedies as a whole. Money is thrown away, serious harm is often done, and, worst of all, the mind is



diverted from the paths of physiological righteousness into paths which either lead nowhere or lead to perdition. The ideal position is that of the old doctor of eighty, full of life and vigour, who on reflection said that he had once taken one dose of medicine!

Knowledge as to healthy conditions of life is sorely needed. Wise advice about this is worth more than all the medicines in a chemist's shop. It will mark a great advance when it is generally recognized that a doctor's main work is giving advice as to healthy living, not giving bottles of medicine.



## CHAPTER X

### Alcohol

Alcohol is a powerful narcotic poison, placed by doctors in the same class as chloroform and ether, because it produces the same effects. It is usually called a stimulant, but is not really a stimulant any more than chloroform or ether. All three stimulate at first, then depress; then if the dose is continued, cause unconsciousness and finally death, from poisoning of the brain centres which control the heart and lungs. There are real stimulants, such as tea and coffee and cocoa, which do not depress afterwards.

The reasons for which alcohol is taken are in the main common to man and woman, but there are one or two causes special to women.

In fainting attacks the sudden stimulating effect of alcohol does stir up the heart and consciousness is recovered, but it is rather dangerous for anyone but a doctor to order it in these circumstances. Some cases of sudden unconsciousness are not faints but are due to apoplexy, and in such cases alcohol may cause death by increasing the hæmorrhage into the brain, which might have ceased had the heart not been stimulated. A safe and effectual procedure for a fainting girl is to lay her down on the floor near an open window, loosen all clothing round neck and waist, and give a drink in little sips. The drink may be hot water, hot tea or coffee, hot milk, but should not be cold water if it can be avoided. Strong smelling-salts will help, and as soon as consciousness is returning, a teaspoonful of sal volatile in a wineglassful of cold water may be given. A mustard leaf on the chest below



the left breast may be needed in prolonged cases, and rubbing of the hands and arms upwards towards the shoulders will help the circulation. If the attacks recur, medical advice should be sought.

Pain at menstrual periods starts many a girl on the downward path as regards alcohol. It is best to make a strict rule never to take it, or to offer it to others, for the relief of pain. In some kinds of menstrual pain it does relieve, but the relief is bought too dearly in damage to the nervous system and the risk of forming a dangerous habit. In other kinds of menstrual pain, alcohol either gives no relief, or intensifies the pain by lowering the resisting power of the nerves if taken time after time. For menstrual pain, advice has been given in a preceding chapter.

The menopause, occurring usually somewhere about forty-five to fifty, has for many women troubles of its own, usually in the form of headaches, indigestion, palpitation, hot flushes, and disturbed sleep. With these there is often a general sense of lessened power of work and of endurance. All these pass away with time and patience, and some of the strongest and healthiest years of life may follow. Alcohol is first taken by many women during the menopause, but it does not really help. For palpitation it is worse than useless. It weakens the heart, causing fatty degeneration of the muscles, and therefore making the heart less equal to its work. The effect on the blood-vessels is to weaken them and make them liable to give way, so increasing the danger of "strokes" (apoplexy). Many men and women die many years too soon from hearts weakened by alcohol.

For depression, alcohol is one of the worst things which can be taken. It excites and cheers for a short time, and then the depression returns worse than ever. Suicides are far more common among alcoholics than among abstainers, and twice as many publicans commit suicide as men in any other occupation. For menopause troubles, what is wanted is abundant open air, cheerful society, and little changes, good simple food, long nights in bed, and a little afternoon rest.



A poor appetite often leads to ale or stout being taken to help to get the food down, but in the long run it really lessens appetite. It causes catarrh of the stomach, which gives a feeling of nausea in the mornings, and leads to no breakfast. Then comes alcohol in the middle of the morning, resulting in no appetite for dinner, to be followed by more alcohol at night and more nausea next morning.

Alcohol checks digestion, therefore the food stays overlong in the stomach, ferments and gives rise to "wind", with pain till this is cleared out of the stomach. It weakens the muscles of the stomach, so that the food cannot be properly moved about, and often leads to a dilated stomach. It is the bitters in the beer and stout which really help digestion, but the hop is not a good bitter and causes sleepiness. Gentian tea, an old country appetiser, is a much better bitter, and a safe one.

In weakness and tiredness alcohol gives a temporary sense of increased power, but it really lessens the strength of the muscles. Athletes in training are not allowed any alcohol, and during long hot marches in campaigns in tropical countries it is forbidden to the troops. Lord Roberts and Lord Kitchener were very keen on stopping alcohol when specially hard work was required of the troops, and in the United States the sale of alcohol is entirely forbidden in the army.

Feeling cold is often adduced as a reason for requiring alcohol, there being a popular idea that a glass of spirits or of wine warms one. It gives a sensation of warmth for a short time by dilating the blood-vessels of the skin so that more blood flows through them and affects the nerves of the skin, which give us our feelings of warmth or cold. But the blood quickly cools in the skin and goes away colder to the interior of the body, which is therefore really colder by reason of the alcohol. This explains why a drunken man often dies on a frosty night if he falls and lies in the air. Arctic explorers found out the deadly dangers of taking alcohol on their expeditions, and now never touch it. Nansen tested this carefully, and found alcohol lowered the temperature of his men.



Many women take alcohol because they are worried or unhappy; and it is an easily understood temptation. But the effect of worries and troubles depends on courage and cheerfulness of temperament and on steadiness of nerves, and as nerves are greatly weakened by alcohol everything becomes harder to bear. Chauffeurs need excellent nerves, and employers demand chauffeurs who do not take alcohol, as they know that even a small quantity makes the nerves less steady.

The mind is weakened as well as the nerves, and many crimes are committed under the influence of alcohol. In Sweden it has been estimated that 70 per cent of the persons in prison are there through alcohol. After the San Francisco earthquake in 1906 the Mayor forbade all alcohol for six weeks, and then opened the saloons again. The first Monday after opening, there were seventy-four in the police courts as compared with five on the preceding Monday. Hospital experience runs in the same direction. Investigations in Edinburgh showed twice as many accidents on Saturday as on any other day.

Insanity often seems to result from alcoholism. "This year 42 per cent of the men and 18 per cent of the women in the asylums were insane through alcohol", wrote the great alienist Clouston in 1903. The extent of insanity due to alcohol is greatly increasing everywhere in England, there being twice as many cases per cent of the asylum population as thirty years ago. This also is Clouston's saying.

Pleasure and sociableness lead to the beginnings of alcoholism in many girls, who first acquire the habit at birthday parties in factories, in which it is often the custom to subscribe for bottles of wine or spirits to celebrate a girl's birthday. This custom will doubtless soon cease in factories where there are Welfare Supervisors. Women who frequently take a little tend to become short-tempered, easily upset by trifles, and deficient in self-control. They become emotional, easily laughing or crying without good cause. Self-control is one of the most important faculties; the higher and lower are always struggling within, and only by the control of the



lower by the higher is it possible for the individual to rise to the best within her. All narcotic poisons attack the highest faculties first; so alcohol attacks self-control early, and self-control weakened, any evil may follow.

It has been estimated that about half the crimes against morality are due to the influence of alcohol.

Many illegitimate babies are born nine months after a Bank Holiday. There has been enough self-control all the year, then comes Bank Holiday and alcohol, and the holiday ends in disaster.

The cost is another serious matter. A few years ago investigation showed that, on an average, each wage-earning family in England and Wales spent five shillings a week on alcohol. The poorest area in one great city was very carefully investigated from this point of view, and it was found that while the average income per family was about nineteen shillings and sixpence a week, the average expenditure on alcohol per family was five shillings a week.

All along the line, physically, mentally, morally, alcohol is a weakening and deadening force, and it is worth a great deal to save women and girls from its influence. Here, as in other matters, more will be done by quiet presentation of facts than by the emotional and exaggerated methods of appeal common among temperance reformers.



## CHAPTER XI

### Foods

The actual working of canteens being in the hands of experts in dietaries and cooking, and the food market varying from week to week as it does in this third year of the war, making now one food, now another the best to buy, it is more helpful to Welfare Supervisors and others in authority to give a general grasp of principles of feeding than to attempt any guidance in detail.

It is a general truth, which it is particularly well to face at this time of national food stringency, that most people eat too much; that more people die in this country and in America from overeating than from under-feeding, and more people from overeating than from excessive drinking of alcohol. There are outstanding exceptions to this, and in one great city in the Midlands, where women's wages have been appallingly low in almost all industries, the wage-earning woman has for generations been chronically underfed—a fact which has been strikingly shown up by the remarkable improvement in her physique since munition wages have enabled her to feed herself well.

It is the present custom to measure food values in Calories. The Calorie is the amount of energy in the form of heat required to raise the temperature of one kilogramme of water one degree Centigrade. All the food assimilated by the body is finally used as a source of energy. Careful experiments have shown the weight of food required per day to keep a man doing a given amount of work in good health and of stable weight. It is easy to find, by burning that quantity



of food and measuring its heat energy in Calories, what is the general food value required for a person each day. For example, a man is found to have done an average day's work, and to have maintained his weight and condition, on a diet of 4 ounces of cheese, 2 ounces of butter, and 18 ounces of carbohydrates. These weights of these foods, when burned, are found to produce heat which raises the temperature of 3000 kilogrammes of water one degree Centigrade, and we therefore say that he needs every day food to the value of 3000 Calories to keep him at work and in good condition. By burning, say, a pound of each food in common use, we can find the Calorie value of that particular food and compare it with the value of others, and so can construct theoretically ideal dietaries, each yielding the desired 3000 Calories per day. The number of Calories required is a matter in dispute among dietary experts, some of whom think 3000 too much, while others think it too little; but there is not much doubt that it is a safe and reasonable amount to aim at for women who are doing an average day's work, often now what has been considered a man's work, in a factory or on the land.

Feeding is not simply a question of Calorie values, or we could live quite satisfactorily and permanently on any one food which gave us the required 3000 Calories per day. The body is constantly giving off from the lungs, the skin, and the kidneys substances which it has used up and which must be replaced. These substances consist in the main of nitrogen, carbon, hydrogen, and oxygen, and the food must therefore supply all these, and must supply them in the quantities in which they are excreted; and the central problem of dietetics is how to do this without waste.

Foods are classified into three main classes according to the elements they contain, and in practice it is found that in this country it is necessary to have a mixed diet derived from all three classes if the body is to be kept in good condition. The three classes are: (1) proteids, which contain carbon, oxygen, hydrogen, and nitrogen; (2) fats, which contain carbon, oxygen, and hydrogen in certain proportions;



(3) carbohydrates, sub-classified into starches and sugars, which also contain carbon, oxygen, and hydrogen, but in proportions which give them a smaller energy-value than fats.

The struggle among the poor is always for the proteids and fats, which being mainly of animal origin are more costly than the starches or sugars—a struggle which ends in the poorer wage-earners going short of the absolutely essential proteids and highly desirable fats. In war-time the struggle is keener than ever, with food prices up 70 per cent, and more meat, our chief source of proteid, supplied to our armed forces and our Allies than the whole previous amount for the kingdom.

The best daily dietaries are those in which some proteid, some fat, some carbohydrate is supplied at each of the three meals, and some of the old country dietaries of the labouring classes are excellent examples of ideal feeding at small cost. For example, a breakfast of oatmeal or barley-meal porridge with milk, even separated milk; a dinner of bacon, potatoes, and cabbage; a supper of wholemeal bread and cheese, leaves nothing to be desired; and on such foods, in the days when the countryman fed his own pig, and grew his own potatoes and beans, green vegetables and fruit, the sturdy British race was reared which is now in danger of deterioration from town life with its inferior feeding. It is greatly to be hoped that the keeping of a pig may after the war again become common, and that all future town planning will allow for a vegetable garden for each house.

**Proteid foods** have special value where long-sustained effort is required. The animal proteids, lean meat of every kind, from ox, sheep, pig, rabbit, fish, or bird, are easily digested as compared with the vegetable proteids, and supply vigour of body and mind, as the American with his three meat meals, the New Zealander, "five-meal, meat-fed", very well know. There is an unfortunate prejudice against Colonial meat which time will break down. Two of the most valuable sources of proteid are greatly neglected in towns. These are



herrings and cheese. Herrings have twice the value, weight for weight, of lean beef or mutton, and whether fresh or cured are an excellent food. Cheese has twice the value, weight for weight, of beef or mutton, and has long been the outdoor dinner, with wholemeal bread, of the country labourer. It is often more acceptable if cooked, with macaroni, or rice, or tomatoes, or artichokes, or cauliflower, or as Welsh rabbit or cheese pudding, and its use should be encouraged in canteens.

Peas, beans, and lentils, gathered when fully ripe, have a theoretical value equal to that of twice their weight of beef or mutton, but the difficulty about the vegetable proteids is that they are much more difficult to digest than the animal proteids, and need very long, slow, and skilful cooking if they are to be valuable foods. They are well adapted to hay-box cooking. The country dish of beans, fat bacon, and parsley sauce is an excellent combination of proteid and fat. Green peas and green beans are luxuries rather than foods, as they are gathered when, though the seed has grown to full size, the replacing of the water in it by solid close-packed food for the nourishment of the seedling has hardly begun.

**Fats.**—The provision of enough fat presents some difficulty where cost has to be considered; and many young girls are far too thin, and often suffer from chronic nasal and bronchial catarrh, because all their lives there has been a shortage of fat in their meals. They need in canteen meals as much consideration in this respect as can be given. The heated controversy as to the comparative merits of butter and margarine has died down during the war; and this is well, as margarine made from the vegetable oil of nuts and flavoured with whey from milk is an irreproachable food, while the superior flavour of butter is due simply to the bacteria it contains. Suet should be largely used in puddings, both flour puddings and milk puddings, which can then be made of separated milk. Dripping and bacon fat are good substitutes for butter or margarine, and a meal consisting simply of wholemeal bread and dripping or fat bacon satisfies all dietary requirements. Nuts supply valuable fat, but are very difficult



of digestion in any quantity sufficient to permit of their replacing animal fats. Olive oil is nourishing, but hardly comes within the purview of canteens in these times of restricted imports.

**Carbohydrates.**—The most important, because cheapest and therefore commonest, foods come into this class; and two of them, oatmeal and wheatmeal, are almost perfect foods in themselves, containing as they do proteid, fat, and carbohydrate. Potatoes and rice are much less valuable, containing little beyond starch, which is the cheapest and least valuable of all our common foods. Unfortunately we so treat three of these foods, wheatmeal, potatoes, and rice, as to get the worst possible value out of them by discarding the proteids and the highly necessary salts and vitamins they contain.

Bread should be made of the whole grain of the wheat, and though our present national bread does not come up to this ideal it is vastly more nourishing than the poor, very white bread it has replaced.

Oatmeal, stone-milled and not crushed between rollers, is more valuable even than wholemeal bread, and should be much more freely used.

Oatmeal, barley meal, maize meal all make very nourishing porridge and cakes.

Potatoes should always be cooked in their skins, the layer of cork in which prevents the valuable salts dissolving out into the water, while the small quantities of proteids and vitamins which lie directly under the skin are also saved. In some canteens the attempt to cook potatoes in the skins has been tried and has failed, because this is a thing "which is not done" in munition circles, but is regarded as derogatory to dignity.

Polished rice, that is, rice commonly sold, has been deprived of its outer layer containing vitamins and consists of little but starch. The loss of the vitamins of rice among a purely rice-eating people has led to the fatal tropical disease of beri-beri, which at once clears away when unpolished rice is again taken. Sugar differs from starch in being very



readily dissolved and absorbed into the blood, whereas starch has first to be changed by the digestive ferments of the body into sugar. It is a most valuable food, and very quickly restores lost energy, hence the great demand for sweets and jams on the part of our men in the trenches. With the war-time restriction on the consumption of sugar, it should be left to the little children, the old people, and the sick, as the healthy adult is capable of obtaining it by the action of his digestive ferments upon starch, of which there are much larger supplies.

Vitamines are bodies recently discovered in foods in very small quantities, but whose importance cannot be measured by their amount, as they are absolutely essential to life. Many modern methods of cooking and of preparing foods either destroy them or discard them, and we tend to depend rather largely for them upon green vegetables, salads, and fruits, rather than upon oatmeal, wheatmeal, other cereals, potatoes cooked in their skins. Vegetables and fruits also give us small quantities of mineral salts which are essential, but which need not form a part of daily diet, and which can be more cheaply though less pleasantly supplied by the chemist as table salt, lemon crystals, and other salts. It should never be forgotten that green vegetables and fruits do not nourish, except to a minute extent, and that though they are valuable as supplying salts and vitamins, they should always be in addition to foods and not instead of them. It has been pathetic to see poor women buying turnips at high prices as a substitute for potatoes, instead of buying rice or maize or barley. Jam and marmalade are good foods in virtue of the sugar they contain. Some fruits contain a little sugar, but, speaking generally, they contain little beyond water, salts, acids, and vitamins.

Milk is a complete food, containing proteid, fat, and carbohydrate, salts and vitamins, but at its present prices it is almost impossible to make an extensive use of it in canteens, and with a threatened still greater scarcity it would be wise to leave it mainly for the babies and young children. Eggs



are also a complete food, but here again the question of cost is a serious one.

In choosing foods it is well to make the choice as wide as possible, to avoid fads, and to discourage ideas that such and such foods do not suit a particular person. The saying of an expert doctor as to the fashionable modifying of milk to suit each individual baby: "There is too much adapting the milk to the child's stomach, and not enough adapting the child's stomach to the milk", has its complement for older people, and most women can eat most things if they go the right way about it.

A healthy person's weight is the infallible indication of the value of the diet on which she is living.

It is best in canteens to begin with the worker's known tastes, and then gradually introduce new foods. Meals should be varied, and the variation should not be regular, so that everyone knows what Monday's meals will be, but should contain as much as possible of the element of surprise, which has a good effect on appetite, and therefore on digestion.

Day and night dinners should differ, as workers often cannot eat or digest at midnight a meal they like at noon. For night dinners lighter dishes are needed, more milk puddings, good thick soups, eggs, bread and butter, cake and jam, savouries and sweet puddings.

Cooking needs more care than it generally receives from British women, who are notoriously bad and wasteful cooks as compared with their Continental neighbours. Much more time should be spent over it than is generally given in this country, as many foods are greatly improved in digestibility by gentle cooking extending over four or five or more hours. Everything needs doing to ensure that the food reaches the tables really hot, and that it is served in as dainty and appetising a way as possible.

The present time of high wages for women affords an opportunity greatly to raise the standard of women's meals so that they will refuse for the future such starvation wages



as 8s. to 12s. a week, and in this way canteen managers are working for the coming time as well as for the present.

**Drinks.**—The question of drinks is an important one in canteens for women, as most women drink far less than the quantity of liquid required for the most advantageous working of the body. An adult, working, eating, and drinking normally, gives off from the body daily five pints of water from the lungs, the skin, and the kidneys, and this implies an intake of five pints if efficiency is to be maintained. An ordinary day's diet supplies in the solid foods two pints of water, as all common foods, bread, vegetables, meat, cheese, eggs, butter, contain much water. This leaves three pints to be taken in addition, and on the whole it is best that most of this should be taken at times when the stomach contains no solid food, as water taken at the close of a meal not only dilutes the gastric juice but tends unduly to stretch the stomach, and so to give rise to or to aggravate indigestion. One pint before breakfast, another in the middle of the morning, and another at tea time, unaccompanied by anything to eat, is an excellent plan; but many people much prefer to drink at breakfast, dinner, and supper times, and if their digestions are normal can well afford to do so, in which case the three pints should become six half-pints, three taken with meals and three at the times previously specified. Water is the only pure drink, and when people are really thirsty is more acceptable than anything else. Two very important functions of the body are apt to suffer, especially among sedentary or standing workers, from a deficiency of water. Constipation is largely the result of insufficient water, and the evils of constipation are many and far-reaching. The kidneys cannot properly rid the blood of toxins unless well supplied with water, and the dangers arising from the retention in the blood of substances which should have been excreted are similar to those due to constipation. The ordinary water-supply of great towns is quite safe for drinking, provided the tap has been allowed to run for long enough to clear out the water which has been standing in the lead pipes which connect the water mains with the



house. Filters, unless most scrupulously and intelligently cared for, are apt to be a source of danger.

Tea is really a drink and a drug. Since its advent in England early in the seventeenth century at ten guineas a pound the consumption has increased, until it now reaches six pounds per person per year, which is more than is drunk in the whole of the rest of Europe. The drug in tea is caffeine, which is a pure stimulant, acting quickly on brain and nerves, and enabling one to think more rapidly and intelligently, to feel brighter and more awake. In moderate quantities, say half a pint of weak tea two or three times a day, it is quite harmless. The tannin in tea, which dissolves out when the tea stands more than two or three minutes, acts on the gastric and intestinal mucous membrane as it does on the leather it is used for tanning; that is, it hardens and toughens it, so making digestion slower and more difficult. It affects similarly any meat or fish which may be eaten at the same time, so that the meal known in the North as a "meat tea" is a peculiarly vicious one from the point of view of digestion. The aim in making tea is to extract the caffeine and aromatics and leave the tannin, and the best way to do this is to put on fresh cold water, bring it up to the point of actual boiling, and make the tea at once, as prolonged boiling will drive off the gases which help in the extraction of caffeine. The teapot should be hot, and should be kept in a hot place for three minutes at most, and the whole of the tea then poured off into another hot pot. The practice of putting the tea in a muslin bag and taking that out at the end of three minutes is not so good as that of putting the tea in loose, as in the latter case the water mixes with it more completely. China tea is on the whole best, as containing least tannin, but is too mild in flavour for most wage-earners. Excessive tea-drinking, even of tea free from tannin, is damaging to brain and nerves, the caffeine acting as a whip to a tired horse and making the nerves unsteady. Taken in moderation tea is a safe stimulant, leading to none of the harmful effects which follow the taking of alcohol.



Coffee is badly made in England, and little is used, only one pound per head per year, as compared with twenty-one pounds in Holland. It contains caffeine and tannin in the same quantities as in tea, and in addition a special oil, *caffeol*, which gives it the aroma. If it is to be worth drinking it costs five times as much as tea, two ounces of coffee being required to the pint, as against a quarter of an ounce of tea to the pint. Made in this strength it is a much stronger stimulant than tea, as it contains so much more caffeine, but it is rarely drunk at this strength in the same large quantities as tea. It should be made in the same way as tea.

The young person under sixteen would be much better without either tea or coffee if she could be got to see it, as children's brains and nerves should never be stimulated by drugs. They will be active up to the point of wisdom, if left to Nature and well fed and cared for. It is an appalling sight to see a baby being given sips of tea. The best hot drink for the young working girl is cocoa, and she might with advantage have more home-made soup than comes her way. Cocoa came to Europe with Christopher Columbus in 1520, and was in use in England long before tea or coffee. Its advantages are that it is really a food as well as a stimulant, containing a little proteid and a good deal of fat and starch, and that the stimulant found in it (*theobromine*) is much less powerful than caffeine, while the tannin present is only half as much as that in tea. It is best to avoid fancy cocoas, some of which are made up with the addition of drugs, and to keep to plain, rather high-priced cocoas which have had nothing added and nothing important abstracted.

Tea, coffee, and cocoa, made with milk, pass out of the category of stimulating drinks pure and simple and into that of foods, and are excellent for tired girls unable to eat much, as for instance when on night work.

The various widely-advertised drinks which are the modern equivalent of the old home-made beef-tea are of the same nature as the beef-tea, that is, they are powerful stimulants which help to tide the body over a temporary period of



exhaustion, and which help a tired person to take and to digest food, but they are not in themselves food; and this needs to be clearly recognized, as much money is spent on them by persons who really need it for food. Regarded as stimulants for those whose duty calls them to unduly long and arduous work, or to sudden effort, they have their place, and the addition of half a teaspoonful of one of these extracts to half a pint of warm milk makes an excellent soup, and is a way of getting milk taken by girls who otherwise dislike it. Meat extracts containing an addition of alcohol are dangerous. Lemonade, whether made from lemons or from lemon crystals, is a helpful drink, especially in the hot weather, when the kidneys are likely to be short of their proper allowance of water owing to the greater evaporation from the skin. The lemon has a stimulating effect on the kidneys, and also leads to more water being drunk than might otherwise be taken.



## CHAPTER XII

### Work and Rest

The proper apportionment of the factory day between work and rest is a matter which in the main is outside the scope of the Welfare Supervisor's powers; but by careful study of the conditions as they exist, by comparison of the effects of various hours at different factories, or at the same factory, a body of evidence will be collected which will prove of great value in future legislation. During the war the question of output has had to be given premier rank, and no people have been more willing to put in every possible hour of work, regardless of personal comfort and even of health, than have the women and girls in factories engaged in munitions of war. During 1915 and 1916 many factories tried the plan of twelve hours work during the day, and no night shifts. This went very well in many cases for a year or more, and women and girls, medically examined in some detail with a view to the effects of the work, showed a wonderfully high level of health, even after working these hours, or something near them, seven days a week for a good many months. There seemed to be several factors at work in producing this result. The most important undoubtedly was that the high wages earned enabled the girls to pay for good meals; they were spending a fair share of money in this way, and in very many cases had never been so well fed in their lives. Good canteens, making the buying of suitable meals an easy matter, were another factor in the case. A third factor was undoubtedly psychic, the exhilaration of the response to the national need, the settled state of mind of the person who has for the time given up all



for some one congenial purpose which leaves her time only for work, food, and sleep. A body of Cambridge women undergraduates, who worked on the land for two months of the long vacation of 1916, found the definite psychic value of days in which life presents no riddle of choice; days in which "you have to be punctual, cheerful, and hard-working for the fixed number of hours, and the time that is over is just enough in which to eat and sleep and clean your boots, write your letters, and read perhaps for half an hour the paper or a book. This brings deep content." And content is wonderfully conducive to health, just as happiness is the best medicine. Work at this rate could not have gone on indefinitely; it was being done partly on physical and psychic reserves, which were being used up. This was realized in time, and many factories substituted day and night shifts of nine or ten hours in each shift, and found that this produced the best output per worker per hour; which means that it tired the workers least, for the tired worker is never the quick worker.

There is a good deal of evidence pointing to the eight-hours working period as really the best from the point of view of output, and the old ideal of the early Labour leaders, of "Eight hours work, eight hours play, eight hours sleep, and eight bob a day", is coming to the fore as a practical matter. Physiological fatigue tests lately carried out show the great value of short breaks, such as ten minutes every two hours. The five-hour spell very commonly worked after dinner is universally found to be very trying. All workers detest it, the output steadily diminishes as the hours go on, and accidents are common in the last two hours. It is bad economy. The morning needs at least one break; the afternoon another break, the fifteen minutes for tea, which would come best at the junction of the third and fourth of the five working hours. The breaks for breakfast, dinner, and tea are of extreme value if wisely used, but unfortunately in many factories there are not good arrangements for obtaining the full value of the breaks, and there is much for Welfare Supervisors to do in this respect. The question of food is met more or less well,



but the equally important questions of air and rest are less considered. The prime necessity of the woman who is standing to work is that she should sit down, if possible with her legs raised, during her breaks for rest. Sitting down lessens by three beats the work of the heart in each minute, and greatly eases the circulation, while the change of posture when the legs are raised to a right angle with the trunk gives great relief, and helps to save many a woman from varicose veins. The short ten- or fifteen-minutes breaks are valuable in this respect. If possible they should be spent in the open air, or at least in rooms with wide-open windows, but where there is provision for sitting down for all standing workers. If the work-room cannot be left during the short breaks, it is urgently desirable that seats should somehow be provided, and it is vastly better to sit on the working bench, or even on the floor, than not to sit at all. Many married women who have inherited a poor quality of blood-vessel develop varicose veins in the legs during a first or second pregnancy. These they generally neglect, with the result that each succeeding pregnancy makes them worse. Such women should not have standing work. If they insist on standing, because it happens to give them better pay, or work they prefer, they should be advised to wear elastic webbing bandages, and an experienced nurse should show them how to put them on. In middle-aged women serious ulcers of the lower leg often result from varicose veins, and these usually take many weeks, or even months, of skilled attention before they heal.

Girls and young women who stand to work, and whose muscles are poor, from inherent defect or from under-feeding, often suffer greatly from flat-foot—a condition in which the natural arch of the foot drops, causing continuous pressure on nerves by certain bones in the fore part of the foot. Such girls are much helped by sitting down during all the breaks. They also need special exercises to strengthen the muscles at fault—those of the outer side of the leg from the knee to the foot—and three minutes a day spent on three special



exercises will work wonders. While the muscles are getting into condition, much relief may be given by instep supports in the shoes. All shoes should be roomy, and should have broad low heels. They should really fit the foot everywhere, as shoes which are too big are rarely comfortable. High-heeled shoes, such as are at present fashionable, are very bad in destroying the proper balance of the body on the natural arch of the foot.

For sedentary workers the free times need using in quite a different way, and for those who are on light work nothing is better than a vigorous game or dance in the open air. It is wonderful how much exercise can be concentrated into ten minutes, where the love of it induces girls to get promptly out into the open air. Ten minutes spent in full activity in the factory garden or yard sends the girls back refreshed and quickened up to an extent which shows itself in the increased output of the next hour.

It is a great matter to avoid mental unrest during the meal-times and other breaks. Everything should be done to avoid scrambling and pushing and annoyance. Egress and ingress as to work-rooms and canteens should be facilitated as far as possible; good canteen arrangements made to save every second of time; good lavatory arrangements. Rest of body, recreation, peace of mind, and cheerfulness are necessary in order to make the breaks of real value for refreshment.

The present long hours of strenuous work in young girls and in women hitherto unused to it have brought certain special difficulties as regards the reproductive organs. Cases in unmarried girls of prolapse of the uterus, or other malposition of the uterus, have been increasingly common since the war began; and though the majority have been susceptible of minor treatment, a considerable minority have needed operation and a stay of some weeks in hospital. Heavy lifting, sudden strains in pushing or pulling, especially in the case of girls who wear tight corsets of a make which is short below the waist, account for most of these cases. Standing



is bad for those in whom there is any tendency to prolapse. The root cause of the trouble is weakness, actual or relative, of the muscles composing the floor of the pelvis, and all measures directed to strengthening the muscles in general, and those of the abdomen in particular, are a great help. Any woman who complains of "something coming down" should be seen by a gynæcologist, and should at once be taken off work involving standing or any special strain on the abdominal walls.

Much more is now being done to help young girls as to choice of work. It has been too common for a young girl leaving school in a poor district to take up the first thing which offered a few shillings a week immediately, unskilled work, therefore ill-paid work leading to nothing better. Now "after-care committees" are trying to show to parents the folly of letting a girl of fourteen take immediate earnings of seven shillings a week leading nowhere, as compared with keeping her in food and clothes and home till she is eighteen, while she learns a trade which will bring her from £1 to £2 a week for the rest of her life. In this crusade Welfare Supervisors will have an increasing part.

Congenial work is a great matter, and as far as possible a girl's own wishes should be consulted. It is so much easier to be healthy on work which keeps one happy. If a girl who likes millinery is put to clerking, the world will probably lose some good millinery and get some bad clerking.

Congenial work is rarely too hard. The energy and pride and pleasure with which it is done go far to keep the worker well. More people are ill of too little work, or boredom in work, than of too much work—a truth which has been amply shown in the general improvement in women's health since the war set so many more to work. It is worry that kills, not work. "Care killed the cat"—even the nine-lived cat—shows the common appreciation of this fact. Ungrudging service is much the happiest and healthiest. Many people are of the opinion expressed by Caleb Garth that "The Prince of Darkness was a slack workman".



The conditions of women's work in factories have been greatly improved since the advent of lady inspectors of factories, whose powers, direct and indirect, are very great. Now that to their occasional visits are to be added the daily helpful influence of educated women as Welfare Supervisors, the outlook for girls in factories is vastly improved.

The element of play is an important one in a working girl's life, and here much help and guidance is needed to secure that the play shall be of a nature to balance the work. The clerk is apt to play by sitting at fancy work rather than by gardening, hockey, tennis, or cycling. The girl in household service may well play in millinery class, singing class, or art school. The shop assistant will do well to play at something which means sitting down in the open air, such as listening to a band in the park, or going into the country on an omnibus top. All who work indoors should aim at playing outdoors for at least part of the time.

Good walking, with a natural waist, low broad heels, head erect, and a graceful free swing from the hips—walking as Spanish women and gipsies walk—is one of the best possible exercises, and one available for all. The bicycle is one of the greatest boons the last few years have given the working girl, enabling her to get out into the country at the earliest possible hour on her half-day, to see beautiful places and historic places, to link her life on to the more natural life of the countryside and to what has gone before in the history of her nation.

Hockey for winter Saturdays is excellent, giving concentrated exercise and the best kind of moral discipline, that involved in "Play the game!"—discipline of a kind which comes less readily to factory girls, each working on her own, than to people who have more of concerted action in their lives.

Swimming and gymnastics under competent and careful instructors do much to develop lungs and limbs and to secure proper balance of muscles.

Dancing is very good, out of doors in the summer evenings,



in well-ventilated recreation rooms in the winter, and is always a favourite form of exercise with sedentary workers.

Every girl should choose some form of exercise and make herself good at it.

Amusement without exercise makes a special appeal to tired workers who have been standing all day, and theatres, music-halls, and picture-houses will always attract them. A dramatic society attached to a factory would be a very helpful institution, and easily workable in a large hostel, under the direction of an educated woman who could lead the girls away from modern rubbish to Shakespeare.

Everyone is the better for a hobby in life, some interesting occupation to turn to apart from work. It matters little what the hobby is, from making crochet mats to gardening, though a good hobby is one which goes on all the year and which can be taken up at odd moments. The point is that it is carried on for sheer pleasure, and saves many an hour from boredom.

Rest comes to most workers chiefly on Sunday, and it is sad to see how little use is often made of Sunday by town workers. It should offer as complete change as possible from the working days, and should keep a balance between physical and mental change. It is a great mistake for a girl shut up all week to go to church and Sunday school three or four times each Sunday, as so often happens among the girls who go to church at all. Once is really as much as she can afford; and as much as possible of the day-time should be spent in the open air in the country.

Good sleep is an essential condition of health. The number of hours needed cannot be given, as it depends on the quality of the sleep, three or four hours of really sound sleep being more helpful than seven or eight of broken, restless sleep disturbed by dreams. Roughly speaking, the town working girl has too little sleep, and does not take the best part of the night for bed. It may be given as a general statement that the growing girl between fourteen and eighteen needs nine hours sleep, and should be in bed by 8.30 if she



is to get up, as many factory girls must, at 5.30. In any case, at whatever hour her factory begins, she should be in bed by 9. The girl of eighteen to twenty-one needs at least eight hours sleep, and should be in bed by 10, while the unmarried girl over twenty-one may find her needs well met by seven hours sleep. These hours are a very rough guide, but apply fairly well to hand workers in general where the work is not unduly heavy.

Aids to healthy sleep are found in taking supper at least two hours before bedtime; in drinking half a pint of hot water last thing; in lying close to a wide-open window, with cotton-wool in the ears if too near a noisy street. Happily the custom of single beds is growing in England, and we may hope to see the unhealthy big bed shared by two girls a thing of the past. It is important that bed-clothes should be light as well as warm, and it will be found that those who sleep at wide-open windows need fewer bed-clothes than those who sleep in stuffy rooms. Trying to sleep is never any good, the very effort keeps one awake. A useful plan is to remember that lying quietly in bed gives great rest to both body and mind even when awake. The very fact of thinking this, and cheerfully settling down to lie awake, often brings sleep. No girl should be expected to sleep with cold feet, and hot bottles and bed-socks are desirable for all who suffer in this way.





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