

The Nordrach treatment for consumptives in this country : how to cure and prevent consumption and other forms of tuberculosis, together with a general consideration of the laws governing health / by James Arthur Gibson.

Contributors

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THE NORDRACH
TREATMENT FOR
CONSUMPTIVES IN
THIS COUNTRY



JAMES ARTHUR GIBSON

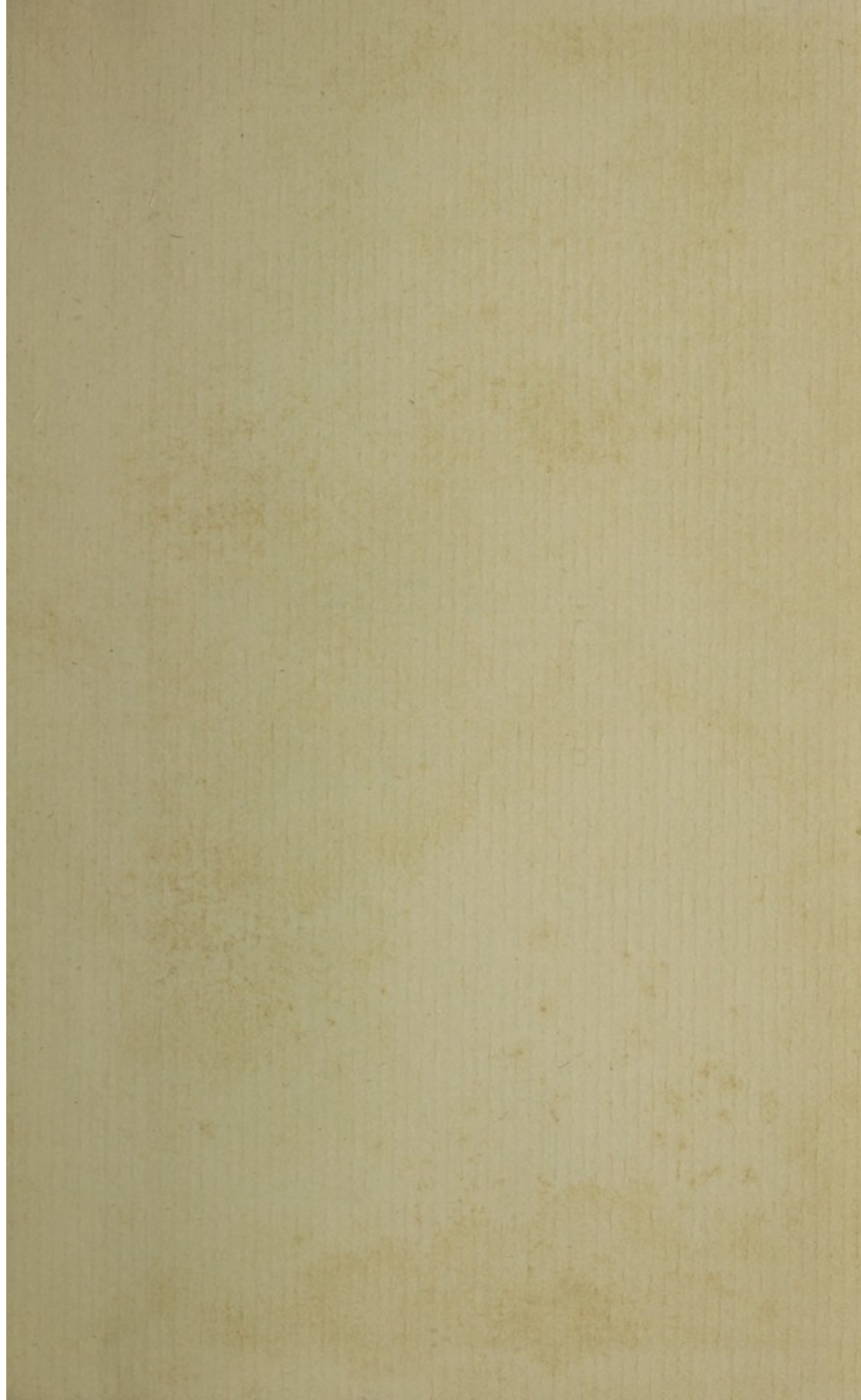
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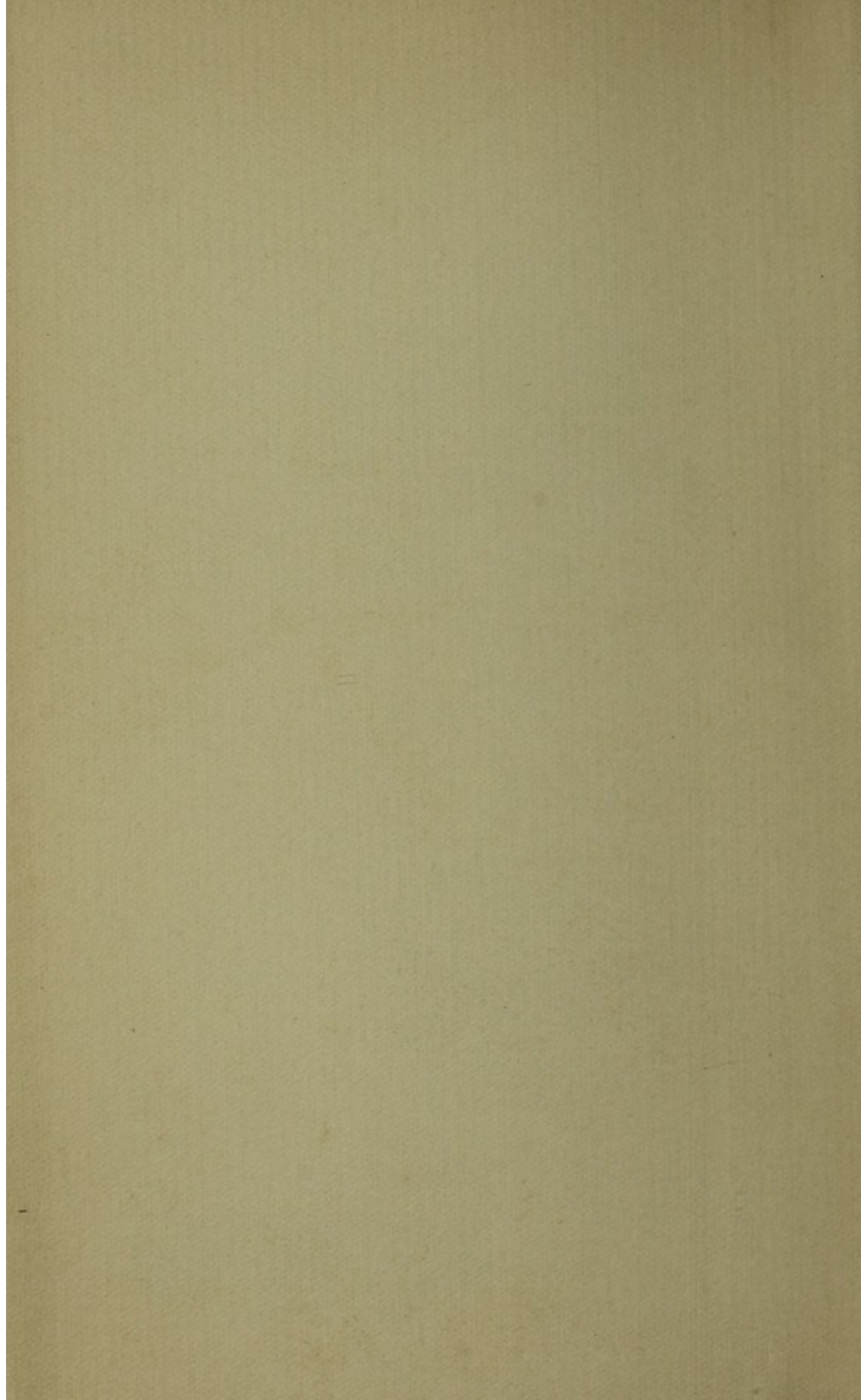
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The Nordrach Treatment

The Northern Hemisphere

The
Nordrach Treatment
for Consumptives in
this Country

HOW TO CURE AND PREVENT
CONSUMPTION AND OTHER
• FORMS OF TUBERCULOSIS

TOGETHER WITH
A GENERAL CONSIDERATION OF THE
LAWS GOVERNING HEALTH

BY
JAMES ARTHUR GIBSON

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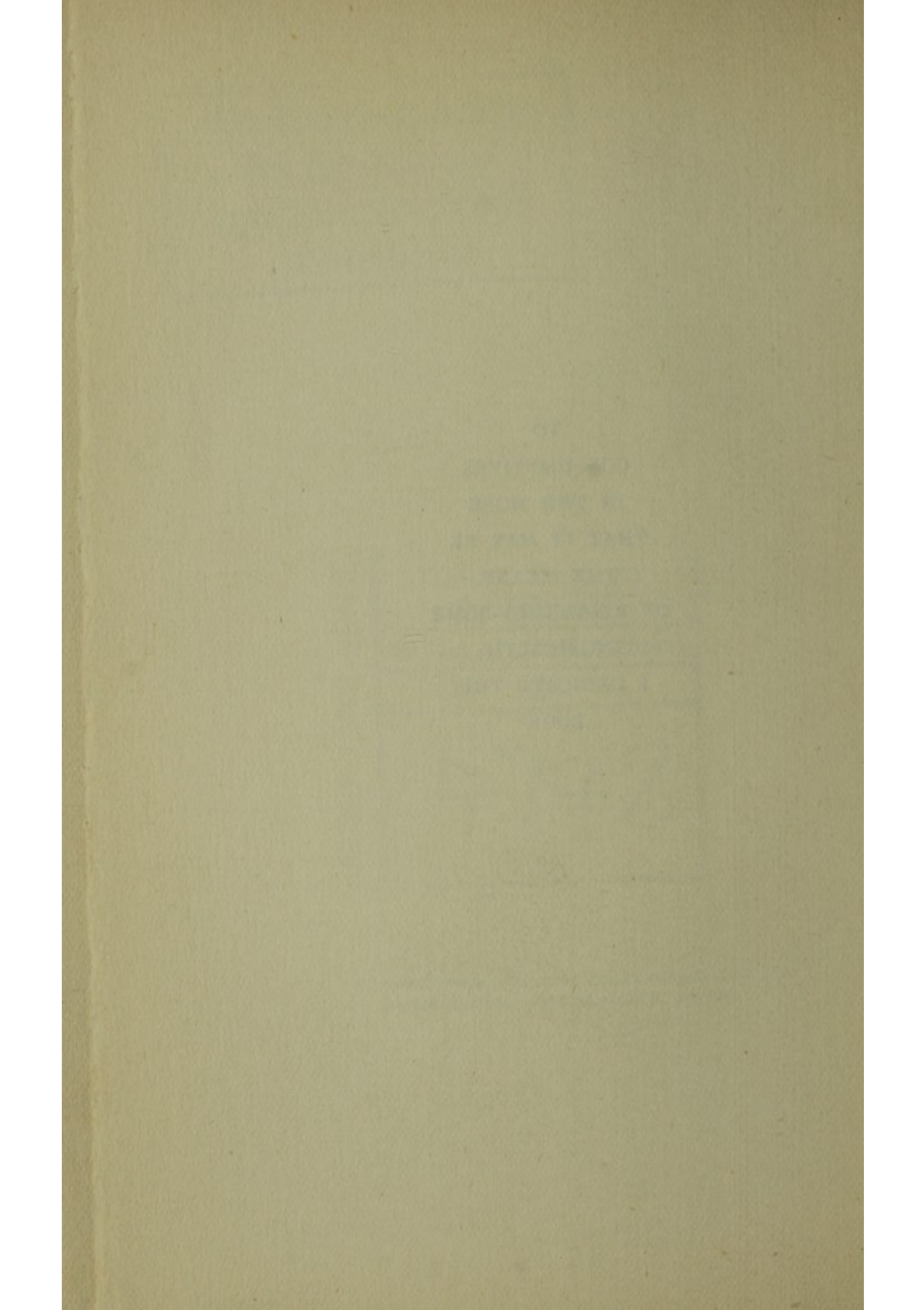
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TO
CONSUMPTIVES
IN THE HOPE
THAT IT MAY BE
THE MEANS
OF RESTORING SOME
TO HEALTH
I DEDICATE THIS
BOOK



NOTE

SO many people have asked me to republish in handy form the articles on consumption which during the past two years have appeared above my signature in "The Nineteenth Century" and "The Westminster Review," that I have felt impelled to the preparation of this book. The first three parts of the volume were issued in "The Nineteenth Century," and the remaining part in "The Westminster Review;" and I have to thank the editors of these Reviews for permission to reprint the papers, which, for book publication, have necessarily been revised, and in great part re-written. At the same time the matter has been considerably added to, for the further guidance of patients, and where otherwise found necessary.

J. A. G.

September 1st, 1901.

NOTES

The first thing that struck me when I entered the room was the silence. It was a heavy, oppressive silence, the kind that makes you feel like you are intruding on something sacred. I had heard that the old man was a recluse, but I didn't realize how true it was. The room was dimly lit, with only a few candles providing light. The walls were covered in tapestries, and the floor was made of polished wood. I could hear the faint sound of a clock ticking in the distance. The old man sat in a large, ornate chair, looking at me with a steady, unyielding gaze. He had a long, thin nose and a small, pointed beard. His hair was white, and his eyes were deep-set. He seemed to be waiting for me, but I didn't know what for. I felt a strange mix of curiosity and apprehension. I had heard that he was a powerful man, but I didn't know what kind of power he had. I was about to speak when he interrupted me. "You are late," he said, his voice low and gravelly. "I have been waiting for you for some time. Now, tell me, what brings you here?" I hesitated for a moment, then I told him the truth. "I am here because I have heard that you are a powerful man, and I want to know what you can do for me." He listened to me without saying a word, his gaze never leaving mine. When I finished, he nodded his head slightly. "You are a brave man," he said. "I like you. But I am not a powerful man. I am only an old man who has seen many things in his life. If you want to know what I can do for you, then you must first tell me what you can do for me. I am not a man who gives things away for nothing. I am a man who trades. So, tell me, what do you have to trade?" I thought for a moment, then I spoke. "I have a secret," I said. "A secret that could change the world. If you want it, then you must give me something in return. Something that is as valuable as the secret I have." He looked at me for a long time, his expression unreadable. Finally, he spoke. "You have a secret, you say. What kind of secret is it? Tell me, and I will tell you what I can give you in return." I hesitated again, but then I decided to tell him. "It is a secret about the future," I said. "A secret that no one else knows. It is a secret that could save the world from a great disaster. If you want to know what it is, then you must give me something that is as valuable as the secret I have." He nodded his head again, then he spoke. "Very well," he said. "I will give you what you want. But first, you must tell me the secret. Tell me everything you know, and I will give you what you need. I am a man who keeps my word. So, tell me the secret, and I will give you what you want." I took a deep breath, then I spoke. "The secret is this," I said. "In the year 2000, there will be a great disaster. A disaster that will destroy the world as we know it. But if we can prevent it, then the world will be saved. I have a way to prevent it, but I need your help. I need you to give me the resources I need to do it. If you agree, then I will tell you exactly what to do. If you do not agree, then the world will be destroyed. It is that simple." He listened to me with a steady gaze, his expression never changing. When I finished, he spoke. "You are a brave man," he said. "I like you. But I am not a powerful man. I am only an old man who has seen many things in his life. If you want to know what I can do for you, then you must first tell me what you can do for me. I am not a man who gives things away for nothing. I am a man who trades. So, tell me, what do you have to trade?" I thought for a moment, then I spoke. "I have a secret," I said. "A secret that could change the world. If you want it, then you must give me something in return. Something that is as valuable as the secret I have." He looked at me for a long time, his expression unreadable. Finally, he spoke. "You have a secret, you say. What kind of secret is it? 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J. A. L.

London, 18th Dec. 1888.

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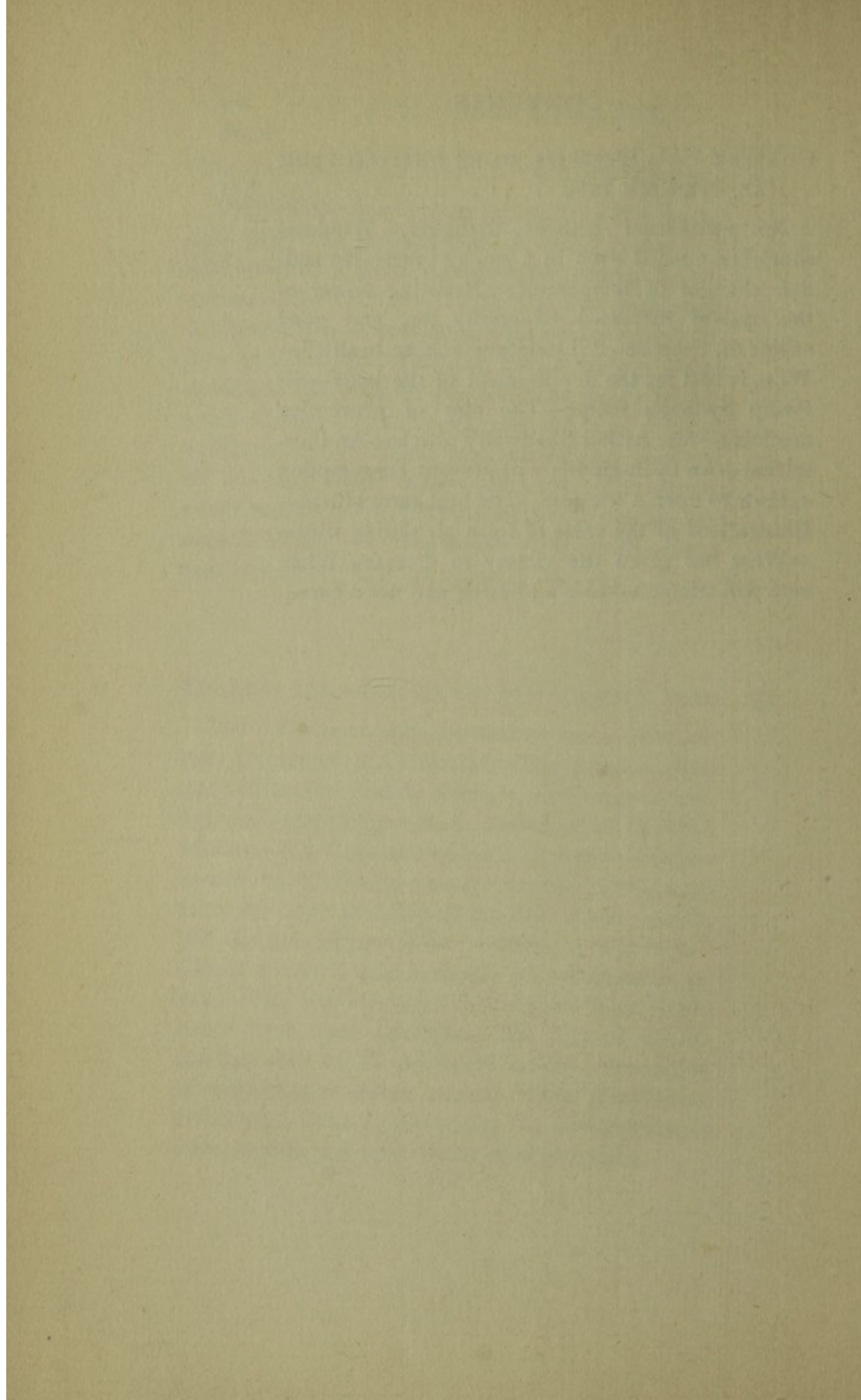
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I.—DESCRIPTION OF THE NORDRACH TREATMENT.

CHAPTER I.

THE WRITER'S OWN CASE.

Reasons for writing—I describe my own case—Break-down in Consumption—Rest in the Country—I hear of Nordrach—Arrival at Nordrach—Gain in Weight—Cured—Before the British Medical Association—Similar Cases—Present mode of life—Open windows—Climate has nothing to do with Consumption—Permanence of Cure—General health restored.

IT may not, in the first instance, be out of place to give my reasons for taking it upon myself to write about consumption. As a layman, speaking to laymen, I feel that I will be more easily understood than a scientist would be ; while from my training as a chemist I am not so unfamiliar with the subject as otherwise I might have been ; moreover—and this to me is excuse enough for writing—I am myself a

consumptive, and have been cured by the rational treatment which I shall afterwards try to explain. I therefore think that I am, to some extent, entitled to speak, since I know, from my own case, more about this disease than most scientists could know by theory, for I have learned, by bitter experience, what are the best possible things for consumptives, and what the worst possible. Indeed I could not help writing. For years I had watched the blind gropings after the truth of the most learned scientists in this country. Had watched the half-truths they had not discovered, but been driven by Continental scientists to acknowledge, and the wrong positions they had taken up, while all the time thousands were dying who might have been saved, and I could keep silent no longer.

Perhaps the best way for me to treat the subject is to start with my own case, and afterwards to show how it is possible to save most of the consumptive persons in this country, if only public interest could be aroused, and the necessary means employed to bring about a result so desirable from every point of view.

In the summer of 1895 I completely broke down in health. I was at that time twenty-eight

years of age. I must have been ill for some very considerable time—perhaps for eighteen months or two years—without realizing the cause of my excessive languor and weakness. I was examined by Dr. A. B. Mitchell and Professor William Whitla of Belfast, who both told me the same thing—that my case was very desperate, that I was suffering acutely from phthisis. My weight, as taken by Professor Whitla at that time was 9 st. 7 lb. I was ordered to stop work and go into the country to live, and to have complete rest. No one, myself least of all, ever expected to see me well again. At first I got considerably worse. Weakness became more apparent, night sweats more copious, cough more severe, and throat inflamed. I set my house in order, believing firmly that my days were numbered, and that they were few. Gradually, however, I began to gain weight, owing to the nourishing food provided for me by my friends. I should think that during the three months I stayed in Ireland I drank more than half a gallon of milk every day besides taking much other food. When I had been three months in the country a friend advised me to go to Nordrach, in the Black

Forest, where he had himself been, and where he had received more good and made more progress in a few months than he had in the previous seven years, during which, as I knew, he had been ill of phthisis. He had been two voyages to the Cape, three winters at Davos, and in fact had tried every known remedy and treatment without any result. Then he heard of Nordrach, where he finally got cured. He is now quite well and strong, is living in England winter and summer, and attending to his business. I decided to give Nordrach a trial, for, from what my friend said of the treatment there and of its results, I could well believe that it was the most likely way of effecting a cure, if the cure of such a disease were possible.

I arrived at Nordrach early in October, 1895. My weight was 138 lb., or 9 st. 12 lb. I left Nordrach towards the end of January, 1896, in three and a half months—cured. During that time I had gained almost 3 st. in weight. On my return I weighed 176 lb., or 12 st. 8 lb., and my chest measurement had increased 6 inches. I here give my weight and gain per week during the progress of my cure.

First week, the 12th of October, 1895, 138 lb.

or 9 st. 12 lb. ; second week, 143 lb. ; third week, 147 lb. ; fourth week, 149 lb. ; fifth week, 153 lb. ; sixth week, 157 lb. ; seventh week, 160 lb. ; eighth week, 163 lb. ; ninth week, 165 lb. ; tenth week, 168 lb. ; eleventh week, 168 lb. ; twelfth week, 169 lb. ; thirteenth week, 170 lb. ; fourteenth week, 173 lb. ; fifteenth week, 174 lb. ; sixteenth week, the 24th of January, 1896, 176 lb. or 12 st. 8 lb.

Since that time, now more than five years ago, I have kept in good health and have maintained a weight of from 12 st. 4 lb. to 13 st. 4 lb., at which figure I at present turn the scales. It is certainly a struggle to get up one's weight, but when that has been accomplished one has only to eat a normal amount to maintain it. I have since my return been examined by doctors who knew me before and during my illness, and they have all pronounced me perfectly sound. In July, 1898, at the British Medical Association in Edinburgh, some of the greatest authorities on the chest examined me and found my lungs quite healed and in a healthy condition. If my case were an isolated one it would convince nobody, some other cause would be adduced to account for the recovery, but it is also the case

of hundreds of others who have been cured at Nordrach, and who have been fitted again to take their part in the work of life. I may say that I have worked as hard since my recovery as ever I did in my life, but with considerably altered methods, and with a deal more care to the essentials of rest and nourishment, and the avoidance of the things—such as impure air—which tended to bring about my breakdown. I may mention that the windows of my house are never closed, but are kept open winter and summer, with nothing but the best results; that I seldom wear an overcoat or a hat in the wettest or coldest weather; and that I have been drenched many times without changing my clothes or catching a cold. This generally is the mode of life followed by those who have been to Nordrach. Before going there they are weakly, dying consumptives; on their return they are strong, hardy and healthy men and women, capable of standing any climate—and *climate certainly has nothing to do either with the cause or the cure of consumption*—provided they lead the reasonable lives that all of us, strong and weak alike, should lead. It may be said that these cures are not permanent; but it is in their

permanency when the recovered patient is favourably circumstanced, that they are so different from many improvements in condition received elsewhere, which seldom last ; for the Nordrach patient has learnt how he should afterwards live, which is the most valuable of all lessons. Cases that were cured ten years ago, when Dr. Walther first started his treatment at Nordrach, still remain well, and will continue well so long as they live within the bounds of reason.

I was formerly always thin and delicate, subject to constant colds and ill-health. During the past five years I have not been laid up a single day through illness, and my general health has been completely restored.

CHAPTER II.

DESCRIPTION OF THE TREATMENT.

Consumption not a fatal disease—Dr. Smyth's paper on Nordrach—Overfeeding—No cure without weight-gaining—Kinds of food—Necessity for eating largely—Signs of returning health—Rest before meals—No medicines—Regulation of the amount of exertion and rest—Taking the temperature—Exertion guided by temperature—Walking—Sleep—Dangers of over-exertion—Pure air—Open windows—Climate of Nordrach much the same as ours—Walking in all kinds of weather—Nordrach treatment can be carried out in this country—Baths—Examination of patients—Effective supervision at Nordrach tells in results—Average length of treatment.

CONSUMPTION, until quite recently, was always looked upon as a fatal disease, and any one ill of consumption was ever considered to be beyond all hope of succour. But it cannot now be too strongly affirmed that consumption need not be a fatal disease; that not a single life need be lost through it, if only the proper means of grappling with it are employed in time.

It is not for me to enter into the scientific

aspect of the disease. An excellent paper on Nordrach is contributed by Dr. R. Mander Smyth, himself a patient cured there, to the "British Medical Journal" of the 1st of October, 1898. I will, however, give a rough outline of the treatment as carried out by Dr. Otto Walther, and to a great extent originated and perfected by him, at Nordrach, Baden, Germany. The results he obtains are so much better than are got at any other sanatorium, that Nordrach is the best place to take as a pattern when erecting sanatoria in this country.

The three outstanding features of Dr. Walther's treatment are :

(1) *Over-feeding*.—Dr. Walther holds that there can be no cure without weight-gaining, and so that there may be every chance of a cure, he encourages the patient by every means to eat as much as possible. It is amazing the amount one can eat when forced to it; twice or three times as much as one would feel inclined to eat. There is no harshness used, but somehow the Doctor is able to make everyone eat the amount necessary. The food is of ordinary kind, and consists of plenty of milk, fats of all kinds, meats, potatoes, vegetables, butter, bread, cheese,

fruits, sweets. The gain in weight is often enormous. I have known a patient to gain 8 lb. in one week, and another to double his weight while at Nordrach. Everyone gains weight. Each patient is weighed every week; and as there is a friendly rivalry as to who will gain the most, there is a stimulus to good eating. This over-feeding causes no ill-effects; indeed girls come there who have taken very little solid or nourishing food for months, and start at once on this heroic treatment, showing signs of immediate improvement. We used to say among ourselves, or when impressing on a new comer the necessity for eating largely, that we had to eat three times the ordinary amount of food; one portion to replace natural waste; a second portion to replace the extra waste from the disease; and a third portion to put on weight so that the system might be strengthened and finally get the better of the disease. This, of course, was our unscientific way of explaining why we had to eat so much, not that we really had to eat three times the quantity of food a healthy person would eat. As the weight increases the patient begins to feel more fit, and to realize that at last he has stumbled on the

right treatment. At the end of the first week or two his cough has greatly abated, for the ordinary cold, which generally accompanies his illness under ordinary conditions, and which causes much of the irritating cough, and which all along he has been too weak to throw off, is now mastered, and as a consequence his lungs get more rest and he himself more sleep. The chest begins to expand, the lungs to heal, and little by little, unconsciously and without effort, the patient's bent shoulders begin to straighten. Every fresh sign of returning health is of untold encouragement and good to him; and besides, he sees others being cured and leaving for home. There are three good meals a day. I am sure there is no place where there is so much food consumed per head as at Nordrach. And that by dying consumptives, who are generally supposed to have no appetite! The meals are at long intervals, and there are no snacks allowed between whiles. Breakfast at 8, dinner at 1, and supper at 7 o'clock. Patients are required to be in their rooms to rest on their couches for an hour before each meal. Immediately after a walk one is too tired to eat well, but when an hour's rest has been taken one has as much of

an appetite as it is ever possible at Nordrach to have. Resting is always to be taken lying on a couch, as in that way the maximum amount of rest is obtained. No medicines are given, or only given in a most exceptional case ; they cannot arrest the disease, and do even little or no temporary good, and only upset the stomach.

(2) *Regulation of the amount of exertion and rest.*—Doctors at home little realize that this is such an important matter. Certainly there is nothing so harmful to a consumptive patient as over-exertion in any form, mental or bodily. Even too great intentness in reading a book, or, let us say, the excitement and engrossedness of listening to a concert are injurious. Dr. Walther gives great attention to this matter of regulating the amount of exertion, for he says that more consumptives kill themselves by doing too much than in any other way. Each patient has to take his temperature, by the rectum, four times every day, and to note the reading on a chart. The Doctor visits him three times a day, and can tell at a glance from the temperature chart if the patient is doing as he ought, and instructs him accordingly ; whether he is to be in bed, to lie on his couch, to sit outside, or to go for a

long or a short walk. When there is fever the patient is required to be in bed until such time as the temperature becomes normal. In old-standing and obstinate cases this is sometimes for months. When in bed the patient is expected to eat quite as much as when going about. When the patient's temperature is satisfactory, he is allowed to be up and about, and to begin his walking exercise. Walking is generally uphill, and always at a snail's pace, so that the heart and lungs are exercised without being exerted, and are thus strengthened and healed. These walks are increased in length as the patient grows stronger, until by the time he is cured he is allowed to walk long distances, say ten miles, and is so hardened and confirmed in health that he is able on his return home to resume work. When cured, the erstwhile patient is sent back to this country as readily in mid-winter as in mid-summer. Winter in fact is the best time for consumptives under the Nordrach treatment, as then they eat more and gain weight more rapidly. Ten hours' sleep every night for each patient; to bed at nine and up at seven o'clock. Though one may not be sleeping all the time, yet one is resting. The Doctor is very much displeased

when anyone disregards his instructions on these matters. Indeed the patient soon finds out for himself that the laws laid down are for his good. Over-exertion to the length of fatigue results in return of cough or fever, or tells a tale in some other unpleasant way.

(3) *Pure air*.—From the moment of arrival until leaving Nordrach the patient never breathes one breath of any but the purest air, as Nordrach is in the Black Forest at an elevation of 1,500 feet, surrounded by trees, and a long way off from a town or even a village. The casement windows of the sanatorium are kept wide open day and night, winter and summer, and in some instances the windows are taken completely out of the frames. Thus it is practically an outdoor life the patient lives continuously. There is therefore no danger of chills on going out in any kind of weather or at any hour, as the temperature within and without is equal. So pleasant does this living in the open become, and so hardy is the patient made, and so invigorated, that on his return to this country, it is the greatest misery for him to have to remain in a room with closed windows. Being at such a considerable height—1,500 feet, with a rise in the longer

walks of another 1,500—the patient, to get the same amount of oxygen into the system, must breathe relatively more of the rarified air, and thus expand the lungs. In this way the lungs are completely flooded with pure air; all the odd corners and crannies, which had hardly been used for years, are ventilated, which the easy walking uphill is eminently calculated to effect, while at the same time the almost absolute rest the patient enjoys allows the lungs to be practically undisturbed, and so permits the healing process to proceed. The climate is much the same as at home. There is quite as high a rainfall, and in winter it is much colder. But it has been demonstrated beyond a doubt that climate has absolutely nothing to do with the case. There the patients, who go out regularly, day after day, in all kinds of weather, sometimes walk for hours at a time in the rain, without ever thinking of changing their wet clothes afterwards. This course I still adopt, and find that such a wetting—sometimes twice in one day—never does me any harm whatever. I asked Dr. Walther if he thought his system could be carried out with hope of success in this country. He said that it could be worked here quite as

well as at Nordrach, or as in the balmiest clime ; that all that was required was a place where pure air was to be had, situated well away from a town, preferably at a fair elevation, and the man to see that the system was properly carried out. I am now convinced that this is perfectly true. Nothing else is needed. A high average of sunshine, dry climate, and all such other things as are generally supposed to be so necessary, go for little. And this is the crux of the whole matter. It is possible to cure here, on the spot, most of the people of this country who are ill of phthisis ! Why, then, are sanatoria not erected to treat the hundreds of thousands of those who are ill, and who have not the means to go abroad—hundreds of thousands who are as certainly doomed to death as if they were already under the sod, if some such steps be not at once taken ? It is sad to think that many people who might easily be saved and ensured a long life, must, through neglect, die long before their time.

These are the three features of the cure : nourishment, rest, and fresh air. There are, of course, more details in the treatment. There is a douche-bath in each patient's room, and the patient as he grows stronger is encouraged to

take a bath every day. This, by keeping the skin in a healthy state is a great aid to the elimination of the disease-poison from the system. The patient is told to take his bath, hot or cold, just as he likes it best, and is also told to afterwards dry himself quietly, and not in the breathless hurry usually exercised at such times. Every patient is examined once a month, both as to his lungs and sputum. Each month, in most cases, the symptoms of disease become less and less evident, until there comes a time when the Doctor, after examining the patient's chest, will say, "I can hear absolutely nothing." That indeed is a happy moment for the patient. The lungs are healed, and the sputum likely to be free from bacilli. After assurance is made doubly sure by injecting the sputum into a guinea-pig, and waiting a few weeks to see that there is no unfavourable result, the happy patient—now a patient no longer—is free to leave Nordrach and go to live in any country without fear of climate. As a matter of fact, on return home, their most intimate friends often do not recognise in the stalwart, broad-chested fellows the dying consumptives they knew but a few months before.

Only about fifty patients are taken at Nordrach. Dr. Walther says it is impossible to properly overlook more, and it can be easily understood that he is besieged with applications for rooms long before he is able to accommodate the applicants. It is in the matter of this effective supervision that the results got at Nordrach are so much better than can be obtained elsewhere. If one thinks for a moment this will not seem strange. At Davos and such places friends of the patients and others unite with them in having a good time, and render it almost an impossibility for a cure to be effected. Nordrach was until lately, when some other sanatoria adopted Walther's methods, the only sanatorium where this thorough, constant, personal supervision, which tells in a marvellous way in the results, was exercised. Instead of twenty-five to thirty per cent. formerly cured at other sanatoria, and those only the most favourable cases, twice as high a percentage, I should say, are cured at Nordrach, and some of these would be cases of the worst type and of long standing, that had most likely come from other sanatoria to Nordrach as a last resort.

Taking all cases—favourable and unfavourable

—the average time necessary to effect a cure is about six months. Some in a very early stage are cured in three months, others (a few) need one or two years. As to what is a hopeless case there is no saying, sometimes the apparently least likely cases responding quickly to treatment. I think Dr. Walther never gives up hope. Certainly he has cured cases that were considered absolutely hopeless by every other authority. But it is to be hoped that, with increasing knowledge and better precautionary measures, such cases as are almost beyond all hope will soon no longer be met with. When every section of the community comes to understand the true nature of consumption, and that patients, upon the very first signs of breakdown, should be placed under sanatorium treatment—there being sufficient sanatorium accommodation provided by the state—there will be little doubt but that every case of consumption will then be curable.

CHAPTER III.

THE TRUE NATURE OF CONSUMPTION.

Consumption curable—Consumption not hereditary—How the idea of heredity arose—The strongest people may become affected—Infectious nature of consumption—No danger from infection when general health maintained—Cod liver oil—Fats—Why consumptives going to Australia sometimes recover—Process the same as the Nordrach treatment—The injection of tuberculin—Other serums—In any case the Nordrach treatment necessary—The annual death-roll—The eradication of tuberculosis.

THE advance in our knowledge with regard to tuberculosis in its various forms has of late years been immense. It is now no longer considered, in the best-informed circles, as incurable, and it has been proved beyond doubt that it is not hereditary. There is never disease, active or latent, in the offspring unless the womb itself of the mother is diseased—a very rare occurrence.¹ In the case of cattle, as veterinarians know, it has been proved that it is not a hereditary disease by the experiments conducted by Sir Thomas Gibson-Carmichael, in his pedigree

¹ Of 2,576 children submitted to a *post mortem* examina-

herd at Castlecraig, some of the soundest and best-known animals of which have been bred off tuberculous parents. The idea that it was a hereditary disease got abroad no doubt in somewhat the following way. In a family in which one or both of the parents are consumptive the children are constantly in contact with an infectious disease. The fact of the parents having fallen victims to the malady is an indication that they were weakly constituted, or subjected to the overstrain of life in some way. The children are naturally weakly constituted also, and are therefore liable to take this or any other infectious disease. That is all. To begin with there is certainly no disease in the children's systems. But living in the same unhealthy surroundings

tion Bolitz found the following percentages tuberculous at different ages :

Still-born children . . .	0.0 per cent.
Children up to 4 weeks old	0.0 „
„ 5 to 10 „	0.9 „
„ 3 to 5 months old	8.6 „
„ 6 to 12 „	18.3 „
„ 1 to 2 years old	26.8 „
Children ranging up to 15 years about 30.0 per cent.	

It may be seen from the above at what an early age the infection from outside sources begins to invade the system.

and bad circumstances as their parents, and being badly nourished, either from necessity or through a constitutional distaste for proper nourishing food, they naturally sooner or later most likely contract the disease. This gave rise to the belief that consumption runs in families. But if the children were taken away from those bad surroundings, and brought up rationally and healthfully, they would be quite as free and immune from the disease as the children of the healthiest parents. On the other hand the very healthiest people, with the best possible "family histories," become afflicted with phthisis through disregard of the laws which make for health. So long as the body is in health, well nourished and well cared for, there is no danger from infection. There is no danger when simple and easily carried out precautions—such as the having abundance of air and light in the consumptive's room, and the careful getting rid of the patient's sputum—are taken. Under such conditions people in good health may mix freely with consumptives without fear, and without any other result than an increased belief in the wisdom of keeping strong in order to defy disease. It is only when the system gets below

par, through some of the hundred and one agencies that tend to reduce it, that there is danger. Then only are disease germs, which abound everywhere, ready to take hold of their victim, when the blood corpuscles and tissue cells have not the vitality to overcome and exterminate the intruders.

This, then, is what we know about tuberculosis. It is quite curable; it is not hereditary; it is not developed spontaneously, but directly by infection either through food, or inhalation, or other such means.¹ How it can be cured I have endeavoured to show. There could not be produced, I believe, an authoritative case of recovery from consumption by any other means than by those I have indicated. Certainly the usual remedies, such as injection of tuberculin, administering guaiacol carbonate and creosote, produce no satisfactory results. Cod liver oil as a curative agent is not in the question, as it is practically the treatment I speak of in one of its branches—namely, seeking to

¹ The communicability of phthisis is coming to be realised in earnest. In New York it is as compulsory to notify a case of consumption as to notify a case of any other infectious disease.

build up the patient's system by added nourishment. But cod liver oil is not such a good form of nourishment as the more natural fats and foods, such as milk, butter, and fat meats, since it has the tendency to produce nausea. Cures resulting from apparently other means are really cures due to this same treatment. Take the case of anyone who has been cured of consumption by apparently other means—say an invalid who had gone to Australia. The chances were great against his recovering there; but granted that he did recover, it was not by taking medicine that he got better. His recovery was entirely due to the three remedial agents: plenty of good food, rest, and fresh air. These are just a reversal of the conditions which brought about his illness, and a getting back closer to nature. When he went to Australia it was either to do no work or to take up some light employment. He lived in the bush an open-air life, and as a consequence of the change for the better in his surroundings his lost appetite returned, and he soon began to gain in weight. This gave him a start, which he was able to improve upon until he was quite cured, when it is certain he could be no other than a big burly fellow in comparison to his former self.

Perhaps the use of tuberculin, of all the attempted cures, is the most likely one to prove serviceable. But at present it is valueless, as even Professor McCall Anderson, who writes in the "British Medical Journal" of October 1st, 1898, on "A Plea for the more General Use of Tuberculin," has to admit: "... This improvement," consequent on the injection of tuberculin, "is but too often temporary, the morbid condition relapsing sooner or later after the treatment is stopped. The accuracy of those observations cannot be gainsaid." He goes on to say that in addition to the injection of tuberculin, other means should be resorted to, such as good food, pure air, and other antistrumous remedies.

There is no saying of what use tuberculin may prove to be in the future, when its preparation and proper use have been thoroughly mastered, when used in conjunction with the Nordrach treatment. It is believable that it might prove to be of great utility in arresting the development of the disease, or perhaps in great measure eliminating tuberculosis from the system, leaving the rational treatment, under better conditions, to rapidly build up the system and ensure a permanent cure. I think it is probable that,

even now, such forms of the disease as lupus would yield to the proper use of tuberculin, if at the same time the patient's system were thoroughly nourished and built up. It is constantly being reported that some new serum has been discovered, or some new method devised—such as the oxygen, the X-ray, or the bathing and saline aperient treatment—that can cure consumption. But it is certain such methods if they be ever found useful in the treatment of consumption will not build up again the shattered system. The very best they could do, if such an end could possibly be attained by such unnatural means, would be to arrest the disease, or lessen in the system the disease-poison, and therefore in any case the Nordrach treatment, which seeks by the most rational means to increase the germ-resisting power of the system, and thus to get rid of the disease and establish the balance of nature, would have to be resorted to in order that the strength might be restored.

Sir Thomas Grainger Stewart says that tuberculosis destroys as many lives as all the zymotic diseases combined, 50,000 to 70,000 dying annually from it in the British Isles. It accounts for at least one-sixth of the total death-rate.

The question is, How can we make use of the knowledge we now possess to alleviate or eradicate such a scourge? Evidently, since it is infectious, the first step towards mastering it is to stop the spread of the disease by removing all sources of infection, by the systematic supervision of consumptives themselves, and by spreading the knowledge of the supreme importance to health of abundance of light, air, and living room in dwellings and work-places, thereby keeping healthy subjects from becoming affected. The next step is to cure as many as possible of those who are affected, and at the same time, by the co-operation of the medical profession and others desirous of suppressing the malady, to discover at once fresh cases. These fresh cases would be affected in such a slight degree that they would easily and quickly be restored to health. By these means—preventing the spread of the disease, curing to the utmost extent the existing cases and singling out at once fresh cases for treatment—tuberculosis in man would at no distant date be eradicated, and a death from such a cause would be as rare in this country as a death from leprosy.

II.—THE NORDRACH TREATMENT PRACTICABLE IN THIS COUNTRY.

CHAPTER I.

SOME CRITICISMS ANSWERED.

Fresh air and over-feeding not alone sufficient for treatment—Strict supervision—Fever—Night sweats—Cough—Hæmorrhage—Dyspepsia—Proper feeding not harmful—Digestion improved, not injured—No harshness used—Physiology of the treatment—Statistics of weight gains—Weight easily retained—Patients should be sent at once to sanatoria—Danger of delay—Mr. Balfour on the backwardness of our medical men—Nordrach or Sanatorium treatment—Walther first shows the possibilities of the treatment—Medical men need special training.

I SHOULD like here to answer some criticisms that have been raised against what has been written in the previous chapters. One medical critic says that it is not claimed that in all cases fresh air and proper feeding alone

suffice for treatment. They certainly do not suffice for treatment, because there is also that strict supervision of every case which is quite as important. My critic does not take note of this matter of supervision, but says that the usual drugs must be used to relieve the symptoms—fever, night-sweats, cough, hæmorrhage, dyspepsia, etc.—overlooking the fact that these things are only *symptoms* of the disease, and that the proper mode of treatment is not to tinker with the *symptoms* but to treat the *disease* itself. It has been proved by Walther at Nordrach that the best means of reducing fever of any degree and night-sweats are absolute rest in bed, alone and undisturbed even by talking, together with proper feeding. Excessive cough will yield to the same treatment. Hæmorrhage, which is mechanical and accidental, need not necessarily accompany this disease, and is to be treated as any other accidental injury would be treated. Dyspepsia will disappear as nutrition advances.

This proper feeding is not harmful to patients even with extremest fever, though such as are unacquainted with its results think it is. I know of the case of a lady who, at Nordrach, suffered from pyrexial phthisis in the extreme. Her tem-

perature used to be about 96.8° F. in the morning, after a rigor 105.8° F. at noon, 96.8° F. again in the afternoon, and, after a second rigor, again about 105.8° F. in the evening. She received every bit of food from the doctor's own hands, lay in bed with fever for nine months, and then got up with a gain of forty-six pounds; so one cannot say it is "in the highest degree injurious in acute stages of the disease." All patients can stand this proper feeding; in fact it is the only hope for far advanced cases.

It is a mistake to say that "many patients break down under the ordeal, and the weight gained under pressure is often as rapidly lost, only a seriously damaged digestive apparatus being the result." I have known almost a hundred patients treated at Nordrach, and I am unaware of a single case of breakdown, and can only remember one who would not face the treatment. He tried it only for two days, and then left the sanatorium. He could quite easily have done as others do, but he was either not man enough or too headstrong to do it. I saw him afterwards, and he said he regretted that he had been so foolish. He roamed about from one health resort to another for two years, and then

died. As for the "seriously damaged digestive apparatus," I cannot do better than quote what a doctor writes in answer to remarks in the "Daily Telegraph."

The correspondent ["M. D." of Bournemouth] has had little or no experience of Nordrach, as he makes a statement curiously at variance with the experience of others when he says, "I have known of several instances in which the digestion was almost ruined by the method [of proper feeding]." He knows of them by hearsay only, he has not known them. One of the things which struck me most about Nordrach (and I underwent the cure there for three months) was the way in which patients who came there with their whole digestive apparatus insufficiently working, in an almost incredibly short time lost their dyspepsia and all other irregularities of their alimentary canal. This was most marked in the case of women—so much so that I should say now that the best cure for all indigestion is increased feeding. The effect is really most striking, but I am convinced that the majority of women neither eat nor drink enough to give them good health, good tempers, or good complexions. Mr. J. A. Gibson's account of Nordrach, which you reproduce, is a fairly correct one, but I really think he exaggerates the amount of food given to patients: it can hardly be described as "heroic" treatment. A few women certainly learn to eat three times as much as they have been accustomed to eat, but the

average man there does not, in my opinion, eat more than half as much again as an average man is accustomed to eat. But the food is good, very nourishing, and is given at such intervals that it is all assimilated—none wasted in the economy.

I did not mean to say that patients at Nordrach actually eat three times the ordinary amount. My words were “twice or three times as much *as one would feel inclined to eat.*” Our speaking among ourselves of the “three portions” was our unscientific way of accounting for what we had to eat, and also to impress on newcomers the importance of feeding. I merely wanted to emphasize the fact that quantity and quality of food were of prime importance, and I may have put the matter too strongly : but I have learned by experience that it is otherwise very hard to impress on a consumptive that he must indeed eat largely. This proper feeding, as carried out at Nordrach, is not unphysiological. It is nourishing food above all things that consumptives need, and to give it to them in suitable quantities is the most natural thing to do. Is it physiological to dose a man with creosote and guaiacol, or natural to live in an artificial temperature of 62° F.? Those who carry out such treatment are

acting unphysiologically. Walther uses no force or harshness. By persuasion and encouragement the patient is got to eat the amount of food he needs—regularly and not intermittently.¹ As to the physiology of the Nordrach proceeding, let me quote Dr. R. Mander Smyth,² who was a Nordrach patient and Walther's assistant for some time.

The dyspepsia of phthisis, then, is to be regarded rather as the outcry of a weak and starved organism

¹ At Davos and other such resorts it is the correct thing to depreciate Walther and the Nordrach treatment. Patients going to Davos are told of the brutalities practised at Nordrach on the patients to induce them to eat. These rumours, it is needless to say, are altogether untrue. There never goes a patient to Nordrach who is unable to do all the eating that is required of him; and he soon finds that the only hope of his being cured lies in his co-operating in the treatment as heartily as he can. But these stories are sufficiently terrible to frighten away from Nordrach and other sanatoria on Nordrach lines, patients who are thereby forced to return to Davos winter after winter as long as they live. It is also wrongly stated that Walther is a crank who will not admit that anything can be wrong with a man other than his lungs; but those who have experienced it know that Walther's is the treatment to set a man up in an all-round state of good health.

² A paper read before the Medical Society on the 9th of December, 1898, and published in "St. Mary's Hospital Gazette," January, 1899.

for adequate rest and ample nourishment than as an indication for limiting the dietary in any way. We usually say, "If the fever will abate, his digestion and nutrition will improve." Nordrach teaching takes an opposite view. "We must improve nutrition at all hazards, and that will cause the fever to abate, the tubercular process to subside, and digestion will improve later on." The *improvement of nutrition* is the key to the situation, and it has always seemed to me, after watching many cases go through this process at Nordrach, as if pulmonary tuberculosis set up a sort of vicious circle in the organism. Dependent for inception perhaps upon a previous state of malnutrition, it sets up, further, loss of appetite, dyspepsia, and wasting; this enables the tubercular process to advance and to obtain a firmer hold. The wretched patient then limits the quantity and variety of his food, actually inducing further wasting and assisting the disease. Later on he dies of tuberculosis, accelerated by starvation.

I have written to Dr. Rowland Thurnam, who was cured of consumption at Nordrach, and who also assisted Dr. Walther there, asking him his opinion on this matter. He writes me to say that he knows of no cases having left with permanently injured digestion. Thus I have set Greek against Greek. I have opposed to my medical critic's *second-hand* statements the *first-hand* statements of three other medical men.

I have been in communication with many other cured Nordrach patients, and their testimony invariably is that their digestions have not been injured ; but rather that, where digestion was weak before, it has been improved. Dr. C. Reinhardt, writing to the "British Medical Journal" on the 7th of August, 1897, says of Nordrach : "I spoke with many patients . . . and did not find one who had not gained in weight or who had suffered from dyspepsia or nasal catarrh after the first month."

The statistics of weight at some of the consumption hospitals in this country prove that proper feeding (there is no "forced feeding" at Nordrach, *i.e.* by stomach-tube, as recommended by Debove) is absolutely necessary. At one such hospital, of 676 cases, 152 did not gain at all ; many of them no doubt lost weight. The remaining 524 gained an average only of $6\frac{1}{4}$ lb. I have never known or heard of a case that did not gain in weight considerably at Nordrach, and the average gain there would be, I should say, 30 lb. I remember one patient who gained 110 lbs. at Nordrach, and know of a lady—a mother of two children—who went there dying, with digestive organs out of order as badly as

could be, weighing 60 lbs. She gained from the very beginning at the rate of 3 lbs. and 4 lbs. a week, and was cured in ten months, when she weighed 150 lbs. She has since then become a mother again, has been perfectly well all along for years, and is as strong as can be. This surely is physiological justification of Nordrach treatment. One can see that the medical critics are quite alive to the importance of consumptives gaining weight, but they fear to ruin the patients' digestions. If then it has been proved that proper feeding, as carried out at Nordrach, is not unphysiological, and that it does not injure, but rather improves, digestion, their case falls to the ground.

And "the weight gained under pressure" is *not* as rapidly lost ; it is not lost at all, unless through carelessness. I do not know a Nordrach man who has any great difficulty in keeping his weight. If patients rapidly lose in weight after leaving other sanatoria, they have either not been properly nourished, or have not been taught the necessity for eating well to keep their weight, or to increase it.

Most fault has been found with me for my remarks about scientists ; but I contend that at

the time at which my first article appeared I was quite justified in writing as I did. Within the last two years, however, a great change has come over the attitude of the medical profession towards the Nordrach treatment. Many of the leaders in the movement against consumption, now that they are getting a grasp of the proper treatment, would blush to have their present day speeches placed side by side with their speeches of two years ago, in which they advocated fresh air and sunshine as the only, and sure, cures for consumption. However, there is still much room for improvement. Every one may look about among his own acquaintance, and will find many, many consumptive patients, who, in the hands of their doctors, having undergone all sorts of treatment and been sent to all sorts of places—sea-voyages, Africa, the Riviera, Egypt—and got advice which to patients who do not know how to live is absolutely vague and useless—die, when they might have been saved if they had been sent to a properly managed sanatorium to undergo the right treatment. I met a patient at Nordrach who had been kept by his doctor for two years in ignorance of what his illness was, because the doctor did not care to tell him, believing consumption

to be incurable. Those two years almost cost that patient his life, for he had to seek health all over the world before he found Nordrach, and was with difficulty cured. If he had been sent at once to such a place a cure would have been an easy matter, and he would have been saved years of ill-health and misery. It cannot be too strongly pointed out that it is a doctor's duty to *at once* send his patients to some proper sanatorium. It is known that consumptives are cured by this method—as many of them as can reasonably be expected—while every other method fails. It is a notorious fact that doctors in this country, taken as a whole, are, on this subject, behind Continental scientists;¹ and everywhere just now—at Dublin, London, Belfast, Edin-

¹ There must be much still lacking in our medical progress when our statesmen have taken to pointing out such a grave national defect. Mr. Balfour, in presiding at the dinner of the Medical Graduates' College and Polytechnic, on May 22nd, said: "it was intended to assist, not the medical students but the professional practitioner. He did not believe that any man who looked round the equipment of our Universities and medical schools could honestly say that we had as a nation done enough to equip research with all the costly armoury that research must have in these modern days. We were lagging behind Germany, France, Switzerland and Italy. Was it

burgh, and Ipswich—they are freely confessing it. The medical Press generally, in writing on the subject, refers to the treatment as the “Open-Air Cure,” thereby showing that they do not grasp the real significance of the procedure. It is the “sanatorium treatment,” or “individualizing treatment,” or, to give it the name of the place where it is most rationally, systematically, and honestly carried out—where it has been brought to the highest pitch of perfection and simplicity by an original thinker and investigator, and where by far the best results are obtained—the “Nordrach treatment.”¹ It is the treatment of con-

not disgraceful? Were we too poor, or were we too stupid? We had committed ourselves to depend to far too large an extent on others. He appealed to the country not to be any longer backward in this great international competition.”

¹ Dr. Stopford, Southport, in a communication to the Press, says: “Davos and St. Moritz for years have been practising this method in some measure, and in the United States there have been sanatoria in being for many years, but not till Dr. Otto Walther of Nordrach first became known did the open-air treatment come into vogue, as a thoroughly good and scientific means towards recovery in cases which under any other method would have been hopeless.” Yet there are some of our medical men who take a delight in belittling Nordrach and its treatment. I have letters from several consumptives who have been

sumption in a specially adapted place, by a specially qualified doctor, who devotes himself entirely to it, and takes only as many cases at a time (Nordrach has only about 50, in spite of the hundreds who want to go there) as he can thoroughly treat, suiting each feature of the treatment to the individuality of each case. It is not sufficient that an ordinary practitioner should

examined by such doctors—some of them very eminent—who, when their patients asked them concerning Nordrach, have replied something like the following: “Those who talk of Nordrach are faddists. There is no use in your applying for admission there as they only take incipient cases and you would be refused as being too ill; besides if you did happen to get in you would risk being sent away if you had a relapse—moreover, there is nothing new at Nordrach.” These statements are quite contrary to the facts. Walther does not ask the state of a patient’s temperature or general health before admission, but takes all applicants in any stage of disease, in the order of their applications. He never sends away a patient who has a relapse, and does not dismiss any until cured or until there is no hope of any further improvement. As to there being “nothing new at Nordrach,” it is those who know it best that find the most that is new in conception and execution, and who see the greatest difference between Nordrach and all the other Continental sanatoria. How different is the Nordrach treatment from the senseless talk about “fresh air and sunshine” for the cure of consumption.

pay a visit of a few hours to one of these sanatoria. No doctor in England can understand Walther's treatment who has not made a special study of it, nor can he carry it out unless he is prepared to give up private practice and devote his whole energies to the work. Some go to Nordrach, look over the place, and come away thinking they know all about the cure, and some even write about it. The main feature is the treatment of each case according to its individuality, and how can that be learned by looking at a couple of rooms, the fine cows, the refrigerator, and the steam laundry?

CHAPTER II.

CURES AT NORDRACH.

English patients readily undergo the treatment—No cures in this country formerly—Sanatoria in this country—Statistics of cures—Comparing sanatoria—Picking cases—Relative cures—Absolute cures—Inadequacy of old hospital methods—Nordrach treatment a success in this country—Mr. Quarrier adopts Nordrach treatment at his hospital—Heated air system wrong—The movement will only succeed on Nordrach lines.

AS against the establishment of sanatoria in this country for the treatment of consumption it has been urged that the well-to-do Englishman will not, in his own country at least, submit to the discipline which is imperative in sanatoria. Surely well-to-do Englishmen are not so much deficient in good sense as such an allegation would imply. I cannot agree that English patients are less inclined to the sanatorium treatment than Germans or others, or that they would be so in their own country. My experience, and that also of many friends since the time I was at Nordrach, has been directly

the reverse. Of course people have hitherto been afraid to go to a sanatorium (hospital) here, and the reason is not far to seek. A well-known man in the north of England, an ex-M.P., who has for many years been interested in a hospital for consumptives, was lately speaking to me on this subject. I asked him was it not the case that every consumptive patient his hospital had ever taken in died eventually of consumption? He had to admit that such was the case. But if we establish proper sanatoria, where cures will be made, there will be plenty of well-to-do patients eager to avail themselves of the treatment and submit to the discipline, as is the case with sanatoria recently started on Nordrach lines in different parts of the country, where the patients lead, with good results, precisely the same kind of life as they would lead at Nordrach, and which have been inundated with applications for rooms.

Although statistics of cures can be made to mean anything or nothing, being too frequently "cooked," yet they are of some importance. In making up statistics of sanatoria it is impossible to compare fairly one sanatorium with another. For instance, it is not fair to compare Falken-

stein and Reiboldsgrün, both of which, according to tables of statistics published, take in only first and second stage cases, with Nordrach, which takes in cases of all kinds, many of whom are failures from the sanatoria of the Continent and the States—and in passing I might ask did anyone ever hear of a case that was incurable at Nordrach, and that had afterwards been cured elsewhere? At Davos they say they cannot tell for six weeks whether the case will be suitable or not. This means that they pick their cases, and of course it is easy for them to get comparatively good statistics. It is not right to compare such places with Nordrach; and it is still more unfair to compare old-style hospitals in this country where the cases eligible for admission are those which are in an incipient or early stage of the disease, or arrested if in the later stages, and into which they are most unwilling to admit a patient whose temperature is above 100° F. Patients, besides, are entered in the statistics of such hospitals as “improved” if they gain a few pounds in weight, as “greatly improved” if they gain 7 lb. or 10 lb. At Nordrach a patient is not put down as improved, even if he gain 50 lb., unless he leaves for home with a hope of keeping well if the circum-

stances of his life are in his favour. Cures are reckoned either as "absolute" or "relative." There are really very few absolute cures, nearly all the cures effected being merely relative: that is, you can never tell if a man is cured—or will become so later on—until he has been at work, and been bearing his own burden for a few years. He is restored to his working capacity with little fear of breaking down unless under circumstances in which a healthy person might be expected to break down. Most of the cures that leave Nordrach are of this relative kind, because the doctor can seldom get patients to stay as long as he would like, and the old-standing cases he gets are not cured in a month or two. Patients are influenced to leave by a hundred different reasons—money, business, and so on. These relative cures are in reality cures; a patient so cured will live indefinitely as far as his lungs are concerned; and whether he becomes absolutely cured or not depends, not on the illness, but entirely on his mode of life. I may say that all who leave Nordrach are advised that for two years they should avoid the over-exertion of bicycling, hunting, rowing, etc., and after that time to get into these exercises very gradually.

Of the twenty-six consumptive patients I have known personally who went out to Nordrach from this country within the last six years, twenty-two were cured, two of whom have since died from other causes, and four died of consumption. The remaining twenty are well and bearing their part at the present time in the British Isles. I have no reason to believe that other English or German patients have fared worse.

It is necessary to point out the inadequacy of the methods that are still being employed for the treatment of consumption at many of our hospitals, to which methods the house physicians engaged there when they fall ill of consumption are wise enough not to submit themselves for treatment, but rather go to Nordrach or some sanatorium on Nordrach lines to be cured. Such places as still adhere to close rooms, hot air, artificial ventilation, even temperature and under nourishment, are, fortunately, becoming fewer, and some of the places that cried out loudest at first against the methods advocated in these pages, saying that this climate was unsuited for consumptives, and that the Nordrach treatment would be un-

workable here, have come to see that in various parts of the country the Nordrach treatment is meeting with success, while all other methods fail, and that to gain results worthy the name they must themselves adopt such methods, and are accordingly doing so.

Dr. F. R. Walters in his "Sanatoria for Consumptives," says that the British Isles are "rich in institutions for patching consumptives, poor in those for effectually mending them." But this reproach is slowly—all too slowly, alas!—being removed as the following quotation will go to show. Mr. Quarrier, whose consumption hospital at Bridge of Weir was until then run on wrong lines—heated air and what not—writes as follows to the "North British Daily Mail" of the 1st of February, 1899 :

It will be remembered that in our "plea for consumptives" we spoke of an even temperature as being essential for the treatment and cure of the disease. For about seven months we tried this in our hospital [of course under medical supervision], keeping the temperature up by our process of propulsion of heated air, and we found that the patients did not improve so rapidly as we could wish under this treatment. About a month ago we took off the inside windows in the hospital and

used less of the heated air, and since then, although the weather has been the coldest of the winter, the patients have not suffered, but have rather improved with this drastic effort made in mid-winter. Many of those who entered the hospital muffled up as it were, and unfit to stand cold, are now able to walk out in any kind of weather, and all have improved under the treatment. The stuffing with food, the gentle exercise and abundance of fresh air, sleeping with open windows, &c., have certainly led to improvement in the cases of those under our treatment; and from practical experience I can establish the words of Mr. Gibson in "The Nineteenth Century" of January, that an even climate has little or nothing to do in the cure of consumption; but that pure air, abundance of food, and exercise according to the temperature of the patient, are the essentials required.

And it is the system which is thus being discredited, and which the strongest opponents of the Nordrach treatment, when these articles first appeared, are now abandoning, that some would still have us perpetuate. The movement in this country will succeed only in so far as it follows Nordrach lines. It is a matter of vital importance what system is adopted; it will mean a difference of many thousands of lives saved.

CHAPTER III.

DIRECTIONS FOR PATIENTS.

Patient should go, if possible, to a sanatorium—Bad influences of home life—Food—Breakfast—Dinner—Supper—Eating—Weighing—Smoking—Food for poorer consumptives—Open air country life and light work for those unable to obtain a rest—Exertion and rest—Taking the temperature—Directions for walking—Fresh air—Open windows—Clothing—Each patient should have his own bedroom—Baths—Importance of all-round improvement.—No danger of infection at a sanatorium.

MANY people have, from time to time, written to me for fuller particulars of the Nordrach treatment and diet than I have already given, in order that they might themselves know how to carry out the treatment in their own homes or in the country, while waiting for admission to, or if unable to afford treatment in, a sanatorium.

I have thought it best to give such particulars here, for it has been found that patients, by acting on these simple rules, can do much to keep the disease in check, or even get the

mastery of it. It is advisable that the consumptive should go, if at all possible, to a properly conducted sanatorium, as it is necessary for him to be under the guidance of a doctor ; besides, it is impossible to carry out the treatment so successfully under the detrimental influences of home life.

FOOD.—As much as possible of the following, or such like foods should be eaten :

Breakfast at 8 A.M. Tea or coffee, with cold tongue or ham, or meat or fowl or sausage, and a liberal allowance of bread and butter (with plenty of the latter), and one pint of milk.

Dinner at 1 P.M. First course—fish or fowl or meat. Second course—fowl or meat. With both courses a generous supply of potatoes, vegetables, and gravy or sauce with butter as the main ingredient. Third course—milk pudding or other kind of pudding, pastry, fruit, and always one pint of milk.

Supper at 7 P.M. One hot course of meat, as at dinner, potatoes and vegetables included ; and one cold course of meat or fowl, as at breakfast, with bread and butter and cheese, tea or coffee, and one pint of milk.

Many consumptives are, unfortunately, unable

to afford so liberal a diet as I have here given ; but there is no need, on that account, for such consumptives to despair. I have known consumptives, who could spare perhaps only £1 a week for a few months, to get well and strong again at farmhouses in the country, on food such as the following :

Breakfast. A plate of oaten or wheaten porridge, and a basin of good milk. Then ham and eggs, or bacon and eggs, or poached eggs on toast, or a piece of fish, if obtainable, with tea or coffee, and plenty of home-baked wheaten and oaten or other bread, and butter, and a tumbler of milk.

Dinner. Hot cooked meat of some kind, with a good supply of potatoes and vegetables (such as cabbage or cauliflower, or peas, beans or rice). If meat is not to be had, then ham and eggs, or bacon or fowl instead. Afterwards a liberal helping of some pudding, and two tumblers of milk. Fruit when to be had.

Supper. Tea or coffee with, say a couple of boiled eggs, or potatoes done in dripping or fat, cheese, and plenty of bread and butter—jam also if to taste—and two tumblers of milk.

A beaten-up raw egg in a tumbler of milk,

with a little sugar added, makes a pleasant, easily taken, and very good form of nourishment.

I have seen more than one poor lad who, having developed consumption, was having his life crushed out of him at hard and confining work in a large town, come to the country, and, being unable to live without working, take light outdoor work, such as driving a jaunting-car, and otherwise having open windows when indoors, get well again on even simpler fare than the above—on plenty of porridge and milk, and bread and butter, and potatoes and rice, with beef or fish, or eggs or bacon occasionally.

The patient should get weighed every week regularly, and note his weight down for reference. He should aim at getting his weight well above normal. If he does his duty, gains of from one to four pounds should be made weekly. It is advisable (1) to eat as much as possible at meals and nothing between whiles ; (2) to have a long interval between meals, in order to give the stomach the maximum amount of time to allow of complete assimilation ; (3) to take one hour's rest reclining on a sofa or in a hammock before dinner and supper. One cannot do justice to a meal if fatigued. There is no advantage to be

gained, but rather otherwise, by eating slowly and carefully masticating the food. The patient should eat as much as he can in the way most convenient to him. Smoking is quite allowable so long as it is indulged in only out of doors, and if it does not induce coughing.

REGULATION OF EXERTION AND REST.—The patient must be guided by his temperature in this matter. A reliable clinical thermometer should be obtained, its simple mysteries inquired about, and a proper temperature chart drawn out. The temperature should be taken by rectum—the only reliable method—four times a day, and noted on the chart. It should be taken immediately on waking in the morning, then after the morning walk (or, if resting, at 11.30), again after the afternoon walk (or, if resting, at 5.30), and at night ten minutes after retiring to bed, at 9 or 9.30. The temperature after walking should be taken at once, as when exertion ceases it drops rapidly. If the temperature has for a week been regularly below 98.6° F., in the morning, and below 100.4° F. in the evening after rest, then gentle walking may be taken. If, however, it shows above 98.6° F. directly after waking up, and 100.4° or even

100° in the afternoon, *after rest*, it is too much, and the patient needs complete rest on a sofa each day until his temperature comes right. When the temperature is regularly, *at rest*, over 100.4° in the evening, the patient needs absolute rest in bed, alone in his room, talking even to be avoided. The patient should have the advice of his doctor, as there are so many outside factors to be taken into account that general guidance in the matter of temperature can only be roughly indicated. The same quantity of food should be taken by the patient when he is in bed with fever as when he is about. The more food taken the sooner will the fever subside. If then the morning temperature keeps regularly below 98.6°, a short walk (say half a mile) at a uniformly *very slow pace* may be taken after breakfast. If immediately after exercise the temperature is above 100.4°, then the walk has been too long, and rest must be taken on a sofa for the remainder of the day. A patient may read, but not to the length of fatigue. Next day, provided the morning temperature be right, a shorter walk should be taken. Then when the temperature, after the walk, is well below 100.4°, and if no great fatigue is felt, a short stroll may

be taken in the afternoon, after dinner, governed also, of course, by the temperature obtained on returning. As the patient gains in strength he may gradually increase the length of the morning walk provided his temperature always remains satisfactory under the increase. He should never get fatigued ; if there be the least indication of fatigue, when walking, he should rest often on the way, and the pace at which he walks must always be the slowest possible. This is of great importance.

FRESH AIR.—As much time as possible should be spent in the open air. Rain, sleet, or snow must not keep the patient indoors if he should be out. If caught in a shower, he should not hurry. To reach home in a breathless condition will do him much harm, whereas a wetting will do him none. The windows must always be kept well open—day and night, summer and winter, in every kind of weather. The patient need not fear to catch cold if he will always live in such rooms and avoid those which are heated and close. Indeed, if he have a cold—which is caught by infection, not from draughts, wet clothes or such things, and which, in many cases, more than the disease itself, causes irri-

tating coughing—it will soon leave him when he begins to lead this natural open-air life. When resting he should sit close to the open window, or, better still, in the garden. If cold, he should have a rug wrapped round his feet and legs. When walking, however, he should have as little clothing on as possible. He should lay aside gradually all chest-protectors, double flannels and overcoats. The less weight he has to carry the better. He should have ten hours' sleep each night, and must sleep with bedroom windows wide open. If he is cold he can put more clothing on the bed. *Every consumptive patient should have a bedroom to himself*, for otherwise he will often be kept from enjoying such sleep as means life to him. He must avoid heated rooms, concert-halls, theatres, and churches; dumb-bell and all such suicidal exercises should be given up. As he gets stronger he should have a bath frequently, but should be very careful not to fatigue himself during the operation.

The above are the more necessary directions. Each patient will of course carry them out as completely as his circumstances will permit. Although it is certainly desirable that the con-

sumptive should live in the country, still those whom circumstances confine to a town will derive much benefit by following the above treatment. And although all consumptives cannot afford to leave off work when ill, still, by having absolute rest after working hours, eating as much as possible, having their workshops, offices, and living-rooms well ventilated and a good draught through their bedrooms during the night, they can do a great deal towards keeping the disease at bay, if they do not get rid of it entirely.

I do not mean that the short directions given above should take the place of sanatorium treatment. They are but meant for those who are unable to gain admittance into one of the few good sanatoria, or who are waiting to gain such admission. A well-known doctor, writing to a medical journal, advocates the treatment, by the local practitioner, of those patients who have luxurious homes. This is a great mistake. These patients have broken down in their luxurious homes. If they are to be fair to themselves they must go to a sanatorium, away from all the excitements and distractions of home life ; for who in a luxurious home will deny himself and live the quiet, hard life a consumptive should

live ; and who will be there constantly to see that he does it? Besides, if a patient gains weight at home he will most likely be in a flabby condition, as is more or less the case with those who are treated on lying-out verandahs. I take it that the *quality* of the blood corpuscles and tissue cells is of no less importance than their *quantity*. A consumptive is not likely to have healthy blood corpuscles—but rather degenerate, if one may so express it—who lounges and lies about all the time on verandahs, which are bad for patients who are very ill, and as bad for patients who are recovering. It is not altogether desirable that consumptives should gain in weight without making progress in other directions at the same time. The patient's whole system needs to be toned and invigorated by graduated walking—under the most careful supervision of a physician—and the patient thereby strengthened and put into “condition.” All this is hard, though not impossible, to accomplish anywhere but at a well-conducted sanatorium ; so that consumptives, who can, would be wise to place themselves under such treatment as soon as they can possibly gain admission. It is, unfortunately, becoming every day a matter

of greater difficulty to obtain a room, in anything like reasonable time, at any of the better sanatoria. The patient need not fear being depressed at a sanatorium, as the whole tone there is one of hopefulness and encouragement, nor is there any danger of infection, for probably no place is freer from bacilli than a properly kept sanatorium.

CHAPTER IV.

HOW AND WHERE TO BUILD A SANATORIUM.

The building of sanatoria—Money should not be lavished on the buildings, but should be spent on the patients—Nordrach Sanatorium buildings—Sites for sanatoria—Indispensable conditions—Consumption can be cured in any climate—The ideal site—Creating a climate—Pure air the one essential—Importance of having the right doctor in charge—Walther's *Anstalt* described—The best sanatorium proper that can be built—No balconies—No sitting rooms—Cost of a sanatorium—Spitting flasks—Disposal of sputum—Ventilation—Close rooms will not do for consumptives—This climate not too cold for open windows—The duty of the State.

NOW that it is at last coming to be understood that the treatment of consumption may be as successfully carried out in this country as elsewhere, it is a matter of great importance to know how to build the most suitable form of sanatorium and where to build it. Much money may be uselessly wasted on buildings which, let us hope, in twenty or twenty-five years will no longer be needed. Every shilling available should as far as possible be spent on the patients,

and not on the buildings. To read some books about sanatoria one would think that the building and the site were everything, and that the treatment and the doctor were merely secondary considerations. Walther's sanatorium proper consists of six buildings, three of which were old dwelling-houses, while one only was specially built as a sanatorium. This latter building I will afterwards describe. It is a fact that Walther gets just as good results in the converted dwelling houses—the rooms of which look in all directions, north, south, east, and west, and into some of which little sunshine enters—as he gets in his specially built *Anstalt*. This shows that the house is practically of no importance. Patients are, as a rule, in their rooms but two hours a day, and sunshine, which is of some moment, they get outside.

First, as to a site for a sanatorium. Go to the highlands of Scotland, the lowlands of England, or to the bogs of Ireland, and plant your sanatorium there—it is not of great consequence where. I see many doctors, leaders of public thought on matters of health, still coquetting with climate. *Climate has little or nothing to do with the matter.* All that is *absolutely* necessary

is (1) a spot in the country where pure air is to be had, well away from smoke, dust, traffic, and excitement, where the patients may lead the quiet unconventional lives so necessary to their well-being; (2) the proper treatment, and (3) (but most important) the man to faithfully carry it out. *These three things are indispensable,* nothing else is. It matters little whether the sanatorium be at the sea-level or on a mountain; whether there be high or low winds; whether there be much or little sunshine; whether the rainfall be high or low, or whether the soil be porous or otherwise. All these things are to be considered, not from the standpoint of healthfulness or unhealthfulness—for in the British Isles all places in the country where pure air is to be had are equally healthful—but from that of the patient's comfort. It is of course advisable to have as many helping factors and favourable conditions as possible, but I am plain on this point because it should be understood that these accessories are not absolutely necessary. It is not by any means my intention to convey the idea that the site of a sanatorium is a matter of no consequence. My object is to point out that it is hopeless to leave climate to cure con-

sumption ; that it can be cured in any climate—the fashionable climates (High Alps, Italy, Egypt, etc.), being by no means the best ; that in all healthy countries—and ours is a healthy country—sites can be found that are in the best sense suitable. I say “Go to the highlands of Scotland, the lowlands of England, or to the bogs of Ireland, and plant your sanatorium there.” But this need not be taken quite literally, nor need it be thought that in Ireland a bog is the best place on which to build a sanatorium. Generally, I mean that all parts of Briternia (Great Britain and Ireland) are suitable for the cure of consumption. All the rest is meant to convey the idea that, if you cannot get a good site, you should go on curing consumption all the same in the best shanty you can rig up, in the most suitable place at your disposal. The ideal place for a sanatorium is a site in the country, five or six miles at least from the nearest town or public works, with an elevation of from 500 to 1,000 feet, protected on N.E. or N.W. by hills and open to S.W. or S.E., with plenty of trees, which will afford protection for the patients from wind and sun, near, and with a good expanse of country around, over which the patients can

have full liberty to roam without fear of much outside interference. By thus locating a sanatorium well, we create a "climate" of our own—that is, we get a protected place, at a fair altitude, lying well to the sun, with pure bracing air about it, and with trees near, among which the patients may walk when the wind or the sun is too strong.

It is a matter of some consequence that a consumptive be cured in the climate in which he will afterwards have to live. It would not be to his advantage to go to a warm climate to recover, as, on his return, it is more than likely he would always, as winter came on, be harking back to sunnier climes. The one essential of climate is pure air—oxygen—and this is to be had at home as well as abroad; in fact, the air and oxygen of the British Isles are the most suitable for British consumptives.

Having selected the site, what is the best form of sanatorium? The cheapest certainly, so that every possible pound may be spent on the patients. There must be no stinting in the matter of food, or in the salary necessary to secure a first-rate doctor. The best men possible should be selected for the work—men of iron

will, of great tenderness of heart, of unflagging perseverance and of inexhaustible patience. They should learn the treatment by practical experience for six months or so at some properly conducted sanatorium. It must be made worth the while of these doctors to devote their whole lives to this work, and to this alone. In this way only, by raising up a school of specialists in consumption from the best brains, hearts, and heads in the country, will consumption finally be overcome ; for in the end everything depends upon the man who has charge of the sanatorium. A limited company was lately formed to start a sanatorium, and they advertised for a doctor at a salary of £80 a year. To think of putting the lives of hundreds of people into the hands of a man so inexperienced as to have to accept such a salary ! It is simply courting failure.

The following is the most perfect—because the simplest and cheapest—sanatorium that can be built. It is Walther's *Anstalt*. It consists of a long straight building of three stories, facing south-east or south-south-east, so that although the front gets most sunshine, yet the back is not altogether deprived of it. The lower part, or

ground floor, consists of the "cellars" (all above ground) for storage of coal, and for the plant and furnace necessary to heat water for baths, etc. The small chimney shaft from the furnace is built at the back of and apart from the sanatorium. On this floor may also be rooms for sanatorium servants. There is no connection, unless necessary for the servants, between this part of the building and the two upper stories, which are the bedrooms of the patients. The entrance to the two upper stories is from the south-west end by stairs. The second story consists of a long line of rooms, eight or ten in number, all facing to the front and opening on to a corridor behind. This corridor is about six feet in width, and runs the whole length of the building, ending in large casement windows, and having in its length five or six casement windows. The third story is a duplicate of the second. There are two w.c.'s, servants' scullery, etc., built for each of these two storeys, out from, and at the back of the north-east corner of the sanatorium. Each patient's room is about $14 \times 12 \times 10$ feet,¹ with a great part of the front,

¹ A consumptive's room need not necessarily be so large as this. The smaller the room the nearer he gets to

facing sun-wards, occupied by window space, there being in each room two casement windows, side by side, each about 4×5 feet, and above each a fanlight-hinged window $1\frac{1}{2} \times 4$ feet, to open inwards, and which can be kept open in the stormiest weather. This gives 52 square feet of window space to a room the front wall of which contains 120 square feet, and that is quite as much as it is advisable to have, although at some sanatoria there are rooms for consumptives the entire fronts of which are composed of glass. How a fever patient is to lie in bed all day long in such a room, with a strong sun beating in, I fail to see. It would become intolerable to lie thus in summer-time, and be possible only with expensive, and almost unworkable, arrangements of sunshades. The floor of each room is covered with linoleum, and the walls and ceiling are composed of varnished pine wood, all of which can be washed as often as necessary and kept scrupulously clean. The furniture, which is made of pine, and as plain as possible, and fittings of each room consist of the following : single-bed, dressing or writing table, two chairs, toilet-stand, the window, and a small room is therefore not much of a drawback, provided the window is large.

on which rests the spitting mug by the bed-side for the patient's use during the night,¹ wardrobe or chest of drawers, couch, douche-bath and washstand (hot and cold), coil of steam or hot-water pipes, which are used for tempering the cold only in the depth of winter, and then but on the coldest days, and electric-light pendant which is movable, and can be hung above table, couch, or bed, as necessary. Each room has bell communication with sanatorium servants' rooms; and the *Anstalt* is connected by telephone with the doctor's house. What has just been described is the best sanatorium proper, or living place, for consumptives that can be devised. The cellar, or lower part, is built of stone, all the rest entirely of pine wood. It is

¹ A patient during the day should carry in his pocket a spitting-flask into which to expectorate, as for a consumptive to spit into a handkerchief, or about a room, or on a roadway, is a habit most dangerous to those who are brought in contact with the infection thus spread about. Nor should the sputum be swallowed, as thereby other organs than the lungs may become affected. In cleansing the night spitting-mug—which should stand about one-third full of weak carbolic acid solution—and the spitting-flask, carbolic solution, and afterwards boiling water, should be used to rinse them well out; and the contents should be carefully emptied down the cesspool.

a model of inexpensiveness and suitability. It is plain, can be kept sweet and wholesome, and contains all that is necessary for the comfort and well-being of the patients. Anything more in the way of furnishings would not help but rather hinder the treatment.

The dining-hall at Nordrach is situated 300 yards or so from the *Anstalt*. It is a long, one-storied erection, literally full of windows on each side—windows that can be taken quite out of the frames for a considerable part of the year, for where forty or fifty consumptive patients are in one room, for an hour at a stretch, it is necessary to have a superabundance of pure air. Adjoining the dining-hall is the executive building, consisting of the kitchens, the office, and the living house of the general servants. At some distance away, and all apart from each other, are the refrigerator-house, the power-house, the steam laundry, the byres and the stables; while scattered about the valley at short distances apart are the rest of the living houses of the patients, or sanatoria proper, and the doctor's own house. There should be no lying-out verandahs built to a sanatorium; they only conduce to lazy habits, and they do anything but put the patients in

"condition." Common sitting or meeting rooms are also a mistake, for they lead to loitering, talking, and excitement; but it is permissible to have a few wooden shelter-sheds on the line of the outlying walks. A building or buildings on this plan can easily be extended to hold any number of patients. A complete sanatorium erected on the lines indicated above, and capable of accommodating forty patients, should be built for £5,000 or £6,000. It is folly to spend £7,000 in an elegant building for the accommodation of fourteen patients, as has been done in one instance. If there be not much money available, any house in a suitable place will do to convert into a sanatorium in which to carry out the treatment thoroughly.

While on matters bearing on the building of sanatoria, I would like to say a few words about ventilation. A doctor who takes the "Encyclopædia Britannica," the latest edition of which is out of date on such subjects, as his guide, in a paper read recently before the Liverpool Architectural Society, says: "In climates like that of Great Britain . . . in winter open windows cannot be borne, at any rate in hospitals for consumptives." This is opposed to experience,

for there are at least a dozen sanatoria in this country—some in England, some in Ireland, and some in Scotland—in which during the past two winters the windows were kept open night and day, with the most gratifying results. That is the *necessity* for the proper treatment of consumption. There are no bad results whatever to be feared. With or without the guidance of a doctor, there is no danger from such *constant* exposure in this climate. The patient needs pure air, and needs it in all its natural simplicity. He must live in it—bathe in it continually. Our climate is never too rigorous for outdoor life, and it is never too rigorous for the open window. It is the fact that consumptive patients do not receive any injury from this procedure; that they are comfortable under it—the amount of bed-clothing being adjusted to circumstances; and that they soon get so to like the process that they cannot bear to have the windows closed. That is in this country—not in some problematical place. Of course there is discretion to be used. For instance, in the coldest of winter it is not necessary to have the windows full open, as the cold air of winter circulates much more quickly

than the warmer air of summer. Then when the weather is extremely cold the patient's room may be slightly heated, and the attendant may come into the room a few minutes before getting-up time to close the window, so that the patient may not have to dress in a too cold room. Also the attendant may close the windows before the patient returns from his walk, or at bedtime, and thus warm the room ; but the patient is in honour bound to open the windows when he comes in. With these slight exceptions, the rule in a good sanatorium is "Open windows continually."

It is too late in the day to advocate heated, or filtered, or forced air ventilation and closed windows for sanatoria. A paper was read at the recent Sanitary Congress at Southampton advocating such means of ventilating sanatoria, and, as far as reported, no one present raised an objection to the views put forward. That is obsoletism. We are past all that. The most up-to-date places are dispensing with such methods. We want the pure unadulterated breath of heaven admitted, fully and directly, at all times, to consumptives ; and the only (and best) ventilation a sanatorium needs is constantly opened win-

dows. Surely that kind of ventilation is easily and cheaply enough come by—and it does the consumptives actual good, and not harm, as other systems do. Whatever may be said in favour of systems of forced ventilation for ordinary hospitals and crowded buildings, for sanatoria, at any rate, they are out of the question. The consumptive's life, not only when in sanatorium, but ever afterwards, depends on his being hardened, and on his getting to love an open-air life of any and every degree of inclemency, which the habit of living in houses has civilized out of him. This result can never be attained by the hot-house treatment some doctors recommend. On every count, closed, forced, filtered, or heated ventilation is inadmissible in a sanatorium.

When it has been proved beyond doubt, as many consider is already the case, that consumption is quite as curable by the Nordrach treatment at home, as it is abroad, it will be the duty of the State to undertake such measures as may be necessary for the cure, prevention, and final eradication of this disease. Private and philanthropic effort are of little avail in checking the fearful ravages of consumption. While it is

being attacked in one place, it is spreading and flourishing in a hundred others. It must be attacked at all places at the same time, as in this way it will be the more easily, quickly, and economically overcome. Sooner or later the State will have to take the matter up, for it is beyond belief that an enlightened and civilised community can continue to stand by and see hundreds of thousands of its members perishing when a remedy lies to hand.

III.—THE CRY OF THE CONSUMPTIVES.

CHAPTER I.

THE STATE OF MATTERS IN THIS COUNTRY.

Knowledge spreading—Efforts to grapple with consumption inadequate—Futility of Chest hospital treatment—Our poor left entirely without treatment—List of sanatoria in this country—Dr. Léon Petit's picture—Our apathy—Other countries are moving—The Berlin Conference—Sixty thousand lives at stake yearly—The National Association—A Board of Public Health—Consumption should be made notifiable.

GRADUALLY is the true knowledge with regard to consumption—its causes, prevention, and cure—being disseminated ; and gradually, but all too slowly, are efforts being put forth to grapple with the evil. These efforts, which are pitifully inadequate, are almost entirely of a private character, and it is in the hope of further stimulating public interest, and, if pos-

sible, of influencing to some extent our attitude, as a nation, towards a matter of such urgency that I venture to continue the consideration of this subject.

The pernicious hospital treatment of working-class consumptives is still almost universally carried out in this country. True, we have a few sanatoria, and a few more are on the way, but there are probably at the present moment not more than 2,000 beds¹ in all our chest

¹ The National Association for the Prevention of Consumption, 20, Hanover Square, London, W., publishes (post free 4d.), a List of Sanatoria and Chest Hospitals. It is hopeless to expect proper treatment at most of the places included in this list, but it is a great convenience for a consumptive to know what sanatoria are in this country and where he can apply for information respecting them. The charges at the sanatoria for paying patients range from about three to five guineas a week, inclusive of everything, except wine and laundry. There are a few places, partly supported by voluntary contributions, to which patients who are not well off can gain admission by paying from 10s. to 30s. a week according to circumstances; while there exist scarcely any on right lines at which a poor man can get treatment free. In the case of the latter two kinds of sanatoria, a limit of three months is generally placed to the patient's stay there. This perhaps is unavoidable under the circumstances, but it is a great pity that a patient should have to leave just when he is in the best position to fully benefit from the treat-

hospitals and sanatoria, which, to give the patients a reasonable chance of recovery (and there is little or no chance of recovery in nine out of every ten of these beds), can in a year afford accommodation for but 4,000 out of our 250,000 consumptives.¹ Most of these beds are in London and the large towns, and offer little or no chance of recovery to the patient; they are of the chest hospital type, with five to twenty beds in one room. If we exclude those in the large towns—perhaps seventy-five per cent. of the total number—we can have some idea of the woeful inadequacy of our means for the treatment of consumptives. Almost all the beds in the country sanatoria—where there is most hope of recovery—are for paying patients, and are therefore not available for the poor, so that the poor either get no treatment at all, or only treatment that is useless. Since our sanatorium accommodation is so limited the great army of our consumptives is ment, and when a longer treatment would give every hope of permanent results. As there is generally considerable delay in gaining admission into a sanatorium—there being more patients than rooms—early application is always advisable.

¹ Germany can now treat 30,000 consumptives a year.

thrown back on other means of treatment. What are these? For those who can afford to pay, and who can therefore always get treatment of some kind, more or less beneficial, there are continental sanatoria—or, if ill-advised, there is Egypt, the Cape, or the Canaries; or there is the attendance of their own medical man, and treatment at home. For those who cannot afford these means—perhaps more than 200,000 consumptives—there but remains outdoor or indoor treatment at our ordinary hospitals and infirmaries, or outdoor treatment at some chest hospital. The general public has no idea of the uselessness and futility of these, the only means of treatment open to the poor;¹ nor can they know the misery and the despair that invariably follow such treatment. Dr. Heron, speaking at Ipswich on the 3rd of February, 1899, said:

that the present system of treatment of consumptives in the out-patient departments of the hospitals in our large cities is little better than a farce; that the consumptive sees the physician for a minute

¹ A French writer stated the case cleverly when he said that there are two kinds of consumption, that of the rich which is sometimes, that of the poor never, cured.

or so perhaps ; that the physician prescribes some drugs for the patient, who then goes back to live—perhaps half-starve, in a slum ; that to call this the proper treatment of consumption is a cruel mockery.

Or take Dr. Léon Petit's picture :¹

Harassed by want, driven by the necessity of supporting his family, the consumptive in the working class has neither the leisure nor the means to care for himself in time. He just goes on and on till he can work no more, and when that time comes and he has exhausted his last resources he goes to the hospital. But hospitals, as they are presently organised, cannot open their doors to the consumptive, so long as he is able to walk. Waiting for the admission examination, it is no unusual thing to see forty patients, of whom the better half are consumptives. The doctor, who, on the best days, has only five or six beds at his disposal, cannot, however much he may wish to, throw them away on chronic cases. Acute symptoms, then, must be present before he can admit a consumptive patient. Thus the poor consumptive begins the steep ascent of his Calvary. He goes away, wandering from hospital to hospital, always turned away, dragging his misery about with him, expectorating his bacilli, sowing infection in all the four quarters of the town, re-

¹ Quoted from "The Crusade against Consumption," by Dr. Thomas F. S. Caverhill, being No. 8 of the Edinburgh Health Society's Lectures.

turning in the evening to his miserable garret, where his whole family is crowded together and exposed to the infection. There is a state of things as disastrous to philanthropy as to the public health.

By dint of waiting we have here a patient to whom it is impossible to deny admission, if we would not see him die in the street. At last his perseverance is rewarded. He enters the hospital.

Will he find here the combined conditions necessary for the treatment of his disease? Will pure air, a constant renewal of which is so indispensable to him, be provided in sufficient quantity? Will antiseptic precautions—such as the disinfection of sputum and soiled linen—be taken specially for him? Then the food—this most important factor in the treatment—will it be provided for him in the abundance which is indispensable, and dainty enough to tempt his appetite and build up his strength? If he is out of bed, will he be able to change his surroundings and breathe another air than that which is contaminated by the exhalations of patients affected with other diseases? And whom will he have for neighbours?

The fundamental elements for the treatment of consumption are not at present to be found in our hospitals, which are organised for quite another purpose; for this reason alone one might almost wish the consumptive excluded from them altogether, both in his own interest and that of all the other patients. His cure is a hopeless problem in a hospital where he is lost in the crowd of other

patients, and to which he is only admitted out of pity, when the disease, arrived at its last stage, offers no scope for treatment. He has been granted a bed only to die in. It is all he has any right to hope for.

We have seen what these death-beds—granted out of pure compassion—have cost society. Suppose (as is quite possible) that under the beneficent treatment of rest the consumptive should be relieved. He is then sent back to his misery, to make room for others. Some weeks later he has a relapse, and this time he lies down to rise no more! All the sacrifices that society has made for him have been utterly useless, for they were neither made under favourable conditions nor at the proper time.

Such is the state of affairs that obtains in the large towns of France, and it is the same in our cities. Multiply this picture two hundred thousand times and you have an idea of the sum of the misery of our working-class consumptives. Consider it, ye who fare well and have leisure; ye who can, at will, enjoy the breath of the ocean or the scent of the hills.

But one will say that we are now leaving all that behind. Are we? When shall we have left it behind? It is perhaps not too much to say that 80 out of every 100 of our consumptives are unable to pay for treatment, and can there-

fore look for nothing better than the treatment which Dr. Léon Petit condemns, and most likely not even for that. We can perhaps each year *half-treat* in town hospitals one of our working-class consumptives in every 100, and *properly* treat in country sanatoria one in every 1,000. We cannot long permit such a state of things. These consumptives are altogether dependent upon us, and we cannot continue to let their lives be at the mercy of the haphazard medical and lay advocacy of men whose time is already fully occupied with their own work. We cannot continue to refuse the powerful aid our organised Government places at our disposal, the more especially as the work to be done is of such urgency that it must be carried out dispassionately, as work, freed from the jealousies and intrigues of those seeking notoriety. Other countries are moving in the direction of State-aided sanatoria. The United States have now some State-aided sanatoria and, no doubt, will soon have many more ; and in Germany also the Government is helping. Yet our statesmen say that our Government cannot, or will not, help with the work. We stand still ; and yet we cry out in indignation if anyone hints that we are

behind other countries in these matters. We talk much, but do little. Until two years ago, when, in a fluster, we bestirred ourselves, what had been our results? Practically nil. If we go on as we are going, with our meetings, our resolutions, our committees, and our quarrellings, we shall in five years possibly be in a position to half-treat two or three out of every 100 of our consumptives, when it is in our power to be in a position, before that time, to properly treat them all. But one medical leader says we must proceed on classic lines with our organisation. Classic lines! What do dying consumptives care about classic lines?

The Berlin Conference on Tuberculosis in 1899, at which nothing fresh was communicated, and much was said that was detrimental, proved at least that the sanatorium treatment of consumption is the only treatment by which cures can be effected, and that such cures are altogether independent of climate. But it will behove us as a wise and cautious nation to appoint several commissions—on whose findings we would never think of acting—so that we may really make sure that the sanatorium treatment is all that it is made out to be, and that our

climate is suitable for that treatment, and thus be prevented taking any unduly hasty step. There are only 60,000 lives at stake yearly. That is not worth a Government's while troubling about. Only one out of every four of our workers dies of consumption. We admit that it is most unnatural for them to die in such a way, but since the proportion is no greater than one in four we need not set our Government the task of putting a stop to this waste of life. We may leave it to Germany and the United States to take the immediate action, for these people are daily becoming more fussy, and more anxious to put their knowledge to practical application, while we may look on and criticise their Quixotism.¹

¹ If anything is ever to be done, we must change our methods ; for those on whom the doing of the work depends are too busy with their own work to give anything but a passing interest to the needs of the consumptives. Tuberculosis Congresses and public meetings should insist that this is pre-eminently a State matter, and should urge the Government to make tuberculosis of every kind a notifiable disease. At the same time a Board of Public Health, with large discretionary powers and considerable means, and consisting of men who would give their whole time to the work, should be established, which would have for its first object the warring, in every

CHAPTER II.

THE TRAINING OF MEDICAL MEN.

Training an important matter—Without training a doctor cannot know the treatment—Many things to be learned—Fear of the open window to be banished—Confidence to be gained—Seeing patients getting well—Discipline—Jumbling up different treatments—Necessity for training—The best sanatoria for patients—Doctors should give patients minute directions—Doctors anxious for training—A Medical Training Sanatorium—Consumptives are the unselfish ones—The choosing of employment for children.

BUT if as a nation, acting more wisely than is our wont, we move to the relief of these consumptives, our most unfortunate fellow-way possible, against tuberculosis. Then would results be attained, and not in this field only, but also in that of the general health of the people; for the methods that must be employed to rid us of tuberculosis would also be raising the level of the general vigorousness of the subject, and, at the same time, be attacking the stronghold of every other disease. More good would result in one year from such an organised general attack—after tuberculosis had been made a notifiable disease—than would result in ten years from the desultory skirmishes of a few half-hearted, inter-bickering Corporate Bodies thinly scattered throughout the country.

countrymen, there will be found many things needing our attention. The most important matter will be the training of medical men to take charge of sanatoria. It is not possible that an ordinary practitioner, or even a chest specialist, can properly undertake such a duty without a special training. There is so much to learn that can only be acquired by experience. The doctor must learn, for example, all about the food that should be given to the patients—the quantity, the quality, the kind, and as to how it should be cooked. There are the hundred and one things to be learned as to temperature, bathing, exercise, and rest—as to when the patient should be in bed, when lying, when walking and how far—and the individualising of cases; also as to sanitation, disinfecting, washing, and heating. There is the fear of the open window to be forever banished. There is confidence in himself to be gained by the doctor, so that he may know without hesitation what to do always, and how to do it. This can never be come at from books or from hearsay, but can only be got by living at a sanatorium and growing into the life there, and by seeing from day to day patients who are being cured—which few of our medical

men have had the chance of seeing—and the means by which they are being cured. A doctor has also discipline and self-denial to learn, and the regular routine of life which is so necessary ; and it may be here said that the doctor should himself lead the same Spartan life as the patients, if he is to keep his necessary vigour of mind and body, and be their leader and command their confidence and respect. Many men would never get into the proper spirit of the treatment without this special training, and without learning the necessity for their doing so. One doctor said to me, “ But would not a man treating always the same disease get in time tired of it all, and careless ? ” The men who would get tired and careless are not the men for the work. When a doctor takes charge of a sanatorium he must practically bid good-bye to ease and to pleasure in everything but his work. There are few who can do it, and in the selection of men for training great care should be exercised. Men only of “grit” and of character, yet of immense sympathy, are suitable. It is a great struggle at times for some patients to persevere, and at such times it altogether depends on the doctor whether they

will persevere or not. A few months of experience at a sanatorium is worth a lifetime of ordinary practice, in which a man never knows absolutely if he be using the right means. By questions that are asked by men who are considered leaders in such matters but who have not had training, it is easy to judge that they have but a faint idea of what the treatment of consumption really is. They evidently jumble up many treatments and systems, and know not which is best. They do not know exactly where they are, therefore they have not confidence in themselves, and never can have until the merely theoretical has given place to the practical. Then they will know what they know, and will be able with self-assurance and success to carry it into execution. There is not time for each to find out for himself, through years of patient study and observation at a sanatorium of his own, what is best for his patients ; few have the ability or the perseverance to thus find out ; and therefore such men as have given the best of their lives to the finding out under the most favourable conditions possible what are the best methods of treatment, or such as have been trained under these men must become the teachers of others.

Much evidence could be adduced to prove that training is necessary for even doctors of the best standing, from instances in which such medical men have lost faith in the sanatorium treatment because they failed to get results, since they did not thoroughly know the treatment, and were connected with institutions which carried it out in a very half-hearted manner. Some doctors who profess to be carrying out "the open-air treatment" say that it is not necessary to encourage the patient to eat as much as possible ; that the fresh air gives appetite enough. Those who say this have little idea of the possibilities of the treatment. It is not fair to judge the results of such men as the utmost that the sanatorium treatment can do. The best sanatorium to which a patient can go is certainly a sanatorium under the charge of some doctor who has had special training. Besides, a doctor is not qualified to take charge of consumptives until he has seen at a sanatorium what apparently hopeless cases are sometimes saved.

The ignorance of most general practitioners with regard to consumption is lamentable. As a rule, they have only read about the new

treatment, and even then take little interest in it. When a consumptive patient presents himself for examination, he is usually put upon medicine treatment; or, if the doctor is more up to date, he is advised to go to a sanatorium (which the patient often cannot afford to do); but at the same time he is told that few recover even at a sanatorium. If the patient be sent into the country, his instructions usually are to eat as much as he can, and to be out in the fresh air as much as possible. This means that he eats just what he feels inclined to eat, which is very little, and is out at rare intervals when the sun shines. I know of a case that just illustrates this: A lad was sent home to the country eighteen months ago, ill of consumption—one of his doctors said to die in three months—without any definite instructions. His family history was very bad, and it was expected that he would never work again. A layman—a Nordrach patient—got interested in his case, saw that the lad had lost heart, and was being allowed to drift to the grave, roused him from his lethargy, and put him on the right treatment, with the result that in five months he had gained in weight nearly two and a half stones,

was bronzed and weather-beaten, his lungs were healed, and he was then reported by his doctors fit for work, to which he returned, and at which he has now been engaged for a year and has kept well. When he went to be re-examined his medical men were greatly surprised at the change in his health, one of them remarked that it would kill him to go about without hat or overcoat, and get drenched without afterwards changing, as the patient had been doing, and showed that he quite missed the significance of the object lesson presented to him by making full inquiries about the climate of the countryside where the lad had been living. It is the duty of a doctor to be in a position to give such a patient—who cannot pay for treatment at a sanatorium—full and specific instructions for carrying out the treatment himself. He should be able to tell him—to set it all down on paper—how much rest and exercise he should have under all conditions ; that he should live in the country if possible, and be out-of-doors at specified times (if allowed to be up), no matter what the weather conditions may be ; that he should live practically in the open continually—windows being open—and be able to tell him

what food he should have and how much of proteids, fats and carbo-hydrates—the proper proportions of tissue-forming and heat-producing foods to maintain the balance of the body; that a superabundance of nourishment is an absolute necessity for him, and that he should be weighed every week—that, in fact, he should eat to gain weight and with his eye on the weighing-machine. He should also be able to give particular information to the patient on all other matters of treatment. If doctors would but take the necessary trouble to instruct their patients well, there would be a different tale to tell in results. But, unfortunately, few medical men are able to advise a consumptive so minutely. As it is, even some doctors who are at the head of some sanatoria trading on the name of Nordrach in this country, but who have had no special training, carry out the treatment imperfectly, for they introduce into it “fads” of their own, which nullify or much reduce the good effects of what is otherwise admirable, and thus bring discredit upon the treatment. Sound common sense is not good enough for your average medical man—he must do a bit of scientific reasoning on his own account.

I know several doctors, at present in charge of sanatoria here, who are most anxious for training at a well-conducted sanatorium. They are themselves the first to admit their inability otherwise to properly carry out the treatment. The establishment of a Medical Training Sanatorium is a matter of the first importance. Now that we have got a certain length in the movement, we shall not, otherwise, get much farther. Nothing would give such a push forward to the work as the establishment of a training school of this kind; and anyone who wished to help consumptives could not possibly do so better than by making such a scheme practicable. The sanatorium would be of considerable extent so as to allow of the training of a fair number of doctors at a time. The patients, who would come on the understanding that they were to be subjects of examination for the doctors in training, would be charged merely as much as would make the sanatorium self-supporting. At the head of the school would be placed a man who had proved by his results in treating consumption, and by his ability to control men, that he was capable of carrying such a work to a successful issue. Each doctor

—who would have, perhaps, ten patients under his charge—would remain in residence for training say six months. After that time he would be capable of taking charge of a sanatorium of his own, and would thereafter be a trainer of other medical men. Soon, if such a training sanatorium were established, we would have in Briternia a band of the finest consumption specialists the world has ever seen.

But one thing is certain, that however our medical men are trained, trained they must be if there is to be hope of any measure of success in our crusade; and when they are thus trained they must give up their lives to this work alone, as it is useless for a doctor to try to treat consumptives while he is distracted by the calls of a private practice at the same time.

And whom do we mean to save? Are they our outcasts and vagabonds? By no means, though truly it might seem so from the carelessness of our attitude towards them. We want to save those who are our best, our kindest, and our noblest; for consumptives are all these. Not those who are easy-going and thoughtless and selfish, but the anxious and considerate ones, the thinkers, the doers, are the con-

sumptives. We all know that it is the gentle, unselfish sister who is spirited away by this fiend ; that it is the hard-working brother, who is trying to keep the home together, whom he lays low. It is not the boy who throws up his cap and rushes off to the playground when he gets out of school, but the boy who goes soberly to his books, anxious to please his parents and his masters, who develops into the consumptive.¹ These are they whom we would save—those present with us, and those to come ; those

¹ And in this connection it should be said that a grave responsibility rests with parents as to the choosing of employment for their children. It is obviously impossible to give here a list of occupations suited to such as are delicately constituted and likely to be phthisically inclined. Only broad lines can be indicated. The family doctor should invariably be consulted as to their physical fitness for the work before boys or girls are placed at occupations. It is nothing short of murder to set a delicate lad to close study or to place him at hard or confining work in a shop, office, or factory ; such a lad's life-work should be in the open—on the sea, in the field, or on the prairie. Not his brain, not his wealth-acquiring propensities need stimulation, but his weakly body needs development out of that unnatural state into which his parents and his surroundings have brought it. He will be of infinitely more use to the world as a sailor, a land-steward, a stone-breaker, or a tramp than as a student or a town-dweller.

whose thoughts are anxious, and who are the burden-bearers for others. These our love of living in crowds, and our ignorance of the first principles of health, have given over to destruction ; these we must save. It is our sacred duty, and we must not shirk it.

CHAPTER III.

NATIONAL TREATMENT OF CONSUMPTIVES.

The co-operation of Parliament—The notification of Consumption—Other countries leading the way—Opposition to notification—State sanatoria—The decrease of fresh cases—Disappearance of consumption—Treatment of working-class consumptives—The advisability of not returning to former employment—A consumptives' colony—Koch's new views—The London Congress—The cost to the country of banishing consumption—Private and philanthropic endeavours unavailing—Universal good health and longevity.

THE dealing with a problem of such magnitude as a national war against tuberculosis, is a matter of great difficulty; but the problem is solvable nevertheless. We need, to begin with, the co-operation of our Parliament. We must make consumption and tuberculosis of every kind notifiable diseases. This is necessary in the interest not only of the patients themselves, but also in the interest of the community at large. How otherwise can we ever hope to reach cases in the incipient stages, when a cure is almost a certainty? There is nothing so disastrous for consumptives as delay. How other-

wise can we ever hope to take the right steps by easily adopted, and not irksome, precautions to prevent, and finally stamp out, this infectious disease which, though more slow, taking perhaps years to effect what other diseases effect in weeks, is therefore more insidious, and more certainly destructive than the diseases already notifiable? Those only oppose notification who will not realize the gravity of the issues. What have they to argue against notification? The liberty of the subject; the public mind not ready for such a step; the time not ripe! Since when has the liberty of the subject stood higher than the safety of the community? When has the mind of the public ever been ready to accept anything that would cause it some inconvenience? When was the time unripe to save human life? This *is* a matter which concerns the safety of the community, therefore it *must* come. Until we have notification we can make no considerable headway against consumption. Other countries again are leading the way and are making consumption notifiable, while good results of a far-reaching character are already apparent.¹

¹ At the Boards of Guardians Conference at Leeds on the 8th of September, 1899, Dr. McCandlish (who presided) said "that as illustrating what was being done

In the next place we must have our trained specialists, men who are armed at all points for the fight, for whom we—the nation, the State, the organised Government—must build sanatoria, or perhaps convert suitable houses in likely situations into temporary sanatoria, in which they may carry on their work. I plead for the poor who, without our help, must perish. Little by little we would be getting the mastery of this disease. After a time we would find that the cases admitted to the sanatoria were all in the incipient stage, as in no case would the disease be allowed to drag on indefinitely ; therefore almost all cases would be curable. Soon the effect of such measures would be felt in the decreasing numbers of fresh cases as the sources of infection became fewer, and as cured consumptives returned to their homes, each an apostle of a more rational mode of living, until, perhaps, in twenty years, consumption would have almost disappeared, and would no longer be looked upon as a dreaded disease.

abroad, he might mention the case of New York, where compulsory notification of consumption had been in force for nearly three years. Last year the number of cases of phthisis in New York was less by one-third than in the previous year, and this notwithstanding the increase in population ; that the first thing to be done was to get dhthisis placed on the schedule of notifiable diseases.”

There would be much detail to arrange. For instance, it would be necessary to support the families of such patients as were bread-winners, as long as these patients were under treatment.¹ We must not let the wife and children starve, else we should have more victims on our hands. And when the consumptive had left the sanatorium it would be unwise, in most cases, to force him to return to his former work, if that had been at all of an unhealthy nature. It would never do to send a compositor back to his type, or a shoemaker to his last, or a tailor to his board. Once he had broken down under the stress of such life he must not return to it ; for you see he has to live on poor fare, and cannot conserve his energies or be good to himself as those can do who are in better circumstances. Therefore we must find some work for him. At most he is but one in 500 of us, and it should not be hard for us to find for him work that he could do, and do well, without fear of his being

¹ Some might cry out against thus pauperising our poor. For our working classes to accept treatment in State sanatoria would no more pauperise them than does their use of free libraries and public parks. The free libraries are their libraries, the public parks are their parks ; the State is their State—they support it, and, as a matter of fact, they support it far out of proportion to their means.

laid up in the doing of it, and again thrown on our hands—such work as driving tramcars, coaches, or cabs ; or work as park-keeper, overseer, caretaker, or watchman, or light gardening work (farm work is too heavy)—any work, in fact, that keeps him in the open air, in the country if possible, and that is of a light nature. At such work he will generally keep well, and in time learn to forget that he was ever a consumptive.¹ Even such consumptives as, at a pinch, can scrape together enough money to pay for treatment, but who are not in a very prosperous way of life—such as clerks and shop-assistants—would be wise to return no more to that work under which they broke down, but

¹ A suggestion has been put forward that there should be established, in the country, a colony where such working-class consumptives as had been treated at sanatoria could live with their families, and where suitable work, under the most favourable conditions, would be provided for them. If such a plan could be carried into execution without unduly interfering with the consumptives' sense of freedom, it would be of untold benefit to such as required to avail themselves of it ; for, in this way, many of those who had received sanatorium treatment, would, instead of relapsing, be confirmed in health, and after a few years' residence in the colony, and with their knowledge of how to live in future, be able, without fear, to take their places again in the ranks of the every-day workers.

should, at any rate for some years, get outdoor employment—perhaps as commercial travellers, pursers on shipboard, or work of that nature. Only such consumptives as are in a good way of life, and can therefore afford to have plenty of nourishing food, and who can take work more or less easily, should risk going back to their former employment, if it is of a confining nature.

At the same time we must do all in our power to get at the truth about bovine tuberculosis, as to whether it can or can not be communicated to man. Professor Koch's pronouncement, at the London Congress, that this disease is not dangerous to man, is considered by nearly every authority on the subject to have been made without due consideration, and it is felt to be certain that his views will, at the least, have to undergo considerable modification. It is evident that the drinking of quantities of tubercle-laden milk is more or less innocuous to the ordinarily healthy person—the probability being that, as the health is good, the milk consumed helps to supply nourishment sufficient to render the system tubercle-proof; if it were otherwise, supposing bovine tuberculosis to be communicable to man, almost every person in this country would die of some form of tuberculosis, for it is certain that

much of the milk consumed contains tubercle germs.

To say that because tuberculosis in man cannot be, or at least is only with great difficulty, communicated to cattle it must therefore be a different disease from bovine tuberculosis, and not merely a variety of the same disease, is to overlook the fact that tubercle bacilli can, and do, undergo great modifications in different organisms and under varying conditions. To build up a revolutionary theory, as Koch has done, on the mere supposition, for it is nothing more as yet, while there are indications that it is an erroneous supposition, that primary tuberculosis of the intestine is very rare, is the same as to maintain that because the bulk of consumptives who for years swallow their own sputum full of bacilli escape tuberculosis of the intestine therefore bacilli from human lungs are not dangerous to other organs of the human body. But we know that bacilli from the lungs do attack other organs when the time comes that the resisting powers of the tissue cells of these organs are weakened ; and that the intestine has great natural resisting power, some other weakened or injured part of the body, such as the hip joint, the knee, the spine or the brain, generally becoming more readily affecte

The probability is that the same holds good with regard to bovine tubercle bacilli, the tissue and other cells of the organs of most people—even of children—being vigorous enough to resist the bacilli for a long time or altogether. As it is, perhaps it is not too much to say that every second person is tuberculous in some respect or other—apart altogether from the lungs—although he may not be aware of it. This tuberculous taint, not of the lungs, is more likely to have been acquired through alimenta—through the taking of tubercle-laden food—than through the breathing in of the infection ; and there is but needed a sufficiently prolonged condition of life adverse to health for the disease to be developed into evidence. How otherwise, than on the assumption that bovine tuberculosis is communicable to man, can it be accounted for that tuberculosis other than of the lungs, in infants, who, as time goes on, are more and more fed from the objectionable feeding-bottle, is on the increase, while pulmonary phthisis in all, and other forms of tuberculosis in adults are, owing to improved health conditions, rapidly decreasing? In the meantime our government should help in the solving of the question of the infectivity of bovine tuberculosis, and in placing a matter which is of

such outstanding importance beyond the region of doubt, one way or the other, forever. Whether the inquiry shows that bovine tuberculosis is highly dangerous to man, or dangerous only to a limited extent, our government must take steps to eradicate the disease, and institute a supervision of the places that produce three of the most important articles of food—milk, butter and beef—if only in the interests of the farmers, and that there may be a pure and clean supply of milk for the people. The public has no idea of the imperative necessity for radical changes in these matters and for strict supervision ; no idea of the state of the average byre, of its dark, suffocating, unventilated closeness, of the filth of the cows' udders, the milkers' hands and clothes, and of the byre itself ; no idea of the insanitary state of the milk vessels, and no idea of the looseness in the methods employed. I know a farm at which the cows are milked and the butter is made by two sisters, one of whom is in consumption, while the other has swollen tubercular glands. The fact that we are being out-distanced and out-classed as butter-makers by countries which have nothing like such good natural facilities, but where there is supervision and where the dairy work is scientifically con-

ducted, is alone sufficient to show that there is need for reform. In the meantime the National Association is to be congratulated on the circumstance which has given such prominence to the Congress, and which will have the effect of directing all men's minds to its work.

"But," you say, "it will take a great deal of money to do all this—to get our Act of Parliament to make notification compulsory, to train our doctors, to build sanatoria, treat all consumptives, and institute inquiries and take measures with regard to tuberculosis in cattle. All in good time! Let us hasten slowly, and therefore surely. Rome, you know, was not built in a day." O, yes, all this would take a lot of money; and even if we spread the burden of it over the twenty years necessary to effect the end, yet it would be a lot of money—perhaps as much as the sum by which we used to reduce our national debt every four years—as much as is lost in money—not to speak of lives—every three years to the nation, owing to consumptives being unable to work; one-tenth as much as the South African war has already cost us. Who knows? Perhaps it is too much to spend in order to be able merely to say, "We have banished consumption." It is true that

Rome was not built in a day; but we may be sure that it was not long, once the building began, before it was a habitable city. So dead in earnest was Romulus about the work that he slew his own brother for being contemptuous of his plans. If we had the enthusiasm and single-mindedness of Romulus we would not be long in building our Rome. Don't we all—even the most backward of us—hope and believe that one day we shall be in a position to treat all our consumptives? It has got to come to that in time. Wouldn't it be much better for us, and more sensible, to do it right away by creating a special department which would undertake systematically the *sole* work of suppressing this disease, and thus save much life, time, and money? Surely the saving of many lives would be justification enough for our spending very largely, even if we were not repaid many times over in other ways, as we assuredly would be. There is more than one man in this country who, from his private purse, could bear the whole expense. Where is there a work of philanthropy to compare with this?

What stands in the way of our taking, *as a country*, immediate steps, if but at first merely for the relief of the most affected districts, later

on, by degrees, working up to the full undertaking of measures for the eradication of tuberculosis? As a consumptive—as one who knows something, though but little, of the utter hopelessness and misery of the lives of these neglected consumptives—I call for the strongest and quickest measures. Nothing but organised effort of the most comprehensive kind can meet the urgency of the case; private and philanthropic endeavours can but touch a few spots in the all-pervading, deep-rooted, festering sore. If we put forth such organised effort, not only would consumption be eradicated, but all other forms of tuberculosis would quickly thereafter disappear as the overcrowding in our slums gave place to more healthful surroundings;¹ as the labour conditions in our shops and sweating-houses improved; as children ceased to be born of emaciated, consumptive parents, and received a rational up-bringing; as good sanitation and cleanliness became more general, the laws of

¹ Statistics show that there is five times as much consumption where there is overcrowding as there is where no overcrowding exists, and that the death-rate from consumption is two and a half times greater among the poor than among the middle and upper classes.

health better understood, and the standard of living higher—all resulting in a healthier and a happier people. Such an effect would these changes have on our power to resist disease and sickness of all kinds that it is certain a stride would be made in the next twenty years towards universal good health and longevity such as had never before been made in the history of our country.

But before we attain to such an end there is plenty of work for us to do. Are we to shirk the doing of it, and be for ever at the mercy of an enemy we have learned successfully to attack but have not the energy to overcome? Is it for us to set the example and show other countries how to satisfactorily solve a problem of such national importance, or is it for others to show us the way, while thousands of our fellow-countrymen, who might easily be saved, are dying?—or is the task too heavy for us? There is ever sure to be some obstacle in the way of our doing, as it ought to be done, anything of more than ordinary utility, urgency, or magnitude. Why is it always so? Is it that the gods, unknown to ourselves, have planted in our hearts a fear of their jealousy, lest we might perchance, sometimes realize our ideals?

IV.—THE OPEN WINDOW.

CHAPTER I.

THE WAY IN WHICH GERM DISEASES INVADE THE SYSTEM.

The question of open windows concerns every living being—The dread of open windows—The true explanation of catching a cold—Disease germs cannot live in healthy tissue—How a draught may cause a cold—Unnatural life Americans lead—Little true medical teaching at our Universities—The heat balance of the body—The reserve of strength—No germs, no disease—Illustrations—Well nourished body cells overcome disease germs—Malnutrition in any form predisposes to disease—Most people take too little nourishment—Illustration.

IT may seem to the reader who is in good health that the question of open windows is one which does not concern him ; that it is of no interest and of no importance to him. But the truth is far otherwise, and few realize it ; so few, indeed, that one never meets them unless it be such as have come to realize it through one's own

efforts. But that it is a matter of importance to every living being is none the less the fact.

It seems almost unbelievable that most people spend twenty or more hours of every twenty-four cooped up and closed in behind windows and doors, deprived of that pure air which is the food necessary for their systems—from that pure air which, and which alone, the long processes of evolution have been fitting their organs to use, and of which now, in this day of civilization, they seek arbitrarily to deny themselves;¹ that for these twenty hours every day they are breathing more or less foul, stagnant, poisonous, germ-laden—and to any one used to better—loathsome air. It is hard to believe that people everywhere are living thus when it is possible for them to breathe in their own homes, every hour of their lives, air practically as pure as that of the outer atmosphere, which alone is suited to their needs. It has always been taught, and is still taught, that if colds and rheu-

¹ It is only since the introduction of glass for use in windows that such a disease as consumption has become a scourge; before that time life had generally to be lived in window-open, ventilated houses; and earlier still, and better, under the blue vault of heaven.

matism, and the hundred and one ills that imagination has connected with these are to be avoided it is necessary to beware of open windows, of damp, and of draughts.¹ Mothers have warned their children, and doctors have told their patients, that it is so, and they have been implicitly believed; and it has come to be the general conviction that an open window on a cold day in winter, and a current of air through a sitting-room or bed-room, are things most dangerous to health. Consequently every one is most careful to see that windows are always tightly closed, and that doors fit perfectly and are draught-proof. And yet, strange as it may seem, this is the surest way to catch cold, and to be

¹ I received, not long since, a letter from a lady, ill of consumption, who, having read of, determined to try the Nordrach treatment, as she was getting worse in spite of all the drugs she was taking. She opened the windows of her house, began to eat liberally, and to carry out in other ways that treatment. Her doctor said that she was mad, that she would kill herself, and tried to persuade her husband to nail up the windows so that they might not be opened; but her husband had also read, and was convinced of his wife's sanity. The windows were kept open and the treatment adhered to, with the result that at the time of writing this lady was gaining in strength rapidly, and was well on the way to recovery.

overtaken by the very things that are being anxiously avoided.

We are usually told that if we get a wetting, or sit in a draught, we will catch a cold. These things are associated in some way with internal or external congestions and consequent disarrangements and illness ; but such explanations do not, however, fit in with all the facts of the case, for they do not cover such instances as those in which we got a wetting, or sat in a draught without catching cold. Therefore it is evident that getting wet and sitting in draughts are not the causes of colds. The true explanation of catching a cold is a very different matter. A person in robust health, and under normal conditions, cannot catch a cold, because a cold is a germ disease—is caused by a pathogenic, or disease-producing, bacterium—and the person may come in contact with the germs, but being in good health the blood corpuscles and tissue cells—those sentient, almost rational, microscopical specs of living protoplasm—of his body are in a fit state to war against and exterminate the intruding germs. Disease germs cannot live in healthy tissue.

When the vital forces are lowered, as they are,

by overwork, under-nourishment, anxiety,¹ or let us say a sudden loss of heat, the tissue cells and blood corpuscles, crowds of which are in a single drop of blood, and part of whose duty seems to be to clear the system of all intruding disease-germs, are in some mysterious way rendered less active or less potent to overcome germs of disease; and if there be not a reserve of strength so as to prevent the vitality of these phagocytic cells (so called because they devour or engulf harmful and other particles) being reduced below resisting point, the germs (disease cells) gain the mastery and begin to multiply at an enormous rate, and at last, generating their poisons and their noxious influences, hold the whole system at their mercy, and the person is ill. This is the simple explanation of catching a cold, taking sore throat, influenza, rheumatism, consumption, small-pox, most likely cancer, and the many other infectious diseases. It is easy to explain how damp feet, a wetting, or sitting in a draught, gives a cold. Most people know the theory of latent heat and its converse. When a person gets a

¹ Prolonged fretting and crying reduce the resisting power in children, affecting them as grief and worry affect older people.

wetting and remains in wet clothing for any length of time the moisture evaporates, and in so doing—or so to do—extracts a considerable amount of heat from the body. Sitting in a draught in a close hot room produces the same effect.¹ The

¹ Our bodies contain heat, and a constant draught passing over them, or a sudden change from a high to a low temperature, or prolonged exposure to cold, extracts some of that heat, and so, in some degree, lowers the resisting power of the system ; but this is not of the slightest danger to any but such as live in close rooms—which are germ-full, and which also accustom their occupants to require to live at an unnatural pitch of heat—and then only if such persons be in indifferent health. I sit constantly in all conceivable kinds of draughts without harm. Not long since a medical man, with whom I had a difference of opinion as to draughts, told me that I would certainly get a stiff neck, if not a cold, by sitting in a proper draught for a time. I knew by theory as well as by practice that it was impossible for me to catch a cold in such a way ; but I could not say as to the stiff neck, which is of a mechanical nature. I would, however, give the matter a trial. Having opened all the doors, as well as the windows, in my house I was able to improvise a very concentrated draught between a slightly opened window and an open door. Taking off my coat (so as to give the poor draught a better chance), I sat down in this draught in such a way that it played full on my exposed neck, at which point it was able to blow out a lighted match. In this way I sat for three hours without inconvenience and without in the least feeling even the approach of stiff neck.

extraction of this heat does not lower the body

And why? Because I had been living constantly in a temperature the same as, or approximating to, that of the draught, and my whole system was consequently strengthened and toned to the necessary pitch. The result would have been different if I had been breathing the atmosphere of close rooms with my physical vigorousness only such as a life in these places induces. Nature always compensates in these matters, and the cooler the system is kept, the stronger, more robust, and better-conditioned will the body become, provided, of course, that the supply of food is sufficient. For this reason a person who fortifies himself in a natural way by taking what food his system demands, is much more robust, and can stand changes of temperature and all calls upon his strength, better than the person who unnaturally protects himself by putting on or throwing off garments according as the temperature of each day or each season of the year varies. In the former case the body is a smoothly working machine, regulated solely by natural laws, and is ready for all emergencies; while in the latter case it is an engine kept unnaturally at the same standard with valves all fastened down tightly, and sooner or later pressure is bound to come for which it is unprepared. That the body in the best of all ways, naturally, adapts itself to surroundings may be readily seen from the fact that a temperature of 45° F. feels warm in March, while the same temperature in October is quite chilly. Americans are worse offenders than the people of this country in respect to the heat and closeness of the places in which they live in winter. If things go on as they are now going, there will be, in two or three generations, nothing but physical wrecks in the large towns of the States. I have seen

temperature,¹ but adversely affects the organised cells, reducing their potency and rendering them,

Americans shivering here in Midsummer, while on the other hand a friend of mine who was for fourteen years in the open in Australia, which has a far hotter climate than America, has lived here for the past year in a house in which the windows in living or bedrooms are never closed winter or summer, and without feeling the cold. There is nothing in the world to prevent windows in any latitude in the States being opened in winter if only to reduce the temperature of the overheated rooms to something like a healthy standard, never to speak of the necessity for the renewal of the air breathed. But what can be said when at some of the colleges of such a university as Cambridge the physical powers of the undergraduates—who for vigorousness are the pick of the country—are debilitated by the rooms being heated like ovens by patent hot-air grates? Could anything be less calculated to produce men? Could anything be less like the training of the youth of classic times? At our universities and colleges little or no attempt is made to teach the medical students the broad and simple laws of health and the art of preventive medicine, or to induce them to look in a reasonable way at the scientific principles underlying their profession; but much time is wasted in the giving of instruction in quack empiricism, in the expounding upon antediluvian drugs and simples, and in the teaching of craft shibboleths.

¹ This phenomenon has been well described thus—I forget by whom—"One of the greatest mechanical feats nature performs is the keeping of the human temperature, under the most varying conditions of external cold and heat, exactly at the same figure."

if the person be but on the borderland of good health, liable to be overcome by intruding "cold," (or other) germs that may be in the atmosphere breathed,¹ or in the food taken, or in the system itself, with the consequence that the person catches a cold. But if, on the other hand, the person under consideration has a reserve of strength—is in good condition (the body cells being well nurtured) and not just on the borderland of good or bad health—his system is able to afford this amount of vital force lowering, without being brought below the point at which it can overcome the intruders. A person thus must be just at the par of health before, say, a wetting will give him a cold ; if he is above par he will not in any way suffer, even though he be in constant contact with "cold" germs.

Two conditions therefore must be present before a person can contract a germ or infectious disease. There must be the presence of the germs of the disease, and also there must be a low condition of health, permanent or for the time being superinduced, in the person. If there be no germs present in the system or in the sur-

¹ Railway carriages and tram cars, being generally stuffy and often filthy, are usually hot-beds of disease.

roundings it is impossible to catch the malady : while on the other hand, if the body-cells (blood corpuscles, tissue, and other cells) are in the vigorousness of good health, the disease will not, under normal conditions of environment, be contracted even on contact with infection. For instance, a person might go to live a life in the open, say on a mountain side, where there were no germs of consumption or rheumatism or "cold." He might systematically half starve himself, work hard and expose himself in all weathers, yet he would not catch cold nor take rheumatism or consumption. But let this person do these things while living in a town and in closed rooms where these germs abound and he would at once become a martyr to colds, and later on, in no long time, a victim to consumption.¹ But again, if he be well nourished, and

¹ A brother of the writer, serving at present as a volunteer in South Africa, writes an account of a twelve days' reconnoitring excursion, in which he accompanied 200 other mounted volunteers across the Zululand border. The party had no tents or other covering with them, and for the first seven days and nights of the run it rained heavily and more or less continuously, and there was not all that time a dry rag among the lot of them ; until in the end they became used to being drenched and could sleep quite comfortably in their dripping clothes, under the sky.

not overworked, and if his strength be not reduced in any unfair way, he will walk unharmed, as the majority generally do, amid the hordes of disease germs that, under present conditions, infest our homes. It is only when the system is reduced to below resisting point, say by long fasting—for after a meal the number and power of the blood corpuscles are increased, and the risk of infection is much lessened—or by insufficient food, under-oxidation (impure air, or insufficient breathing), overwork, want of sleep, over-sedentariness—for all these mean under-nourishment—or in any other way, when the potency of the body-cells—those ultimates of life—is impaired, that disease germs, even after gaining access to the system, can make headway.¹

During the whole run there was not a single case of cold or other illness among the 200; and that is exactly what one would have expected with men never under cover and not camping long enough in one place to engender any of the diseases of civilisation.

¹ See what havoc diseases of all kinds play on the emaciated frames of a famine-stricken people. See the thousands of quite avoidable deaths fever has caused among our oftentimes half-starved, over-worked troops in South Africa. As a rule most people take too little nourishment. I do not refer to such as eat and drink much and have little or no work or exercise; but to such as have work to

CHAPTER II.

THE LAWS GOVERNING HEALTH.

Unity of the laws governing health—The organised life—The vagrant life—A law formulated—Rheumatism a germ disease—Not caused by exposure—Illustrations—Conditions that predispose to rheumatism—Connection between the open window and the germ theory of disease—Close rooms debilitate our physical powers—The wrong way to avoid illness—Draughts and cold not to be avoided—Misconception reigns supreme—Open windows all the year round cannot do harm—The system needs oxygen free from excess of carbon dioxide and organic matter—No rheumatism at Nordrach—Good results accruing from an open-air life.

IT is hard in a few bald sentences in such a restricted space to explain the wonderfully grand, though simple, cosmology of health. It do, but fail to take sufficient nourishment on which to do it. I would give a case that came under my own notice. A young lady was left in charge of four school-boys for a few weeks during the absence of the mistress of the house. The young lady persuaded these boys that it was harmful to eat much, and that the worst thing they could do was to take a hearty meal. The consequence was that, on the return of the lady of the house, the boys were thin and pale and starved looking. It is a pity to relate, but not surprising, that this young lady is now in consumption.

would take a volume, and a large one at that, to present in all its forms the universality of the laws governing good health and illness ; the causes and effects, and the apparent contradictions that, on sounder knowledge, but fit in harmoniously and make the unity of working—the lawfulness—of the whole the more evident. For there is a unity in all ; when you understand the rationale of one disease you will understand the rationale of every disease. You will then perceive that a constant war is being waged between the body-cells—those living things, the only living things, of the body (biological manifestations being only mechanical), the ORGANISED LIFE, and the germs or cells of disease, the VAGRANT LIFE.¹ So constant and so unfailingly

¹ Observations are tending to indicate that some free cells—bacteria—may, under varying conditions, be proto-phytic (living upon inorganic matter), saprophytic (living upon dead organic matter, and bringing about fermentative or putrefactive changes), or parasitic (feeding upon living organic matter), or even upon cells of their own species—(Is cancer a similar instance in the case of organised cells?) and may become also rudimentarily organised ; and that the same parasitic cell may be either non-pathogenic or pathogenic (disease-producing, living upon and destroying organised cells) and pathogenic even in varying kind and degree according to circumstances. Can it be

and unvaryingly certain in their workings are the laws governing health and disease in all organisms that they may be expressed in the form of a general law, thus: ALL DISEASE IS OF GERM ORIGIN. AN ORGANISM CANNOT BE ATTACKED BY A DISEASE UNTIL THE CELLS OF THE ORGANISM ARE REDUCED IN POTENCY TO SUCH AN EXTENT THAT THEY ARE NO LONGER ABLE TO RESIST AND OVERCOME THE GERMS OF THE DISEASE. This law would refer to vegetable as well as to animal life, and "disease" is to be taken to mean all, except what is merely mechanical or chemical, that injuriously affects an organism.

It is not necessary here to prove that an ordi-

possible that we may one day find that organised cells, under conditions favourable to that end, retrograde in specialisation and become free? Organised cells (animal and vegetable cells) and free cells reproduce similarly, elaborate and metabolate similarly, are similarly constituted, composed, affected, nourished, and can antagonise each other, sometimes one, sometimes the other, gaining the mastery. No fast line can be drawn between free animal cells (protozoa) and free vegetable cells (proto-phyta—under which are classed bacteria in general) as in many cases properties belonging to the cells of one kingdom are possessed by the cells classed in the other kingdom. Saprophytic and parasitic bacteria are, from their mode of nutriting, more like animal than vegetable cells.

nary cold is a germ disease—that it is infectious—for, although few people yet accept it, the knowledge is safe to rapidly spread. All other infectious diseases such as influenza, consumption, and scarlet fever, are, although the exciting bacterium in some cases has not been discovered, so generally considered to be of germ origin that they need not be mentioned in this connection. But with, for example, rheumatism, it is different; it is seldom looked upon as a germ disease; yet everything points to rheumatism being of germ origin. From analogy, from every point of view, one is forced to this conclusion. It is generally supposed that damp, cold, and exposure are the causes of rheumatism, and yet the people who think so also somehow attribute rheumatism to excess of certain acids in the system. Where is the connection? There is none. Can these two sets of causes be made to reconcile? They cannot. Moreover, many people who are often drenched and wet and exposed for many hours at a time never have rheumatism. It cannot be explained in this way, because it is not a disease which arises from exposure—even of years—for it is often met with in warm, dry climates. It is also contracted by people, such as seam-

stresses, who are never exposed ; and it is now known that rheumatism is frequent among children. It is a disease which affects young and old, exposed and unexposed alike. Outdoor labourers who, when they get old, are said to be subject to rheumatism, are pointed to as proof that exposure to wettings causes it. But if such people in their old age be more subject to rheumatism than others it is merely because as they grow older they are less able to stand the slight loss of vital force caused by exposure, and so less able to resist the germs of rheumatism ; and that by living, as they generally do, in close hovels, they render themselves doubly liable to fall victims. But I know a farmer who is now seventy years of age, and who for thirty years of his life every winter spent weeks on end gathering wrack from the seashore, drenched from morning to night, from head to foot, and who yet has never had a twinge of rheumatism, because he has always been able to live well, resided in a good house, was much in the open, and had not, as he grew older, to overwork. An old roadman of sixty, who mends the roads running past my house, works in his shirt sleeves in all weathers, and is sometimes in the rain for a whole day.

He has three miles to walk to and from his work. I asked him if he were troubled with rheumatism. "Rheumatism!" he replied, "I have never had an ache or a pain in my life." The whole workings of this illness can point to no other conclusion than that it is of germ origin. Under proper conditions of life no exposure short of being "foundered" or frozen, or of over-exertion under a torrid sun, can do harm, as could be proved by numberless instances. On the other hand, rheumatism is induced, say, by malnutrition, even in a person who may never have been out of doors or got a wetting in his life. Anything in fact that reduces the resisting power of the system renders the person liable to contract rheumatism. The effect of rheumatism on the bones, joints, and in general on the body is very similar to that produced by some forms of tuberculosis, and the fever resulting is the same manifestation of pathological action as is the fever of a consumptive. If there be excess of lactic or other acid in the system of a rheumatic patient (or excess of uric acid in the system of a gouty patient) this may be a consequence, but certainly not the cause, of the disease. The same things—damp and exposure—as used to be assigned as the causes of

consumption are yet commonly thought to be the causes of rheumatism. But in the former case it is now known that these only afford the bacteria opportunities, under conditions otherwise favourable to them, of gaining lodgment in the system, and are not causes at all, and after a while the same will be known in the case of the latter also. It is easy to see how this climate, being considered unsuitable for consumptives, was made so.

But what has the germ origin of disease to do with the open window? Everything; for it is the fear of damp, and cold, and draughts that plays havoc with our physical well-being, makes us shut ourselves up in air-stagnant rooms, which are as nearly hermetically sealed as it is possible for mason and joiner and glazier to make them, and thereby subject ourselves doubly—by the debilitation of our physical powers and by constant contact with disease germs—to unknown infective dangers. But when with fuller knowledge we see what are really the causes of colds, chills, rheumatism, and diseases of all kinds, we lose our fear of draughts and believe in open windows. Before the laws of cause and effect in health and disease were understood or imagined

by any one—before the rationale of balances fight or potencies of which I have been speaking, was ever dreamed of, it was found that damp and cold and draughts affected some people in a detrimental way and so it came to be established, and the doctor upheld it, that these things of themselves were dangerous and to be avoided. But now that the workings of these mysteries are known, anyone who thinks the matter over will soon be clear in his own mind that a draught, for instance, is not dangerous *per se*, but only dangerous if the person subjected to it is leading an altogether wrong life ; and that in fact one can in no surer way render himself liable to “all the ills that flesh is heir to” than by trying to avoid them by immuring himself within draught-proof rooms.

It seems to be an astounding statement to make, that draughts and cold and dampness are not dangerous, but that, since they are inseparable from a constant supply of fresh air, they are to be courted and not avoided (personally I seldom wear a hat or an overcoat and do not in the least mind a wetting, and never get harm from remaining in damp clothes ; nor do my children wear hats, and I teach

them to love a life in the open in all weathers); but anyone who will grasp the germ theory of disease, follow it to its ultimate conclusions, applying it to his own experience and the experiences of others, will see that this is no more than a true statement, and will be surprised that he could ever have thought it otherwise. It is the fear of these bogeys, I am convinced, that is the cause of nearly all the illness to which we are subject. From the poles to the equator misconception reigns supreme. From the reeking savage who shuts himself at night in his suffocating hut, from the French peasant who fears that an open window will hurt his eyes, to the Britisher who believes that he will "catch his death of cold" if he lives or sleeps in a room with open windows—it is the same; a blind, unreasoning fear kept alive through ignorance.

It would not be hard to accumulate many instances to show that open windows in a house all the year round do not and cannot injure in the slightest degree, but that they, or their equivalents, are necessary if health is to be preserved. Everyone knows, or ought to know, that the system needs pure oxygen as it obtains in the air, uncontaminated with any ex-

cess of carbon dioxide, for its proper building up and nourishment; that when the amount of carbon dioxide is above normal, as it always is in closed rooms, and to a fearful extent in theatres, churches, and schools, the air then breathed acts slowly as a poison. The harmfulness of impure air seems also to be due to the quantities of effete excretionary organic matter it contains. When pure air, however, is constantly breathed, windows being open, there is a double protection against illness and disease in that not only is the system strengthened by an amount of air-food sufficient to carry out correctly all the needs of the chemical and vital processes going on in the body, but also the air is free from organic excrements and is also free from pathogenic germs, or practically so. The advantages to be derived from such an open-air life are so great and so far-reaching and so apparent that no one would hesitate to adopt it, but that the fear of it has been instilled into all and prevents the doing so. The fear of such a life with open windows, winter and summer and in the open in all kinds of weather, must first be overcome. This can only be effected through a fuller knowledge, which gives reasons why,

backed up by experience, which shows that in actual practice it is not dangerous.

Hundreds of consumptives, who are the most fragile and the weakest of all human kind, are now leading this life with great benefit. They do not lead it only in the summer months, but all the year round; and not only do they themselves benefit by it to the saving of their lives in a great number of instances, but also their attendants' and nurses' benefit, as is a matter of common observation at all open-air sanatoria. The tired, anæmic, dyspeptic nurse soon blossoms into a healthy woman when she comes to lead this grand open-air life. If a weakly consumptive can stand it and never catch cold or chill or rheumatism,¹ can sit for hours in winter in a room with open windows,

¹ It is untrue that patients at Nordrach, being, as they are, often exposed to wettings, frequently contract rheumatism. These reports are fabricated and circulated by interested persons, and have no foundation in fact. I have never known of a Nordrach patient contracting rheumatism; nor can I hear of such a case, though I have made many and searching inquiries. Rheumatism (*Arthritis acuta generalis*) can be no other than a germ disease, and is not caused by exposure to cold or wettings; while the word "rheumatism" is loosely and wrongly used, even by medical men, to indicate all kinds of pain.

can lie in that room, still with open windows, during the very coldest winter night, can go out in rain or snow, or weather of any severity, and get nothing from such action but a renewal of life and health, surely, surely, the average, healthy person can do so also without danger, and raise his health in this way from the average level to that tip-top health of the sportsman and the sailor—the lovers of and the lovers in the open air—which all, and not only the few, should enjoy.

CHAPTER III.

DR. HENRY MACCORMAC'S BOOK.

The book bears little immediate fruit—MacCormack persecuted and ridiculed—The Royal Medical and Chirurgical Society wrong—MacCormac's foresight and knowledge—R. L. Stevenson on the open window—MacCormac's deductions sound—Doctors should read his book—Quotations showing that open windows night and day all the year round benefit, but do not injure—What obtains everywhere—Closed windows and execrable air—Disastrous results—The Foot Guards' death rate—What would result from open windows—The duty of schoolmasters—Dr. H. H. Almond's article—Prevention of consumption—More extracts—How MacCormac saved many lives by preventing the development of consumption and other forms of tuberculosis.

SOME months ago, while looking through my father's library, I came across a wonderful book, written by a fellow-countryman, almost a fellow townsman.¹ This book had always been within my reach, and yet I had missed it. What a difference it would have

¹ "Consumption." By Henry MacCormack, M.D. 2nd Edition. London: Longman, Green, Longman, Roberts and Green, 1865.

made in my life had I but known of, read, and acted on it, or been taught its precepts. I would then never have been a consumptive. If this book of Dr. MacCormac, of Belfast, had borne the fruit it should have borne, there would now have been few, if any, consumptives in this country. But the book bore little or no immediate fruit; the author was looked upon then (1855-1865) as a crank, and his theories and practice were ridiculed in medical circles throughout the whole country. He had to bear every kind of persecution that a man in his position could be subjected to; he was neglected and sneered at. In 1861 he read before the Royal Medical and Chirurgical Society a paper "On the nature and absolute preventibility of tubercular consumption." In that paper he pointed out in the clearest language that damp and exposure never could cause consumption, but that it was caused by overcrowding in unventilated living holes, and by want of pure air; and, moreover, he insisted that consumption was quite preventible and curable, and that it was not hereditary. Here was a prophet indeed, one who, in those dark ages of medical ignorance, forty years ago, had wrested her secrets from

Nature. And this is the paper which these wise-acres took it upon themselves to censure ; they actually refused to pass a vote of thanks to MacCormac for preparing it, because, forsooth, they thought it was written by a monomaniac. How true to history : MacCormac, the clear-visioned, patient investigator battling alone with all the strenuousness and almost frenzy of his nature for the theories which he clearly saw were right, but for which he was persecuted, shunned, and ridiculed ! Nevertheless, he ceased not to thunder forth his message ; a message which, if it had been listened to, would have saved the world an infinity of misery. Never for a moment did he doubt of the eventual triumph of his opinions, arrived at after the most patient observation and thought ; and now many years after his death the world has come to see that he was right and the members of the Royal Medical and Chirurgical Society wrong, with a wrongness that has cost Europe alone a million lives every year since then.

MacCormac fifty years ago held practically the whole truth about consumption when other medical men were groping in the dark. His idea of its origin was wrong, for he did not

know, and could not then have known, of the germ theory ; but, nevertheless, his conclusions were right, for he told how consumption arose, how it could be prevented, that it was not hereditary, and also how it could be cured. In his book he speaks of quite a number of cures that he effected ; and yet he met with little encouragement. I do not recollect the time when I did not hear stories of the mad Belfast doctor, who used to break people's window-panes with his cane in order to let in the air. He was a grand, clear-headed, far-sighted, and in spite of the treatment he received, kindly man—a father of whom Sir William MacCormac surely must be proud.

The book is full of instances and piled-up examples of the detrimentalness of living in closed rooms, of arguments and examples in favour of the benefit to be derived from open windows and outdoor life, and of many instances showing that there is no danger therefrom. I can only take quotations at random from it, but anyone who wishes to be convinced of the advisableness of “washing the soul and the body in the open air,” as George Borrow would say, or who wishes to believe with R. L. Stevenson, that “we are

human only in virtue of open windows"—who wishes to become what may be called an *alfrescan*—should take a great deal of trouble to get and read this book.¹ There are in it one or two obvious errors—such, for instance, as that tuberculosis is due to deposits of unoxidized carbonaceous waste, and *ex consequenti*, that consumption is not infectious ; and also the treatment, though on right lines, is not thorough enough ; but, although his starting-point is wrong, MacCormac's deductions are sound, which makes his insight all the more remarkable. Let me quote first a few passages bearing on open windows and open-air life.

The mainly unreasoning dread of night air, so termed, is a great impediment to free ventilation by night. And yet day and night air is the same virtually, does not differ appreciably. The air by night, whether damp or dry, is equally pure, equally

¹ Doctors especially should make themselves familiar with it, for it is the most convincing book that has yet been written on the general bearings of consumption. In the hands of medical men who would act upon its advice it would prove the means of prevention to, and the salvation of, numberless persons, who, under the very eyes of the doctors, are, for the want of a word of advice and warning, falling into consumption.

salubrious with the air by day, and calls not less solicitously for ceaseless admission into our dwellings. . . . Air, ere it reaches the lungs, is always damp. Quite dry air is irrespirable. It needs no peculiar or unusual habitude in order to respire what is termed night air. Exposure to, contact with, the day air equally prepares us for exposure to and contact with the air by night. We can multiply our coverings by night with even greater ease than we can by day, and with the most perfect certainty of producing and maintaining warmth. We can breathe pure air by night, were it for the very first time, with as much impunity and as much benefit as were it to partake for the first time of roasted meats or turtle steak. Good heavens ! how is it that people are so wildly mistaken, as if the great, wise Deity, as He does by every exquisite and perfect adaptation, did not intend that we should make use of the purest, sweetest air day and night and always. . . . The prospective results of breathing purest air by night are so infinitely desirable, the immediate enjoyment is so great, that it only needs a trial to be approved of and adopted for ever. . . . Reasonable precautions—that is to say, adequate night coverings—being resorted to, no colour of risk, even to lungs the most delicate, can possibly ensue. For it is stagnant air, air pre-breathed only, and not pure unpre-respired air that makes lungs delicate. . . . Although air, warmth, food, and cleanliness be cardinal conditions and essential to life, still the

most important of all health factors is air, air pure and undefiled alike by night and by day. . . . The constant uneasy dread of taking cold, which so haunts the minds of patients and their friends, is doubtless the one great reason why fresh air is so thrust aside. And yet cold will not be caught, were it in Nova Zembla itself, by night, if only the sleeper's body be adequately covered. . . . The pulses or puffs of air that come in ceaselessly, winter and summer, through open windows by night inspire, just as if one slept in the very open air, a sort of ecstasy. Gush follows gush, full of all delightfulness, replacing the used-up air and purifying the blood. It has oftentimes been said to me, "I open the window the moment I get out of bed." To this I have uniformly replied, "The moment to open the window is when you get into bed, not when you get out of it." You cannot otherwise with entire certainty secure the benefit of an ever ceaselessly renewed night air, so all essential to the blood's renewal and the maintenance of health. . . . With warm, abundant night coverings there is not a shadow of risk. There is none of rheumatism, none of bronchitis, in short, no risk whatever. The only, the real risk which we incur, is that of closing our sleeping-chamber windows, of debarring ourselves of pure air during our repose. . . . As for myself, I have slept long years with my chamber window open. For years my family, and every one whom I have been able to influence, protected, indeed, by sufficient night coverings

have done so likewise, not only with impunity, but with every conceivable imaginable advantage. . . . To children, in particular, in whom the tissue metamorphosis is so incessant, and who consume so much oxygen, the respiration of a pure unpre-breathed atmosphere is among the most vital necessities of their corporeal being. . . . For, as I must incessantly iterate, it is the indoor (foul air) not the outdoor exposure which we are to dread. Wind, wet, rain, cold, coupled with wholesome vigorous effort, are Nature's sharp restoratives, maintain health, cheerfulness, and vigour, blessings on no other terms to be enjoyed. . . . Until the entire community, medical and otherwise, shall become persuaded that the respiration of air not pre-breathed averts, and alone averts, consumption and scrofula absolutely, they will not be at pains to secure it adequately. The great present dread, indeed, of patients and medical practitioners alike, is contact, immediate contact with the fresh, free open atmosphere. In the abstract they all admit, nay, boast of the blessings of untainted air—air untainted by the breath of man and brute—but, in the concrete, they will have none of it. Yes, there are those who would not pull down a window by night, no, not if it were to save them from dying. Neither will they go out of doors by day so as to secure the sufficient amount of healthy organic life and action.

Yes, this is what obtains.

Go where you will, ignorance, prejudice, and

apathy ride rampant over man's destinies. Pass through and across any of our large cities at early dawn, and you shall not perchance find a single window open throughout. No wonder the inmates are tubercle-ridden, eaten up with disease and decay. Consider only the general aspect of the inhabitants of these mountain masses of brick and stone, their pallid, weedy, half-developed offspring, too often sickening, perishing, like the insects on the wall. . . . During the recent London exhibition I lived with my family for a week or two in Belgravia, and yet even in this reputable quarter the windows had never been made to come down. It would pull the house to pieces, the people said, to alter them. I persisted, however, and it was done. And, ah, how refreshing it proved during these sultry summer nights to lie in the open draught-way. Incredible, nay, unspeakable, would prove the amendment in the health and stamina of Londoners if only every window in the immense metropolis, ἡ πόλις ἡ μεγάλη, were made to open and were opened nightly as I opened mine. Somewhere in the year 2000 the thing perchance may be done. . . . A hovel with clean straw and open windows is indeed preferable to a down bed in a palace with closed ones. When I visited the Duke of Northumberland's house, in the Strand, the satin-panelled rooms were gorgeous with pictures and silken hangings, the marble stair was exquisite, but there were double casements and the air was execrable. In the dwelling of a certain nobleman

in one of the Midland counties, large rooms, with ceilings at least sixteen feet high, looked out on a grassy windswept park. But the air of those rooms, in default of ventilation, was stagnant and unbreathable utterly. I was sorry, but not surprised, when I learned that a daughter of the house, a young girl of only sixteen, had been carried off by decline. Her brother, whom I met, looked delicate. He only preserved life by fleeing from his sickly home—sickly not owing to Nature's autonomy, but through the handiwork of man.

If the air in such places is unbreathable, what must it be in the slums, in crowded schoolrooms, dormitories, and barracks?¹ A chimney-shaft and badly-fitting windows and doors cannot give anything like adequate ventilation to an otherwise closed room. Disastrous results are inevitable. Dr. MacCormac, after showing that while the deaths from pulmonary disease among those in civil life at soldiers' ages are 6·3 per thousand, the deaths from the same cause among the Foot

¹ Anyone who is not aware of the backward state of matters existing in flats would be amazed to see the dark, airless, unventilated bed-closets and bedrooms such an enlightened Town Council as that of Edinburgh permits to be hidden away in almost every building erected in the city. But the same may be said of the Town Council of every town of any size in Scotland.

Guards amount or amounted (1858), to 29·4 per thousand owing to insufficiently ventilated barracks and sleeping-rooms, goes on to say :

Thus, then, in England, the disgraceful anomaly subsists of adult men, men elected for their general vigour and robustness, dying faster than does the general population with all its vast liabilities of infancy, infirmity and disease.

Matters are very likely improved among the Guards since then ; but they must still be bad enough. Yet it is certain that if there were but properly aired living- and sleeping-places for our soldiers and sailors, so regular is their life, and so much in the open are they, and so comparatively well fed, there would never be the loss of a man in the army or the navy from consumption or any other tubercular disease. To think that relatively large barrack-rooms, schoolrooms, and dormitories obviate the necessity for free ventilation is a mistake, for such devices only put off for an hour or so all the ill-effects of smaller un-ventilated rooms. And what would be the results of open windows ?

Thus, with exercise in the open air by day, coupled with its respiration by night, ample nourishment and warm habiliments otherwise, the mor-

tality from phthisis would, I am convinced as of my life and being, prove eventually nil. . . . But what signify a few scattered instances of recovery, a warning or an admonition taken seriously to heart here or there? They are but as a drop rescued from the mighty ocean of human suffering. And yet a day will come when by the means here pointed out, for indeed there are none other, consumption and scrofula shall be haply banished from earth's surface for ever. Such are the sure results of a more wholesome rule of living, a closer adhesion to Nature's law.¹

Two years ago, while yet ignorant of the existence of MacCormac's book, I used similar language, and for doing so was called a visionary. But there is truth in every word MacCormac here uses.

Prevention is by far the surest means we can employ to make headway against consumption. Doctors have it constantly in their power to save

¹ Of all the tribes of the world those alone are exempt from consumption who, from the nature of their life, are compelled to breathe pure air constantly night and day. Although the inhabitants of the Western Highlands of Scotland and of the Hebrides are more poorly fed than the rest of our people, yet the ravages of consumption are much less among them, being in some places unknown, because their houses are, or were, as a rule, built so badly as to ensure a good ventilation.

life thus.¹ I will quote some passages in which this good man, Henry MacCormac, in his rare book, tells of what he did, and of what others might and certainly ought to do in this way :

There is, indeed, a borderland of disease where

¹ Schoolmasters can do much to teach the youth the most essential matters of health—in all conscience there is need for such teaching ; and a course of Health Lectures should form part of the training of every schoolmaster. It is the rarest of all sights to see an open window, or any adequate ventilation in our crowded, reeking schoolrooms. Children are being deprived of one of the things most necessary to make them men ; they are not being educated ; they are being stunted, not developed. Some of the brightest men I have known have developed consumption through over-studying, or over-taxing the strength in some way in their anxiety to succeed. It is a thousand pities that the parents or guardians of such boys had not been able to warn them against the avoidable dangers ahead, or that their teachers had not been less anxious about their Latin and Greek, and more anxious to instruct them how to grow to be men, so that they might have had long and honourable, if less brilliant, careers. To many a lad the brake, and not the spur, needs to be applied ; while to all it is of first importance, and far before scholarship, to be taught the highest of all arts—that of keeping the body sound. The influence for good of such a man as Dr. Hely Hutchinson Almond, Headmaster of Loretto, is incalculable and unending. Read his article, “The Breed of Man,” in the “Nineteenth Century” for October, 1900.

consumption has not actually broken out, but where it is continually imminent. Pure air is respired at intervals, yet not sufficiently respired to realise sound health. Foul air, too, is respired, yet not sufficiently respired to induce actual tangible disease. Such cases are of necessity numerous. Many spend their days, and live and die, without exactly knowing of what they ail, not feeling sick enough to complain, nor yet well enough to be well. This neutral state, however, assumes a terrible significance if we consider that it must and does precede all actual outbreaks of consumption whatsoever. The disease, if not actual, is yet imminent. Thousands of human beings throughout these islands not now labouring under consumption will, nevertheless, display the frightful symptoms of a most disastrous malady within the year. This, then, is the especial stage in which the mighty aid of medical science and medical skill may be invoked with a well-grounded expectancy of relief. In such subjects a little more confinement, a little more continuous respiration of the poisoned pre-breathed air, suffices to generate the tubercle taint with fatal celerity. Often and often may we avert, as often and often I believe I have averted, a phthisical outbreak in persons whose parents, brothers, or sisters have already fallen victims to the disease. . . . "Gott in Himmel," exclaimed a German Governess, whose window had been left open by one of my young people, "I have slept with my window open, and yet," giving herself a little

incredulous shake, "I do not think I am much the worse." Already had this young person, oftener than once, herself experienced hemoptysis (blood-spitting), as also had one sister, while a brother perished of phthisis in the airless precincts of their German home. And now these sisters, one in Germany, the other in England, sleep habitually with open windows. One has become a wife and mother, the other remains unmarried, but both enjoy uninterrupted health. . . . "The cadets of certain French houses who enter the Church are invariably," observes Baudelocque, "the only scrofulous members." Inactive habits and indoor life rob multitudes of health and energy and cast them ere their prime into the ravening trench ever yawning for the consumptive. . . . Three lads and as many girls, belonging to different families, now seem to stand before me. They slept in stairhead rooms, without open windows or renewed air. All, poor things, contracted phthisis and, after the usual alternations of suffering and decay, perished. The surviving member of these families I told to live differently; they did so, fortunately, and to this day they exist exempt from tubercle. . . . Some years since I was consulted about the children of a Mr. C. Under the ramus of each jaw of all of them, and beneath the chins of some, copious tubercular deposits, a portion of them the size of walnuts, had formed. To what extent tubercles subsisted internally I had no sufficient means of ascertaining. They lived in a beautiful and admirably situated country seat, and yet their sleep-

ing chambers were low and airless, utterly, while they were chained to lessons all day long, and most mistakenly ill-nourished in their opulent home besides. Instantly I pulled their chamber windows down, and kept them so day and night, and always. I clothed them amply and well, and sent them, gambolling with ecstasy, out for four hours daily upon the green. I carefully regulated their food. . . . So soon as the season was somewhat far advanced I packed them off to the sea strand, there to frolic up and down each day, and all day long, and when night came to sleep in chambers with the windows opened well. Ere winter again came round, the tubercles had all disappeared, and vigorous, rosy children replaced the pallid, etiolated, weedy things that formerly bore their name. They have since arrived at man and woman's estate. I see them sometimes, but, to all appearance, they and tubercle have parted company for ever.¹ . . . A retired doctor lived in a pleasant nook amid the lovely hill scenery that abounds to the south of Dublin. "My dear friend," he wrote to me to say, "all my first family perished of consumption, and now from signs and tokens with which I am only too familiar, I perceive with dismay that the dear children by my present wife, three daughters and a

¹ I have seen tuberculous children living in close rooms in a town lose their appetite, grow pale and thin, and be subject to excruciating ear-ache; and the same children living an open-air life in the country, free from pain, and developing into strong boys and girls.

son, seem as if they should incur a like fate. I am in despair, and know not well what to do. They have every comfort, nor is there under heaven a healthier spot than where we dwell." I wrote to him what I thought he ought and ought not to do, and added that, as he had often pressed me to go and see him, I should set out at once. Shortly after, in effect, I found myself in my friend's hospitable abode. "Do you send your young people out of doors?" "I do," he replied. "Have you opened their sleeping-chamber windows?" He replied, "I have." "Excuse me," I rejoined, for I knew the weakness of poor human nature, "and as I really wish to serve you, permit me to inspect your arrangements with my own eyes." "But my young people," he said, "have all retired to bed." "So much the better," I exclaimed, "I shall then know for certain." I would give the doctor no time to make preparations, but mounted the stairs out of hand along with him. The beds, in truth, were uncurtained, but the windows were opened barely half an inch. The blinds were also down and the shutters were to, while the window-curtains were drawn close. "Do you call these open windows?" I said. "You have complied, my dear doctor, in terms but not in fact. And as *de non apparentibus et de non existentibus eadem est ratio*, I must, I find, arrange matters myself." So I drew back the curtains, opened the shutters, hoisted up the blinds, and pulled down each window, the poor doctor all the while holding out a deprecating arm. . . . Finally, my friend

surrendered at discretion, and entered heartily into my views. And his family, when I saw them, enjoyed the most perfect health.

MacCormac's is the only book, medical or otherwise, I have ever read that uncompromisingly recommends open windows; yet even MacCormac does not seem to be quite sure, as I read him, of the advisability of opening windows at all seasons during the day, or of having day-draughts; but, if so, one can easily understand why, for in his day there did not exist the knowledge requisite to explain (and avoid) the seeming anomalies occurring in such a procedure.

CHAPTER IV.

BENEFITS TO BE DERIVED FROM AN OPEN-AIR
LIFE.

No ventilation without draughts—Windows should be opened even in a smoky town—No sudden changes of temperature—Resisting power of the system increased—Necessity for, and good effects of, exercise—“ Literature abhors health ”—What is best for the development of the body—Sir Philip Sydney’s recipe—The aim of preventive medicine—Mr. Arthur Shadwell’s article—An illustration—An open-air life will prevent consumption—How to open a window—The best germ killers—Illustrations of the value of fresh air during illness—What has given the victory to disease—When man will triumph—Life a blessing and not a curse.

IT is the general opinion that if a door be opposite a window that window must not be opened for fear of draughts. But it is just such a window that is best placed for being opened, as thereby a perfect renewal of the air is ensured by draughts—“ beautiful draughts ” Walther of Nordrach calls them—being caused, without which there can be no ventilation. It matters not how the room is constructed, or where the fireplace, door, and window are re-

latively situated—open the window of that room day or night. Open the windows in all the rooms of your house, and keep them open, and you will find that you have all your life been afraid of shadows. Pull up the blinds and open the windows; let in the sunlight and the pure air to ventilate and purify your filthy, air-stagnant, repulsive rooms; do not mind rain, or fog,¹ or wind; do not mind if your curtains and your carpets become sooner soiled or faded; better destroy these than your own and your children's health. You will be the better for it in every way: you will feel differently, you will think differently, and you will take a broader, kindlier, more comprehensive, less jaundiced view of life through your open windows.

But you are still undecided; you think such a course would be dangerous. It would not. If you have rheumatism, if you have chronic bronchitis, you would benefit from it. Warmly clad and well fed you and your children would get

¹ If one has to live in a town where there is much fog and smoke, one should open the windows nevertheless. It is better to breathe fog containing a sufficiency of oxygen than to breathe fog with a deficiency of oxygen and laden with germs and effete organic matter as is the case in closed rooms in such a town.

nothing but good from open windows. You would be living night and day in an atmosphere practically free from disease germs, you would have no sudden changes of temperature coming as shocks upon your system,¹ and, besides, your strength, your resisting power, would be so much increased, owing to greater functional activity and metabolic and nutritive changes, and consequent vigour, that you would be more able to withstand attacks upon your health. From open windows you would be led on to love the fresher air without, you would lose your fear of draughts and cold, and wind and rain ; you would be led out oftener to take exercise in the open, which is most essential,² and you would be surprised

¹ During the winter before last, which was of exceptional severity, I took frequent readings of the temperature in my house, and found that the temperature in the sitting-rooms during the hours of occupation did not rise, on an average, even with fires burning, more than 8° F., and that in the bed-rooms more than 2° F., above outside temperature. This was borne by us all with comparative comfort. For the sake of experiment I had kept the windows full open, but it is not necessary to open them to anything like such an extent in winter.

² Insufficient outdoor exercise and indoor, sedentary occupations, especially if in close buildings, more than any other things predispose the system to disease of all

at what a difference all this would soon make on kinds. A myriad years' enforced exercise, during man's struggle for existence, has produced a body that, to be kept healthy, must be exercised. No person can long remain in a state of health who has not an amount of exercise equivalent to, perhaps, a five or six mile walk each day, but must soon become subject to petty illnesses, brought about by imperfect assimilation of food, which in turn leads to malnutrition of the whole system, producing a state of affairs calculated to render the person liable to contract any disease with which he comes in contact. There result from sufficient outdoor exercise and pure air indoors, good appetite, good assimilation, good nutrition, good breathing, good oxygenation, good sleep, all resulting in good health. The breathing capacity of a person who is thinking intently, or deeply engrossed in work, especially if of a sedentary nature, is at such times greatly curtailed, and if such acts develop into a habit the end will be disastrous. There is needed for those who have sedentary occupations a game of golf or bowls, or a brisk walk, or some other form of out-door exercise each day, in order that the lungs may sometimes be exerted to their full extent and the whole blood of the system be thus purified.

Stevenson somewhere, in a moment of depression, or, I should rather say, in a moment of inspiration, said "Literature abhors health." I had often thought that thought, but could not have expressed it so forcibly. There could not well be anything more unnatural than poring over books; and the habit is one that may easily degenerate into a disease. The more one lives in the open, and leads an active, rational life, the less taste has one for mental intoxicants—*cacoethes legendi et scribendi*.

your health.¹ Sir Philip Sydney gives as a recipe for good health and long life :

Great temperance, open air,
Easy labour, little care.

And the old couplet has it in different words :

Fresh air, exercise, and repose,
Slam the door on the doctor's nose.

In this direction—that of preventive medicine—should medical effort chiefly be concentrated. These are the lines—open-air life, sufficient exercise, nourishment, rest, and sleep, and the avoidance of excess in work, thought, or pleasure—and the only lines, on which immunity from disease is to be acquired ; the means, and the only means, by which the system is to be made germ-proof: and when life comes to be thus lived as it ought to be lived, pathogenic bacteria will cease any longer to terrorise, and may all in time, having no “hosts” on which to batten,

¹ Organically, the body of the weakly, fatigued, dyspeptic, stay-indoors, catch-a-chill-from-the-slightest-draught person is as sound as the robustest, healthiest, outdoor worker who heeds neither damp nor cold. The only difference is that in the former case the worst possible, and in the latter the best possible, life is lived for the proper development of the body.

disappear, or for want of practice, become non-pathogenic and rise to be man's helpers—his aids to digestion, his makers of cheese, his brewers of beer !¹

A story, that might well illustrate the value of a free, open-air life, is told of a nobleman, whose children, in spite of all the care that was lavished on them, had, one after the other, as they emerged from childhood, died. The bereaved father was in despair, and looked with envious eye upon the villagers who lived outside his park gates, whose children grew up strong and healthy, while he was left without a successor to his name. At length another son was born to him ; but he could not think that this child, who, when but a few months old, was left

¹ A capital article, which will well repay reading, appeared in "The Contemporary Review" for October, 1900, on "The True Aim of Preventive Medicine," from the pen of Mr. Arthur Shadwell, who shows clearly that it would be futile to attempt to deal singly with every separate bacterium that is capable of producing disease in, or on, every individual, by protecting the system against them by a different serum injected for each ; but says that the aim of preventive medicine should be along the line of natural resistance—to increase the germ-resisting power of the individual—and is of opinion that a valuable field lies open for research in this connection.

motherless, would fare better than had all his other children. A time came soon when it was necessary for him to go abroad. Before going he confided his delicate little son to the care of a worthy village woman, with instructions that he was to be brought up with the village boys; but he scarce dared to hope that his son could ever be boisterous and healthy as they. Years passed away thus, and at last the nobleman returned to his own country. On passing through the village on the way to his mansion his attention was arrested by a group of boys playing in the street. He stopped to watch them. There had been heavy rains and water was flowing in a rivulet down the side of the street; and the boys were making a dam to hold the water. One sturdy youngster, who was directing the operations, and seemed to be the leader, was especially engaging the attention of the onlooker, when suddenly, without the least warning, part of the dam wall gave way, and the whole structure was in imminent danger of being demolished. Quick as thought the little leader rushed to the spot, and, not hesitating a moment, flung himself down in, and effectually stopped the breach until his companions were able to

repair the wall. The nobleman could not refrain from applauding this quick and daring boy, who, on inquiry, he found, of course, to be his own son.

If you live an open-air life, provided that you have ample nourishment, are not overworked, and have adequate out-door exercise, you will never fall into consumption, no matter how bad your family history may have been, or how many of your friends may have died of consumption, or how fatalistically you may have always believed yourself to be doomed: your chances of escaping every illness will be much better, and if you should unfortunately ever be taken with an infectious disease, your open-air life will stand you in good stead, and your hopes of coming safely through will be immensely increased. But you must live the life consistently, for it will not serve if you have one room in your house hot and close and with shut windows while another is open and cool. The most timorous could at first open all the windows in the house a little, and, as confidence increased, could go on opening them wider.¹

¹ As a rule I have from twelve to eighteen square feet of open window space in my bedroom, and have the bed

Mechanical comfort—the stopping short of the blowing about of papers and tablecloths—will set the limit. A window open somewhat at bottom as well as at top will give much better ventilation than if open correspondingly as much at top only. In winter it is not necessary, as I have said before, to have windows so full open as in summer, for air circulates much more rapidly then than in summer.

Two winters ago, when influenza was so rife, whole families around us being prostrated, there were, in our household of eight persons, but two isolated cases. One case was due to an evening at the theatre, and the patient was quite better again in two days, and no one else in the house took the infection. Two or three weeks later the second case, traceable to a visit to a friend's house, occurred. In this case also a day in bed (still with open windows)¹ and a day's rest afterwards put the invalid all right, and the infection ceased there. It would have

placed about eight or ten feet from the windows, while the door of the room is generally wide open also.

¹ It is slowly coming to be recognised in hospitals that abundance of fresh air and light are the best things possible in the treatment of all infectious diseases.

been just as hard to have caught influenza in the oceans of pure air in which we were living, as to have found that needle in the haystack. The best disinfectants—germ-killers—in the world are light, air, and healthy body-cells, and with ordinary cleanliness no other need be used. During a summer stay at Aberfoyle I was so fortunate as to fall in with a band of gipsies—happy people ! Having got on good terms with one of the men I walked up the valley several miles with them, learning of their ways of life. In an open spring cart were five children, plump, copper-cheeked, merry-eyed urchins, without hats or shoes. The gipsies told me that they lived in winter just as in summer, camping out in any woods or fields permissible ; that they did not mind the rain or the cold ; and I was not surprised to learn, for I asked the question in the affirmative, that they never had colds or other infectious diseases, except when they might be trading for a time about a large town, and then some of the children might catch a malady, but that, so mild were the attacks, the children had rarely to take to bed even for measles or scarlet fever. All this shows that an abundance of fresh air is inimical to germ life and points to

the probability, nay, certainty, that if we all lived open-air lives—open air in the sense of this book—infectious diseases would soon cease to exist among us. It is known, for instance, that plague in India seldom visits a well-ventilated house, and that if it does so, there being plenty of fresh air, it is of a mild type. (What are our sanitary specialists thinking of when they do not advocate open windows—pure air—as the most necessary of all sanitary precautions?) The rapidity with which wounds heal in the open as compared with the rate at which they heal in hospital illustrates this contention.

When one has had two or three weeks' experience of open windows one will not readily revert to the old order of things. I know of a family of several children who are accustomed, month about, to go on a visit to a friend who keeps open windows. As each returns home, rosy-cheeked and weighing more by eight or ten pounds, he puts to shame his white-faced brothers and sisters, who are kept indoors and out of draughts, but only in his turn to again become white-faced and listless; and yet both these houses are situated equally healthfully in the suburbs of the same city,

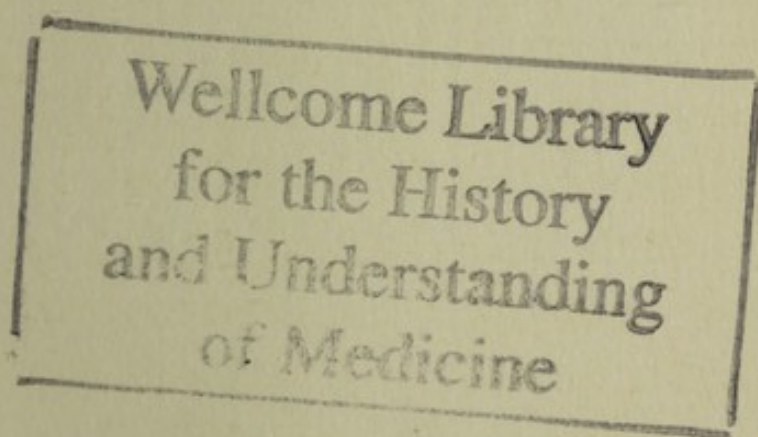
and the children in their own home lack nothing that could minister to their health but fresh air. How sweet and pure the air in an open-window house is felt to be after one has been confined in a house with closed windows.

If there be some slight discomfort at first with open windows this should be borne bravely and cheerfully—for what worth having was ever yet got without some pains?¹ I believe it was just this weakness in man that he was not noble enough, in the mass, to endure the discomfort, at times, of a life in the open, that has given the victory to disease, that has held man in bondage, and that will hold him in bondage until he lives as countless ages have been fitting him to live; until he sees why he should endure, and so endures. Consumption will be unheard of, and infectious diseases of all kinds will disappear, when man lives as man ought to live; when he ceases to crouch shivering or sweating in his filthy dens, and, flinging them open to the outer air, goes forth erect, a man, deep and full breathing, to meet and rise superior to the elements—then will the sum of human misery

¹ Exercise is Nature's first and best move against cold.

be the less by all that foul disease comprises. It is, in truth, a simple gospel of health, this to preach—the gospel of a sturdier life ; but its very simplicity has been a stumbling-block to the scientists of all ages.

If you ponder over what is here written, and apply to it your own experience, and gauge it by all you see happening around you, an ordered plan, you will find, will gradually unfold itself before you ; a plan that will explain to you many things before mysterious, and that will enable you to so order your ways that your years shall be long and useful, and life be to you a blessing and not a curse. Think it all out and you will be as wise, act upon it and you will be as happy as the writer.



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