

CHRONIC
CONSTIPATION

J. ELLIS BARKER



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THE MOST INSIDIOUS AND THE MOST DEADLY
OF DISEASES, ITS CAUSE, GRAVE CONSEQUENCES
AND NATURAL CURE

BY

J. ELLIS BARKER

Author of "Good Health and Happiness: A New Science of
Health," "Cancer: How it is Caused, How it can
be Prevented," etc.

WITH A PREFACE BY

SIR WILLIAM MILLIGAN, M.D., M.S.



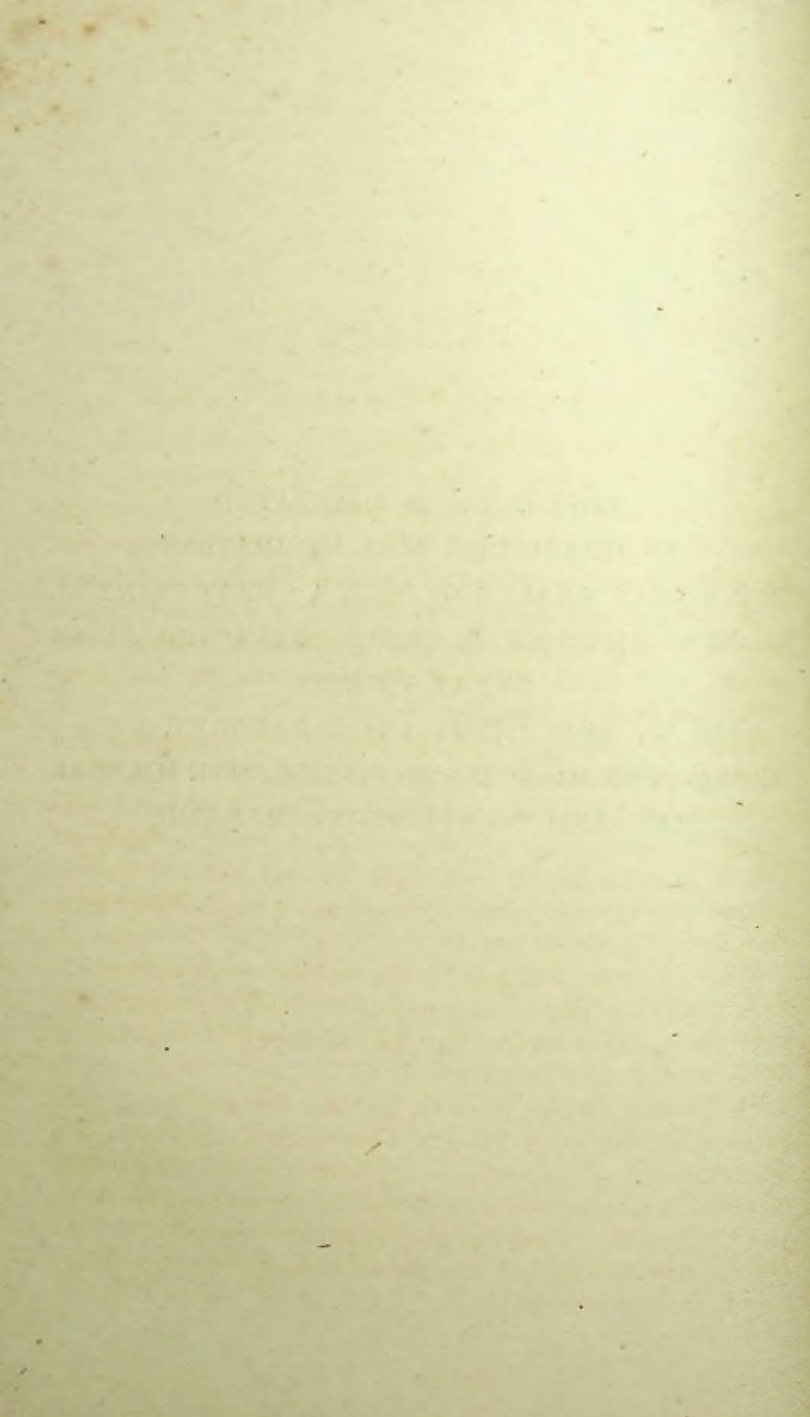
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THIS BOOK IS DEDICATED
IN GRATITUDE AND ADMIRATION
TO A GREAT HEALER OF MEN, A GREAT PIONEER,
A GREAT TEACHER, A GREAT CHARACTER, AND A
GREAT FRIEND

SIR W. ARBUTHNOT LANE, BARONET, C.B.
TO ALL OPEN-MINDED AND PROGRESSIVE MEDICAL
MEN AND TO SUFFERING MANKIND



PREFACE

BY SIR WILLIAM MILLIGAN, M.D., M.S.

MEMBERS of the medical profession and lay readers owe a deep debt of gratitude to the author of the following pages for a sound, readable and scientific volume dealing with one of the commonest and most insidious complaints to which mankind is subject.

It is no exaggeration to say that a vast amount of the ill-health of to-day is due to quite preventable causes, and that amongst those causes chronic constipation stands foremost.

The aim and object of the book is to emphasize the deleterious effects of auto-intoxication from the effete products of combustion, to demonstrate how intestinal stasis is caused by improper habits and methods of living, and to depict in simple yet unmistakable language its far-reaching consequences and disastrous results on general health.

While previous works by the author have shown his versatility and his wide grasp of medical literature, the present volume cannot fail to enhance his reputation as a writer and thinker.

Dedicated as the book is to that distinguished surgeon and Founder of the New Health Society, Sir Arbuthnot Lane, to whose untiring efforts in the cause of Health the public owe so much, the part played by the author in presenting so much valuable information should not be allowed to pass without due acknowledgment and gratitude.

The collection of valuable and apposite extracts from the writings of so many distinguished authors has been a herculean task, but a task which shows the thoroughness with which the author has attacked his thesis.

The volume is unique in its presentation of facts bearing on the injurious effects of neglect of the human drainage system, sound in the principles which it advocates, and valuable as a contribution to the proper enjoyment and maintenance of health.

The interdependence of the various organs of the body upon one another is so intimate that any neglect of one system may lead, and often does lead, to a breakdown of its intricate machinery.

In succeeding chapters the author shows with unerring precision how stagnation in the alimentary tract injuriously affects the harmonious working of other organs, how a state of general poisoning is induced and how definite organic changes from a vitiated blood supply ensue in consequence.

While collectively we insist upon our towns and cities being properly drained *pro bono publico*, as individuals we are prone to minimize the importance of maintaining our own drainage system in a state of absolute efficiency.

In terse and concise language the author depicts the consequences of neglect, demonstrates the far-reaching and untoward results of intestinal stasis, and signifies the attention which should be paid to the regular working of the *primæ viæ*.

While certain of the author's views and deductions may not obtain general assent, the broad fact remains that he has placed before the public an illuminating, timely, and masterly review of the evil and injurious effects arising from intestinal toxæmia, the outcome of prolonged and chronic constipation.

The book merits the attention and careful study of everyone interested in Health problems and in the preservation of the Race.

FOREWORD

FOR many years I had urged Sir W. Arbuthnot Lane to publish a full, popular and scientific account dealing with chronic constipation, its numerous disastrous consequences and its natural remedy. Nobody could have carried out that important and necessary task better than the creator of the doctrine of Intestinal Stasis. To my great regret Sir Arbuthnot did not fulfil my wish, but urged me to deal with the subject, and the result is the present volume.

I think I may say that I am well qualified to deal with the subject of chronic constipation owing to my acquaintance with Sir Arbuthnot and many other leading specialists, owing to my painstaking and unusually wide studies, owing to my deep interest in medical matters, and owing to my personal experiences.

Chronic constipation is indeed "the most insidious and the most deadly of diseases." It destroys the health and happiness of millions. Yet it is readily curable by natural means. I myself was a victim of chronic constipation for decades. It drove me into chronic invalidism and to the verge of insanity, as I have shown in my books, *Cancer—How it is Caused, How it can be Prevented* and *Good Health and Happiness—A New Science of Health*. I have succeeded not only in re-creating my body and brain, but have had similarly gratifying results in the case of many acquaintances and friends, whom I have taught the art of health.

Those who have suffered for decades from chronic constipation and auto-intoxication, and who have seen their condition get steadily worse notwithstanding every form of treatment, are apt to become victims of despondency and despair. I hope that this book, like its predecessors, will throw a strong ray of light upon the cause of their sufferings, give them new hope, and teach them the way to health and happiness.

By diet alone veritable miracles can be brought about. Grateful readers, among them not a few medical men, have spontaneously written to me and told me that, by following my methods, their lives have become worth living and that numerous chronic diseases from which they suffered, and which seemed incurable, have completely vanished.

Most of our diseases are due to faulty feeding, delayed excretion and consequent self-poisoning. Such troubles cannot be permanently dealt with by means of artificial remedies, however scientific. Drugs, serums, ultra-violet rays, glandular treatment, psychological treatment, and so forth, cannot restore to health those who damage their systems day after day by faulty food, delayed excretion, etc. As soon as the gravely damaged system is given the right food and as soon as the bowels have been got into working order a wonderful improvement takes place and chronic sufferers are brought back to health and strength. Rheumatism, gout, arterio-sclerosis, tuberculosis, diabetes, eczema, nerve diseases, etc., respond readily to right food and a normally working bowel.

Of course discretion must be used by sufferers. No two people are alike. There is no perfect diet suitable for all. Every case has to be treated on its merits with due caution. Experimentation in curative dietetics by the seriously sick is as inadvisable as self-drugging.

J. ELLIS BARKER.

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CHAPTER I

Introduction

For the intelligent practice of medicine and the understanding of disease the simplification of medicine is necessary.

The detection of a microbe which provokes the ill-health throws no light upon the conditions which made the man ill and which may lead to death.—SIR JAMES MACKENZIE, *Diseases of the Heart*.

IN the bulky medical textbooks issued for the use of doctors, constipation is as a rule discussed on only a page or two. That trouble is so universal that it is considered trivial, commonplace and “uninteresting.” Yet constipation, or rather bowel stagnation—looseness of stools and even diarrhoea often occur in utterly torpid and diseased bowels—is one of the most dangerous and one of the most deadly of diseases, especially in its chronic form. It is quite safe to assert that chronic bowel stagnation inflicts upon mankind vastly more misery, suffering and deaths than any of the great dramatic “killing diseases,” such as cancer, tuberculosis, heart disease, etc., which are largely caused by that trouble.

While the majority of medical men, in accordance with the teaching they have received, consider chronic constipation as a trifle which can easily be treated with the usual pills, salts, enemata, etc., the masses of the people take a far more serious view of that complaint. Most men and women instinctively feel that chronic bowel trouble is the source of innumerable

grave and dangerous developments. They worry seriously about it and anxiously try to overcome that complaint, and the manufacturers of proprietary medicines eagerly cater for that widespread and acute want. *The attitude of the average doctor is wrong and the instinct of the people is sound and right.* The writers of the medical textbooks are much to blame for disdaining to treat chronic bowel stagnation with seriousness and at adequate length.

Chronic constipation is not only one of the most depressing, distressing and tormenting, but also one of the most deadly, of maladies. Like many other serious chronic maladies, among them cancer, tuberculosis, heart disease, etc., it causes little or no discomfort at first. It comes like a thief in the night. However, the greatest conflagrations are often brought about by an unconsidered spark which could easily have been quenched at the beginning.

Chronic bowel stagnation affects us in a threefold manner. In the first place, it weakens the body as a whole, undermines its power of resistance against every infection and every disease, and thus opens the way for numerous maladies which rather attack the chronically constipated than those who are possessed of healthy, normally functioning bowels. In the second place, chronic bowel stagnation, by weakening the body as a whole, aggravates every complaint, disorder or disease from which we may happen to suffer. Last, but not least, chronic stagnation of the bowels leads to auto-intoxication, to self-poisoning of the system, and to the degeneration of the bowel and of the whole of the alimentary tract and its connections from the mouth to the exit. Where constipation is universal, pyorrhœa and dental decay, tonsillitis, adenoids, catarrhs of the nose and throat, indigestion, ulcers of the stomach and of the duodenum, appendicitis, colitis, gall-stones, diseases of the liver and kidneys, hæmorrhoids, fistula and pruritus of the anus

and cancer of the stomach and bowel are also universal.

The poisoning of the system consequent upon chronic stagnation of the bowel leads of course not only to the grave degeneration of the entire alimentary canal and its connected organs. The body does not consist of a number of isolated organs. Hence degeneration of the digestive tract leads to similar degeneration of the whole body, of all its organs and structures, and to the decline of all its functions. Muscles, bones, skin and hair, teeth, organs, nerves and brain are nourished and kept wholesome by the blood. The old Bible tells us truly that "the blood is the life." Those who suffer from chronic bowel stagnation and consequent auto-intoxication show that their blood is impoverished and degraded by their pale, yellowish, greyish and unhealthy skin and complexion. Scientific analysis of the blood of the chronically constipated shows that it is either deficient in red blood corpuscles, or that the red blood corpuscles are deficient in iron, or that there is a deficiency of both at the same time.

The soundness of the teeth depends on that of their daily blood supply wherewith they are nourished. The soundness of the heart depends, according to the teachings of the highest authorities, principally on the quality of the blood which nourishes the heart muscles and valves. The functioning of our eyes and ears is largely dependent upon the quality of the blood whereby these organs are fed day by day. The health of our nerves and brain, of our muscles and bones, of our hair and nails, etc., is determined by the quality of the blood, which either strengthens or poisons them. We can, therefore, not wonder that chronic constipation leads to innumerable disorders, diseases and defects, among them heart disease, neurasthenia and other nerve diseases, melancholia, epilepsy, many forms of insanity, degeneration of

eyesight and hearing, the peculiar diseases of women, infertility in both sexes, diabetes, arterio-sclerosis, the rheumatic diseases, falling off of the hair, degeneration of the nails, various skin diseases and other defects and diseases too numerous to mention.

Medical teaching is incredibly faulty and defective. In the ponderous recognized textbooks every disease is solemnly treated as a separate entity. The causation of every one of the innumerable diseases described is as a rule attributed more or less vaguely to a germ, to an infection, to the faulty working of a gland or organ, or to some other ostensible cause. In reality most so-called diseases are not diseases at all. They are merely symptoms, and the vast majority of our diseases can be traced back to faulty food, defective excretion, etc. Not very long ago dropsy, the collection of fluid in a cavity of the body or in its tissues, was solemnly described as a separate "disease." Then it was discovered that Bright's disease of the kidneys led to dropsy, that dropsy is merely a symptom and consequence of kidney disease. Now Bright's disease is not caused spontaneously. It is not due to "a germ." It also is merely a symptom, for it can be produced in animals, and in men as well, by feeding them on irritating foodstuffs which are dealt with by the kidneys and which in course of time cause their degeneration and their complete breakdown, causing Bright's disease.

Medical men, by breaking up the body into the parts composing it and describing separately the functions and diseases of every portion or organ and by rigorously dividing the art of medicine into innumerable water-tight compartments, have destroyed the true science of health preservation and of disease prevention. The body is not a fortuitous collection of organs and structures, each liable to some special disease or diseases, but a single entity. The sufferings of almost any single part affect the body as a whole. Sir James

Mackenzie wisely wrote on page 40 of his book, *The Future of Medicine*, published in 1919 :—

The effects of disease, on its invasion of the human body, are seldom limited to one structure or organ. There is thus produced a series of phenomena of great variety, the variations depending upon the peculiar reaction of the different organs and tissues affected. Not only is a series of phenomena produced in this way, but the functional disturbance of one organ reacts on the function of all the other organs, so that from a simple cause we may get a bewildering variety of symptoms.

At first sight it may seem absurd and extravagant to attribute diseases innumerable to chronic bowel stagnation. However, the proof that that widespread complaint leads indeed to countless diseases will be furnished in this book by the production of ample, nay, overwhelming, evidence of the highest authority. Meanwhile I would impress upon the readers of these pages the fact that the part played by the microbe in the production of disease has been grossly exaggerated by the laboratory men and their uncritical medical disciples. The micro-organisms of disease are universal, but disease is not universal. Our bodies were made to resist disease germs, and the healthy body usually resists them successfully. Disease, therefore, is caused in reality, not so much by certain micro-organisms identified by the bacteriologist with microscope and culture tube, as by the weakening of our tissues and organs consequent upon our faulty methods of living. Unfortunately the laboratory has swallowed up the medical man, the art and science of medicine and medical experience, logic and common sense. That eminent scientific researcher and physician, Sir James Mackenzie, wrote despairingly in his great book, *Diseases of the Heart*, Edition of 1925, on pages 2, 3, 12 and 69 :—

To obtain a knowledge of disease, the circumstances

which favour or induce its onset, the earliest symptoms of its presence, the modification of these symptoms as it progresses, with all the variations which occur till its termination in death or recovery, must be studied. It is manifestly impossible to combat disease effectively without this kind of knowledge, and it can be obtained only by those who have the opportunity of watching individual patients through the course of an illness. It is manifest that this is beyond the range of the so-called "scientific departments."

Notwithstanding the widespread interest taken in medical research and the enormous amount of labour spent upon it, the most obvious of all problems, whose solution is necessary for the rational practice of medicine, remains practically untouched.

Notwithstanding the great number of people engaged in research and the energy with which it is pursued, the phenomena of disease are still so little known that the need for a better concept to guide research becomes urgent.

For the intelligent practice of medicine and the understanding of disease the simplification of medicine is necessary. So long as medicine requires an increasing number of specialists to interpret the phenomena of disease it may be taken for granted that the subject, though becoming ever more and more complex, is not necessarily making progress.

The detection of a microbe which provokes the ill-health throws no light upon the conditions which made the man ill and which may lead to death.

If there is any department of medicine whose progress is hampered more than another by the lack of a proper conception of vital activity, that department is therapeutics (remedial treatment). The taunt that has been so long levelled against the doctor is as true to-day as when it was first uttered, that he gives drugs whose actions he does not understand for conditions of which he is ignorant. There is every prospect of the state implied in this taunt continuing so long as the attitude towards medicine which is dominant to-day persists.

In his book, *The Future of Medicine*, 1919, Sir James Mackenzie bitterly complained on page 3:—

For the study of disease after the patient has died, we find institutions magnificently equipped, presided over by men of great experience and training; for patients suffering from the advanced stages of disease, we have great hospitals, with staffs of skilled physicians, surgeons and specialists. While men undergo a long and special training to enable them to recognize the appearance of disease after the patient has died, and other men undergo equally careful training to enable them to recognize disease after it has damaged the tissues, *few or no attempts are made to train men for the detection of the disease when there is a hope of cure.*

The laboratory men are discovering every year new "diseases" and are splitting up existing diseases into numerous carefully differentiated sub-divisions. Each disease and sub-disease, being considered a separate entity with a separate microbic or other causation, requires, according to them, highly specialized scientific investigation in order to make a correct diagnosis and equally highly specialized, scientific, separate treatment with the most modern drugs, serums and so forth. The result has been that not only the layman, but even the medical practitioner, is utterly confused and bewildered by an ever-increasing over-elaboration and over-specialization.

Unfortunately the vast majority of medical men have become enslaved by the laboratory superstition. A veritable laboratoromania has taken hold of the medical profession. The majority of modern doctors are rather laboratory men than healers of the human sick. The most obvious factors in the causation of disease which the old doctors knew so well are disregarded and disdained and are therefore no longer recognized. The plain human knowledge of plain human disease is rapidly disappearing. The old-fashioned doctor could tell with his eyes and nose whether a man was drunk or a woman anæmic. We are now bidden by the ultra-scientific laboratory

doctors to make "scientific" tests of drunkenness by analysing the blood, the urine and the cerebro-spinal fluid for alcohol; and anæmic girls, instead of being treated straightforwardly, have to await half a dozen elaborate and costly laboratory tests before a commonplace remedy is applied to a commonplace complaint. In view of their infatuation of complicated laboratory methods, we cannot wonder that Sir Arbuthnot Lane raised a storm among the laboratory specialists and among the laboratory-trained doctors when he proclaimed his belief that the vast majority of diseases of civilization are caused, or aggravated, by the fundamental disease of civilization, by bowel stagnation, by what he calls Chronic Intestinal Stasis.

Old-established professions and organizations are extraordinarily conservative. They cling tenaciously to the past and oppose with reactionary obstinacy new ideas, however beneficial, fruitful, true and obvious. The Church, the Law and Medicine are equally hostile to the innovator, to the independent thinker, to the progressive. The medical profession is particularly hostile to the non-medical discoverers, although nearly all the greatest medical discoveries throughout the ages were made not by doctors but by observant outsiders. However, it is almost as strongly opposed to striking discoveries made by distinguished medical men.

In 1546 Girolamo Fracastoro of Verona, a poet and student of all the sciences, published in Venice an important medical work which contained the first account of the true nature of contagion or infection by disease organisms and of the way by which infectious diseases are transmitted. He called the organisms causing disease *seminaria contagionum*, described these particles as being too small to be seen, and explained in detail the causation of disease by what is now called microbiology. A century later Athanasius Kircher, a mathematician and philosopher, demonstrated the presence of "minute living worms" in putrid meat,

milk, etc. In 1683 Antonius van Leeuwenhoek, a Dutch naturalist and maker of lenses, communicated to the English Royal Society the fact that he had found in water, saliva, dental tartar, etc., "animalculæ" of rod-like and spiral form, which moved about. In 1786 O. F. Müller, a Danish zoologist, classified the micro-organisms of disease under the terms of bacillus, lineola, spirillum, etc. During all these years the medical profession had disregarded the wonderful microbic discoveries made by non-medical men as to the causation of disease, and when, between 1840 and 1860, Pasteur, a chemist, demonstrated by the most convincing practical experiments made on animals the microbic cause of many diseases, he was overwhelmed with ridicule by the medical profession and was bidden to stick to his stink-pots. Lord Lister, who was open-minded enough to apply Pasteur's discoveries to surgery and who saved more lives than were destroyed in the Great War by developing antiseptics, making operations safe, had also to fight against the short-sighted malignity of medical reactionaries for many years.

Galileo, an astronomer, in 1585 first counted the pulse. He also was the first to measure the temperature of the body by a primitive thermometer. Both these fundamental discoveries were disregarded by the medical profession during more than two centuries. The clinical thermometer was introduced by Wunderlich only about 1870.

The medical profession treated with contempt for many years the ophthalmoscope, which is indispensable for the medical examination of the eye, and which was invented by Babbage, a mathematician. It treated as a ridiculous toy the laryngoscope, which is equally indispensable for the medical examination and treatment of the throat, which was invented by Manuel de Garcia, a singing master. When Laennec, a doctor, had invented the stethoscope, reactionary medical

men called that indispensable instrument useless rubbish.

The medical profession as a whole opposed for years the use of antiseptics, of anæsthesia, of disinfectants and even the use of common cleanliness. Puerperal fever killed in the past an enormous number of women in childbirth at public institutions, largely because physicians inserted their dirty hands into the lacerated insides of women in labour. Medical students, coming straight from the mortuary and the dissecting room, where they had handled putrid corpses, were allowed to do likewise. Between October, 1841, and May, 1843, of 5,139 parturient women in the maternity department where Semmelweiss was employed, 829 died, giving the terrible death rate of 16 per cent, not counting those of patients transferred to other wards. Mothers would often die in rows, while in other rows of beds no puerperal deaths occurred. Young Semmelweiss soon discovered that these unfortunate women were killed by medical dirt. Startled by the fact that puerperal fever was "epidemic" in hospitals and public institutions, and little prevalent elsewhere, he clearly proved in 1847 how this disease was caused and he was hounded out of Vienna two years later by the irate reactionary doctors whom he had ventured to blame. He died broken-hearted and poor in a lunatic asylum, driven mad by his medical enemies, in 1865, when only 47 years old, but a monument was erected to him 41 years later. Pioneers in medicine and surgery have only too often been not only martyrs of science but also martyrs of the profession.

In the past, scurvy was one of the most terrible diseases afflicting sailors on long voyages. It often killed or incapacitated half and more of the men on board. Ronssius had shown in 1564 that lemon juice was a sure preventive of the disease. Sir Richard Hawkins had used with the greatest success lemon juice

against scurvy in 1593 and Commodore James Lancaster had done likewise in 1600. It was recommended against scurvy in John Woodall's *Surgeon's Mate* in 1636. Nevertheless the doctors stubbornly disregarded this simple and most efficient remedy for centuries, and opposed the agitation of Dr. James Lind, who proved in 1754, once more in a special volume, that scurvy was easily preventable with lemon juice and fresh vegetables. Only in 1795 lemon juice was introduced in the British Navy, and the dreaded scourge disappeared as if by magic. Medical obscurantism had kept alive avoidable scurvy for centuries.

Many similar examples of stubborn resistance to new and sound ideas on the part of the medical profession might easily be given. We can, therefore, not wonder that the great majority of medical men have during twenty-five years disregarded and opposed the teaching and demonstration of Sir Arbuthnot Lane that innumerable diseases are directly caused by auto-intoxication following upon chronic bowel stagnation, and that practically all diseases are greatly aggravated by the torpidity of the excretory system whereby the body as a whole is depreciated and deteriorated.

Medical resistance to progress is as ancient as history. In the treatise *The Art*, which forms part of the collection of the works of Hippocrates, and which was written twenty-three centuries ago, we read :—

It is the ambition and proud privilege of the intelligent physician to discover medical facts which were hitherto unknown, and thus to enlarge the medical knowledge already existing. However, there are medical men who are always eager to put these pioneers to shame by abusing them and depreciating their discoveries, although they themselves have discovered nothing and have added nothing to medical knowledge. Such action seems to me to be due to both lack of medical understanding and to an inborn evil disposition. Such men show their malevolence by disparaging the medical discoveries of those

whom they envy and by cavilling at the mistakes which are necessarily made by the great pioneers of medical science and art.

The laboratory workers who concentrate their entire attention upon microscopic investigation, chemical and biological tests, etc., have demanded full proof of Sir Arbuthnot Lane's views. They have demanded that they should be shown the chemical substances or organisms which arise in the stagnant bowel, the method of progress of these substances or organisms throughout the body, their eventual action upon the various tissues and organs, and their final existence in the diseased parts or organs. Exact scientific proof cannot always be given in the case of organic bodily processes which are beyond the ken of the scientists, partly because of the limitation of our understanding, partly because of the insufficiency of our very imperfect scientific instruments and methods. In the past smallpox was far more deadly than cancer is now. Medical science cures smallpox by means of vaccination. This is one of the greatest triumphs of the healing art. However, notwithstanding the most industrious research by innumerable scientists, the microbic factor responsible for smallpox has not yet been discovered. Vaccination is currently used to-day, and vaccination and inoculation have been used against that disease by the Hindus and Chinese for thousands of years. Wise observation by men of vision and common sense has proved far more potent in this case than reliance on fallible and ineffective scientific instruments and on the mechanical procedure of the laboratory. Laboratory men have obviously forgotten the old fundamental principle of human healing that "THE WHOLE ART OF MEDICINE LIES IN OBSERVATION."

Although we are told every day by men possessed of the laboratory mind that only by laboratory research we can hope to vanquish cancer, influenza and many other diseases, it must be stated with emphasis that

all the greatest medical discoveries were not made by scientific researchers but by observant, plain men in the distant past who possessed to a high degree the power of observation which is vastly more precious than all the intricate machinery of the modern laboratory. Thousands of years ago Chinese, Hindus and other primitive races discovered that many transmittable diseases, among them smallpox, could be staved off, or cured, by inoculation and vaccination. Primitive savages, not Pasteur and his followers, evolved serum treatment. Primitive savages discovered quinine, the great specific against malaria; chaulmoogra oil, the great specific against leprosy; quicksilver, the great specific against syphilis, which has been used since the earliest ages; cocaine and many other of our most valuable drugs. The ancient Egyptians and Hindus protected themselves against the malaria mosquito with mosquito netting; tuberculosis was treated most scientifically by the ancient Greeks and Romans by fresh air, sunlight and a milk diet. All savages practise psycho-pathology. The laboratory men have merely confirmed the wonderful discoveries of observant men who had no instruments of precision but had common sense, observation, industry and brain power. Half a century ago laboratory men discovered the microbic cause of tuberculosis, but they have not been able to improve upon the prehistoric treatment of this disease. The brain is more powerful than the microscope and the test tube. Genius requires few tools.

Sir Arbuthnot Lane is not a laboratory man, but a true "physician," which word signifies a student of nature. He is an observer whose vast practical experience has convinced him that chronic bowel stagnation leads to chronic poisoning of the whole body. That fact, which is obvious to every intelligent man or woman who suffers from chronic stagnation of the bowels, is still disregarded by a great many so-

called scientists and specialists who call for the elaborate scientific demonstration of the obvious. One might as well refuse to employ vaccination against smallpox because the actual smallpox germ, which undoubtedly exists, has not yet been discovered. Professor Anthony Bassler, one of the leading authorities on abdominal disease in America, wrote on page 147 of his book, *Diseases of the Intestines and Lower Alimentary Tract*, published in 1920, referring to these short-sighted and narrow-minded "scientific" sceptics and formalists :—

It serves no purpose to say that because certain toxic bodies are not recoverable from the urine or elsewhere that no such condition as intestinal toxæmia exists. All around us there are instances of people who for many years have conditions that can only be due to disorders of this kind. These individuals are immutable facts.

There are many persons in medicine who because they do not understand a certain subject, directly make the statement that no such subject exists. Clinical (bedside) facts, however, are immutable facts, and if the subject is approached with an open mind and largely from the clinical standpoint, one cannot but arrive at the conclusion that these states are a *bona fide* disorder of mankind and most common.

The late Sir William Osler wrote with excellent common sense :—

The best teaching is that taught by the patient himself. The whole art of medicine is in observation, as the old motto goes, but to educate the eye to see, the ear to hear, and the finger to feel takes time, and to make a beginning, to start a man on the right path, is all that we can do. We expect too much of the student and we try to teach him too much.

Early in December, 1926, Dr. Victor Pauchet, the eminent French surgeon, whom I had asked to send me material for the present book, spontaneously told me in a letter :—

I would like to repeat what I have said so often in the past. Constipation, chronic intestinal stasis, is *the disease of diseases*. Like syphilis, it causes the degeneration of the entire body and opens the way to chronic diseases of every kind. Chronic bowel stagnation has a far-reaching influence in the causation of tuberculosis, of cancer, of arterio-sclerosis, of premature old age. The development of disease is favoured by the damage which bowel stagnation causes among the ductless glands, which break down, and through the depreciation of the nervous system, and glands and nerves react upon each other.

In my opinion Sir Arbuthnot Lane has been the greatest surgical genius England has produced. His ideas will influence all future generations. Many physicians and surgeons have criticized Lane's methods because they have failed to understand that surgical treatment of intestinal stasis is only one of the methods of dealing with it, that the evil has to be fought not only by the surgeon's knife, but also by medication, diet, exercise, glandular treatment, etc., in accordance with the requirements of the case.

Another eminent Frenchman, Professor E. Mériel, wrote on page 59 of his book, *Affections Chirurgicales du Gros Intestin*, Paris, 1924 :—

Sir Arbuthnot Lane of London has the merit of having attracted attention vigorously and authoritatively to intractable constipation, to chronic intestinal stasis. His theories of causation, his teaching in numerous publications—between 1901 and 1914 he has issued forty books, pamphlets, etc.—and his brilliant operations, have made him the creator of a doctrine, the inspirer of a multitude of followers and the pacemakers to all succeeding researchers.

Sir Arbuthnot Lane has been great in surgery, but perhaps still greater in practical preventive medicine. Doctor Rudolph Matas, the President of the American College of Surgeons, stated in the important periodical, *Surgery, Gynecology and Obstetrics* of February, 1926 :—

Lane gave us a metallic plate and the mechanical imple-

ments which, modified in many ways, have been instrumental in transforming the old methods of bone-setting into a finished osteoplastic art. He gave a new outlook on the treatment of fractures, and created a veritable renaissance in the history of the traumatology (injuries) of the skeleton. He taught us new methods by which to overcome many hitherto insuperable difficulties in the cure of cleft palate. He taught us how to save lives that would otherwise have been lost from the migration of acute ear infections by the timely ligation and excision of the jugular vein. He taught us the secrets of a new technique, based upon a mastery of anatomical detail, which made the extirpation of the entire colon a feasible and legitimate operation.

He gave us a new view of the mechanism and effects of chronic intestinal stasis, and, in doing this, he pointed to hitherto undescribed anatomical anomalies and pathological membranes which retarded the faecal (excremental) circulation, now familiar to us as Lane's kinks; but, more than this, he created a new clinical picture of chronic intestinal toxæmia (poisoning), which is now known as Lane's disease.

Many similar opinions by the highest British and foreign authorities could easily be given.

Sir Arbuthnot Lane incurred the disapproval of the laboratory-trained, laboratory-dominated and laboratory-ridden profession by using common sense and observation instead of the latest laboratory methods. Moreover, like all the greatest medical pioneers of the past, he never quoted "authorities" in his numerous writings, but described his own discoveries and drew the conclusion to which they obviously pointed. In the writings of all the greatest medical men, from Hippocrates to John Hunter, Thomas Sydenham, Lord Lister, and Sir James Mackenzie, no pseudo-scientific references to "literature" are given. Lane is not a great reader. He has studied only two books, but has studied them thoroughly: the Book of Nature and the Book of Experience. Great men are not compilers

but originators. Lane's omission to quote "authorities" in support of his very original views offended no doubt small-minded and visionless medical writers and journalists.

Unfortunately short-sighted medical men and the equally short-sighted public prefer sensational extravagance and crankiness dressed in a pseudo-scientific laboratory garb to plain common sense. When Metchnikoff, Pasteur's successor, proclaimed that the big bowel was not merely useless, but a dangerous encumbrance which should be cut out as a routine measure at the earliest opportunity, he startled the world, but his opinion was widely accepted because he was a laboratory man without any practical experience of surgery and medicine. At St. Mary's Hospital his assistant, Doctor Distaso, actually stated:—

Every child should have its large intestine and its appendix surgically removed when two or three years of age. My experiments have proved that we would all of us be better off without a large lower intestine, which is nothing more or less than an ideal breeding place for disease germs. Almost every chronic disease may be traced back to the harmful action of these germs. Chronic heart disease, arterio-sclerosis and many kinds of headaches are examples.

Although Arbuthnot Lane is one of the ablest men of his time in abdominal surgery, and although he shares Metchnikoff's opinion that almost every chronic disease may be traced back to the harmful action of germs bred in the big bowel, he is in favour of cutting out the colon only in case of the utmost necessity, when that operation is needed to save life in immediate danger. Otherwise he favours dietetic and other gentle means. He is too wise a surgeon and physician to condemn, and try to improve upon, the wonderful work of Providence.

Dramatic surgery, like bacteriology and glandular

treatment, has been grossly overdone. That eminent physician and surgeon, Sir James Crichton-Browne, wrote with biting irony on page 9 of his book, *The Prevention of Senility* :—

It is astonishing, when one comes to think of it, with how many superfluities we are burdened, or have burdened ourselves.

The appendix is, of course, a useless redundancy, of which we should be relieved. The tonsils are of doubtful utility, and are better away. The thymus-gland and the spleen can be removed from guinea-pigs without detriment, and the inference is that they are padding which may be laid aside by human beings with impunity, if not with advantage. No one is a ha'p'orth the worse for losing his gall-bladder, a receptacle for mischievous pebbles. The whole large intestine is a dangerous encumbrance, and Metchnikoff looks forward to the time when, in the progress of surgery, its extirpation by operation will be a normal and routine proceeding. . . .

Short-sighted pseudo-scientists blame the handiwork of the Creator for the faults of man. The great anatomist and biologist, Sir Arthur Keith, stated in a Discussion on Alimentary Toxæmia at the Royal Society of Medicine in 1913, referring to the big bowel :—

It is hard to believe that a great structure which has served that long chain of ancestors, carrying man's lineage through the secondary and tertiary periods of the earth's formation and assisting man to become the dominant and universal species of the world, should suddenly fail him. We seem drawn to the conclusion that it is not the organization of the great intestine that has failed, but that our modern dietary sets it a task for which it is not adapted. In civilized modern communities the great bowel has to manipulate a dietary such as was never before prescribed to it at any stage of its long evolutionary history. If an engine runs unsatisfactorily it may not be from a fault in its mechanism, but from a defect in the fuel. Those

who regard the great bowel as a useless structure blame the engine. For my part I stand by those who blame the fuel.

Men possessed of the narrow laboratory mind readily attribute disease to a laboratory cause and recommend, for dealing with it, a laboratory-made remedy, a theoretical or "scientific" remedy, such as a surgical operation, a serum, a glandular extract, or a powerful chemical. However, methods which have stood the laboratory tests may prove utter and horrible failures if applied to the human body, of which we know so little. The vast majority of our diseases are not caused by hostile influences which "attack" us and which we have to "fight" with hostile microbes, potent drugs, etc. Most of our sufferings are due to our weakness, our short-sightedness, our foolishness, our self-indulgence, etc. Sir George Newman wisely wrote, on page 221 of his Report *On the State of the Public Health*, 1926 :—

Disease is not an external agency apart from the human body, awaiting an unguarded moment on our part and then stepping in to slay us. It is the reaction of the human body to irregularities of its whole environment, including various forms of infection. Disease is a process. If by sound nutrition and healthy living we can fortify the body against infection we prevent, in some degree, the occurrence of tuberculosis and other infective processes.

Chronic intestinal stasis, chronic bowel stagnation, is due to our faulty habits and methods of living. It can be prevented by better methods and habits and it can as a rule be cured without powerful medicines and without drastic surgery. That will be shown abundantly in the course of this book. An old, experienced country doctor, William Buchan, wrote as long ago as 1797 in a book which was significantly entitled *Domestic Medicine—A Treatise on the Prevention and Cure of Diseases* :—

Every intention in the cure of many diseases may be answered by diet alone. Its effects, indeed, are not always so quick as those of medicine, but they are generally more lasting; besides, it is neither so disagreeable to the patient, nor so dangerous as medicine, and is always more easily obtained.

As many of the indications of cure may be answered by diet alone, it is always the first thing to be attended to in the treatment of disease. Those who know no better imagine that everything which goes by the name of a medicine possesses some wonderful power or secret charm, and think, if the patient swallows enough of drugs that he must do well. This mistake has many ill consequences; it makes people trust to drugs, and neglect their own endeavours; besides, it discourages all attempts to relieve the sick where medicines cannot be obtained.

Medicines are no doubt useful in their places; and, when administered with prudence, they may do much good; but when they are put in place of everything else, or administered at random, which is not seldom the case, they must do mischief. We would therefore wish to call the attention of mankind from the pursuit of secret medicines, to such things as they are acquainted with. The proper regulation of these may often do much good, and there is little danger of their ever doing hurt.

Similarly Professor C. E. Bock, of Leipzig University, wrote in his *Buch vom Gesunden und vom Kranken Menschen*, 1910:—

The principal maxims regarding diseases are the following: It is easier to prevent diseases than to cure them. In the vast majority of cases of disease the cure is due not to medical art, but to the curative action of Nature. The curative action of Nature may be assisted by a suitable diet. By far the greatest number of diseases can be cured without the doctor and without the chemist by sensible dietetic treatment. However, it is easier to write a prescription than to devise a suitable diet.

As for thousands of years the identical diseases have been cured by the most varied forms of treatment, both with drugs and without drugs, by medical men and by

non-medical men, and as many diseases are cured spontaneously without physic and without a physician, it follows that cure is dependent on something different than orthodox medicaments, lay treatments of every kind, secret remedies, and other hocus-pocus. More than two thousand years ago Hippocrates proclaimed the great truth that "Nature is the Curer of Diseases."

CHAPTER II

A Glance into the Past

Bodies not properly cleansed, the more you nourish them the more you injure them.

Diseases which arise from repletion are cured by depletion.

Persons in good health quickly lose their strength by taking purgative medicines or by using bad food.—HIPPOCRATES, *Aphorisms*.

“**G**REAT was the wisdom of the ancients.”—Let us not disdain the accumulated experience of countless generations which came before us.

The most primitive races existing at present live for all practical purposes in the Early Stone Age. Central African negroes, Australian aborigines and Eskimos, who do not know the use of metals, etc., represent, according to the highest ethnological authorities, those conditions of life and of civilization which prevailed in Europe twenty thousand years or more ago. These primitive races which, rightly considered, are prehistoric survivals, have their medicine men and their primitive methods of curing disease by incantation, which means faith cure, by psychological treatment, to use a fashionable expression, primitive drugs, diet, massage, baths, sunlight treatment, surgical operations, and so forth. All these primitive races pay the greatest attention to their bowels. Their dances are often not merely religious or social events and ceremonies. They are at the same time hygienic measures for the prevention or cure of constipation.

Among these primitive races the dance does not consist of graceful, rhythmical movements of the legs as among ourselves, but principally of vigorous abdominal movements, of a kind of *danse du ventre*, which has a most potent influence in stimulating peristaltic activity.

The Egyptians are the oldest nation of which we know. According to Herodotus, the Father of History, they possessed a very perfect medical organization. Their civilization was so far advanced that they had medical specialists for every disease and for every organ. Like the primitive races, they paid the greatest attention to their bowels. Herodotus tells us that the Egyptians observed a monthly course of purgation, that they freely used purgatives, laxatives and enemas, and that in consequence they were the healthiest of men.

Hippocrates, the Father of Medicine, left a special treatise *On Purgative Medicines*, which possibly was not written by himself but by some other authority of his time, and which contains very interesting practical directions and suggestions. In another treatise of his *On the Administration of Hellebore*, that favourite purgative of the ancient Greeks is dealt with. In his undoubtedly authentic Aphorisms, which were meant to be learnt by heart by medical men, we read :—

Use purgative medicines sparingly in acute diseases and at the commencement, and act with proper circumspection.

If the matter which is to be purged is such as should be purged, the evacuation is beneficial and is easily borne. If matters are otherwise, purgation is borne with difficulty.

Persons in good health quickly lose their strength by taking purgative medicines or by using bad food.

Purgative medicines agree ill with persons in good health.

When the menstrual discharge is of a bad colour and irregular it indicates that the woman stands in need of a purging.

Medicinal evacuations, if carried to an extreme, are dangerous.

When things are at the crisis or when the crisis has just been passed, neither move the bowels nor make any innovation in treatment, either as regards purgatives or stimulants, but let things alone.

The evacuations are to be judged of not by their quantity but whether they be such as they should be and how they are borne.

Lack of appetite, heartburn, vertigo and a bitter taste in the mouth in a person that is free from fever indicate the need of purgation.

In his treatise *On Diseases*, Hippocrates makes the following statement:—

The excrement is best which is soft and consistent, is passed at the hour which was customary to the patient when in health and in quantity proportionate to the food eaten; for when the passages are such, the lower belly is in a healthy state. . . . But in proportion to the food consumed the patient should have an evacuation twice or thrice in the day, once at night and more copiously during the morning, as is customary with a person in health.

The writings of Hippocrates contain many other interesting and important references to the necessity of avoiding constipation and of promoting the healthy natural activity of the bowels. It is worth noting that he drew attention to the stimulating effect of wholemeal bread. However, it would lead too far to give further extracts in this place.

Celsus, a Greek physician and surgeon, who lived in Rome about the time of Christ, wrote an exceedingly important book on health and disease, of which there is unfortunately no satisfactory English translation. He summarized the best medical knowledge of his time, and once more we find that great prominence is given to bowel conditions. Chapter XII, Book II, is headed "Purgation by Medical Means." Celsus states in it the noteworthy fact that "the physicians of the past emptied the bowel by various medicaments in

practically all cases of disease." However, he points out, as did his master, Hippocrates, that "the body is weakened by too frequent or too drastic purgation." Under the heading "On Enemas" we read :—

In most cases the bowel must be emptied with enemas. Their rare use, in accordance with the teachings of Asclepiades, seems best. They should not be given frequently but only once, or at most twice. They should be given when the patient's head seems heavy to him, when he sees black spots before the eyes, when he has trouble with his bowel, or has pain in the abdomen or the hips, when his stomach is filled with acrid material resembling gall, or with quantities of mucus or water-like liquid, or when he finds it difficult to pass gas from the bowel, or when stools do not come automatically. Enemas are particularly called for if the excreta accumulate near the exit, or if a patient, suffering from constipation, has a breath smelling of excrement, or when his excreta are putrid, or when fever cannot be rapidly improved with fasting, or when it is necessary to open a vein to bleed the patient at a moment when times are unfavourable, or when his strength does not permit of it, or when there is a sudden and uncalled for constipation.

Celsus gives long details about the use of enemas, and he describes not only water enemas, but many medicinal and nutritive enemas for those who cannot be fed by the mouth. After giving full particulars, the author states in Book II, Chapter XII :—

If in the manner described the noxious matter has been eliminated and relief has been given to the body, the disease takes in nearly all cases a turn for the better. However, if the patient has been exhausted by going to stool too frequently, he must be made to rest so as to preserve his strength and he must be given food. The question whether he is to be fed lightly or more substantially depends upon the character of the disease and the prognosis of its development.

In Book III, Chapter XXIV, we read under the heading "On Jaundice" :—

On the first day the patient should be made to fast. On the second he should be given an enema, and if he should suffer from fever he should be given a suitable diet. Asclepiades gave to jaundiced persons salt water during two days so as to empty their bowels.

In Book IV, Chapter VIII, we are told :—

Those who suffer from difficulty of breathing should be bled unless that proceeding appears inadvisable. However, if bleeding fails to give relief the patient should be made to keep his bowels open with milk (probably soured milk) and he should be given occasional enemas. By that treatment the body is relieved and the patient's breath goes easier.

In the beginning of liver diseases the best procedure is to open a vein and bleed the patient. Then his bowels should be opened with hellebore unless some other procedure proves effective. The abdomen should be covered with warm, wet packs, to which might be added vermouth or iris. The patient should be fed with soups and those foods which are warming and not very nutritious and which are also suitable in the case of those who suffer from diseased lungs.

In Book IV, Chapter XXXI, we read under the heading "Diseases of the Joints" :—

If there are recurrent pains of the joints, the patient should be given a very strict diet, with a view to freeing the body from noxious matter. At the same time such a patient should be made to vomit frequently, and if his general health makes this course inadvisable, his bowels should be kept open by enemas, or by the taking of (soured) milk.

Hippocrates, as we learn from his writings, employed in cases of insanity black hellebore, a powerful purgative, with excellent results. Celsus did likewise. We

read in Book II, Chapter XII, and Book III, Chapter XVIII :—

Those who suffer from black gall, who are affected by depressive insanity, melancholia, and those whose limbs refuse to act, are given black hellebore. Patients who suffer from fever should have their bowels opened, not by medicines, but only by suitable food and drink, which at the same time give strength and induce natural evacuation.

In case of depressive insanity the patient must be purged with black hellebore. When the bowel has been thoroughly cleansed thereby, the disease shows a very marked improvement. Now, if a single purgative with hellebore has improved the condition of such a patient insufficiently, the treatment by evacuation must be repeated.

It is noteworthy that many of the European and Asiatic mineral springs which have a strong purgative action have continuously been used by the prehistoric tribes, by the Romans, by the mediæval nations and by the moderns.

Hippocrates wrote in his *Aphorisms* :—

Bodies not properly cleansed, the more you nourish them the more you injure them.

Diseases which arise from repletion are cured by depletion.

These two maxims have guided the medical profession for more than twenty centuries. In the numerous diseases of repletion patients were depleted by purgation and enemas, by bleeding and fasting, etc.

The great physician and scientist, Albert von Haller, anticipating Sir Arbuthnot Lane, and writing in 1765, expressed his belief that in constipation "foul water was absorbed from the stool" and, "filling the blood with rancid parts, produces fever, hæmorrhages, consumption and insanity." In Dr. Arthur F. Hurst's *Constipation and Allied Intestinal Disorders*, London, 1919, we read on page 187 :—

In his *Observations on Purgative Medicines*, published in 1805, James Hamilton gave a remarkable list of diseases which he believed were caused by constipation. Few writers on the subject since Hamilton's time have failed to add to his list, so that there are now scarcely any diseases which have not at one time been supposed to result from constipation. Ebstein and Lane are the most prominent of the recent authors who regard constipation as an extremely potent cause of all manner of pathological (diseased) conditions.

One of the leading surgeons at the turn of the eighteenth century was John Abernethy, who lived from 1764 to 1831. Like Sir Arbuthnot Lane, he took a great interest in the prevention of disease and he came to the remarkable conclusion that chronic stagnation of the bowel was the cause of diseases and disorders innumerable. So strongly was he convinced of this, that he wrote a book *On the Constitutional Origin and Treatment of Local Diseases*, in which he pointed out that the body does not consist of disconnected members and organs, as modern specialists seem to imagine, but that it is an organic whole and that neglect and bad functioning of an important part, such as the bowel, is bound to affect disastrously all the organs and structures. He wrote:—

An evil seems to me to have arisen from the artificial division of the healing art. The reciprocal operation of constitutional disorders upon local diseases has obtained still less attention. No part of the animal body can in general be very considerably disordered without occasioning a correspondent derangement in other parts of the system. The connection of local disease with general disorder has been often remarked. It has been formally attributed to impurity of the fluids, a theory which is not irrational. Imperfect digestion must influence the qualities of the blood, and all parts of the body may be affected from this source. The writings of the ancients abound with passages in which local diseases are attributed to

affections of the abdominal viscera, and the same fact has been noted by several of the moderns.

Abernethy endeavoured to prove his contention that chronic bowel stagnation was followed by numerous diseases by giving the history of a large number of cases which had come under his treatment which cannot be given for lack of space. Dealing with the causation of abscesses and sores, one of the commonest results of chronic stagnation of the bowel, he wrote :—

In general, abscesses and sores break out in succession in different parts of the body. The circumstance of their successive formation is, I think, a proof that they depend upon some error in the health in general, and I have accordingly observed that they are seldom, if ever, unattended with disorder of the digestive organs. The imperfect history which the patients generally give of their previous state of health will not enable us to determine with certainty that the disorder of the bowels was the cause of their ill-health and subsequent local diseases, but I can confidently affirm that those diseases in general become tractable in proportion as the disorder of the viscera is corrected. It would be quite impracticable to describe all the diseases which make the subject of the present section, namely, unhealthy indurations, abscesses and sores. They may be compared not improperly in variety and number with the infinitely diversified combinations and shades of colour.

After describing in detail a number of cases of abscesses and other growths which were cured by regulating the bowels, Abernethy concluded :—

My observations have led me to believe that most local diseases are preceded by general indisposition of which a disordered state of the digestive organs is in evidence and may have been a cause. The relief arising from the correction of this disorder is indeed surprising, and the general knowledge of this fact I have deemed my duty to promote to the utmost of my power. Even in cancer, disorder of the digestive organs appears to be antecedent to the local

disease and aggravated by its existence, but whether this disorder be the effect or cause of the constitutional diathesis (tendency) cannot, I think, be at present determined.

In the opinion of Abernethy, chronic bowel stagnation upsets the digestion and poisons the whole system, and the general poisoning of the body leads to disease in some part or other which ought to be treated locally, but by correcting the first cause, constipation. He writes, for instance :—

I have observed that diseases of particular organs seem to originate in many instances from disorder of the system in general. The testis of the male subject and breast of the female have furnished me with examples of this observation. . . . Before I paid attention to those complaints which arise from, or are aggravated by, constitutional causes, I could not have believed that such considerable local diseases, after resisting various topical and general means, should give way so readily and completely to small doses of medicine.

The author described the protean consequences of bowel stagnation as follows :—

Attention to the state of the bowels is indispensably necessary even in the practice of surgery. A simple cut of the finger frets into a bad phagedænic sore which resists every local remedy so long that amputation is at last proposed. This is the consequence of bad health which, in turn, is aggravated by the irritation of the sore. The patient has a furred tongue, with other symptoms of disordered digestive organs. An attention to this disorder corrects the painful state of the sore which now heals rapidly under simple dressings.

An erysipelatous inflammation of the leg is imputed to some trivial cause, as for instance a gnat-bite. It becomes worse under the common remedies. The health has been long declining and the chylopoietic viscera (bowels) are obviously deranged. The erysipelas is quickly cured by medicines for that disorder.

I have observed in all the cases of that noisome and

intractable disease, ozæna (stink nose), which have come under my care lately, that the stomach and bowels have been disordered, and more benefit has been obtained by endeavouring to bring these organs into a healthy state than by all the local applications which have been previously tried.

It is well known that ophthalmy (inflamed eye) frequently arises from constitutional causes, and in such cases the digestive organs are generally deranged. The health will be most speedily restored and the local disease most effectually diminished by correcting the disordered state of the abdominal viscera.

Abernethy had the great merit of pointing out the connection existing between the bowel and the nerves and the brain. He wrote :—

In my opinion local nervous disorders and muscular debility may arise from a general disorder of the health in which the digestive organs are chiefly affected. Such cases as I have related have impressed the opinion on my mind that disorders of the digestive organs may originally cause, or may secondarily aggravate, a nervous disorder and produce a diminution of the functions of the brain or a state of excitation causing delirium.

The reciprocal sympathy which exists between the brain and the digestive organs is generally admitted, but the kind and the degree of the effects arising from this sympathy is not, perhaps, in general sufficiently understood. These organs mutually increase each other's disorder till the affection of the sensorium leads to the greatest disturbance of the nervous functions, and even those of the mind. All this may happen without any visible disease of the brain. . . . There can be no doubt but that epilepsy may in like manner take place without any morbid alteration of the structure of the brain or membrane.

Now if disorder of the digestive organs is capable of causing or aggravating nervous disorder, even to the production of those effects which have been mentioned when there is no alteration of structure, it must be granted that such a state of irritation of the sensorium may lay

the foundation of an excitement of the vascular structure of the brain, and thus very frequently produce organic disease. When this has occurred, it will aggravate and establish the nervous affection and thus perhaps render it insusceptible of cure.

I have examined the bodies of six patients in whom disease most certainly began in the abdominal viscera and was continued in them to the conclusion of their lives. Nevertheless, the patients seemed to die rather of nervous disorder than of disease of the part first affected. One of the patients died affected with apoplectic symptoms and five with hemiplegia (paralysis). In all these cases the liver was greatly diseased and the bowels also exhibited diseased appearances.

Abernethy believed that pulmonary disease also was caused, or aggravated, by what is now called auto-intoxication arising from a sluggish bowel. We are told :—

When my attention was first directed to the subject of sympathetic affections of other organs caused by those concerned in digestion, my primary object was to endeavour to ascertain by dissection how far pulmonary diseases originated from such a source. I have in the course of my inquiries had several opportunities of examining the bodies of patients who apparently died of phthisis (consumption) combined with diseases of the digestive organs. In these cases both the history and dissection tended to prove that the chylopoietic viscera (bowels) were the seat of the greatest and most established disease and that the pulmonary affection was a secondary disorder. The liver was greatly diseased and the lungs were also beset with tubercles. Yet a considerable portion of those organs was sound. But dissection can never conclusively ascertain the truth of the opinion which I have stated, for the same disposition to disease existing in the constitution may equally affect both the pulmonary and the digestive organs.

My opportunities of acquiring practical information on this subject must necessarily have been very limited. Yet I have seen many cases which to me appeared to prove

that pulmonary irritation sometimes proceeds from disorder of the digestive organs. In cases of surgical diseases, accompanied by disorder of the digestive organs, I have also occasionally observed a cough attended with expectoration to cease upon the correction of the disorder of those organs.

I do not mean to insinuate that pulmonary diseases do not arise originally and idiopathically (spontaneously), but only to suggest that they may arise sympathetically or in consequence of disorder of the digestive organs. The proportionate number of cases in which they originate in this manner can only be determined by very extensive experience. That the stomach and bowels are disordered during the progress of phthisis will, I conclude, be readily admitted, and that an attention to correct such disorder is requisite must be acknowledged from what has been said relative to the influence of such treatment upon various local diseases.

In the concluding chapter, Abernethy expressed his faith in his theory as to the causation of many diseases in the words :—

When I find in diseases that the functions of the digestive organs are impaired and disturbed, I consider this disorder as the cause or effect of the more general derangement of the system at large. When it seems to be the cause, and when it can be speedily corrected and removed, then the relief and cure of those local diseases which may have taken place is in many instances so sudden and surprising that I think it impossible to consider the disorder of the general health and the local disease in any other relation but that of cause and effect.

It must indeed be very difficult to ascertain the causes of the peculiarities of local diseases, but when I see such a variety of them cured, sometimes suddenly, by means which tend only to tranquilize and invigorate the constitution, I become confirmed in the opinion that a similar state of health may lead to the production of dissimilar diseases.

I have further observed that persons who have been out of health, but with no other distinguishable errors in

their constitutions than such as nervous weakness and irritation, with a marked disorder in the functions of the digestive organs, have been liable to a succession of dissimilar local diseases. In such instances I have seen in succession enlargements of absorbent glands, boils, rheumatic affections of joints and dysury (bladder trouble). Yet all local diseases have ceased as the health became re-established by attention to correct the disordered functions of the digestive organs. I have seen also in the same patient enlargements of absorbent glands, rheumatic disease of a joint, and an eruptive disease of the skin which have all equally got well as the general health improved by similar medical attention. Nay, the continuance of local diseases in some instances, after the disorder of the constitution has been relieved or cured, does not in my opinion invalidate the foregoing conjectures respecting their origin. Local diseases, however induced, may have become established by habit or continued from that state of disorder into which they have reduced the part that they have attacked. A local disease, however excited, may, as we know from experience, be of such a nature as that its actions never cease, and as we have not succeeded in curing. I allude to cancer which occurs, in conclusion, in such constitutions as I have endeavoured to describe.

If we may be able to trace the origins of diseases of the absorbent and salivary glands, of the breast and testis, to constitutional causes, why may we not reasonably expect that similar circumstances may produce diseases of the lungs, liver and kidney? We may therefore account rationally and in conformity to acknowledged facts for the production of diseases in vital organs by supposing that a state of general weakness and irritability being induced, the naturally weak parts suffer in the greatest degree, and in consequence they most readily become the subjects of disease.

In Abernethy's time relatively little was known about the diseases of primitive races. The writer was apparently not aware that primitive races are practically free from constipation and from the numerous diseases to which it gives rise. However, he had

noticed that animals are little affected by this almost universal complaint of the civilized, and he came to the conclusion that the unwholesome state of the bowels among the civilized was due to their unnatural food and sedentary habits. The author wrote :—

Of late I have been inclined to consider these circumstances as the cause of the complicated diseases which are met with in man so much more frequently than in animals. In man the brain is more sensitive and liable to be disordered by mental affections. In man the digestive organs are liable to be disordered by a stimulating and unnatural diet. Sedentary habits and impure air co-operate to aggravate these disorders. The affections of the brain and digestive organs mutually increase each other and thus a state of constitution arises which is productive of the most general and complex diseases.

But even these do not seem to me the most calamitous terminations of such causes. The disorder of the sensorium, excited and aggravated by the means which have been described, frequently affects the mind. The operations of the intellect become enfeebled, perplexed and perverted. The temper and disposition irritable, unbenevolent and desponding. The moral character and conduct appears even liable to be affected by these circumstances. The individual in this case is not the only sufferer, but the evil extends to his connections and to society. The subject therefore appears to me of such importance that no apology need be offered for this imperfect attempt to place it under general contemplation.

Abernethy wrote this remarkable book more than a century ago when physiology and medical science were very backward, and when nothing was known about the microbic causation of disease. Experimentation on animals had scarcely begun and X-rays were unknown. The science of nutrition had not yet been developed and men were not aware of the importance of the numerous mineral elements and of the vitamins which are eliminated from the over-refined food of civilization. In the course of the last few decades a

new era has been opened in the fight against disease. By means of scientific tests made on animals and men we have become acquainted with the working of stomach, bowels, etc., and by means of the X-ray apparatus we can watch the process of digestion and the propulsion of the residue through the bowel. Moreover, the microscope has shown us the existence of infinitely small creators of disease, and we have learnt that some of these swarm in huge numbers in the stagnant bowel and invade other portions of the body.

I have quoted Abernethy at considerable length because there is a remarkable resemblance between the comprehensive views of that great physician and surgeon and those of Sir Arbuthnot Lane. Curiously enough, Sir Arbuthnot, who is a student of Nature, not a student of books, was quite unacquainted with Abernethy's views and he was surprised and delighted when I discovered them and showed them to him.

Throughout the ages many of the most eminent medical men have seen in the stagnant bowel one of the principal, if not *the* principal, cause of our bodily and mental defects and diseases. Let us not disdain their teachings because they had no microscopes, ultra-microscopes, test tubes, cultures, serums, X-rays and all the other paraphernalia of the modern laboratory.

CHAPTER III

The Consequences of Chronic Bowel Stagnation—A General Review

It is an absolute fact that 90 per cent of all diseases may be directly traced to some derangement of the stomach or intestines.—DR. JOGENDER LAL CHUNDRA, *A Treatise on Treatment*.

AS I wish to convince not only the general readers but also my expert medical readers that chronic bowel stagnation is indeed the most insidious, the most widespread and the most serious of diseases, I bring forward not merely sufficient but overwhelming evidence which in part is dry and technical, and there is necessarily a certain amount of repetition. After all, only an overwhelming mass of evidence is likely to carry conviction with the sceptical, the hostile and the prejudiced. However, those who are wearied by the number of witnesses I have called and the length of their statements, can, of course, skip a number of the extracts.

The health of men and animals depends principally on two factors, their food and their excretion. Fresh air, light, cleanliness, exercise, etc., are of minor importance. Animals and men, if properly fed, flourish even if they live in confinement, where there is little fresh air, little sunlight and little cleanliness. African natives, Eskimos and other healthy races, dwell in narrow and almost airtight dwellings, and many animals live in stuffy burrows, dens, etc. Yet they

are in excellent health. Most animals keep underground during the day and venture out only at night. Miners and pit ponies who often work in darkness all the year round are very healthy. Lack of exercise is not very harmful unless accompanied by over-feeding.

A right diet and a free excretion are the two principal health-creating factors. An ill-chosen, unsuitable diet accompanied by free excretion is probably less harmful than a faultless diet accompanied by bowel stagnation. The food residues left within our bodies are apt to fester and putrefy, and the poisons thus generated are absorbed into the body. Thus the blood becomes vitiated and the organs and tissues, instead of being provided with healthy food, are dosed with virulent poisons day after day, year after year. It is true that we possess wonderful organs for eliminating these poisons, such as the liver and the kidneys. However, these are apt to break down if they are overworked during a long time.

Before giving Sir Arbuthnot Lane's views in his own words, I would describe the position of the big bowel and the serious consequence of habitual constipation in homely and quite untechnical language.

The big bowel rises in the right groin, running up perpendicularly to the margin of the ribs. Then it curves at almost a right angle and runs horizontally to the extreme left side to a point high up under the ribs, and from that spot it drops perpendicularly down into the left groin, whence it goes towards the exit. In other words, the big bowel has a shape roughly comparable to that of the framing of a door.

If it is heavily overladen with fæcal matter, one of two things may happen. In weak and flabby individuals the weight of the contents drags the bowel out of its position. It becomes dilated and elongated, loses its shape, and the patient begins to suffer from colitis, which means inflammation of the bowel, and its often very serious consequences. In strong and

energetic individuals, Nature comes to the rescue and ties up the overweighted bowel by means of bands.

There is a tendency of the body to adapt itself to almost any position and condition. The bricklayer gets horny hands. The pack-carrier's spine adapts itself to the load by an appropriate curvature, and the soft cartilages of his spine become replaced by bone as hard as ivory. The bands whereby Nature supports the overweighted big bowel do excellent services for a time by holding it up in its door-frame-like position. Unfortunately, these bands have a tendency to contract with advancing years. These contractions pinch in the bowel, which begins to bear an aspect similar to that of a rubber tube which has been hung on a nail and has angulated at the point of pressure. Thus one or several kinks may be formed which obstruct and almost close the bowel.

Curiously enough, the existence of these kinks has been ignored until quite recently. The most important and the most dangerous of these kinks has been called by Sir Arbuthnot Lane "the first and last kink," because it is the first one which develops, and it is the last one on the line of the bowel, being nearest to the exit. It occurs in the left side of the abdomen at the place where the colon ends and drops down towards the anus.

The obstruction caused by the first and last kink, and by the other kinks as well, offers a physical obstacle to the passage of the fæces. They accumulate above the obstruction and become dry and hard through the absorption of the liquid by the bowel walls. At last Nature forces the hard mass through the kink or kinks, or, more likely, it is forced through by means of a purgative medicine. The violent propulsion of the hard mess through the obstructed part causes friction and damage. Often the hard fæces seriously damage the tough leathery skin of the exit. The soft mucous membrane of the bowel is, of course, far more easily

damaged, especially if there are obstructing kinks. Poisonous matter from the fæces enters the system through the damaged bowel wall, and the continually renewed damage and absorption of toxic matter during a long course of years may at last cause a cancerous growth to form in the obstructed part of the passage. From thence it is apt to spread towards the liver or other parts of the body.

There is a strange connection between a woman's bowel and her breast, a connection for which biological science has not yet found an adequate explanation. Long-continued constipation in women is very frequently accompanied by degenerative changes in the breast, in the very corner which is the favourite site of breast cancer.

Women suffer more severely from constipation than men, because their abdomens are larger, because they lead more sedentary lives, because they eat more sweets and other foodstuffs which favour constipation, and because they are more bashful than men. Therefore they readily suppress their need, with the result that they upset the automatic machinery of evacuation. While in vigorous men the overfilled big bowel is frequently supported by bands which eventually become harmful by producing kinks in the manner described, women and weak men do not readily develop these bands. In their case the big bowel often sinks down, becomes prolonged and enlarged, and chronic stagnation of the contents sets in, which leads to colitis, or inflammation, and to the formation of pockets which act as traps and as centres of putrefaction. Owing to this condition, poisonous matter is formed, which enters the system and is carried to various parts of the body. Thus both the breast and the uterus are apt to be infected, and degeneration sets in, which frequently culminates in cancer.

I would draw attention to the following most important fact. Until recently the knowledge of the

mechanism of digestion and excretion was both fragmentary and vague. Only a little was known, knowledge being based upon the dissection of dead bodies and operations on living men and animals. The advent of X-rays has completely changed the position. Doctors and surgeons are no longer groping in the dark. They can give to a living man or a woman an opaque meal, such as a bismuth meal, and, by using the X-rays, can watch the way how every mouthful is swallowed, how it is conveyed into the stomach, how the stomach propels it to the bowels, and how the bowels pass it along. Therefore the details given in the present chapter and in other chapters of the book relating to the processes of digestion, etc., are scientifically exact and reliable. Moreover, medical men can, by means of the X-rays and of an opaque meal, ascertain the defects in the action of the digestive apparatus and of the bowels. They can ascertain whether there are irregularities, such as a bowel occupying an abnormal position, whether there are points of constriction along the alimentary canal, and whether there are other anomalies and conditions which will be described in the course of this chapter and elsewhere.

Sir Arbuthnot Lane has described the far-reaching consequences of chronic bowel stagnation followed by self-poisoning in scores of papers and addresses, books and pamphlets. He outlined the origin of the great disease of civilization and its evil results as follows in an address given on the 18th October, 1923, to the Physical Society of Guy's Hospital:—

It is the habit of civilization to regard a single formed motion a day as the normal, so that the individual is habitually constipated for at least twenty-four hours, and the products of the food consumed during that period are accumulated in the large intestine and in the first instance in its termination. Therefore strain is experienced first upon the outer layer of the mesentery, which

fixes the iliac colon to the floor of the fossa, and this strain is greatest about the junction of the iliac and pelvic segment of the colon.

Corresponding exactly to this strain there is developed upon the outer surface of the mesentery, extending from its base, streaks or bands of peritoneum, fibrous in appearance. These spread gradually along its outer aspect, and as they grow they contract and shorten this portion of the mesentery, so limiting the range of movement of the portion of the intestine which it secures. Later this new growth of tissue, which is the crystallization of lines of force, extends to the outer wall of the large bowel and gradually encroaches on its circumference. Not only does it pin the intestine immovably in the fossa, but by its progressive attachment to the bowel wall it rotates it upon its long axis and reduces its lumen very materially, and consequently obstructs the passage of fæcal matter through it.

The contents of this portion of the intestine are usually firm and often hard, so that it is easy to realize how difficult it may be for the fæcal mass to negotiate this obstruction, even when it exists only in a moderate degree. Any interference with the free functioning of this portion of the bowel is a serious obstacle to efficient drainage, and the more marked the obstruction, the greater the delay of material in the entire gastro-intestinal tract proximal to it.

To this particular obstruction I gave the name of the "first and last kink," the *first* because it is the earliest to form, and the *last* because it is the lowest in the gastro-intestinal tract.

I cannot exaggerate its importance, as I believe its capacity for harm is tremendous and far-reaching, and that it is responsible for all the changes which are due directly and indirectly to chronic intestinal stasis. It spells the failure of civilization and is a veritable Pandora's box.

Consequent on the stagnation of material in the large bowel, similar bands develop along the mesentery, securing the convexity of the loaded colon. These are most marked in certain situations, such as the splenic flexure, and again at the end of the ileum, where it is called the ileal kink. The secondary accumulation of material in the

small intestine angulates the duodeno-jejunal junction, causing first dilatation of the duodenum, and later ulceration of its first portion, spasm of the pylorus, dilatation of the stomach and its ulceration along the seat of strain, namely, the lesser curvature. This ulceration of the stomach tends readily to become cancerous.

The same tendency to the development of cancer occurs in the large bowel where angulated and obstructed by acquired bands, or by spasmodic action of the sphincter ani or of Mayo's circular band of muscle, in direct proportion to the degree of obstruction and to the increase in consistence of the fæces. The stagnation of the contents of the large bowel also causes an inflammation of the appendix, which is frequently anchored and obstructed by acquired adhesions of the mucous membrane of the colon, producing colitis in its various degrees and forms. The appendix is often so secured as to control the ileal effluent and to increase the stagnation of the material in the small intestine.

Besides these mechanical results of stasis, the sequences of which are quite obvious, we have those which are consequent on the fouling by organisms of the dammed-up contents of the small intestine, duodenum, and even the stomach, with the extension of the infection along the hepatic and pancreatic ducts, which produce gall-stones and cancer. The mode of the extension of the infection in these is as apparent as the mechanical changes.

The next series of changes we have to consider are those which come about by the absorption of the infected contents of the gastro-intestinal tract of more toxins (poisons), etc., than the liver is able to deal with. These noxious substances getting into the circulation are carried away to every organ and tissue in the body, and produce disastrous results in proportion to the degree of the toxicity of the blood.

The degenerative changes in the thyroid, adrenal, and other ductless glands, the heart and blood vessels, the nervous system, the eyes and ears, the kidneys, liver, pancreas, uterus, ovaries, testes, prostate, breast, fat, skin, hair, lymphatic tissue of the naso-pharynx, and the gums and teeth, these last two being the most frequent and conspicuous of all, I have frequently described in

detail, and I have shown how liable certain of these degenerated organs, as the breast, uterus, ovary, and pancreas, are to be infected with cancer. Among the nervous symptoms may be mentioned intense headache, neuritis, neuralgia, sleeplessness, misery, complete mental and physical prostration, melancholia, epilepsy, disseminated sclerosis, delusions, dementia præcox, etc.

Besides these changes, which are the direct result of the supply of toxic blood to the tissues, we have a number of infections which occur because of the inability of the degenerated tissue to withstand their inroad. These infections are all of such a nature as not to be able to obtain a foothold in a normal healthy subject.

CANCER NEVER AFFECTS A HEALTHY ORGAN

Perhaps the most conspicuous at the present moment is cancer. Cancer never affects a healthy organ. In every case in which I have had an opportunity of verifying it, I have found that the cancer patient was suffering from chronic intestinal stasis, and that the infection by cancer was an indirect consequence of this condition. Cancers of the skin and tongue, which are produced by chronic traumatism alone, are not included in this category. If this assumption is correct, it is obvious that, to prevent the development of cancer, it is necessary to obviate these changes, which result in the gastro-intestinal tract from the diet and habits of civilization. . . .

Cancer is the final stage in the sequence of chronic intestinal stasis. It is the last chapter in the story of defective drainage of the large bowel as it is in the rest of the gastro-intestinal tract.

Women have more capacious abdomens than men. They require a considerable reserve space to accommodate the growing baby. Much of that reserve space is apt to give accommodation to grossly overfilled intestines. We therefore cannot wonder that women suffer particularly from chronic bowel stagnation. In his book *The Operative Treatment of Chronic Intestinal Stasis*, Sir Arbuthnot Lane described the consequences of that evil in the case of women as follows:—

The first result of auto-intoxication to which I would call your attention is the removal of fat, which is a marked feature in most cases and is, perhaps, the first evidence that the individual is failing in capacity to deal with the poisonous matter that is destroying the structure and impairing the function of every one of the component tissues of the body. This brings about not only an appearance of premature senility, but also a series of changes of infinite importance to the individual, and especially to the female, in whom, for reasons I have already indicated, fat plays a far larger share in supporting important organs and structures than it does in the male.

The changes in the position of the several organs which follow on the loss of fat serve to exaggerate the existing stasis in the gastro-intestinal tract and to produce a vicious circle. The removal of the pelvic fat results usually in a backward displacement of the fundus of the uterus, which rests upon the concavity of the rectum. When the woman strains to evacuate the contents of the rectum she drives the large gorged fundus vertically downwards and the rectal lumen is compressed between it and the sacrum, or, much less frequently, the uterus may be bent forwards, partly on account of the loss of fat and to a large extent because of the degeneration of its muscularity which exists generally throughout the body. Consequent on the engorgement and the displacement or kinking of the uterus, a number of changes take place in that organ which call for the attention of the gynæcologist. As we shall see, auto-intoxication plays so large a part in the development of diseases of the female genito-urinary apparatus that the gynæcologist may also be regarded as a product of intestinal stasis. If women were not imperfectly drained, the gynæcologist would not have been evolved.

The removal of fat from the true pelvis permits of the greater descent of the cæcum and small intestines into that cavity and exaggerates the obstruction of the ileal effluent correspondingly.

The kidneys move freely in the space behind the peritoneum, in which they were originally supported by a cushion of fat, and changes ensue in these organs should the escape of blood or urine from them be

controlled by their altered relationship to adjacent structures.

As regards the attractiveness of the woman, a matter of vital importance to her happiness, the loss of fat is a most serious factor. The formation of wrinkles, the prominence of bones, etc., are all most distressing and conspicuous features. The buttocks also become flat and flaccid, instead of firm and round, partly because of the disappearance of fat which enters so largely into their formation, and partly because of the associated degeneration of the large gluteal muscles. The breasts also waste and flop downwards, and the whole form and contour of the woman alters conspicuously in the most objectionable manner.

The skin undergoes remarkable changes and affords, perhaps, the most obvious evidence of the degenerative changes which are going on all over the body. It becomes thin, inelastic, sticky, and pigmented, especially where it is exposed to any pressure or friction. This pigmentation is observed first in the eyelids, whence it spreads gradually over the face. The neck becomes brown and later almost chocolate-coloured. The skin of the axillæ, abdomen, adjacent aspects of the thighs, and that covering the spinous processes of the vertebræ, becomes progressively darker and darker, and defined areas of even darker pigmentation may develop on these stained surfaces. The secretion from the flexures also becomes abundant and offensive. In some of the cases I have operated on this symptom has been such a marked feature as to render the patient very objectionable to others.

The hair of the head falls out, either because of impaired nutrition of the cells or from the invasion of the roots by organisms. In the young subject, associated with this is a new growth of fine down over the cheeks, lip, chin, down the back and over the forearms, all of which conditions are very disfiguring and very distressing to the sufferer. These all disappear more or less completely with an improvement in the drainage.

The limbs become very cold and this coldness becomes exaggerated as the extremities are approached. If the hand be passed over the shoulder it crosses abruptly from an area of warmth to one of comparative coldness. This

corresponds to a line drawn transversely round the centre of the deltoid. The skin of the back of the upper arm is very thick and feels as if it were affected by a firm, brawny œdema. Its colour is bluish, and in some cases even livid. It is liable to be covered with hard, pointed papules. This condition exists to a much more marked degree in the girl than in the woman, and may be sufficiently conspicuous to render the wearing of short sleeves impossible. The skin of the forearm and hand is mottled, being bluish and yellow in patches, while the fingers may be quite blue or cyanotic. The legs present the same condition and usually in a greater degree.

The muscular system degenerates in a very marked manner. The voluntary muscles waste and become soft, and in advanced cases tear with the greatest facility. In consequence the individual assumes positions of rest. In young life the muscular debility produces the deformities which are called dorsal excurvation or round shoulders, lateral curvature, flat-foot, and knock-knee.

The muscular wall of the intestines wastes in a similar manner, so that in an advanced case of stasis the ileal wall is very thin and bluish or livid in colour, resembling the appearances seen at a post-mortem, and they give out a distinctly earthy or fœcal odour. The intestine has no rounded form, but, being inelastic, puddles like jelly in the floor of the true pelvis, forming innumerable bends, through which its contents are transmitted with great difficulty.

The heart-muscle is influenced by the poison in the same manner. Here, however, we get two distinct conditions arising, varying, I believe, with complications in the most important excretory organ—the kidney—as well as in the circulatory system itself. In one group of cases the heart is soft, flabby, and the blood-pressure subnormal; while in the other the left heart is definitely enlarged, the aorta dilated, and its walls atheromatous (degenerated), as are those of all the vessels, and the blood-pressure is abnormally high.

The toxins appear to exert a special depreciating influence upon the respiratory centre. Symptoms which are

typically asthmatic in character are not infrequently seen in this condition, while minor varieties are commonly present.

The toxins exert upon the nervous system a most distressing and depressing effect. This is perhaps the worst feature of the effects of chronic intestinal stasis. The patient is usually miserable. Sometimes the depression and misery is so great as to constitute melancholia or imbecility. Several of my patients have attempted, or contemplated, suicide.

The breast behaves in a characteristic manner in auto-intoxication, so much so that it may be regarded as the barometer of the degree of poisoning. At first it presents induration (hardening), which commences in the upper and outer zone of the left breast, extending subsequently to the entire organ on both sides. Cystic or other degenerative change may ensue, and at a later period cancer appears with remarkable frequency in these damaged organs. I have found as many as seven distinct nodules of cancer in a hard, lumpy breast, in which the presence of that disease was not suspected.

The thyroid gland diminishes steadily in size, and in an advanced case it may be so small that the finger can detect no evidence of its presence. The eyes show very definite evidences of degeneration.

The joints of toxic people, and especially of children, are very loose and permit of considerable over-extension. We know that the fit or security of a joint varies directly with the development of the muscles which control it, and the feebleness of the poisoned muscles readily accounts for the insecurity of the joints. The mobility of the joints gives a very clear idea of the date of origin of the stasis.

The presence of tubercle in the body, except by direct inoculation, is, I believe, always preceded by that of auto-intoxication.

Rheumatoid arthritis, like tubercle, is never present except in association with auto-intoxication due to chronic intestinal stasis. Its severity may be accentuated by the presence of any other infection which exists in consequence of the stasis, such as infection of the uterus, gums, nasal and associated sinuses, etc., and some relief to the

severity of the symptoms may be obtained by dealing with these secondary infections.

Many cases of stasis suffer severely from infection of the skin.

One had an extensive pustular eruption which had resisted all forms of treatment, but which disappeared after colectomy.

Perhaps one of the most distressing skin conditions for which colectomy was performed was a chronic pruritus of the labia and anal region, which made the patient's life unbearable, and prevented her going about among her friends. The patient showed herself nine weeks after the operation, when she had gained greatly in weight, her old pallid stained face was replaced by rosy healthy skin, and she had quite lost her severe pain, sickness, and flatulence, and was able to eat anything. The skin irritation disappeared within a few days of the operation.

According to Sir Arbuthnot Lane, chronic bowel stagnation is responsible for innumerable disorders and diseases, ranging from trifling complaints, such as an impure skin, to the most serious maladies, among them cancer, heart disease, arterio-sclerosis and insanity, which often leads to suicide. It may be thought that Lane has grossly exaggerated the evils flowing from a chronically stagnant bowel, that "intestinal stasis" has become with him a hobby-horse, a craze, a mania. It is true that doctors and medical investigators are apt to ride a hobby to death. A well-known doctor and investigator ascribed all diseases to uric acid. Another one attributed all our maladies to alcohol. A third held responsible the tobacco habit. A fourth saw the cause of all evils in universal over-feeding. A fifth attributed most of our diseases to poisoning by arsenic, which exists in traces in coal and other minerals and in the materials made from them or connected with them. There are doctors who believe that all our diseases spring from our eating meat, from the general use of drugs, from the universality of refined sugar, etc., and there are others who see the cause of

all the diseases described in the medical textbooks, from acne to zymotic disease, in the universality of defective teeth, in our consumption of tea, coffee, in the universal indulgence in tobacco, etc.

Although Sir Arbuthnot Lane's views have been severely criticized, many of the most eminent surgeons and physicians have become convinced that his views are sound and unchallengeable. Let us listen to the opinions of some eminent independent authorities. Let us listen to men of the first rank who do not echo anybody's opinion, but express only mature views of their own. Sir Berkeley Moynihan, one of the leading British surgeons, who has the great distinction of being the President of the Royal College of Surgeons, wrote in his *Essays on Surgical Subjects*, 1922 :—

Amongst the most interesting and possibly one of the richest gifts of surgery to medicine is the hypothesis that intestinal stasis, with the associated condition of absorption of toxins, is responsible for many of the diseases which attack not only the abdominal viscera (bowels), but even also parts remote therefrom. Perhaps no subject in medicine to-day has received more discussion, has been more bitterly assailed, more often attacked by derision rather than by argument, and more cheerfully supported, than this. Its author, Sir Arbuthnot Lane, is a man whose mind moves easily along new paths. Such a pioneer has often reached his destiny before other tardy travellers have set out upon the way. The pioneer in all branches of knowledge rarely himself reaches the truth—he is more apt to overreach, or to be content to guess the road that lies ahead without beating it down with his own foot-tread.

In contemporary surgical history many observers, as I have pointed out, have had their minds attracted to a firm belief in one thing—namely, that many of the diseases for which surgery is called upon to deal are not primary disorders, but are secondary; that they depend for their existence and extended development upon some common cause; and that this common excitant is an

infection which expresses itself now in one way, now in another. The conditions I have already mentioned—ulcer of the stomach or duodenum and cholelithiasis (gall-stones)—are, in the belief of all of us who do much work for their relief, really dependent upon an infection. For my own part I look upon the appendix as the most potent and the most frequent cause of offence.

Arbuthnot Lane takes a wider view. He believes that the intestine itself is the factory in which the poisons are produced, which cause, or make more easily possible, not only the various conditions I have named, but also such diverse and distant conditions as "rheumatoid arthritis," tuberculous disease of bones and joints, diseases of the breast, cystic and malignant, of the thyroid gland, and many other conditions.

At first it was supposed that the large intestine was the malefactor, and some slender support was possibly derived for the hypothesis from the work of Metchnikoff and others. More recently the delayed drainage of the small intestine has been held more blameworthy. Various bands and kinks have been described in different parts of the alimentary canal, and these have been held responsible for the obstruction, behind which dilatation and stagnation occur. Controversy has raged around the question as to whether these veils and kinks were developmental in origin, inflammatory, or evolutionary; and very often the opinions of a writer are formed exclusively upon, or prejudiced by, the one out of many possible methods of examination to which he has devoted exclusive attention. But there can be no doubt that obstruction of the most acute, as of the most chronic, kind may be solely dependent upon "kinking" of the large bowel at its splenic flexure, surrounded and held firm by membranous adhesions.

But these points, after all, are only incidental. The main question is concerned not with the exact means by which effects are produced, but rather with the existence of the alleged effects. The fervid apostles of the new creed are a little prone to bewilder us with reasons for their immature observations. This is only to darken knowledge and to encumber their religion with dogma. We need not yet be greatly exercised over the terms of an

explanation of how these effects come about, for in medicine explanation often lags far behind experience.

The most exemplary instance of the effects of alimentary toxæmia occurs, perhaps, in the condition which may best be described as Lane's disease. The miserable chronic dyspeptic with sallow skin, dirty tongue, flaccid belly, offensive breath, dusky lips and nails, cold extremities, and constipation that is with some difficulty overcome, is restored to health with incredible rapidity when a short circuit is made between the ileum and the pelvic colon. The claims that Lane makes in respect of such patients must indubitably be admitted.

Every surgeon who has much experience of the intestine in these cases will agree that, as a rule, the wall of the gut is thin and almost translucent; it is not, as we see it in cases of veritable obstruction, thick from hypertrophy of its muscular wall. It is feebleness of action rather than impediment which causes the tedious transit of food. The walls of the gut are thin, the membranous supports are of such poor quality that parts normally well fixed, like the splenic flexure, can often be withdrawn from the abdomen, and the musculature of the abdominal wall is flaccid and feeble. Everything indicates that a sort of apathy is, as a rule, the cause of stagnation, not an obstruction which is with difficulty overcome.

The victim of what we may call "Lane's disease" is now easily recognized, and the symptoms are caused to disappear by appropriate surgical treatment. The symptoms are strikingly repeated in case after case. The patient is generally a woman of unhealthy aspect and attenuated figure. She is lean, cadaverous, flat-chested, and she has a sour breath and cold and clammy hands. The skin is harsh and of an earthy colour and bears many crops of pimples; its secretion is apt to be distressingly noticeable. She makes complaint of "indigestion," pain after meals, flatulence, and inveterate and incoercible constipation. The abdominal muscles lack bulk and tone. They are flabby and flaccid, and all the viscera which they should hold up are fallen in greater or less degree. Mentally, there is often a complete absence of the joy of life; the patient is a morose, querulous, and often suspicious and introspective person. These attributes are

rarely all present together, but so many of them may co-exist as to enable a distinct type of patient to be recognized. In the very obvious cases of this kind I do not think the mild measures that can often usefully be employed for the novice—massage, abdominal exercises, and the unrestricted use of paraffin—are really of any value. These sufferers are properly cases for surgical treatment. The colon should be excised in whole or in part.

The patients whose condition and appearance I have just described very often undergo a most marvellous rejuvenation after operation. They gain in weight and glow with health; life changes its colour, and vivid interest and keen enjoyment succeed to apathy and languor.

So far as concerns a great variety of other diseases, it is claimed that intestinal stasis is either the sole cause or a contributory cause of such significance that all other causes can be neglected or dismissed.

In diseases of the joints, for example, rheumatoid arthritis, or tuberculous disease, stasis is held to be the essential indispensable factor causing the harm, or at least permitting it to take place. And the treatment of the severer forms, at least, of both diseases does not occupy itself with a direct assault upon the joints affected, but with the intestine from which all the evil has started. Cases are reported, and are shown to us, in which such treatment has had an effect beyond all one's wildest imagining. I have myself seen many cases of advanced—indeed, apparently hopeless—tuberculous disease of the hip-joint, or of the wrist or shoulder, in which an arrest of the quickly destructive processes took place almost at once when the colon was removed or a short-circuiting operation performed. And a sensible improvement has followed also in a few cases of rheumatoid arthritis in which, while nothing was done directly to the joint, the whole colon was excised. Of the occurrence of such events there can be no question. They do not, indeed, stand alone.

The evidence at the moment available allows us certainly to say that intestinal stasis does seem to stand in a causal relationship toward some cases of chronic joint affections, and that such cases exhibit a marked and instantaneous delay or even cessation in the destructive processes, after

operation upon the bowel, and that a complete recovery of the joint ultimately occurs.

In medicine the new idea is slow to gain currency. We are a conservative race; and we all find criticism a more facile process than creation. There is no intellectual sin more deadly than sloth of the imagination. I have thought many hours, read much, and worked not a little at this subject of intestinal stasis, and have tried to clear my eyes for the new vision opened to us by Sir Arbuthnot Lane. My experience has been full of surprises: old beliefs, so slow to perish, have been undermined, and new faiths, so slowly fashioned, have been painfully accepted. And now I do not hesitate to say that the whole question is one which will have to be considered by all of us and to be put to the proof. It cannot be dismissed with a shrug or a sneer, for there is truth in the matter. Among much that is dross there lies a nugget of pure gold.

Great authorities rarely agree. The agreement of Sir Arbuthnot Lane and Sir Berkeley Moynihan with regard to the evil and far-reaching consequences of chronic bowel stagnation is certainly remarkable.

Mr. J. P. Lockhart-Mummery is a distinguished surgeon. He is the chairman of the Executive Committee of the British Empire Cancer Campaign and he takes a leading part in many other important organizations. He is the author of a number of valuable scientific books. In his volume, *Diseases of the Rectum and Colon*, he wrote on pages 330 to 332, without mentioning Lane's name:—

Constipation is chiefly of importance because of the secondary symptoms to which it gives rise. These symptoms are very numerous, such as headache, dullness, discomfort in the abdomen, backache, furred tongue, etc., but the most important result of severe chronic constipation is the condition often called auto-intoxication. When the contents of the colon are unduly delayed in their passage to the anus, and remain long retained within the body, certain alterations take place. Chemical changes occur in the faecal material, and many of the waste products

of digestion become still further split up into poisonous substances or toxins. Under normal circumstances there would not be time for the formation of poisonous by-products before the fæces are discharged from the body; but in chronic constipation considerable quantities of these may form while the fæces are still in the colon, and may then be absorbed by the bowel wall and find their way into the blood-stream. The patient, in fact, is slowly poisoned by toxins formed within his own colon.

We have good evidence of the extremely poisonous nature of these toxins in cases of intestinal obstruction. Here, when death occurs, it is more often due to a profound toxæmia from the poisons generated within the obstructed bowel than from the obstruction itself.

The toxæmia in chronic constipation is never so serious or profound as in the intestinal obstruction, because the poisoning occurs more slowly, and the bowel wall being undamaged, absorption does not occur so readily. It often, nevertheless, produces after a time very serious consequences. The patient becomes lethargic and listless. The appetite is poor, and there is a general feeling of not being well. The skin, instead of looking healthy, becomes of a greyish or earthy colour. The skin smells, the tongue is coated, and frequently much of the subcutaneous fat disappears. There is generally a chronic headache, and sometimes severe neuralgia and even more serious mental symptoms have occurred. The appearance of patients suffering from chronic auto-intoxication is often quite characteristic, the listless appearance and the colour of the skin being alone sufficient to identify them as the subjects of chronic constipation.

Mental despondency is very frequently met with in a marked degree. There is considerable evidence that the endocrine (ductless) glands are seriously affected by stasis in the colon, and that many of the more prominent symptoms may be attributed to this factor.

To my mind, it is clear that it is not the stasis which is the cause of the trouble, but the fact that some change has occurred in the wall of the bowel which allows toxins generated in the intestine to be absorbed direct into the blood-stream. Whether these toxins are normally present in the colon, but are not absorbed by a normal bowel

wall, or whether the toxins are abnormal and the damage of the bowel wall is secondary, we cannot at present say.

The three leading abdominal surgeons of England are obviously in agreement.

Dr. John Harvey Kellogg is one of the best known physicians and surgeons in the United States. He is a high authority on dietetics and on all the natural methods of curing disease and he has done invaluable pioneer work in many directions. Besides he is an excellent popular writer. Kellogg is of opinion that most of our diseases are due to our faulty methods of living and of feeding, and he has created by far the largest health institution in the world, the Battle Creek Sanitarium, in which he has treated more than 100,000 patients. As he employs an enormous staff of physicians, surgeons, biological chemists, X-ray operators, etc., and as he has a large organization for filing the case histories of patients, his practical experience and his knowledge of all the factors connected with health and disease is unrivalled. Dr. Kellogg is one of the most enthusiastic supporters of the doctrine evolved by Sir Arbuthnot Lane. He wrote in his book, *Auto-intoxication or Intestinal Toxemia*, 1922, on pages 45 and 19:—

Food is to the body what earth is to the plants. The food is the soil out of which the body grows. The four million villi of the small intestine are the rootlets which suck up the nutrient material prepared by the digestive ferments to nourish the tissues. If with this nutrient material are mixed poisonous substances, the natural result is the manifold disturbances of the bodily functions and the varied degenerative processes, which, through the labours of Bouchard, Combe, Roger, Brieger, Tissier and a host of other observers, have been shown to arise from the condition known as "intestinal toxemia." Prominent among these disturbances may be named, not only various gastric intestinal disorders, including gastric and duodenal ulcer, cholecystitis, cholelithiasis,

pancreatitis, colitis, appendicitis, acute and chronic diarrhœas and dysenteries, but also the grave disorders that are due to organic changes such as cirrhosis of the liver, arterio-sclerosis, myocarditis, Bright's disease, cardio-vascular renal disease, and probably diabetes.

The great increase of diseases of the heart and blood-vessels, diabetes, Bright's disease and other disorders of degeneration which has occurred within the last thirty years and is becoming more and more evident with each year's issue of the U.S. mortality statistics, is without doubt in large part due to the premature wearing out of the defensive mechanism of the body on account of the enormous amount of over-work required of it in dealing with the flood of toxic products which find their way from the colon into the blood stream.

In his book, *Colon Hygiene*, 1923, he stated :—

Virchow more than half a century ago called attention to the fact that post-mortem examinations show evidences of disease of the intestines in almost every case of many hundreds examined, irrespective of the cause of death. Indeed, he declared it to be almost impossible to find an adult person whose intestines did not show adhesions and other evidences of chronic disease.

Chronic auto-intoxication is unquestionably a factor in nearly all chronic disorders, and lays the foundation for tuberculosis, cancer of the stomach, ulcer of the stomach, and other gastric disorders. Many women supposed to be suffering from disorders peculiar to their sex are really suffering only from auto-intoxication, which is the natural result of prolapse of the viscera, colitis, and inattention to the hygiene of the bowels.

At first the evil effects of this systematic poisoning do not appear. Indeed, many years may elapse before serious consequences make their appearance. The reason for this is that the body is provided with means of defence. The mucous membrane acts as a filter to exclude poisons. The liver destroys poisons. The thyroid gland, the suprarenal capsules, and probably the spleen and several organs, aid in the destruction of poisons. The suprarenal glands are believed to be especially active in destroying the

poisonous pigments which are produced by putrefaction in the intestine.

After a longer or shorter time these defences break down. The mucous membrane becomes the seat of infection—colitis—and allows a much larger quantity of poisons to pass into the blood stream. The liver, thyroid, and other poison-destroying organs become damaged by overwork, and fail to keep the blood clear of poisons. The kidneys are enormously overworked in their efforts to remove these deadly poisons from the blood, and so lose their efficiency. Now the effects of chronic poisoning begin to make their appearance. Every organ and every function of the body shows evidence of damage. The poisons circulating in the blood irritate the walls of the blood vessels and cause first contraction, then hardening and degeneration, or arterio-sclerosis. The brain and nerves show evidences of depression or irritation, according to the nature of the dominating poisons. Headache, neuralgia, neuritis, paralysis, mental dullness, neurasthenia, even insanity, are the results. Diseases of the liver, thyroid gland and spleen develop. Skin diseases of various kinds and every sort of bodily derangement are seen. The putrefying contents of the colon readily pass backward into the small intestine. The infection thus induced may travel backward the entire length of the small intestine, to the stomach, liver, gall-bladder, pancreas and duodenum, giving rise to ulcer of the stomach, duodenal ulcer, gall-stones, inflammation of the gall-bladder, infections of the liver and jaundice resulting from these conditions, and pancreatitis, a still more serious condition. This is essentially the same thing as discharging a sewer pipe on to the dinner table and mingling sewage with the food.

In his book, *The Itinerary of a Breakfast*, 1923, Doctor Kellogg wrote on page 143 :—

A moment's consideration will show that such corrupt and putrescent matters must be capable of producing much greater mischief when in the body than after removal from it. If the mere breathing of the greatly diluted volatile poisons arising from such putrescent matter will

produce highly unpleasant effect, how much more grave must be the effects when through the retention within the body of these foul substances all of their poisonous contents are absorbed and sucked up into the blood and circulated throughout the body! In other words, when a person through constipation throws off through the lungs, kidneys and skin a large part of the poisonous matters which ought to have been discharged through the bowel, how great must be the mischief done! There is abundant reason for believing that the poisoning of the body, or so-called intoxication, which results from the absorption of poisons from the intestine, is the chief cause of most chronic diseases and of premature senility and decay, as well as a very potent and predisposing cause of many acute maladies.

As the child advances in years the putrefaction germs increase in number in the intestine. Through the use of meat highly active putrefaction germs are introduced into the intestine and grow and multiply in great numbers, so that the stools become very offensive and chronic auto-intoxication results. The ultimate effects are constipation, colitis, so-called biliousness, gastritis, inflammation of the gall-ducts, gall-stones, skin diseases of various sorts, neurasthenia, and in later years Bright's disease, hardening of the arteries, high blood-pressure, apoplexy, paralysis, insomnia, mental depression, and even insanity.

Among the worst of the putrefaction germs which are commonly found in the intestine in the diseased conditions of adult life are the *bacillus coli*, *Welch's bacillus*, *bacillus subtilis*, *streptococcus*, *entero-coccus*, *bacillus putrificus*, *bacillus paracoli*, and sometimes the typhoid bacillus. All of these germs produce most virulent poisons, and when present in the fæces in large numbers they are certain proof of the existence of chronic intestinal auto-intoxication, even though the characteristic symptoms of auto-intoxication have not yet appeared. A coated tongue, a sallow complexion, dark circles round the eyes, appearance of brown spots upon the hands or other parts (the so-called liver spots), offensive breath and perspiration, the discharge of foul-smelling gases from the bowels, putrid stools, a thin, inelastic parchment-like skin, dullness of mind, inability to concentrate the mind, irritability

or depression without cause, cold hands and feet, perspiration of the hands and feet, chronic headache, attacks of migraine or sick headache—these and a score of other symptoms which might be mentioned are certain indications of chronic poisoning, prompt attention to which may prevent the development of later more serious conditions, such as hardening of the arteries, Bright's disease, with albumen and casts in the urine, or apoplexy with paralysis. Grave symptoms of auto-intoxication do not appear until after the mechanism of the body, through which nature deals with poisons, destroying and eliminating them, has broken down and failed to accomplish its purpose as a result of the overwhelming amount of work which has been thrown upon it. Hence, the appearance of symptoms of auto-intoxication indicates that the body has already become crippled and that the matter must receive serious and immediate attention.

One of the leading American authorities on abdominal diseases is Dr. Samuel Goodwin Gant, Professor of Diseases of the Rectum, in New York. Professor Gant obviously believes with Sir Arbuthnot Lane, Sir Berkeley Moynihan, Mr. Lockhart-Mummery and Dr. Kellogg that chronic bowel stagnation, followed by auto-intoxication, is responsible for innumerable diseases. We read in his important volume, *Constipation and Intestinal Obstruction*, 1909, on pages 131 and 133 :—

Auto-intoxication, or self-poisoning from the intestinal canal, is a frequent manifestation of chronic constipation, if the reported experiences of many clinicians are to be relied upon.

The following are some of the numerous symptoms met with in constipated individuals which have at various times been ascribed to intestinal auto-toxicosis: Furred tongue, bad taste, foul breath, nausea, thirst, sallow complexion, certain skin affections (acne, urticaria, erythema, pemphigus, impetigo, etc.), anæmia, weak pulse, lassitude, anorexia (lack of appetite), insomnia, headache, neuralgia, loss of memory, inability to concentrate the mind, irasci-

bility, melancholia, temporary insanity, infantile convulsions, and numerous other phenomena.

Except on the ground of intestinal auto-intoxication and the resulting copremia (stool blood poisoning), it is extremely difficult to account for the above-enumerated manifestations, which are so frequently encountered in constipated individuals.

Surgeons and obstetricians have learned from experience that when a patient has a sudden rise of temperature, which cannot be accounted for on the ground of infection, the best thing to do is to administer a cathartic (purgative) or high enema and thoroughly empty the bowel—a procedure which is generally followed by a prompt reduction in the temperature, pointing to the fact that fæcal retention and absorption of noxious products were at the bottom of the trouble.

Clinicians are generally agreed that infantile convulsions can be arrested by paying proper attention to the hygiene of the bowel, and that the condition of persons suffering from insanity or from organic diseases of the nervous system is nearly always improved by securing a regular daily evacuation—facts which go to show that auto-intoxication, while perhaps not the cause of the disease, has at least an aggravating effect upon it.

Patients suffering from obstinate constipation not infrequently suffer from furred tongue; bad taste in the mouth; foul breath; nausea; thirst; indifferent appetite; gaseous eructations; flatulence; abdominal tenderness; colicky pains; cold extremities; sallow complexion; fæcal fever; small weak pulse; anæmia; palpitation; albuminuria; lithemia (uric acid), frequent micturition (urination); dark-coloured urine; indicanuria and increase of the solid constituents in the urine; skin affections.

Constipation complicated by fæcal retention of sufficient magnitude may, owing to the pressure and irritation caused by the fæces, produce local disturbances such as diarrhœa; intestinal catarrh; catarrh; discharges of mucus, alone or admixed with pus and blood; ulceration; enteroptosis (dropping of bowels); dilation of the bowel; localized peritonitis; adhesions and tumefactions; localized pain, and disturbances and diseases of the bladder,

urethra, prostate, seminal vesicles, uterus, tubes and ovaries.

I have many times observed the following conditions which appear to be the result of costiveness and chronically retained fæcal accumulations: Enteroptosis, angulation, dilatation, and displacement, bowel congestion, irritation, and other diseases and disturbances of the uterus, ovaries, and tubes, menorrhagia (excessive menstruation), vesical, prostatic, and urethral disturbances, neuralgia of the buttocks, sacrococcygeal region, and limbs, cold extremities, seminal emissions, and hæmorrhoids, caused by the injury to or blocking of the iliac, hemorrhoidal and pudic veins, as well as congestion, erosions, and ulcerations induced by irritation and pressure upon the intestinal mucosa and its blood-vessels by the accumulated fæces.

Dr. S. G. Gant wrote on page 248 of his book, *Diseases of the Rectum, Anus and Colon*:—

In extreme cases of stasis with auto-intoxication the skin is marked by brown blotches, acne, urticaria, erythema, etc., there is marked anæmia, lowered blood-pressure, and the patient suffers from neuralgia, fæcal fever, and melancholia.

End-results.—Authorities have attributed the following symptoms, complications, and end-results to bacterial infection and toxæmia arising from chronic obstipation—stasis—with auto-intoxication, viz. degenerated body tissues, ulcerated gums, endocarditis (heart disease), pyorrhæa alveolaris, degeneration of the breasts, arthritis—rheumatism, gout—loss of hair, appendicitis, cystitis, endometritis (inflammation of uterus), salpingitis, cholecystitis (inflammation of gall-bladder), peritonitis, pancreatitis, thyroid gland, hepatic (liver) and pancreatic disturbances, duodenal dilatation and ulcers, abscess, eye and bone affections, and visceroptosis (drooping of bowels).

Obstipation and chronic intestinal auto-intoxication, through systematic weakening, also predisposes the patient to tuberculosis, cancer, Still's disease, nephritis, arteriosclerosis, other chronic ailments, and acute terminal infections.

One of the leading French surgeons is Dr. Victor Pauchet. He published in 1926 a volume, *La Constipation*, in conjunction with Dr. H. Gaehlinger, in which we read:—

Left-sided constipation is relatively trivial, and consists of dried faeces which are only slightly toxic lying in the rectum. It is extremely frequent, and is usually not accompanied by indications of auto-intoxication. Those who suffer from it become used to it, and many practitioners have among their patients old people who have had left-sided constipation all their lives, and who empty their bowels with a suppository or an enema. Although left-sided constipation is usually not toxic, it can become toxic.

On the other hand, right-sided constipation consists of liquid matter, and is accompanied by symptoms of auto-intoxication, of infection. This is Lane's disease, or chronic intestinal stasis. It is the Great Disease from which half the diseases known to pathology seem to flow. It reduces the physical, moral and intellectual powers of the individual from 20 to 80 per cent, shortens life, predisposes to senility and to the most varied nutritional diseases. As a rule, right-sided constipation, accompanied by auto-intoxication, has been preceded during a more or less extended period by a left-sided constipation which has become firmly established.

The tongue is dirty, whitish, or yellowish. The breath is often foul and the accentuation of these symptoms may indicate a crisis.

Appetite is fickle. It diminishes among nervous patients, who reduce food intake through fear of pain. Among most patients appetite is capricious, and sometimes a pronounced appetite appears before a painful paroxysm. Others suffer from hunger pain accompanied by acidity of the stomach, caused by colitis. Treatment of colitis is apt to reduce acidity.

One of the symptoms frequently mentioned by those who suffer from stasis and colitis is the constant feeling of nausea which they experience in the morning on waking, during the day and after meals. This sensation is to be found particularly in patients who suffer from stagnation of the liver and blockage of the appendix.

According to age, the lesions, their extent and the dietary methods followed, the general health is more or less affected. There are patients who are generally in good health and who suffer periodically from crises of auto-intoxication, and there are others who suffer from pronounced stagnation, who are thin and who present all the signs of serious and continuous self-poisoning.

Often there is a considerable loss of weight. Weakness is constant, and sleep difficult and often interrupted by nightmare. For such patients a good evacuation has a better effect than a sleeping draught. They suffer from headache and migraine, and these are particularly pronounced during periods of stool retention. Fairly often it happens that headache disappears almost immediately after evacuation. In such cases auto-intoxication is not a sufficient explanation for the certain improvement. However, headaches do not always disappear instantaneously, but as a rule only several hours after the action of the bowels.

The skin of the auto-intoxicated is dry and pigmented, the complexion is greyish, yellowish, or earthy, and auto-intoxication can bring about veritable jaundice (Surmont).

Auto-intoxication is accompanied by rheumatic pains and various aches and pains in joints, limbs, etc. All these toxic developments spring from stool retention. Normally the poisonous substances contained in the stools are converted into less poisonous compounds by the liver. However, if the liver functions are impaired, that organ cannot neutralize the poisons emanating from the protein consumed. The symptoms are particularly frequent in the case of right-sided colitis. They occur less often when the colitis is left-sided. These two kinds of colitis, right-sided and left-sided, affect the elaboration of the poisonous substances which develop during the digestion of protein and we shall show in due course that these two kinds of retention and auto-intoxication lead to various sequels.

Gastric Symptoms.—A feeling of nausea becomes habitual. In painful paroxysms springing from constipation, retching is frequent. Often digestive troubles of the stomach are noted accompanied by great sensitiveness of that organ, aches, pyloric spasm, hunger pains,

etc., which make one suspect an ulcer. At any rate ulcer may be found as a complication of intestinal stasis.

The thyroid gland plays an important part in the detoxication of poisons. Like the liver, it acts more or less in transforming poisons generated in the intestines into less harmful substances. If the thyroid gland is overworked or irritated in consequence of chronic constipation the secretions of the gland are altered, its functions become irregular and we notice the outbreak of diseases due to thyroid insufficiency or to thyroid over-development, of Basedow's disease.

Auto-intoxication, by affecting the renal glands, can give rise to changes which are manifested by low blood pressure and pigmentation of the skin. Chronic constipation produces chronic lesions of the female breast and the development of cysts.

Chronic inflammation of the pancreas coincides often with degenerative developments of the liver, gall-bladder, etc.

Chronic intestinal stasis is accompanied in both sexes by lack of desire for sexual intercourse. In the case of women, irregular menstruation is frequent and the ovaries shrink and degenerate. These developments lead to troubles of menstruation.

Subjects of auto-intoxication often have a bluish skin, and the hands and feet are cold and occasionally swollen. They suffer often from frostbite.

The troubles of intoxication and of impaired digestion lead to affections of the heart, which range all the way from palpitations following a meal to a kind of angina pectoris.

Varicose veins are frequent among the constipated. They are caused by the accumulations in the intestines. The degeneration of varicose veins leads often to phlebitis, which is apt to occur during an intestinal crisis.

In many cases epilepsy is due to chronic intestinal stasis. Often epilepsy disappears on the day that the functioning of the digestive tract has been made normal by medical or surgical means.

Many mental diseases are due to chronic intestinal stasis, and surgical operations on the bowel which eliminate stasis often lead to their disappearance.

Changes in the Breasts.—Chronic constipation leads to chronic inflammation of the breast, and to the development of cysts, which favour the development of cancer. We have noted that the majority of women who suffered from chronic inflammation of the breast or from adenoma (tumours) suffered at the same time from intestinal stasis. If women complain about neuralgic pains in the breast or inflammation of the breasts it is always wise to have the digestive tube examined by X-rays. Very frequently they are cured by treating their bowels.

Hardening of the breast begins as a rule in the left breast and at the upper and outer quadrant. The trouble extends gradually to the whole of the organ and then attacks the right breast. The cystic development of the breasts and cancer may follow. Often patients have no idea that their breasts have degenerated. After an operation or effective intestinal treatment the breasts may regain their former shape and softness.

Skin Diseases.—Loss of weight is a cause of unattractiveness, fatigue and of early ageing. Loss of fat and of muscle lead to the development of flabby, pendulous breasts. The skin becomes hard, stiff, thin and discoloured and brown where there is pressure or friction. The eyelids and the neck take on a brown colour, and so do the skin of the abdomen and the upper parts of the legs. Strong acrid smells arise from the arm-pits and from the genital organs, and pruritus (an itching inflammation especially around the anus and the genital organs) may develop and many skin diseases may break out. Chronic intestinal stasis depreciates the human form and outline. It leads to the loss of hair, while hair begins to develop on the cheeks, the chin and on the back parts of the forearms of women.

Lack of Appetite, Impotence, Sterility.—Sir Arbuthnot Lane tells us that every individual reacts differently to the development of intestinal auto-intoxication, and that among the factors which affect matters are the colour of the hair. The darker the hair, the less is the resistance to auto-intoxication and the greater are the troubles of those suffering from it. The red-haired people offer the strongest resistance to auto-intoxication and suffer the least by it. People with brown hair suffer more. Lack

of sexual desire and power is accompanied by lack of appetite for food. Both disappear rapidly in women whose bowels have been made to act normally by surgical interference. We have operated on women suffering from stasis who had become entirely unsexed. The idea of marriage filled them with disgust. Soon after a colectomy had been effected, the development of the sexual instinct was so strong that one of the operated women married her doctor while the other one took a lover.

Diseases of the Circulatory System.—Auto-intoxication powerfully affects the muscles of the heart, the vaso-motor system and the glands of the skin. Troubles of the circulatory system cause the chilling of the extremities. Nose, ears, hands and feet are cold. The skin of the back and the upper part of the forearm becomes thickened and water-logged, purplish or bluish in colour and sometimes covered with acne. In cases of young women these developments may make it impossible for them to wear short-sleeved dresses. Those who suffer in this manner are troubled with frost-bite, and they complain of cold knees even when the temperature is warm. They like hot weather and high altitudes, and feel unwell when at the seaside and during the cold season. In certain cases one can watch the development of all the symptoms of Raynaud's disease.

Muscular Atrophy.—The muscles degenerate, become soft, and the patient adopts a stoop. In young people muscles shrink and produce various deformities, such as flat foot, curvature of the spine, knock knee, etc. The abdominal muscles get flabby and badly hold up the intestines, and stomach and colon sink down into the pelvis.

Menstruation Troubles.—The uterus sinks downward and backward, or falls forward. The ovaries atrophy, become hard, cysts develop and menstrual troubles set in. Hysterectomy, which formerly was mistakenly carried out in such patients, accentuated the troubles springing from auto-intoxication and consequent sufferings. Ovariotomy in cases of hardened and systemic arteries is not only useless but positively harmful. A surgeon should never remove a hardened and cystic ovary.

Chronic Intestinal Stasis reduces the power of the

individual by from 20 to 80 per cent. It hampers him continually in his physical and intellectual activities and in moral power. It shortens life, makes people old before their time, causes arterio-sclerosis, Bright's disease, epilepsy, diabetes, and particularly cancer and tuberculosis.

The late Dr. A. Combe, a distinguished Swiss physician and university professor, wrote in his book, *Intestinal Auto-Intoxication*, 1908 :—

The auto-intoxicated is a suffering being, of pale visage, sometimes yellow, with a drawn face and a sad expression. The hair is dry, without lustre ; it is often split at the ends, the colour is not frank, and the scalp desquamates (dries). The eyes are sunken, the conjunctiva slightly yellowish at times, with some puffing of the lids.

The forehead and the cheeks are prematurely lined, and frequently covered with yellowish or brown spots.

The lips are red and thickened, much too red for the pale complexion with which they strongly contrast ; at the time of the crises this redness increases, and is accompanied by considerable tumefaction (swelling) and heat, most disagreeable to the sufferer.

The thorax (chest) is emaciated, the abdomen is voluminous. The skin is dry, desquamates, and has a dirty greyish aspect. The hair on it is over-developed, but dry and broken.

The nails are soft, split, badly formed and often present transverse ridges indicating periods of crises. White spots are often found under the skin in the regions of the neck and axilla (armpit).

In the inguinal (groin) regions we can find numerous movable and painless glands. The sufferer perspires easily during the day, but particularly at night.

Rapid emaciation gives the sufferer a cancerous aspect. He complains of dizziness, headaches, neuralgias, and rheumatic pains in the extremities. He is in a state of nervous depression and neurasthenia. The breath becomes fetid and attacks of migraine with vomiting supervene ; obstinate constipation alternating with foul ill-smelling fæcal discharges occur, and these relieve the sufferer temporarily.

Finally he complains of attacks of pain on the right side, and there upon examination we find the cæcum thickened, movable, greatly distended, and with perceptible splashing sounds. Whenever the intestinal poisons enter the blood in too great quantities, the phenomena of old age will take place before their time.

Whenever there is exuberance of the bacterial flora—whatever the cause may be—there will be found a marked increase in the proportion of intestinal toxins.

The antitoxic and eliminative organs redouble their efforts, and, for a time at least, succeed in maintaining the equilibrium.

If one of the anti-toxic organs becomes weak and incapable the others supplement its action; if one of the eliminative organs becomes obstructed, the others take its place.

The channel of elimination varies with the individual; in some it is the skin; in others the intestine; in still others the kidneys; it is a sort of special constitutional habit, a kind of idiosyncrasy found sometimes in all the members of one family.

But the overwork of these organs is not accomplished without wear and tear, and, should it last, without lesions appearing. The liver becomes fatigued, and augments in volume; the kidneys become slowly inflamed, and owing to the incompetency of these organs, the hyperproduction of toxins is no longer checked; then begin the symptoms of intestinal auto-intoxication. The enterotoxins only slightly modified and incompletely eliminated, accumulate and circulate in the blood, irritating the heart, the blood-vessels, the vascular glands, the nervous system, etc. These organs react by morbid symptoms.

According to the individual predisposition, this or that organ will suffer; in one it will be the nervous system, in another the lungs, in a third the heart, etc. The gradual accumulation of these poisons in the organism, will, at variable intervals, determine crises of elimination according to the nature of the sufferer; at times a febrile access, at others a cutaneous outbreak, or an intestinal discharge, all of which leave the patient weakened but otherwise improved for a certain length of time, until a reaccumulation reproduces the same symptoms at necessarily varying intervals.

Dr. Anthony Bassler, Professor of Gastro-enterology at a leading New York Medical School and Hospital, stated in his Book, *Diseases of the Intestines and Lower Alimentary Tract*, 1920 :—

SYMPTOMS IN SPECIAL PARTS OF THE BODY DUE TO
INTESTINAL TOXÆMIA

Eye Symptoms.—It is not uncommon among these people to find choroiditis, iritis (eye inflammation), and various functional disturbances. There have been at least a score of instances of ophthalmologists who have referred cases to me for treatment for some gastro-intestinal condition, and only after the intestinal condition had been cleared up did the ocular symptoms disappear.

Asthma.—Not a few cases of chronic essential asthma are due to intestinal toxæmia. Some of the most striking results that I have achieved have been in cases of chronic asthma, particularly those that occur in the late part of the winter, from the middle of January on, before the warmer weather set in.

Myocarditis (heart inflammation).—In middle age in the absence of syphilis, alcohol or other toxic factors as the cause, and in the presence of a marked status of intestinal putrefaction, this disease may be due to these intestinal states. As a rule, however, when the heart condition is distinct, although a general benefit in health may be brought about by the treatment of the intestinal condition, the heart condition does not clear up. The same may be said of vascular and renal (kidney) conditions. There is no doubt that intestinal toxæmia is a factor of much importance in connection with arterio-sclerosis in middle age. When syphilis, lead, alcohol and various other factors can be eliminated, a chronic intestinal condition must be taken as the main cause.

Joint Conditions.—Arthritis deformans is, in my opinion, based upon the successful treatment of forty-five cases, largely due to an intestinal condition as the main cause. Some of the most striking successes I have had have been in cases of arthritis deformans. The relapses of the attacks have been stopped and distinct amelioration in the already affected joints has taken place.

Hyperacidity and Hypersecretion.—The textbooks on diseases of the stomach for a long time have described these conditions as entities without giving any causes beyond indiscretion in diet and drinking and ulcer. The truth is that by far the largest number of cases of hyperacidity are due to chronic intestinal toxæmia.

Atony.—Those states of loss of tone in the musculature of the stomach as well as diminution of peristaltic power, in my opinion, are due to an effect upon the Auerbach and Meissner plexuses by resorbed intestinal toxins.

Appendix.—It must be perfectly logical to anyone to consider that the large number of cases of acute and chronic diseases of the appendix must have its origin in the bacteriology of the intestinal canal. My belief is that the main cause of chronic appendicitis is an intestinal toxæmia, and this explains why it is that often after appendices are removed the symptoms continue just as before, because removal of the appendix will not cure intestinal toxæmia.

Chronic Colitis.—Chronic colitis is often a resulting condition from an intestinal toxæmia of long standing.

Gall-bladder Conditions.—It is a well-known fact that in some individuals, particularly those who have intestinal toxæmia, the bacteria may reach the general circulation, in which instance the liver may act as an organ of elimination, the bacteria gaining the bile and collecting in the gall-bladder may infect it with the production of cholecystitis all the way from the strawberry type to that of the fibrous form, and when the gall-bladder is enough diseased as in individuals who have a cholesteremia there can occur a production of gall-stones.

It may here be mentioned that intestinal toxæmia is an active cause of cirrhosis of the liver. It is a well-known fact that many alcoholics do not get cirrhosis of the liver, and that others who drink do. It is also known that cirrhosis of the liver is not an uncommon finding in the operating-room with people who have drunk no alcohol at all.

Gastric and Duodenal Ulcer.—It is my belief that a large number of cases of gastro-duodenal ulcer are secondary to intestinal toxæmia. Generally in these instances there is also a pathological appendix. The whole canal then has become more or less changed in the way of local pathology, such as has been described.

Dr. Ismar Boas, Professor of the Diseases of Digestion and Excretion in Berlin, is one of the highest German authorities on abdominal diseases, digestive diseases, etc. He stated in his book, *Habitual Constipation*, 1923, on pages 46, 48, 50, etc. :—

Chronic constipation in its fully developed form is apt to affect the general organism. This is not always the case, however, for there are many patients who suffer from constipation for years without making any complaint of their trouble. But as the disease progresses we frequently find some repercussion on the organism. Among the first of these reactions are a general physical depression, a disinclination to work, and an easy fatigability. We often find actual emaciation also, especially in patients who have the naïve conception that they can best treat their disease by starvation. Still more frequently do we have patients who complain of headache and dizziness. These head symptoms may declare themselves as a feeling of simple dull pressure and numbness or as severe migraine, which occurs infrequently at first, but then in gradually shorter and shorter intervals. While it would, of course, be an exaggeration to attribute every case of headache or migraine to intestinal disturbances, I have little doubt that cases of true migraine sometimes come under observation which are due to fæcal retention alone and are completely curable by removal of this cause.

Unquestionably the organs of circulation, the heart and blood vessels, may become affected in sympathy with the disease. Cardiac troubles of this origin are not organic but functional and transitory, quickly subsiding with the cure of the bowel difficulty, even though the latter has persisted for years. One form of this is what has been called "dyspeptic asthma," the attacks of which occur as a rule in the night. . . . Such heart attacks are the result of a large accumulation of gas in the stomach and intestines pushing up the diaphragm and thereby interfering with the normal action of the heart. In time, the heart may become affected, or it may, as I have been able to demonstrate, remain free from any organic change.

The kidneys also may suffer under the influence of obstinate and long continued constipation.

A more evident sign of the harmful working of constipation on the general system is the occasional appearance of fever (so-called toxic fever).

The foregoing sequels of chronic constipation are grouped under the now popular term auto-intoxication.

Notwithstanding a constipation of many years' duration the large intestine may remain absolutely normal. But it may in the course of time become the seat of complications of a more or less severe nature. First among these we may mention catarrh of the large intestine. As a result of the long retention of inspissated and sometimes stony-hard faecal masses (coproliths) we find irritation of the intestinal mucous membrane, with the discharge of a variable quantity of mucus.

We may distinguish catarrh of the cæcum (typhlitis), of the sigmoid flexure (sigmoiditis), and of the rectum (proctitis). In the most advanced cases the catarrh may involve the entire large intestine. That these local catarrhs may give rise to severe pain, or at least to great discomfort, hardly calls for proof. The symptoms are especially pronounced in cases of cæcal catarrh (typhlitis). There is no doubt in my mind that chronic constipation may cause not only irritation but even a tumour growth in this especially predisposed bowel segment. This opinion was formerly strongly opposed, but to-day, when most people have had the appendix removed, it would do violence to the fact to deny the possibility of an acute inflammation of the cæcum. We often see patients who, after the removal of the appendix, have a brief period of health, but soon begin to complain anew of pressure and pain in the right iliac fossa, undoubtedly due to faecal stagnation and catarrh in this portion of the intestine. Such a diagnosis appears simple after the removal of the appendix, but is easily mistaken for appendicitis before that operation.

Hæmorrhoids, as is generally known, are dilated veins near the rectum or in its mucous membrane. They are due solely to local diseases of the rectum—most commonly to constipation, especially when it occurs in the lowest part of the bowels.

Among other diseases often associated with a slow intestinal peristalsis are those of the liver and bile passages. The best example of this is afforded by gall-stone disease.

Of many thousand patients of this kind whom I have observed I can recall very few who said that their intestinal functions were normal, and not one who complained of diarrhoea. Almost ninety per cent of my patients with this trouble—of women fully ninety-five per cent—suffered from chronic constipation. This is of practical significance in that it demonstrates that regulation of the bowels is an essential factor in the betterment or cure of gall-stone disease.

Sluggishness of the bowels and constipation are likewise seen in diabetes. In former times diabetics were advised to consume large quantities of meat, but aside from the modern view that a large intake of proteins increases the excretion of sugar, is the fact that it also causes a notable slowing of peristalsis.

In gout also the occurrence of chronic constipation, either in its simple form or accompanied by severe colic, is frequently observed. The latter variety is sometimes called intestinal gout. A close relation must exist between the condition of the intestinal tract and gout, for the experience of many physicians has shown that the attacks of gout often alternate with diarrhoea in such a way that the former disappears suddenly upon the appearance of profuse watery stools.

Dr. Jogender Lal Chundra, a distinguished Indian physician, wrote on page 294 of his book, *A Treatise on Treatment*, Calcutta, 1911:—

It is an absolute fact that 90 per cent of all diseases may be directly traced to some derangement of the stomach or intestines. The colon is the main drain of the human body—a physiological sewer in fact; and if it be necessary, for sanitary reasons, to keep the main drain of your dwelling clean, how much more important it must be to keep the drainage system of the body free from filthy obstructions! We see the external dirt and hasten to remove it, but our eyes do not reveal to us the offensive internal accumulations—lakes of liquid fæces. If we could see them, we would not lay our heads upon our pillows until we had cleansed the human temple from its defilement. But there is a more serious aspect of the question. Scientific investi-

gation has proved that there is a constant interchange of fluids going on in the colon—that the liquid portion of the foul waste is in unceasing contact with the blood current, and that a process of self-poisoning, *Auto-intoxication*, is for ever going on by the re-absorption of this pestilential substance into the very fountain of life.

I have given long, carefully reasoned out, statements made by leading British, American, French, Swiss, German and Indian authorities, supporting and confirming Sir Arbuthnot Lane's views as to the far-reaching evil consequences of chronic bowel stagnation. I could easily fill a large volume with similar pronouncements. However, in order not to make this book unduly lengthy, I would give a large number of brief extracts and opinions in order to show that the disastrous and multitudinous consequences of the great disease of civilization, are recognized not only by a few leaders of the medical profession, but by a considerable number of open-minded and eminent physicians and surgeons. Dr. Alexander Bryce wrote in his volume, *Intestinal Toxæmia*, 1920 :—

There is no difficulty now in understanding the widespread prevalence of disease when we realize that the average man is daily charging his alimentary canal and tissues with hordes of harmful bacteria which tax his protective powers to the utmost to prevent them gaining a foothold in his body. Between the body cells and the germs that swarm all around there is incessant conflict, and in the end the germs always win the battle. But the fewer the hostile germs that are able to exert their poisoning powers, the longer will it be before disease and death appear on the scene. Hence within certain limits health and longevity are rewards for careful living, because in every case the time eventually comes when the intestinal filter fails, the liver ceases to destroy poisons, the glands become exhausted, and the kidneys can no longer keep the blood pure by excreting poisons.

So long as the intestinal mucous membrane is intact, little trouble need be apprehended from the ever-present

toxins, but when inflamed (as in some forms of colitis) or congested and abraded by the constant use of purgatives and laxative mineral waters, its defensive powers are crippled and the doors are open wide for the entrance both of harmful bacteria and toxins. This is the explanation of the frightful exhaustion and depression experienced by many people after a much delayed intestinal evacuation with or without the use of purgative medicine.

Effects of Auto-Toxæmia.—The scientist feels he must reckon with the fact that headache, malaise, lassitude, sciatica, tetany, epilepsy, eclampsia, many forms of skin disease, various nervous disorders, myxœdema, cretinism, chlorosis, pernicious anæmia, cirrhosis, nephritis, arteriosclerosis, have all been attributed to poisons of gastrointestinal origin. . . .

Dr. S. Henning Belfrage stated in his book, *What's Best to Eat*, 1926 :—

There is no more potent source of injury to the defensive tissues of the body than the poisonous substances absorbed from a constipated bowel. Moreover, these poisonous substances, circulating in the blood, set up by their constant irritation, what is known as fibrotic change in certain tissues—by this is meant, the destruction of the cells of the tissue, followed by the laying down of fibrous materials. This is Nature's method of healing. Every one is familiar with the scar that forms when the cells of the skin have been injured by cutting or burning. In the same way an internal organ may become scarred by the constant action of an irritating substance, and rendered less able to carry on its work.

The subject of bowel poisoning becomes easily tired, and suffers from headache, biliousness, and rheumatic pains. The tongue becomes furred and foul, and is a good indication of things inside the bowel. The breath is offensive. The skin becomes dirty and blotchy and prematurely wrinkled. The extremities are nearly always cold and blue, and chilblains are easily induced. The appetite is poor and capricious. The mind becomes affected, and the sufferer becomes depressed. The memory becomes unreliable, and the ability to concentrate on mental work is

lost. This mental disorder may go on to actual insanity if there is any hereditary tendency in this direction, or epileptic seizures may develop. The condition not infrequently leads to alcoholism, especially in women.

The tone of the muscles is diminished, and the ligaments or sinews are weakened, causing flat foot or spinal curvature. These deformities, associated with generally poor physique, arise in early life in constipated children.

One of the leading textbooks used by medical practitioners is the volume, *The Principles and Practice of Medicine*, by Osler and McCrae. We read on page 542 of the edition of 1925:—

Debility, lassitude, vertigo, and mental depression are frequent symptoms in constipation, particularly in persons of a nervous temperament. Headache, loss of appetite, a furred tongue, foul breath and gastric disturbance may occur. In girls the skin is "muddy," acne is common, anæmia may be associated, and there is a flabby state of the system generally.

When persistent, the accumulation of fæces leads to unpleasant, sometimes serious, local conditions, such as piles, ulceration of the colon, distention of the sacculi, perforation, enteritis, and occlusion. In women pressure may cause pain at the time of menstruation and a sensation of fullness and distention in the pelvic organs. Neuralgia of the sacral nerves may be caused by an overloaded sigmoid flexure.

A similar textbook, entitled *A Short Practice of Medicine*, by Robert A. Fleming, Professor of Medicine in Edinburgh, 1919, informs us on page 208:—

A huge number of persons suffer from constipation, and they may even neglect artificial means of relief without appearing to be much the worse, while others are rendered miserable if the bowels fail to act, naturally or with the help of medicine, for a period of forty-eight hours. The chief results are discomfort, bad breath, and thickly furred tongue, flatulence, sometimes colic, loss of energy and depression of spirits, headache, irritability, and sometimes giddiness.

Great stress has been placed on the evil effects of absorp-

tion from the bowel, but whether it causes chlorosis or not, certainly constipation and flatulence are not infrequently the predisposing factors in appendicitis. There are also pressure results on sacral nerves, causing neuralgia, and on veins, causing hæmorrhoids, and possibly even, in very extreme cases, œdema of the legs. A rectum blocked with hard fæcal masses may give rise to great distention of the bowel with gas, and fæcal impaction may be so great as to simulate peritonitis from the severity of the consequent colicky pains, while vomiting, eventually becoming fæcal, may even commence if relief is not obtained. On abdominal palpation we can feel the hard fæcal masses, mostly in the large intestine and cæcum. Sometimes these masses are tunnelled and diarrhœa due to irritation may actually coexist with constipation.

Dr. Walter Essex Wynter, physician to the Middlesex Hospital, wrote on page 26 of his work, *Minor Medicine*, 1908 :—

The common effects of constipation are headache, loss of appetite, foul breath, and furred tongue. There is often irritability of temper, lack of power of application, and general malaise. Inability to sleep soundly and waking unrefreshed are common accompaniments, usually associated with increased vascular tension. Among special disturbances may be mentioned epistaxis, and such paroxysmal affections as asthma, migraine, bilious attacks, and, in children, convulsions. Epileptic fits are encouraged, but can hardly be said to originate, in constipation.

There are, moreover, many complex and irregular groups of symptoms which might not ordinarily be thought of in this connection, due nevertheless to what has been termed Copræmia, or toxic absorption from the colon. Such cases are often rendered all the more difficult of detection by the fæcal accumulation being masked by even a daily motion of the bowels, and it may be only by a pelvic examination or the recognition of scybala by palpating the abdomen that a knowledge of the true state of things is arrived at. Complete corroboration is subsequently afforded by the immediate recovery of the patient when effective purgative measures have been adopted.

Dr. Charles D. Aaron, Professor of Gastro-enterology and Dietetics at Detroit, wrote in his book, *Diseases of the Digestive Organs*, 1921, on page 683 :—

Intestinal toxæmia is a form of blood-poisoning induced by the absorption of toxins or micro-organisms from a damaged intestinal mucous membrane. Any delay in the passage of the intestinal contents through the various segments of the intestinal tract exposes the patient to the danger of intestinal toxæmia.

The term "chronic intestinal stasis" as employed by Lane indicates such abnormal delay in the passage of the intestinal contents through a portion or portions of the gastro-intestinal tract as to result in the absorption into the circulation of a greater quantity of toxic or poisonous materials than can be disposed of by the liver or other protective organs.

We read in Professor W. J. MacCallum's well-known *Textbook of Pathology*, on pages 507 to 509, Edition of 1924 :—

Of course, only a small number of the existing bacteria are harmful to man, and it seems that we must believe that these have gradually acquired, through long adaptation, their ability to thrive in contact with the living tissue. The rest live outside the body under all sorts of conditions, requiring in their struggle for existence heat, moisture, and nutriment. The latter they get partly from animal or vegetable matter, in which they hasten the process of decay, which depends largely upon their ferment activities. Such saprophytes (organisms of decay) may occasionally acquire the faculty of parasitic existence, and point the way followed by those which we now think of as obligate parasites.

Bacteria live in great numbers on the body surface: they are taken into the digestive tract in great quantities in the food, and penetrate readily into all the external orifices of the body. At each point there is a mechanical or chemical guard of a sort, but nevertheless there is constantly an army of them besieging each portal. The impermeability of the horny layer of the skin, the constant

irrigation of the conjunctival sac, the cilia of the respiratory tract, the acid gastric juice, the irrigation of the urinary tract, the acid vaginal secretion—all act as outpost guards. Nevertheless, in each of these positions it is known that bacteria are not entirely destroyed and that there is a characteristic flora, including pathogenic forms, waiting, as it were, to break through the second line of guards. The whole upper respiratory tract is smeared with bacteria: the mouth is a perfect incubator of dozens of forms, and while the stomach and duodenum are relatively free, the lower intestine, and especially the colon, contains myriads.

Bacteria alone introduced into the tissues or body cavities are relatively easily killed. If, however, foreign bodies or dead tissue are present there, to afford a shelter against the disinfecting action of the tissue juices until multiplication to great numbers has occurred, the bacteria can more readily gain a dominating position. Bacteria in the uterine cavity in the puerperal state might be practically harmless were it not for the protected culture-medium offered by remains of detached and dead placenta, in which they reinforce themselves by growth until they can victoriously invade the uterine wall.

A "man seldom dies of the disease with which he sickens." He really dies of the secondary infection, which thrives in the body weakened by the original disease. One might say that the fatal outcome in cancerous disease is usually not from the effects of the cancer but from the bacteria that invade the emaciated subject. And so with destructive chronic tuberculosis of the lungs, in which the hectic symptoms seem to be due rather to the streptococci and staphylococci and other bacteria which secondarily infect the cavities in those organs.

Persons who die after long illness with such affections as chronic nephritis, cardiac disease, or cirrhosis of the liver, may show no special symptoms of infection other than a sudden fever at the end, but in their tissues at autopsy one finds, as pointed out by Flexner, streptococci or other bacteria which have finally invaded the failing tissue and have added the intolerable last straw.

Dr. A. B. Cooke, Professor of Anatomy at Nashville,

stated on page 67 of his book, *Diseases of the Rectum and Anus*, published in 1914 :—

We shall have occasion to speak of constipation as an etiologic factor with reference to practically every separate disease discussed. Explanation of this universal causal relation is to be found in the mechanical interference with the circulation of the rectum which constipation always occasions. Venous congestion is one of the great underlying factors in the production of rectal diseases, and the anatomic position and structure of the organ, together with its peculiar function, render this to greater or less extent its normal condition. Constipation necessarily augments it. Fissure, hæmorrhoids, prolapsus, pruritus, proctitis, ulceration, abscess, and fistula are the most conspicuous lesions which may in many cases be traced directly to constipation and its coincident phenomena.

The present unsettled state of our knowledge of the etiology of malignant growths permits no definite assertion in regard to them. But discriminating observations justify the assumption that mechanical irritation is a factor both constant and weighty in determining their sites of development. If friction is admitted as a causative agency, the function of the rectum, particularly when it has to do with costive stools, would account for the disproportionate frequency with which intestinal cancer is located in this organ. To place malignant growths, therefore, in the list of rectal diseases for which constipation may, in a sense at least, be responsible, seems not altogether unreasonable.

Dr. Samuel T. Earle, Professor of Diseases of the Rectum at Baltimore, wrote on page 67 of his volume, *Diseases of the Anus, Rectum and Sigmoid*, 1911 :—

The Consequence of Constipation.—The three prominent and constant functional disorders that always result from constipation are an inhibition of peristalsis, and accumulation and hardening of fæces, and an obstruction to the circulation of the rectum and sigmoid which results in turgescence and congestion.

Among the pathological conditions resulting from constipation may be mentioned hæmorrhoids, anal fissure,

typhlitis, due to the distention of the cæcum by faecal matter, and its consequences; a certain number of cases of appendicitis, as in a large percentage of such cases faecal concretions are found in the appendix; membranous enteritis, sigmoiditis, prostatitis, enteroliths, dilatation, which may be general, involving the whole of the large bowel from the cæcum to the anus, or limited, affecting any section thereof; ulceration, diverticulitis, hernia, as a result of violent straining at stool to overcome constipation; diarrhœa with constipation and intestinal obstruction, auto-intoxication.

Dr. Jerome M. Lynch, Professor of Intestinal Surgery in New York, published in 1919 an important volume, *Diseases of the Rectum and Colon*, in which we are told that chronic bowel stagnation causes or aggravates innumerable diseases. The writer informs us:—

The symptoms of constipation are numerous and varied, and nearly every disease that man is heir to can be traced to the condition of his bowels. It is difficult to separate the symptoms and complications of constipation; they must be considered together. Of course auto-intoxication is not always associated with constipation; but at the same time a constipated individual is more apt to suffer from auto-intoxication than one whose movements are regular.

Those working in institutions for the insane now recognize the importance of constipation as an etiological factor to insanity. Cases of neurasthenia, hypochondriasis and incipient insanity which have come under the care of the writer have been intensely benefited, and in some cases absolutely cured, when their constipation was relieved. Every one who has practised medicine for any length of time has seen cases of headache, neuralgia, hysteria, and other mental indications of minor mental symptoms relieved, and in some cases cured, by proper attention to the hygiene of the bowel. The writer is convinced, after years of special work in this line, that more hypochondriacs and neurasthenics are created by the lack of a daily movement than by almost any other condition.

Vertigo is perhaps one of the most frequent symptoms of constipation. Of course the gastric symptoms so commonly

associated with this condition may be due to the stomach, and constipation is secondary under such circumstances. As a matter of fact the functions of the gastro-intestinal tract are so interdependent and closely allied embryologically, anatomically, physiologically, chemically and otherwise, that disturbance in one part or function will assuredly be followed by disturbances in other parts of the digestive tract.

Pernicious anæmia is now looked upon as of intestinal origin, resulting from constipation and auto-intoxication. The same applies to dyspepsia, asthma, and other disorders of the respiratory tract.

Ebstein (in the *Deutsche Medizinische Wochenschrift*, Berlin, October 19, 1911) suggests that while asthma is not always due to constipation, he has found these two ills so closely associated that he is inclined to believe that asthma is frequently a symptom of constipation. Further, he has found that when the constipation was cured the asthma subsided. This has been borne out in every case coming under the observation of the writer and his associates.

In one of Ebstein's cases there was an interval of nine years before the asthma returned, and this attack was accompanied by dyspepsia and constipation; but as soon as the gastro-intestinal functioning was restored the asthma again disappeared. He also describes a case in which a boy of eight, who was cured of an unusually severe attack of asthma, found that his constipation was also relieved.

Cardio-vascular disturbance is a frequent symptom of chronic constipation. Murmurs, palpitation with tension, and an irregular pulse disappear when constipation is relieved. Functional disorders of the kidney are occasionally symptoms of chronic constipation. Ovarian pain, bearing down feeling, increased micturition, congestion of the pampiniform plexus of the uterus, and disorders of menstruation are also occasional symptoms of constipation. The writer had one case under his observation for a number of years in which severe pain in the spermatic cord was the first symptom of constipation, and was always cured by relieving the latter. Gout was the first symptom in another case under our care.

It seems reasonable to suppose that there is a direct

relationship between constipation and gout. As uric acid and other harmful products are converted into less harmful substances, if in the diseases such as gout and rheumatism uric acid exists in larger quantities than normally, we may infer that uric acid is not being converted into urea. As we know that this should take place in the liver, we must infer that some insufficiency of the liver exists under these circumstances. Furthermore, we know that constipation and auto-intoxication can cause temporary insufficiency of the liver, and we know that as the result of insufficiency of the liver an excess of uric acid occurs; therefore, if our premises are correct, we may say that constipation can precipitate an attack of gout.

Acne and other cutaneous eruptions frequently appear at the onset of an attack of constipation, and are nearly always present in chronically constipated individuals. That appendicitis can cause constipation, and vice versa, is admitted by all. It is therefore difficult to decide in many cases which is the cause, and which the effect.

The pathology of auto-intoxication is the pathology of most of the disease to which we are heir. As a result of stasis and auto-intoxication, we have increased bacterial growths, with a lowered vitality of the cells of the mucous membrane of the bowel. Lowered vitality means lowered resistance, with ulceration and increased toxæmia; then a vicious circle is established, and every one is familiar with the end-results of auto-intoxication.

Symptoms.—The patient, after the disease has existed for some time, is pale with a sallow complexion and lustreless hair. The tongue is coated in the centre and red at the edges. The veins are prominent and dilated. He suffers from irregular appetite, anorexia, and often from intestinal colic, from periodical attacks of headache and diarrhœa, inability to concentrate the mind, loss of memory, and a tired feeling. He feels drowsy and sleepy most of the time; is constipated between attacks, suffers from muscular weakness, increased arterial tension, arterial sclerosis, and is very easily depressed:

Dr. H. W. Wilson stated at a "Discussion on Alimentary Toxæmia," at the Royal Society of Medicine in 1913:—

The effect of toxic absorption from the lower alimentary canal on the rest of the digestive apparatus may be profound. Functions of the stomach, liver, and pancreas may be much disturbed. Various forms of dyspepsia seem to be secondary to it, and prove most intractable as to treatment unless the originating cause is first attended to. . . .

The nervous system is particularly prone to be affected in some way by toxic absorption from the colon. It is very remarkable how rare it is to find the complaint in patients of a phlegmatic or bucolic temperament, and it seems to be a fertile source of neurasthenia and high-strung nerves. Too frequently are neurasthenic patients subjected to "rest cures," and the usual routine treatment of such cases, without first having a thorough overhaul of their digestive apparatus. It is rare, too, to find the subjects of colon intoxication without nerve symptoms of some sort or kind. Commonly enough these may be of minor degree, but none the less distressing. Such patients often complain of depression and irritability; trifles worry them; they have difficulties in mental concentration, and as to memory. They lose their sense of well-being, are often restless, and are apt to get morbidly introspective.

It is a not uncommon cause of insomnia, and one which should be more widely recognized, as it often escapes the attention of the medical attendant. Nerve symptoms, however, may be of great severity. For example, I have seen success follow treatment of the colon in intractable hemicrania (head neuralgia) of many years' standing, where previously all ordinary treatment had failed, and the patient had had to be given morphia, under medical advice, for attacks of increasing intensity and frequency. Acute neuralgias, and some forms of neuritis, are associated with it, and I have found it the cause in several instances of tender scalp. Da Costa, writing in 1871, recognized the importance of inquiring as to the state of the large bowel in cases of anomalous nervous disease; and were this more frequently borne in mind much benefit would accrue to individual sufferers.

The effects of colon auto-intoxication on the circulation differ in the same way as the trouble produces different symptoms in different subjects. In some cases blood-pressure is abnormally low—this is often found to be so

where there is marked mental depression. On the other hand, it would seem that in many instances it is a source of abnormally high pressure. Tachycardia or bradycardia may exist, or the pulse may exhibit marked irregularity in time and force. Poor circulation, as is evidenced by coldness of the extremities, is common, and is a very frequent symptom. I have seen it associated in more than one case with Raynaud's disease.

Diseases of the locomotor system not uncommonly find their origin in chronic intestinal auto-intoxication. It is a more than probable cause in some cases of rheumatoid arthritis, one of prime importance in gout, especially of the acute type. In quite a number of cases I have seen efficient lavage of the colon cut short an attack of this disease where previously all the more usual methods of treatment had failed to bring or maintain relief. Fibrositis, too, may find its origin in absorption of toxin from the digestive apparatus, and it is now recognized by many authorities as a direct cause of this painful and troublesome affection. The state of the skin in these chronic toxic cases is often peculiarly dry and harsh. Affections such as some forms of eczema, psoriasis, and chronic urticaria may arise from a similar cause. I have seen success follow treatment of the colon in obstinate conditions of herpes and dermatitis herpetiformis and also of septic state of the nails.

Dr. Alfred C. Jordan, a distinguished radiologist, wrote in his book, *Chronic Intestinal Stasis*, London, 1923, on page 5 :—

The intestinal stagnation gives rise to a definite train of clinical disturbances, while the toxæmia, or poisoning of the circulating blood by the products of bacterial action, affects every tissue and organ of the body.

Many of the symptoms and signs of stasis are due to derangement of the ductless glands and other organs. So interwoven are the effects that it is impossible to devise a complete logical classification of the symptoms and physical signs of chronic intestinal stasis.

Derangements due to the direct effect of intestinal stagnation are: Constipation, flatulence, distension, abdominal pain, abdominal tenderness (general or localized)

and colic. Appetite is poor or capricious. There may be nausea; the breath is foul, and there is a bad taste in the mouth.

In advanced stages, the bowel wall is affected by the general toxæmia, the mucous membrane becomes catarrhal, and the constipation gives place to a form of diarrhœa in which mucus is voided with small amounts of fæcal material.

Some of the symptoms of early stasis may be said to be due to uncomplicated toxæmia, though none can say when derangement of one or other of the ductless glands begins to enter the picture. These early symptoms include headache, backache, muscular pains and aching joints, neuralgia and neuritis; attacks of asthma occur in some cases. All the early symptoms enumerated above are intermittent at first, but become more persistent as the disease progresses.

As the disease gains a firmer hold on its victims, it gives rise to a train of "mental disturbances," covering the whole range of intensity from lassitude and sexual inertia to delusional insanity. The catalogue includes: Depression, want of energy, lack of concentration, loss of memory, and neurasthenia. Sleeplessness and bad dreams are common complaints. Serious mental disturbances include epilepsy, imbecility, melancholia, and suicidal mania. In three instances in my practice acute depression ended tragically in suicide.

The physical signs of stasis are very constant and definite. The skin is sallow, fatless, and inelastic; it is stained, the brown coloration commencing in the regions where pigment is present normally, i.e. the eyelids, the axillæ and the back of the neck. The sweat has an unpleasant odour.

The hair of the head falls out. This is due to the general toxæmia, for the impaired nutrition of the tissues of the scalp allows microbes to invade the roots of the hairs.

Pyorrhœa occurs in toxic gums, and leads to infection of the roots and sockets of the teeth. Rheumatic swelling of joints and rheumatic arthritis occur from secondary infection of the toxic joint tissues by micrococci. Suppuration at the roots of teeth increases the liability of the joints to these secondary infections.

There is general wasting and softening of the toxic muscles and ligaments of the body. In young subjects,

the lack of muscular support of the joints leads to spinal curvature, flat foot, and other deformities. Over-extension of the joints is usual in "toxic" children. The thumbs are "double-jointed," the fingers and wrists can be bent back to an abnormal extent; the elbows can be over-extended.

In older subjects, the ciliary muscle of the eyes weakens, the lens hardens, and so accommodation fails. There is general loss of fat, leading to prominence of the bones, wrinkling of the skin, and an appearance of premature senility. The mammæ become pendulous. The skin of the abdomen and of the buttocks hangs in folds. These changes contribute to the appearance of premature old age.

The viscera lose their fatty support; the kidneys drop, and the uterus falls back upon the rectum.

Dr. A. Mantle stated in the *Discussion on Alimentary Toxæmia* at the Royal Society of Medicine, in 1913:—

Just as colitis may be an infection from the mouth and stomach, and subsequent to gastritis and duodenal catarrh, so may the stomach be infected from below in association with chronic appendicitis and catarrhal inflammation of the colon. By either route the gall-bladder and pancreas may become infected and explain the pain in gall-stones being so commonly referred to the stomach, and epigastric pain being suffered with appendicitis. From a large experience I look upon a toxæmia of intestinal origin induced by chronic constipation and catarrhal inflammation of the colon as the most common form met with. It is usually that form of constipation in which there is delay in the passage of the fæcal matter favouring bacterial multiplication, and is often met with in the neurasthenic. Deficiency of motility in the intestinal wall leads to stasis, and the irritation of hardened fæces to catarrh of the mucous membrane. In the other form of constipation which is due to deficient expulsive power, the fæces have reached the pelvic colon, but are not efficiently expelled, and we get the same catarrhal symptoms, the result of irritation. That there are thousands of constipated people who get no bad symptoms, such as have been described, there can be no doubt, for we must remember that with such a

strong barrier of defence as we possess in the cells of the mucosa, together with the powerful antitoxic function of the liver, probably it is only when the mucous membrane is inflamed, and its epithelium stripped by abrasions, or is ulcerated—or, again, when the liver or the kidneys become inadequate—that toxins find their way into the circulation.

I believe the toxins from the intestine have a special affinity for the nerve centres, and although I am quite prepared to admit that neurasthenia is the cause of constipation, the intestinal wall and reflexes taking on the lethargy common to the neurasthenic condition, yet the bowel stasis increasing bacterial activity, and possibly absorption of toxins, may increase the nervous symptoms of neurasthenia, and also affect the vasomotor centres, bringing about the circulatory changes which are so common in these cases, for there is usually too little blood in the periphery, and too much in the splanchnic area, with a tendency to congested viscera. There is a feeling of a great sense of fatigue, and patients say they always feel tired. Sir Lauder Brunton says, "the *Bacillus coli* seems to have a special power of producing fatigue toxins, and many people in whose intestines it exists in great abundance suffer from constant weariness and a feeling of fatigue." The skin is usually sallow, and as we may get various skin eruptions, which I have already referred to, from ingested poisons in articles of food, so we may find the toxins of chronic intestinal stasis affect the skin, probably due to their irritation or stimulation of the vaso-motor centres, and produce such eruptions as eczema, psoriasis, urticaria and pruritus. The joints may become affected, and I have already incidentally mentioned rheumatoid arthritis as being produced by infection from the naso-pharynx, but the same joint symptoms arise from poisons absorbed from the intestinal mucous membranes, and we know many poisons favour the joints.



CHAPTER IV

How Chronic Constipation Causes Insanity and Suicide

In the early states of insanity, and throughout its whole course, the bowels are often in an obstinately constipated condition. There is no class of agents which acts so certainly and effectually, in relieving the mind when under the influence of depressing emotion, as cathartics (purgatives).
—DR. FORBES WINSLOW, *On Insanity*.

SIR ARBUTHNOT LANE and several of the independent authorities quoted in the previous chapters have expressed the opinion that chronic constipation leads not only to various diseases of the bowel and of the digestive organs and to many general diseases, etc., but even to insanity and suicide. To the uninitiated these statements may appear wildly exaggerated, ridiculous, unbelievable, absurd, preposterous, laughable. The weakness of scientific claims is frequently revealed by the strength of the language used and the reckless assertions made. Men will readily believe that chronic constipation may damage the alimentary tract, but they will doubt that it causes what is called mental disease.

Mental disease is a misnomer. The mind, like the soul, is an abstraction to which neither good health nor disease can be attributed. At the present moment it is fashionable to cure diseases of the intangible mind by psychological means, by psychotherapy, by soul cure. There can, of course, be no physical diseases

of the non-physical mind and soul. Insanity is not a disease of an intangible philosophical abstraction, called mind or soul, but is a disease of the body and particularly of the brain. The body is a single entity, and every discomfort, indisposition, disorder, or disease naturally has a very potent influence upon that most wonderful and most sensitive structure and organ, the brain. The mind has, of course, considerable influence over the body. Hope may change disease to good health, while fear, sorrow, worry and despair may create sickness. Psychopathologists may have some successes in brain disease by psychological means alone, but they have still greater successes if they combine psycho-analysis, etc., with a corrective diet and other means which regulate the body functions and therewith improve the physical health of the body in general and of the brain in particular.

The fact that chronic constipation is apt to affect nerves and brain to a considerable extent is, of course, known to every sufferer from bowel troubles. Every pill vendor glibly tells us in his advertisements that chronic bowel stagnation leads to mental depression, loss of memory, inability to concentrate one's mind, etc. I myself was driven to the verge of insanity by chronic bowel stagnation and auto-intoxication, as I have explained in my book, *Good Health and Happiness—A New Science of Health*, published in 1927. There are many business men who absolutely refuse to make any important decisions if they have not had a satisfactory motion in the morning, because they know that their mind is not clear and that they may commit grave errors of judgment in consequence. If slight constipation makes people irritable, nervous, unable to concentrate, and weakens their memory and judgment, it stands to reason that prolonged and severe constipation accompanied by auto-intoxication may lead to serious and to most serious brain diseases.

As it may be believed that the assertion that chronic

bowel stagnation is apt to lead to insanity and suicide is nothing but a highly sensational stunt of modern bowel specialists—sensational and totally unjustifiable self-advertisement is not unknown in the medical profession—I would like to say that the wisest medical men of the past have recognized that there is an intimate connection between the bowel and the brain and that the health, or ill-health, of the one may gravely affect the other. Hippocrates, the Father of Medicine, wrote twenty-three centuries ago in his Treatise, *The Sacred Disease*: “The depravement of the brain arises from phlegm and bile.” Even slight “biliousness,” which means constipation, leads immediately to corresponding “depravement of the brain,” and with the clearing of the bowel the clouded mind also becomes clear once more. Hippocrates and the great physicians of his time cured insanity in numerous instances by regulating the clogged bowels.

The physicians of antiquity did not possess any of the wonderful scientific instruments which we have at present, but they possessed vision, high intelligence and observation which are infinitely more valuable than the most perfect mechanical contrivances. The mind is more powerful than the machine, and a genius requires few tools.

The most eminent modern physicians and surgeons marvel at the knowledge of Hippocrates. In many respects medical treatment by the ancient Greeks was abreast, and even ahead, of modern treatment. The *British Medical Journal* of the 8th January, 1927, contains an address by Sir Charles Balance, the President of the Society of British Neurological Surgeons, in which we read the remarkable statement:—

The passage in Hippocrates (Littre's translation, Vol. IX, p. 159) in which craniectomy is recommended as a cure for blindness without evident disease of the eye seems to show that Hippocrates operated for the relief of optic neuritis. He writes: “When sight fails without evident disease of

the eyes an incision should be made in the parietal region, the bone trephined and the fluid beneath let out—that is the treatment, and thus these patients get well.” The seed cropped by Hippocrates did not germinate in regard to the treatment of amaurosis (blindness) without visible ocular disease till some forty years ago.

The craniectomies performed at the present day are not greatly, if at all, in advance of those carried out by the Hippocratic surgeons.

The ancients knew obviously far more about the brain than most of us imagine. Therefore we had better treat with respect their views regarding brain disease and their treatment of insanity. Celsus, a Greek physician practising in Rome, who lived about the time of Christ, stated in Book II, Chapter XII, and Book III, Chapter XVIII:—

Those who suffer from black gall, or who are affected by depressive insanity, melancholia, and those whose limbs refuse to act, are given black hellebore.

In case of depressive insanity, melancholia, the patient must be purged with black hellebore. . . . When the bowel has been thoroughly cleansed, the disease shows a very marked improvement, but if a single purgation with hellebore has improved his condition only a little the treatment must be repeated.

Brain disease can, of course, spring from innumerable causes. Many diseases and many poisons affect the brain. A brain may be defective from birth, or it may be made defective by a blow or other injury, by a morbid growth, etc. However, if there are no obvious causes, such as malformation, an injury, certain brain-affecting diseases and so forth, and if at the same time there is chronic bowel stagnation, one has every reason to attribute mental abnormality and disease to the defects of the apparatus of excretion. The greatest modern alienists are practically unanimous in believing that great grief, fright, worry, over-work, etc., never cause insanity by themselves. These

mental factors are overcome if the body is in health, but if these mental effects are combined with physical defects, such as chronic constipation, insanity may result.

Among the ancients Hippocrates and Celsus stood by no means alone in bringing bowel and brain into close connection. Dr. Francis Adams, in his commentary contained in his translation of the writings of Paulus Ægineta, 1844, Vol. I, page 385, summarized the views held by the ancients as follows:—

Hippocrates, in his *Aphorisms*, points out the lower intestines as the seat of melancholy, and directs us to cure the complaint by purging. Galen, in his Commentary, agrees with his principles and practice. Galen states correctly that melancholy sometimes changes to epilepsy, and vice versa, that epilepsy is often succeeded by melancholy. He gives a curious extract from the works of Diocles, with remarks upon the same.

Aretæus considers melancholy as an incipient mania. He gives a masterly sketch of the different modes in which mania makes its attacks. For the cure of melancholy he advises blood to be abstracted at the commencement, according to the patient's strength and condition. He approves of giving black hellebore, and of applying cupping-instruments over the liver, stomach, or to the head, according as these may happen to be affected. He recommends then wormwood and aloes. When the menstrual or hæmorrhoidal discharges are stopped, they are, if possible, to be restored; and for this purpose blood may be abstracted.

Celsus, in cases of melancholy and mania, recommends in particular vomiting and purging by hellebore; with the black species, if the patient is affected with grief; but with the white if with gladness. He also approves of bleeding.

Aetius gives an interesting account of the treatment of melancholy, principally extracted from the works of Galen, Ruffus, Posidonius, Archigenes, and Justus. The remedies in which all of them seem to have reposed most confidence are drastic purgatives combined with bitters and carminatives. They approve, however, of general bleeding and

cupping, when indicated by the symptoms of the complaint and the state of the patient. Nonnus in like manner prescribes bleeding in the forehead, purging with hiera picra, acrid clysters, and bitters, such as gentian and stæchas (*lavendula stæchas*).

Paulus Ægineta dealt at length with insanity, and, like the other writers mentioned, treated it principally by purging the bowels. He stated, Vol. I, page 383 :—

The cure of melancholy.—Those who are subject to melancholy from a primary affection of the brain are to be treated with frequent baths, and a wholesome and humid diet, together with suitable exhilaration of mind, without any other remedy, unless when, from its long continuance, the offending humour is difficult to evacuate, in which case we must have recourse to more powerful and complicated plans of treatment. These cases are to be purged from the first with dodder of thyme (*epithymus*), or aloes. If a small quantity of these be taken every day, it will be of the greatest service, and open the bowels gently. After purging, as we have mentioned, give wormwood, sometimes macerating and boiling the herb in water to the amount of two cyathi, and sometimes diluting the juice with water, to the amount of half a drachm, and giving it frequently.

When you meet with an incipient case of the complaint, and the body is strong, you must begin with phlebotomy (bleeding), and after phlebotomy when the strength is recruited, purge downwards, with the wild cucumber, and the composition from the black hellebore, and promote the hæmorrhoidal and menstrual discharges, if the affection be occasioned by retention of them. Diuretic remedies are likewise proper, as also evacuations by perspiration.

If the complaint arises from disorder of the hypochondria (abdomen), we must attend to them, and foment them with a decoction of rue, dill, wormwood, pennyroyal, the seed of the chaste-tree, and of the fruit of the bay tree; for these soothe the pains and diminish flatulence. They may be boiled in oil and applied; and the cataplasms of them ought to contain the remedies for flatulence, namely, parsley or anise, or cumin; and it will not be improper

to add cyperus, iris, and frankincense, to them. These things are to be allowed to remain in general, even during the day, and whether the patient eat or fast; and, when taken away, apply some other protection, such as a broad piece of wool. Use dry-cupping for flatulence, and cupping with scarifications for pains and inflammations. While directing your attention to the cure, you must not forget mustard, and apply acrid unguents and heating plasters to the back and belly. In chronic cases, the most powerful remedy is evacuation, by vomiting with hellebore.

The diet for all melancholics should be wholesome, and moderately moistening; abstaining from beef, roe's flesh, dried lentils, cabbages, snails, thick and dark-coloured wines, and, in a word, from all things which engender black bile.

The cure of mania.—Persons affected with mania are to be treated like melancholics; and, in particular, we must apply to the head rose-oil, or rose-oil with vinegar, and purge with the bitter antidote called hiera, having previously bled them; and we must use leeches to the head. But nothing is of such service as horse-fennel, either the root or seed drunk in water. A drachm of the root of bryony with water may be taken every day. If the maniacs will not be persuaded to take the purgative medicines, they must be mixed with their food.

In Juvenal's writings we find many allusions to the use of the purgative hellebore as a remedy for insanity. Drs. Bucknill and Tuke rightly stated in their book, *Psychological Medicine*, 1862:—

The purgative treatment of insanity by hellebore is the oldest on record, and it still enjoys some traditional favour.

Among the factors which are popularly believed to cause insanity is the intensive use of the brain. Our brain was meant to be used intensively. Intensive mental work does not damage the brain unless there is a physical depressing factor which is causing its weakening and degeneration. Those who believe that close mental application is apt to lead to insanity

point to the fact that genius and insanity are often found combined. Professor Lombroso, the Italian alienist, has written some notable books on the connection of genius and insanity, and there is a book, *The Insanity of Genius*, by J. F. Nisbet. The observation that men of genius frequently fall a prey to insanity is as old as history. Plato, a contemporary of Hippocrates, wrote about the "divine insanity of poets," and Aristotle stated: "Those who have been eminent in philosophy, politics, poetry, and the arts have all had a tendency towards melancholia."

In Lombroso's writings and in J. F. Nisbet's book, *The Insanity of Genius*, London, 1891, cases are given showing that genius and insanity are found combined. Lombroso, who was an eminent medical investigator, was under the delusion that more or less pronounced insanity is required in the production of works of genius. He and those who share his view have insufficiently considered the problem. It is true that genius and mental abnormality, culminating in insanity, are frequently found together. However, the mentally abnormal, melancholy, hysterical, epileptic, suicidal, and insane geniuses, were in the vast majority of cases poets, philosophers, historians, painters and musicians. They were men engaged in sedentary occupations in the towns and they suffered from more or less pronounced stagnation of the bowels and auto-intoxication. That may be seen from the detailed description of their physical appearance and their digestive and other troubles, given to us by their contemporaries. Among the distinguished names of insane geniuses mentioned by Lombroso and Nisbet are the musicians Handel, Gluck, Beethoven, Schumann, Chopin, Wagner, Paganini, Weber, Donizetti; among the painters and artists we meet great names such as Michael Angelo, Benvenuto Cellini, Van Dyck, Watteau, Romney, Cosway, Haydon, Landseer, Turner; among the poets and scientists we find Petrarca,

Galileo, Savonarola, Leopardi, Manzoni, Cardano, F. D. Guerazzi, Goldoni, Gaetana Agnesi, Tasso, Alfieri, Balzac, Dumas, Alfred De Musset, Verlaine, Auguste Comte, George Sand, Baudelaire, Rousseau, Pascal, Chateaubriand, Victor Hugo, Kepler, Copernicus, Swedenborg, Strindberg, Lenau, E. T. A. Hoffmann, Schopenhauer, Gogol, Hegel, Nietzsche, Isaac Newton, Blake, Dr. Johnson, Carlyle, Swift, Cowper, Southey, Shelley, Byron, Campbell, Goldsmith, Charles Lamb, Walter Savage Landor, Chatterton, Edgar Allan Poe, Burns, Thackeray, George Eliot, Wilkie Collins, Browning, Wordsworth, Herschel, James Watt, Humphry Davy, Faraday, Bunyan, George Fox, Cardinal Newman, Darwin, and many others. Of course, some of the men mentioned became insane through infections. Beethoven and Nietzsche, for instance, were very syphilitic. Naturally the evil effects of syphilis are greatly increased if there is chronic stagnation of the bowel.

Havelock Ellis, in his book *A Study of British Genius*, 1904, points out that men of genius are distinctly neurotic in character and that they suffer to an extraordinarily great extent from gout, asthma and angina pectoris. Among the gouty British geniuses were Sydenham, Newton, Gibbon, Fielding, Hunter, Johnson, Congreve, the Pitts, J. Wesley, Landor, W. R. Hamilton, Darwin, etc. Now, asthma and angina pectoris are very frequently caused by chronic constipation according to the authoritative views given in the preceding chapter.

Constipation is the disease of civilization. It is the disease of the sedentary. We cannot wonder that poets, musicians, painters and scientists leading a sedentary life are apt to fall victims to the various diseases springing from auto-intoxication, to nerve diseases, to profound mental depression, melancholy, despondency and eventually suicide. Dr. Forbes Winslow, a leading alienist of his time, wrote a volume

The Anatomy of Suicide, 1840, in which he distinctly laid down that chronic bowel troubles are one of the most frequent causes of melancholy, brain disease and self-destruction. We read on pages 139, 195 and 282 :—

There is no more frequent cause of suicide than visceral derangement, leading to melancholia and hypochondriasis.

The origin of self-destruction is more frequently dependent upon derangement of the *primæ viæ* (bowels) than is generally imagined. Every one must, in his own person, be aware of the influence of indigestion, and what is termed bilious disorder, upon the spirits. An inactive condition of the bowels is a common cause of mental disquietude.

Lord Byron says, in one of his letters, "I am suffering from what my physician terms 'gastric irritation,' and my spirits are sadly depressed. I have taken a brisk cathartic (purgative) and to-morrow 'Richard will be himself again.'"

The bloodthirsty miscreant Robespierre is said to have been of a "costive habit, and to have been much subjected to derangement of the liver." After death, it is said that "his bowels were found one adherent mass." It is indeed interesting to consider, both morally and medically, how far these morbid ailments influenced this monster in the bloody career in which he was engaged.

There can be no question but that the morbid irritability which many of our men of genius have manifested was but the effect of a derangement of the physical frame acting upon a mind naturally sensitive to such impressions.

The stomach, liver, and intestines are the most frequent seats of morbid phenomena in these cases. It is difficult, however, to say whether they ought to be considered as the effect or cause of the suicidal disposition. In many cases of gastric disease the brain is also found organically affected. How is it possible for us to say which organ was primarily affected? The stomach, intestines, and liver may be originally the seat of the irritation, and the brain may be sympathetically deranged. This is often the case. Again, the patient may have laboured under a severe mental ailment, which may give rise to disease of the splanchnic

(abdominal) viscera. Severe and long-continued indigestion, from whatever cause it may originate, will, in certain dispositions, produce suicidal mania. Very few cases are examined in which we are not able to detect some disease of the gastric organ or its appendages.

Dr. Winslow not merely strongly expressed the opinion that insanity followed by suicide was frequently caused by toxic developments within the disordered digestive tract, an opinion which was based on careful investigation of the history of suicides and on the dissection of their bodies after death, he also showed by interesting case histories that insane men with pronounced suicidal tendencies could be restored to normality by thorough and careful regulation of their bowels. We read on page 138 of his book :—

A young man, who had become insane in consequence of long-continued intoxication, made violent efforts to maim himself, and especially to pull out his right eye, which appeared to give him great offence. Rest, temperance, seclusion, the application of half a dozen leeches to the temple, and a few doses of opening medicine, restored him, in about a fortnight, to the full possession of his faculties.

J. C., about 50 years of age, was insane for two years. He was formerly in respectable circumstances, and employed in the situation of writer in an office. He made several attempts on his life. He had been in the habit of drinking spirits very freely, and had a disease of the liver which appeared of some standing. At the time of his admission into Hanwell Asylum, under the care of Sir W. Ellis, he was in a most emaciated state; his legs scarcely able to support him. His face and body also were covered with eruption; tongue furred; his stools very dark: he was much depressed, and always moaning most piteously; complained of heat and numbness in his head, and pain in all his limbs. Leeches and cold lotions were applied to his head, his bowels were opened by calomel and colocyath, and he went into the warm bath every other day. He was much relieved by these means. He still continued,

however, to moan as before. His tongue remained furred, and stools unhealthy. He took five grains of blue pill every alternate night for some time. These were then left off awhile. No improvement taking place, he began the pills again and continued them for two months, with evident advantage. His tongue was clean; he was less depressed; became strong and gained flesh; the biliary secretions were much improved. He is now occupied in the office; and every day, as the action of the liver seems to improve, his mind makes a corresponding advance.

Winslow's experience, gained at lunatic asylums and elsewhere, does not stand alone. Other authorities have had similar experiences with patients suffering from chronic stagnation and auto-intoxication. We read on page 202 of Winslow's book:—

A timely administered purge has been known to dispel the desire of self-destruction. Esquirol knew a man who was decidedly insane whenever he allowed his bowels to be in an inactive condition.

A patient of Falret had well-marked suicidal delirium. So urgent were the symptoms, that he was placed under restraint and carefully watched. Active cathartics (purgatives) were administered, and Falret states that the largest tapeworm he ever saw was evacuated. The idea of suicide soon vanished, and the man was restored in perfect health to his friends and family.

Foderé examined the bodies of three persons in one family who fell by their own hands, and in the three cases considerable disease was discovered in the intestinal canal, which had been irritating the brain and disturbing its manifestations.

In the instances just referred to, the indication of physical disease of the *primæ viæ* (bowels) were but trifling during life.

Disease of the stomach and liver frequently incite to suicide; hepatic (liver) affections notoriously disturb the equilibrium of the mind. Many a case exhibiting an inclination to suicide has been cured by a few doses of blue pill. The physician should direct his attention to the condition of the uterine function and the state of the

skin. During the puerperal state, a tendency to suicide is often manifested.

A lady, shortly after her accouchement, expressed, with great determination, her intention to kill herself. Her bowels had not been properly attended to, and a brisk cathartic was given. This entirely removed the suicidal disposition.

Winslow describes the manner in which the tendency towards suicide develops on page 141 as follows:—

There are individuals who, from various physical or moral causes, fall into a state of corporeal torpor and mental depression. They complain of want of appetite, dull pain in the head, sense of heat in the stomach and viscera, borborygmi (noise), and constipation of the bowels; while they exhibit little or no indication of disease. In the female sex, the natural secretions become suspended. As the complaint advances, the features alter, and the countenance exhibits anxiety; the complexion becomes pale or sallow; there is a sense of tightness, or even pain, in the epigastrium (abdomen), a kind of compression in the head, which prevents them from fixing their attention, or arranging their thought; a general torpor or lassitude, which keeps them inactive. In this state they become filled with gloomy ideas, despair of ever being better, desire, or even invoke, death, and sometimes destroy themselves, from a conviction that they are no longer capable of fulfilling their duties in society. These people are perfectly sane on all subjects of conversation; their impulse to suicide being strong in proportion to the activity of their former avocations, and the importance of their former duties. I have seen their disease (for it is a disease) continue for months, and even years. I have seen it alternate with mania and with perfect health. I have seen patients who would be six months of the year maniacal or in sound health, and the other six months tormented with these gloomy ideas and impulses to suicide.

The fact that bowel troubles often lead to insanity and suicide cannot be doubted.

We have seen that the ancient Greeks and Romans

were of opinion that in innumerable cases insanity is due to chronic stagnation of the bowel, and that brain disease can in many cases be cured by timely purging and other suitable means. The knowledge of the most obvious and the most easily curable form of insanity became lost with the arrival of Christianity. The insane were superstitiously believed to be wicked people "possessed by an evil spirit" which had to be driven out. Purgatives were replaced by exorcism, prayers, physical punishments and insults of every kind. The lives of the mentally afflicted were made a long-drawn-out agony. Towards the end of the eighteenth century a revolt against treatment of the mentally afflicted by chaining them up and torturing them took place. The celebrated Dr. George Cheyne wrote in his book, *The Natural Method of Cureing the Diseases of the Body, and the Disorders of the Mind Depending on the Body*, published in 1792, on page 90:—

I have already said, that true Manias, real Lunacy, Madness, and a disorder'd Brain, (a Disease by which so shamefully many suffer in England, and those of the best Kind, and many of them distinguish'd Parts) can possibly be accounted for, from no other natural Cause, but a Mal-regimen of Diet; and the best Physicians have no other Method of curing such Diseases, but great, proper, and frequent Evacuations of all kinds, Vomits especially, with a low diet, and then bracing by Vegetables, Astringents or cold Baths; all the rest are but trifling.

A low Diet, or living on Vegetables, will not destroy Life or Health, or cause nervous and cephalic (head) Distempers; but, on the contrary, cure them, as far as they are cureable.

On the whole, I think the lightest and least Food may be justly term'd the shortest and most effectual Antidote, and the most universal Remedy, for all Distempers of the Body, and Errors and Mistakes of the Mind, that depend upon, or have any Relation to the Body, that the Wit of Man can suggest or invent.

Dr. William Buchan, a wise country doctor, wrote on page 427 of his book, *Domestic Medicine*, 1797:—

Of Melancholy.—When persons begin to be melancholy they are timorous; watchful; fond of solitude; fretful; fickle; captious and inquisitive; solicitous about trifles; sometimes niggardly, and at other times prodigal. The body is generally bound; the urine thin, and in small quantity; the stomach and bowels inflated with wind; the complexion pale; the pulse slow and weak. . . . The unhappy patient, in this case, unless carefully watched, is apt to put an end to his own miserable life. . . .

Regimen.—The diet should consist chiefly of vegetables of a cooling and opening quality. Animal food, especially salted or smoke-dried fish or flesh, ought to be avoided. All kinds of shell-fish are bad. All kinds of fruits that are wholesome may be eaten with advantage. Boerhaave gives an instance of a patient who, by a long use of whey, water, and garden-fruit, recovered, after having evacuated a great quantity of black-coloured matter.

When the patient is constipated, evacuations are necessary. In this case he must be bled, and have his body kept open by purging medicines, as manna, rhubarb, cream of tartar, or the soluble tartar. I have seen the last have very happy effects.

It will be noticed that both Dr. Cheyne and Dr. Buchan advocated for the insane a "low diet," a "vegetarian diet." Vegetable foods ferment within the body, and are relatively innocuous, while animal foods putrefy and are apt to lead to the formation of poisons which bring about auto-intoxication. Besides, Drs. Cheyne and Buchan advocated the use of purgatives. They urged the re-introduction of the wise Greco-Roman treatment previously described.

Dr. Arthur F. Hurst stated on page 213 of his book, *Constipation and Allied Intestinal Disorders*, 1919:—

A century ago it was the custom at Bethlem to purge every patient twice a week, irrespective of the nature of his mental symptoms or the condition of his bowels. In

1828 Annesley expressed his opinion that insanity was sometimes produced by constipation, and related several cases of melancholia and mania, which he claimed to have cured by purgatives.

In the beginning of the nineteenth century the science of treating the insane was greatly developed by French alienists. Dr. E. Esquirol, the principal physician at the Charenton Lunatic Asylum, gave in a valuable book, *Des Maladies Mentales*, the most interesting and important information that the dissection of bodies of lunatics frequently shows a very serious displacement of the colon, a displacement which is responsible for chronic bowel stagnation and consequent auto-intoxication, which Sir Arbuthnot Lane has often described, as will be noticed by reference to the extracts from his writings given in the previous chapter. We read on page 462 of the book mentioned :—

One of the changes which I have frequently noticed in sufferers of melancholy is a displacement of the transverse colon. The transverse colon, instead of being situated in a horizontal position with an upward curve, often slides downwards at an angle or hangs down perpendicularly.

After describing in detail a number of cases in which this anomalous displacement of the colon was found, the author writes :—

The details given display a pathological phenomenon which has not previously been described.

The ancients and moderns who have discussed insanity, and particularly melancholy, have all mentioned the occurrence of lesions of the bowels, but no author has described the displacement of the transverse colon. Nevertheless, such displacement is often found, the bowel slanting downward and sometimes hanging down perpendicularly. Sometimes its end hangs down behind the pubis and sometimes it hangs down below the pubis, settling down in the cavity

of the pelvis. Insane patients, particularly sufferers from melancholy among whom this anomalous displacement is found, complain often about abdominal pain, which may be likened to the pressure of a band or belt. Such sufferers have difficulties with their stools, and these difficulties can be explained by the displacement of the colon. The ancients, in giving hellebore, and the moderns in prescribing emetics and drastic purgatives to the insane and particularly to the melancholic, endeavour to improve thereby the condition of the bowels. For this purpose laxatives are combined with tonic medicines and for the same object sea voyages and exercise on horseback, which has a particularly good effect upon the organs of excretion, are ordered.

Knowledge of the facts mentioned seems to be interesting in the first place because displacement of the colon is frequent in the insane and the melancholic; secondly, because knowledge of this condition will make the treatment of sufferers from insanity more rational.

On page 641 of his book, Dr. Esquirol writes:—

I often found displacement of the colon in insane patients with suicidal tendencies.

Dr. Forbes Winslow wrote on page 73 of his book, *On Insanity*, published in 1854:—

In the early states of insanity, and throughout its whole course, the bowels are often in an obstinately constipated condition. . . . There is no class of agents which acts so certainly and effectually, in relieving the mind when under the influence of depressing emotion, as cathartics (purgatives). It is important in every case of insanity, but particularly in the acute stages of mental derangement, to act powerfully upon the bowels by means of a succession of brisk purgatives. The bowels are often found gorged with fæcal matter, and immediate relief often follows the administration of two or three doses of calomel and colocynth, or of croton oil. It will often be necessary to assist the operation of the cathartics by means of enemata.

In the modern textbooks on insanity the numerous

forms of brain disease are described at wearisome length. Very little space is given to the causation of that terrible affliction. In the chapters dealing with causation, syphilis, alcohol and many other factors are treated very fully while the most obvious and the most easily curable cause, chronic constipation, is often discussed only in a few sentences. It is fashionable at present to dilate on the "psychological" aspects of insanity. Some of the textbooks on insanity are, to the disgrace of their writers, filled with hundreds of pages of useless pseudo-scientific verbiage in which psycho-analysis and psychological treatment monopolize the field. However, their authors feel compelled to mention, at least briefly and grudgingly, the fact that bowel trouble often leads to brain disease and that thousands of cases of insanity can be cured by regulating the constipated bowel. As it might be thought that only a few writers on insanity are of opinion that there is a causal connection between bowel disease and brain disease, I shall give a large number of quotations in support of that fact. These numerous quotations may weary the reader. However, their imposing number shows that chronic intestinal stasis is indeed in innumerable cases responsible for brain disease which is avoidable and is easily curable by timely action.

One of the leading German authorities on brain disease is the well-known Professor, Dr. R. Von Krafft-Ebing. He wrote on page 175, Vol. I, of his classical *Lehrbuch der Psychiatrie*, Edition of 1879:—

It cannot be doubted that the acute, and to a still greater degree chronic, inflammation of the digestive tract not only lowers the spirit of people but calls forth psychoses which as a rule have the character of melancholia and hypochondriasis. An exact diagnosis is required instead of following superficial impression and attributing the disease vaguely to hæmorrhoids, swollen liver, etc.

Dr. G. H. Savage wrote in Vol. VIII of Allbutt's *System of Medicine*, under the heading "Toxic Insanities," describing the various results of chronic bowel stagnation and auto-intoxication:—

With jaundice depression is very common, and at times there are sensory hallucinations. I have myself met with only one (doubtful) case in which a jaundiced patient complained of seeing all things yellow. With hepatic (liver) trouble profound melancholia is not uncommon, and the interpretation of the miserable feeling will depend to some extent on the age, sex, and condition of the patient; the old man fears ruin, the middle-aged woman dreads dishonour. Gall-stones and their consequences are very common among the chronic insane in asylums, a proclivity dependent on their inactive life, good feeding, and torpid bowels.

The old notions of suppressed gout and of gouty metastasis to the brain represent the fact that in some persons who are gouty, the cessation or arrest of a gouty attack may be associated with mental disorder, which is frequently melancholic. I have never met with greater mental misery than in such cases, and in them the tendency to suicide is very great.

Mania.—The tongue is coated, the breath foul, the bowels generally confined and the stools offensive. In some cases marked gastric disorder is present, the face may be flushed or sallow; as a rule the bodily weight decreases.

Those living more simple temperate lives suffer less than those living in cities who take much animal food and alcohol. . . .

Toxæmia, whether due to external poisons, or to changes in the body itself, may give rise to symptoms due to more or less grave loss of higher control; and the symptoms will depend on the amount of change produced by the poison in the nerve-centres. . . .

Most bodily diseases indeed have certain mental features which may become so well marked as to interfere with the ordinary mental life, and to take their place as characteristic symptoms of the particular disease.

Toxic insanity depends on poisons either derived from without or generated within the body. All these poisons,

in interfering with the healthy nutrition of the highest nervous structures, act alike; and their effect depends on the concentration of the poison, the frequency of its use, and the power of the patient to withstand its effect.

Dr. John Macpherson wrote on pages 43 and 52 of his important work, *Mental Affections: An Introduction to the Study of Insanity*, 1899:—

The state of the nutrition of the body exercises great influence upon the functions of the nervous system, and consequently upon the mental manifestations. Prolonged hunger or thirst has the effect of producing distinct abnormal mental symptoms, such as hallucinations (especially of sight), delirium, and dementia. In those forms of malnutrition accompanied by exhaustion, which succeed serious bodily illnesses, mental diseases of a certain type are liable to occur.

On the other hand, mental troubles may be determined by over-alimentation, especially in the absence of sufficient exercise. In such cases the superabundant quantity of the nitrogenous products not used by the organism throw a greater burden upon the organs of excretion than they are able to fulfil.

The poisons which act upon the nervous system, causing disorder of its functions, although numerous, have not as yet by any means been all elucidated. There is, however, every reason to believe that the field of toxic nerve disease is one of the most extensive in morbid psychology, and that it is because we are still on the threshold of inquiry that its recognition is not more general.

The toxic substances which are associated with the causation of mental disorder are divided into three great classes: (A) those which arise from the morbid products of metabolism within the body itself—these are known as auto-intoxicants; (B) those which are due to the infection of the blood or tissues by micro-organisms, which multiply in the blood, and whose poisonous products injuriously affect the nervous structures; (C) organic or inorganic poisons introduced into the system voluntarily or by accident.

Dr. W. Ford Robertson stated on page 359 of his work, *A Textbook of Pathology in Relation to Mental Diseases*, 1900 :—

In typical cases of senile insanity, the evidence in support of the essentially auto-toxic nature of the pathological changes is, to my mind, absolutely conclusive. Indeed I would regard senile insanity as the best example that we have of mental derangement determined by auto-intoxication. The kidneys are cirrhotic (hardened); the liver is atrophied (shrunken), or shows some other form of chronic morbid change; the lungs are often emphysematous (distended) or present evidence of chronic congestion; there is frequently chronic bronchitis; the stomach is commonly dilated and there are generally signs of imperfect intestinal action. All of these morbid conditions of the internal organs imply incomplete and perverted metabolism, and consequent auto-intoxication. One of the results of this auto-intoxication is chronic irritation and mal-nutrition of the vascular (vessel) walls of which there is always abundant evidence in various parts of the body. The cerebral arteries, capillaries and venules are always more or less severely implicated.

Writing a quarter of a century ago, when Sir Arbuthnot Lane was only beginning to teach that auto-intoxication consequent upon chronic bowel stagnation was the source of innumerable diseases, among them insanity, Drs. Savage, Macpherson and Ford Robertson attributed insanity in a very large proportion of the cases to auto-intoxication arising in a torpid bowel.

Another eminent alienist, Dr. Lewis C. Bruce, contributed to the *Journal of Mental Science*, 1908, a weighty paper, "The Symptoms and Etiology (Causation) of Mania," in which we read :—

The evidences of general failure of nutrition, the disorders of the alimentary tract, and the character of the nitrogenous excretion by the urine are all such as would lead one to expect that maniacal states are closely allied to the diseases known as infective.

If, as indicated in my first two lectures, the diseases known as mania are due to bacterial toxæmias, then the natural question arises, what organism or class of organisms produce the toxæmia, and how do they attack the patient? To answer these questions it is necessary to describe in detail the various observations undertaken to discover the organism.

As the result of these observations, I believe that the diseases known as mania are conditions of brain poisoning, the poison or toxine in every case being a bacterial one. The bacteria causing these toxæmias are probably streptococci, and the point of attack is almost certainly the intestinal tract.

My explanation of the disease process is as follows: Owing to some lowering of the bacterial defences, certain strains of cocci become unduly increased in the intestinal tract. These cocci do not actually enter the blood-stream, but they form toxines in the intestine which are absorbed by the blood-vessels and lymphatics in such quantities as to escape destruction in the liver and lymphatic glands, and they pass into the general circulation. These toxins have a selective affinity for the most highly-developed nerve structure of the brain to which they are carried by the blood-stream.

When the toxine molecules are present in the blood-stream in sufficient quantity to produce an acute brain intoxication, then an acute attack of mania is the outward result. When the poisoning is more gradual, there is a gradual deterioration of the brain-tissues, showing itself in eccentricities and changed character, which may lead finally to a chronic delusional state. The presence of toxine molecules, however, in the blood-stream inevitably leads to the formation of antitoxine. The toxine molecules stimulate the cells of the body to throw out anti-toxine molecules, which, by combining with the toxine molecules, render them inert.

When a maniacal patient makes an apparent recovery, the antitoxine molecules have for the time being neutralized the toxine molecules, and so we have a cessation of the symptoms. On the other hand, a lowering of the general bodily health or a failure on the part of the cells to form a sufficient number of antitoxine molecules immediately

allows of the toxine molecules again to go free ; further poisoning takes place, and another attack of mania is the result. The cause of the whole process, the streptococci in the intestinal tract, remain a source of danger, as they are unaffected by the formation of antitoxines which cannot reach them in the intestine. This is not a mere hypothesis, because on examining the bacterial flora of the intestine in the cases of two patients who had recovered from confusional mania, I still found streptococci in almost as great numbers as when the patients were acutely maniacal.

Mr. Bernard Hollander published in 1912 a book, *The First Signs of Insanity: Their Prevention and Treatment*, in which we read on page 132 :—

When the toxic substances which are associated with the causation of mental disorder arise from the excessive formation of morbid waste-products, products of disordered metabolism within the body itself, they are then known as auto-intoxicants.

The temper of the patient is singularly modified by different disorders and diseases. The state of despondency in abdominal complaints forms a remarkable contrast with that of hopefulness in chest complaints.

That distinguished alienist, Sir Maurice Craig, stated on pages 28, 88 and 450 of his well-known textbook, *Psychological Medicine*, 1917 :—

Every year brings more and more convincing evidence of the importance of recognizing that auto-toxins derived from the alimentary tract play no small rôle in the production of insanity. Blood changes, including poisons circulating in the blood, have for some time past been placed in a prominent position among the various factors to be considered when studying physical disease. The case is no different in insanity, and it may fairly be said that the advantages to be gained by a careful study of the blood in cases of mental disorder cannot be over-estimated. Constipation is not only a common symptom in the insane, but it is the rule rather than the exception to find a history

of prolonged constipation before the mental disorder supervened. For years the blood may have been loaded with effete material, and is it to be wondered at that the nervous system, together with other systems of the body, finally becomes disorganized as a result? It may be that while we have been groping in the dark with metaphysicians, the key to the problem has been lying under our very hands.

Stress has been frequently laid in these pages on the fact that the physical health always suffers to a greater or less degree in every form of insanity. Constipation is probably the most common of all symptoms. In melancholia it is scarcely ever absent and requires constant attention. Constipation may result from sluggishness of functions or deficiency of intestinal secretions. In some cases there is found to be at post-mortem actual narrowing of the bowel, more especially in the exhaustion psychoses. In other cases the fault may lie in defect of innervation and lessened peristalsis. Whatever may be the cause—and the physician should discover the fault, if possible—constipation is a symptom which should never be forgotten, as it is a cause of anæmia, sleeplessness, and general discomfort, and may even form the basis of delusions.

The bowels require constant attention. As has been pointed out, constipation is a very common symptom in all forms of mental disorder, and there is little doubt that chronic constipation is an important factor in the production of insanity. Further, the fact that auto-intoxication is now considered to be a weighty element in mental disease accentuates the necessity of keeping the bowels freely open. The student must remember that careful attention to the bowels is one of the most necessary details in the treatment of the insane, as a loaded condition of the intestines will aggravate all the mental symptoms.

Apart from the treatment of constipation by aperients, many authorities advocate the use of intestinal disinfectants. There is no doubt that many of the insane are affected by the continual absorption into the blood of poisonous substances which are generated by putrefactive and fermentative changes taking place in the intestines.

Dr. T. S. Clouston wrote on page 640 of the great textbook, *Index of Treatment*, published by Dr. Robert

Hutchison and Mr. James Sherren, 1919 Edition, under the heading "Mental Disease" :—

The most ancient treatment of insanity we know was the Hippocratic practice of using a strong purgative in the shape of hellebore. It is certain such a practice has remarkably good and curative effects in many cases. Few things are more evident in most acute cases and many chronic forms of mental disease than derangements of digestion, of the action of the bowels, and of the hepatic (liver) functions. The tongue will very often be found coated and furred. It tends frequently to be dry, this morbid condition being shared by the mucous membrane of the mouth and throat. It will be found that in most cases of melancholia the bowels are inactive and are often obstinately constipated. Frequently the stools are devoid of bile, while the colour of the skin and of the conjunctivæ is muddy and yellowish.

Of late years the opinion has become strong and widespread that the contents of the bowels may become very septic, and that catarrhal conditions of the stomach and bowels frequently result from this cause. Dr. Ford Robertson, of the Scottish Asylums Pathological Laboratory, has lately astonished those of us who have seen most symptoms and treatment of insanity, by drawing attention to the enormous multiplication of micro-organisms over the surface of the mucous membrane of the stomach, duodenum, and small intestine, in general paralysis. As the result of those clinical and pathological facts, it may be said that purgatives have lately "come in again."

Dr. Alexander Bryce wrote on pages 41 and 50 of his volume, *Intestinal Toxæmia*, 1920 :—

Cotton, Draper and Lynch (*New York Med. Record*, May 1, 1920), finding that 75 per cent of patients grouped in the functional psychoses could be cured by removal of obvious sources of infection in mouth, tonsils, and elsewhere, directed their attention to intestinal toxæmia as a further possible source of infection. The result of their study was a complete corroboration of Lane's contention

that intestinal stasis was the origin of many diseases, even in the brain.

Sir Lauder Brunton used to say that the bacillus coli had a special power of producing fatigue poisons, and this harmonizes with the views of specialists in mental diseases that chronic intestinal stasis accentuates such symptoms as apathy, irritability, perverted moral feelings, melancholia, mania, hypochondria, and a condition of worry sufficient to make people almost demented.

A high American authority, Dr. Albert C. Buckley, wrote, in *The Basis of Psychiatry*, 1920, page 134 :—

The influence of disease toxins in producing psychoses is not to be questioned.

Much attention has been given to the subject of auto-intoxication since Bouchard, in 1887, furnished the impetus to study of the subject. Forcheimer analysed 77 cases of auto-intoxication due to gastro-intestinal disturbances and found "nervous symptoms" in 61 patients, shown by attacks of genuine migraine, headaches, neuralgia, neuritis, general nervousness, restlessness, irritability, insomnia, mental depression and hysterical attacks. It is a matter of common observation in clinical experience to note marked defects in functional activity of the stomach and intestines in both acute and chronic forms of mental disorders. These disturbances of digestive function may be either exciting causes of the mental disturbance or merely part of the symptom complex.

From India we receive similar statements. For instance, Dr. A. W. Overbeck-Wright, of the Indian Medical Service, published in 1922 an important volume, *Lunacy in India*, in which he stated on pages 14, 114 and 217 :—

The first and most common incipient signs of insanity are, as a rule, derangements of the digestive system—dyspepsia, anorexia (lack of appetite), constipation, etc. The patient then becomes moody and irritable, or at times apathetic and listless. His habits and temperament seem to change. He loses interest in his surroundings. He

complains of headache and a feeling of fatigue without due cause. His affection for his family seems to become diminished or altered. Sleeplessness is practically an invariable symptom, and one of the earliest. A tendency to shun society is seen in many cases, and is, as a rule, the precursor of hallucinations and delusions.

These symptoms gradually increase in intensity, delusions and hallucinations spring up, and suddenly the relatives and friends of the patient realize the true state of affairs, but only perhaps too late to prevent the perpetration of some crime or outrage. The toxic theory of the causation of many forms of insanity is daily accumulating wider and stronger proof. Twenty-two years ago Macpherson wrote: "The toxic basis of all forms of insanity is a presumption for which there is fairly good foundation but no proof." Since then Bruce has brought forward evidence which, to those who have studied bacteriology fairly deeply, must be at least most convincing presumptive evidence of the truth of this, though, as he himself says, "there is no direct proof, and never will be, because the only satisfactory and irrefutable proof would be the experimental production of morbid mental states by the use of toxins, and that is impossible."

Since this was written, many eminent scientists—Mott, Orr, Rows and others—have been working on this subject, and daily stronger and stronger evidence is accumulating to show that, though not all, at least the very large majority of mental and nervous cases arise from such causes.

In all acute insanities there is distinct evidence of metabolic disorder, but in one type of disease—namely, acute melancholia—metabolic toxæmia is most markedly present, and to such an extent that there can be but little doubt that the mental derangement is mainly, if not wholly, due to this deranged metabolism.

Dr. W. Ford Robertson wrote on pages 222, 230 and 234 of his work, *Therapeutic Immunization in Asylum and General Practice*, 1921:—

Psycho-analysts have laid themselves open to just censure by ignoring the fact that many of the morbid phenomena with which they deal are due to toxic actions,

which require investigation in each case and which can often be remedied by appropriate measures.

Every one of the thirty-four cases of acute insanity that I have investigated suffered beyond all question from bacterial infections of great severity. This I attest with the comparative experience of similar investigations carried out by the same methods in many hundreds of cases of other forms of illness. The few cases that I have been able to follow out have yielded evidence that the infections present were essential factors in the causation of the mental disorder. This evidence consisted in the occurrence of distinct reactions to the vaccines, improvement under treatment and the comparative paucity, or complete disappearance, of the pathogenic bacteria on repetition of the bacteriological examination, when the patient had recovered partially or completely.

Acute forms of insanity, ranging from the milder types of amentia to acute delirium, are essentially of toxic origin. From the clinical side, very striking evidence supporting this view has been obtained by Lewis C. Bruce.

Dr. John Harvey Kellogg, who has an enormous experience, because more than 100,000 patients have passed through his celebrated Sanitarium, wrote in his important book, *The New Dietetics*, 1923, on page 850 :—

Modern studies of the causes of mental disease have made clear the fact that in not a small proportion of cases mental alienation is the result of intestinal toxins acting upon a peculiarly susceptible nervous system. Constipation and toxæmia lead to insomnia and depression and in time the mental equilibrium is broken down.

Dementia præcox has been definitely shown to be, in certain cases at least, the result of chronic intestinal toxæmia. Foul stools and constipation are always present.

In another book, *Colon Hygiene*, 1923, Dr. Kellogg stated on page 268 :—

For many years experts in mental disease, both in this country and in Europe, have maintained that certain forms

of insanity, particularly dementia præcox and manic depressive insanity, are due to functional disturbances or structural degenerations set up by toxins derived from focal infections, the seat of which may be the tonsils, the teeth, the genital organs or even the gall-bladder or the appendix, but which is most frequently found to be the colon. In many cases at least, and probably in a very large proportion of all cases, infections of the tonsils, teeth and other so-called focal infections, are really the result of the lowered vital resistance produced by long-continued absorption of poisons from the colon.

Cotton and others have in recent years insisted upon the great importance of the colon as a factor in mental disease. These authorities cite many cases in which the removal of the colon or a large part of it has resulted in restoration of the patient to mental soundness when other means had failed.

In his book, *Minor Maladies*, 1923, Dr. Leonard Williams informed us on page 375:—

The responsibility of the intestinal tract for the manufacture and distribution of poisons which cause functional derangements in the central nervous system is now so well recognized that it scarcely needs a reference. Chronic constipation vies even with syphilis and alcohol in the multiplicity of its morbid consequences and their magnitude. Among these consequences mental troubles occupy the foremost place, and there can be no doubt that if patients in the early stages were adequately purged of their toxins, the number who ultimately come to certification would be considerably reduced.

Although I have given a very large number of important opinions that bowel toxins often cause insanity, the overwhelming evidence of an army of eminent experts may not convince some ultra-sceptical and ultra-prejudiced readers. They may say that medical men, like all of us, have preconceived notions, that there are originals and cranks in the medical profession, that the views expressed are those of a section of the

medical world, etc. There is a book which is absolutely impartial and non-partisan, *The Encyclopædia Britannica*. No sect and no section is allowed to obtrude its views in it. Volume XIV, published in 1910, contains a long and weighty paper on insanity, written by Sir John Batty Tuke and Doctors John Macpherson and Lewis Campbell Bruce, in which the greatest stress is laid on auto-intoxication as an important cause of insanity, and in the sections dealing with treatment great weight is given to the historic procedure of the Greeks and Romans, to the cure by activating and cleansing the foul bowel of the insane by purgatives, enemas and an eliminative light diet. We read in this most interesting contribution:—

The proximate causes of insanity may be divided into (1) toxic agents, (2) mechanical injury to the brain, including apoplexies and tumours, and (3) arterial degeneration.

1. Toxic Agents.—The definite nature of the symptoms in the majority of the forms of acute insanity leave little reason to doubt that they result from an invasion of the system by toxins of various kinds.

The toxic substances which are generally believed to be associated with the causation of mental disorders may be divided into three great classes: (a) those which arise from the morbid products of metabolism within the body itself, "auto-intoxicants"; (b) those due to the invasion of the blood or tissues by micro-organisms; (c) organic or inorganic poisons introduced into the system voluntarily or accidentally.

The results of modern research point to a growing belief in the frequency of infection of the nervous system from the hosts of micro-organisms which infest the alimentary tract. No definite or substantiated discoveries have as yet been formulated which would justify us in treating this source of infection as more than a highly probable causative influence.

Acquired Insanity.—The most general physical disorder common to the onset of all the insanities is the failure of nutrition, i.e., the patient rapidly and apparently without

an apparent cause loses weight. Associated with this nutritional failure it is usual to have disturbances of the alimentary tract, such as loss of appetite, dyspepsia and obstinate constipation. During the prodromal (early) stage of such conditions as mania and melancholia the digestive functions of the stomach and intestine are almost or completely in abeyance. . . . Doubtless these functional derangements exercise considerable influence on the progress of the case by assisting to deprave the general economy, and by producing depressing sensations in the region of the stomach. To them may probably be attributed, together with the apprehension of impending insanity, that phase of the disease spoken of by the older writers as the *stadium melancholicum*, which so frequently presents itself in incipient cases.

Acute Melancholia.—In the fully developed disease the patient is flushed and the skin hot and dry; the temperature is usually raised 1° above the normal in the evening. The pulse is hard, rapid and often irregular. There is no desire for food, but dryness of the mouth and tongue promote a condition of thirst. The bowels are constipated. The urine is scanty and frequently contains large quantities of indoxyl. The blood shows no demonstrable departure from the normal. The patient is depressed, the face has a strained, anxious expression, while more or less mental confusion is always present. Typical cases suffer from distressing aural hallucinations, and the function of sleep is in abeyance.

Acute melancholia may terminate in recovery either gradually or by crises, or the condition may pass into chronicity, while in a small proportion of cases death occurs early in the attack from exhaustion and toxæmia. . . . If the patient does not recover, the physical symptoms are those of mal-nutrition, together with chronic gastric and intestinal disorder. The skin is dull and earthy in appearance, the hair dry, the nails brittle and the heart's action weak and feeble. Mentally there is profound depression with delusions, and persistent or recurring attacks of hallucinations of hearing. When death occurs, it is usually preceded by a condition known as the "typhoid state." The patient rapidly passes into a state of extreme exhaustion, the tongue is dry and cracked, sordes form upon the

teeth and lips, diarrhoea and congestion of the lungs rapidly supervene and terminate life.

Treatment.—The patient in the early stage of the disease must be confined to bed and nursed by night as well as day. The food to begin with should be milk, diluted with hot water or aerated water, given frequently and in small quantities. The large intestine should be thoroughly cleared out by large enemata and kept empty by large normal saline enemata administered every second day.

Excited Melancholia.—Physically there is loss of appetite, constipation and rapid heart action, a great increase in the number of white blood corpuscles, particularly of the multinucleated cells which are frequently increased in bacterial infections. In the blood serum also there can be demonstrated the presence of agglutinines to certain members of the streptococci group.

Folie circulaire, or Alternating Insanity. Treatment.—There is no known curative treatment for the depression of manic-depressive insanity, but the depression, the sleeplessness and the gastric disorder are to some extent mitigated by common-sense attention to the general health of the body. If the patient is thin and wasted, then treatment is best conducted in bed. The diet should be bland, consisting largely of milk, eggs and farinaceous food, given in small quantities and frequently. Defecation should be maintained by enemata, and the skin kept clean by daily warm baths. What is of much more importance is the fact that in some instances subsequent attacks can be prevented by impressing upon the patient the necessity for attending to the state of the bowels, and of discontinuing work when the slightest symptoms of an attack present themselves.

Mania.—The direct exciting cause or causes are unknown, but the physical symptoms suggest that the condition is one of acute toxæmia or poisoning, and the changes in the blood are such as are consequent on bacterial toxæmia.

The urine is scanty, turbid and loaded with urates. The white blood corpuscles per cubic millimetre of blood are markedly increased, and the blood serum contains agglutinines to certain strains of streptococci which are not present in healthy persons.

Treatment.—Acute mania can only be treated on general lines. During the acute stage of onset the patient should be placed in bed. The bowels should be unloaded by large enemata or the use of saline purgatives. The continuous use of purgatives should as a rule be avoided, as they drain the system of fluids. On the other hand, the administration of one large normal saline enema, by supplying the tissues with fluids, and probably thereby diluting the toxins circulating in the system, gives considerable relief.

If one compares the extract taken from the *Encyclopædia Britannica* article or the contents of any of the bulky textbooks on insanity with the very brief statements and teachings regarding that disease made by the ancients and quoted in the beginning of this chapter, it will be seen that the science of treating the mentally afflicted has advanced very little in the course of the last two thousand years. The writers of antiquity briefly mentioned that insanity is frequently caused by a torpid bowel and the foul poisonous matter which is absorbed from it into the system, and they recommended the thorough cleansing of the bowel and a non-toxic, eliminating diet from which meat and other heating substances were to be excluded. In modern textbooks insanity is divided into a large number of separate "diseases" according to the symptoms to which that malady may give rise. Hundreds of pages are devoted to the description of these separate "diseases" in highly technical language, ornamented with hard words derived from the Greek and Latin, and at intolerable length the microbic, chemical and glandular factors are described, which do not matter very much. If we rid modern textbooks of all these superfluous and highly artificial divisions and subdivisions, descriptions and other trimmings, we find that, as regards cure, the modern alienists have not advanced very much further than Hippocrates and his disciples. The recommendations for treatment contained in the *Encyclopædia Britannica* article are

identical with those given by Hippocrates, Celsus, Galen and the rest of the ancient writers quoted above. Unfortunately the very simple facts about the causation of preventable insanity and about its cure are obscured by a gigantic mass of irrelevant pseudo-scientific verbiage and by the "psychical treatment" of a plain commonplace bodily trouble which can easily be cured with common-sense means.

The most frequent form of insanity is melancholia. Melancholy is often the first step on the road towards incurable insanity. Yet melancholy can as a rule be easily cured by the methods employed by the ancient Greeks and Romans whereby the body is freed from auto-intoxication. Perfectly sane people suffering with their digestive tract have occasionally fits, not only of depression, but of true melancholy. Shakespeare's Hamlet, the "melancholy Dane," is a representative of the melancholy type. Shakespeare displayed a professional alienist's knowledge in drawing the character of that tragic figure. In Hamlet gloom, utter depression, weariness of life, and thoughts of suicide, alternate with fits of buoyancy, elation and exuberance. The hero of the play is given to morbid introspection, to self-pity, and to unconquerable hesitation when action is called for. His attitude towards Ophelia shows the typical decline of sexual power and sexual appetite. He neglects his dress and outer appearance and apparently did not wash. Very likely he suffered from a Lane's kink of the colon, or more likely from a dropped and elongated bowel and consequent chronic intestinal stasis.

Melancholia, the most frequent and the most easily curable form of insanity, is apt to develop into incurable mania if neglected. Incurable insanity arises through the continued poisoning of the brain, which at last is overwhelmed by an irresistible flood of toxins. Melancholia is in practically all cases not a brain disease but a bowel disease. That has been

briefly mentioned by some of the authorities previously quoted. Let us now deal with melancholia a little more fully.

In the work, *Psychological Medicine*, by Doctors Bucknill and Tuke, 1862, we read on page 160, under the heading "Physical Symptoms of Melancholia" :—

Among the earliest of these are, loss of sleep and disturbed dreams. We have known cases in which the dread of falling asleep was intensely agonizing, from the anticipation of dreaming, and awaking with horrible sensations. The digestive organs are frequently deranged ; the tongue being unnaturally red or loaded, and the substratum firm, while there is a marked fullness at the epigastrium (abdomen) and the evacuations are deficient in bile. The tongue may in other cases be flabby, pale, and indented at the edges ; a fixed dull pain, or an ill-defined sense of oppression in the head, is also often complained of. The pulse is not usually accelerated, but slow and compressible. The urine is often pale ; sometimes high-coloured, and depositing sediment. The skin varies ; usually harsh, but not infrequently moist and clammy.

In women the uterine functions are more or less disordered and are suspended in the large majority of cases. In men, the reproductive instinct is usually in abeyance.

Melancholiacs complain, observes Dr. Conolly, when any distinct complaint is made, of uneasy sensations in the epigastrium, in the left hypochondrium, or other parts of the abdomen ; of a feeling of fluttering, drawing, gnawing, or tearing. They even refer a sense of terror to the epigastrium.

There is nothing remarkable among the insane in the pathology of the small intestines ; but the large gut suffers in chronic insanity frequent and extraordinary displacements, which we are quite at a loss to explain. The most common of these displacements is that of the transverse arch of the colon to the lower part of the abdomen, from whence again it ascends to take its proper position as the descending portion.

According to Doctors Bucknill and Tuke melancholics show all the symptoms of chronic intestinal stasis des-

cribed by Lane and other high authorities in Chapter II of this book. It is very notable that the distinguished authors draw particular attention to the "frequent and extraordinary displacements of the large gut" to which previously the eminent French alienist, Esquirol, had drawn attention, whose views have already been quoted.

In the *Journal of Mental Science*, 1905, Dr. Arthur A. D. Townsend had a paper significantly entitled "Mental Depression and Melancholia considered in regard to Auto-Intoxication," which deals very learnedly with the chemical aspects of the disease. The author has found an excess of indoxyl in the excretion of the insane, and he considers that "the only treatment is free purgation." That was already known by the ancient Greeks although their chemists had not recovered indoxyl from the excreta of the insane. The author writes:—

The only treatment that I have found to diminish the excess of indoxyl is free purgation, and a diet exclusively of milk, but in many cases it is difficult and often impossible to get patients to submit to it.

There is not the least doubt that the subjects of melancholia suffer in greater or less degree from the absorption of toxins, the products of abnormal putrefactive changes in the intestinal tract. It is fully recognized that excess of indoxyl in the urine affords the evidence of morbid putrefactive processes in the upper part of the intestinal tract.

So far as my observations have been carried they have enabled me to show that indoxyl is found in excess in the urine of patients suffering from acute melancholia; it therefore follows that we have in the intestinal tract of these cases a condition favourable to the formation of toxins.

Dr. Clouston, in his book, *Unsoundness of Mind*, 1911, page 142, significantly speaks of "melancholia of the bowels." We read:—

Nutritive and digestive troubles often precede the mental symptoms for a long time. Indigestion, attacks of vomiting, loss of appetite, falling off in weight, muscular flabbiness, and constipation are all exceedingly common, especially before attacks of depression of mind; indeed those symptoms, along with altered bowel contents in directions pointing to infection by hurtful microbes and imperfect digestion, are present in at least 50 per cent as preludes of the various forms of insanity.

I am in the habit of speaking of a "melancholia of the bowels" as preceding and accompanying most cases of melancholia. The acuter forms of mental disturbance and general paralysis are specially apt to be preceded by marked intestinal or gastric catarrh. I do not, however, agree with the views put forward by many of the toxic school, which go so far as to attribute most cases of depression, and also excitement of mind, directly to the hurtful microbes originating in the alimentary canal. I am satisfied, however, from my experience that if the digestive, constipative, and nutritive preludes of mental disease were attended to and could be counteracted, it would be in some cases arrested.

The cure for melancholia prescribed by Hippocrates, the father of medicine, was severe purging by black hellebore, and the latest scientific conclusions point in that direction, but to a modified extent, and in regard only to certain forms of the disease. We are, for instance, now using calomel in small and repeated doses to an extent much greater than we did thirty years ago.

Studying melancholia quite unnecessarily from the ultra-scientific point of view of the analytical chemist, Dr. J. George Porter Phillips wrote a paper, "The Treatment of Melancholia by the Lactic Acid Bacillus" in the *Journal of Mental Science*, 1910, in which we read:—

Melancholia, with its attendant constipation and faulty alimentation, lends itself at once to a dietetic form of treatment.

It is obvious that the melancholiac, in the acute stages

of his illness, struggles against great odds owing to the following facts: His alimentation is defective, his excretions are diminished, and, moreover, his whole system is in a state of auto-intoxication. In other words there is a general clogging of the metabolic processes. The disturbance of the alimentary tract tends to form a vicious circle, hindering the nervous system from obtaining an efficient and pure food supply.

We have ample evidence of this impaired metabolism with its toxæmia. The patient has a sallow, muddy complexion, a dry skin, a parched, furred tongue, a high-tension pulse, brittle nails and lustreless hair, a scanty high-coloured urine containing an excess of ethereal sulphates, and fæces deficient in quantity and moisture and very offensive in odour.

Ranging from a mild attack of depression to a severe case of melancholia, one finds the hub of the disturbance centring itself in the alimentary canal.

The author has made the discovery that melancholia "centres in the alimentary canal," that there is auto-intoxication, and that detoxication by dietetic treatment, largely milk, is beneficial. The ancients knew quite as much although they did not know the lactic acid bacillus. Throughout the past melancholy has been treated by free evacuation of the bowel combined with a regime based on fruit, vegetables and milk.

In an interesting paper contained in the *Journal of Mental Science*, 1923, entitled "The Rôle of Auto-Intoxication or Auto-Infection in Mental Disorders," Dr. Chalmers Watson wrote:—

Pinel in his classical textbook, *Sur l'Aliénation Mentale*, in 1809, wrote as follows:—

"It seems that the primitive seat of insanity generally is in the region of the stomach and intestines, and it is from that centre that the disorder of intelligence propagates itself."

In a paper on the "Prodromata of the Psychoses and Their Meaning," by T. S. Clouston, in the *Journal of Mental*

Science, 1904, the importance of nutritive and digestive disturbances is emphasized in the following terms:—

“Nutritive and digestive troubles often precede the mental symptoms for a long time. Indigestion, dyspepsia in every form, attacks of vomiting, anorexia (lack of appetite), falling off in weight and muscular flabbiness are all common, especially before attacks of melancholia. Constipation and altered bowel-contents in directions pointing to imperfect digestion, primary and secondary, are present in over 50 per cent of the cases as prodromata (forerunners) of various forms of insanity. A melancholia of the digestive tract in the shape of obstinate constipation and distressed feeling in the epigastric region precedes and accompanies half the cases of melancholia. . . . I believe many attacks of insanity are warded off by appropriate dieting, just as attacks of epilepsy are often so prevented. The acuter insanities and general paralysis are specially apt to be preceded by marked intestinal or gastric catarrh.”

In the *Journal of Mental Science*, 1905, there appears a paper on “Mental Depression and Melancholia considered in regard to Auto-intoxication,” by Arthur A. D. Townsend. In this paper there appears the following:—

“For a long time I have strongly held the opinion, as a result of my own observations, that a very large proportion of cases suffering from melancholia are due to auto-intoxication resulting from absorption of toxins from the alimentary tract, for in depressed states generally there are various symptoms referable to disordered metabolic processes in some part of the gastro-intestinal tract. The symptoms in question that I consider as evidence of a state of toxæmia are as follows: foul breath, coated tongue, indifference to and often refusal of food, marked constipation, foul stools, anæmia (varying in degree), a sallow dirty skin, profuse perspirations and of offensive odour, skin irritations, eruptions, disorders of sensation often leading to flesh-picking, and headache. Of course we do not in any one case find all these symptoms, but there are several common to all cases of acute melancholia.”

In Quain's *Dictionary of Medicine*, Vol. II, 1894, there is an article on melancholia by Dr. G. F. Blandford. This article is interesting because it was written

before the time of Sir Arbuthnot Lane's demonstrations regarding the numerous diseases which spring from chronic bowel stagnation and consequent auto-intoxication. The author of this article also informs us that melancholia is a bowel disease. We read :—

There is almost always considerable disorder of the digestive apparatus.

One symptom is obstinate constipation. It may be necessary in the first instance to relieve the loaded and obstructed bowel by means of turpentine enemata ; after which it will be of advantage to give a daily dinner pill of the extracts of aloes and nux vomica, or a daily teaspoonful of castor-oil, following it up if necessary by an enema, but ensuring an action every, or every other, day, and so habituating the bowels to act. Many melancholic patients, especially women, will be found to be persons who have been accustomed to go for long periods without any action of the bowels, or who never had relief without medicine. Food must be given to this class of patients in large quantities. Under this augmented diet the tongue will become clean, the bowels will act without physic, and the patient's appearance will soon testify to the efficacy of the treatment.

Under the heading, "Melancholia and Hypochondriasis," we read in Vol. VIII of Allbutt's *System of Medicine*, 1899, an article by Doctor Henry Rayner which also could not yet have been influenced by the teaching of Sir Arbuthnot Lane. The author states :—

The history of the case commonly reveals protracted malnutrition, due to malassimilation, toxic conditions, or defective rest ; these factors being commonly associated, or deriving from one another.

The defective assimilation may result from insufficient or inadequate food, chronic indigestion—especially from bad teeth or defective mastication—organic conditions of the stomach (dilatation, displacement, etc.), protracted ill-health (from exhausting discharges, loss of blood, semen, pus, etc.), or other conditions of disease.

The toxic conditions which produce it are usually of slight intensity, such as tipping, insidious poisoning by lead, influenza or malaria, gout, constipation, defective action of kidney or liver, and so forth.

Insanity is a terribly widespread disease among the civilized. The number of insane has been increasing in a very alarming manner throughout the world. In England and Wales, for instance, the number of lunatics has increased as follows according to the returns made to the Commissioners in Lunacy:—

1860	38,058	1895	94,081
1865	45,950	1900	106,611
1870	54,713	1905	119,829
1875	63,793	1910	130,553
1880	71,191	1915	115,090
1885	79,704	1920	116,764
1890	86,067	1925	131,557

During the period under review the number of reported lunatics in England and Wales has nearly quadrupled. There has been a steady and continuous increase, and a similar movement has taken place in the United States, the British Dominions and the Continental nations. In addition to this gigantic army of officially recorded insane, there is at least as large an army of unofficial insane people. Notwithstanding the assertions of certain apologists that the increase of insanity has been rather apparent than real, that more people are recorded as insane because now thousands of afflicted people are sent to mental hospitals who formerly were kept at home, it is perfectly obvious that there has been an alarming and very actual increase. The increase of chronic constipation and of so-called mental disease has gone hand in hand. Unfortunately thousands of certified insane need not have been certified at all, for they might have been cured by attention to their bowels. Dr. Nathan Raw made,

in a paper entitled "The Relation of Mental Symptoms to Bodily Disease," the following terrible revelation in the *Journal of Mental Science*, 1904 :—

After a long observation of lunatics (I have personally certified over 2,500 patients to asylums), I am firmly convinced that a large number of people are certified as lunatics throughout the country who are simply suffering from temporary insanity, the result of, or associated with, some form of bodily disorder or toxic poisoning. These people are not really insane, and should not be associated with lunatics. They quickly recover under proper treatment.

Apparently thousands of unhappy wretches are kept in so-called mental hospitals, and through lack of treatment their temporary and curable insanity has been converted into permanent and incurable brain disease because the majority of the doctors refuse to accept the teachings of the wisest physicians of all times, from Hippocrates to Lane, who have told us that insanity, and particularly melancholia, is frequently produced by auto-intoxication following upon chronic bowel stagnation. Thousands of unfortunate wretches locked away in lunatic asylums suffer not from "incurable mental disease," as officially stated, but from medical neglect and indifference. A brain which has been flooded with toxins for a time is only temporarily upset because its structure is not yet irretrievably damaged. If the flood of toxins is stopped by attending to the poison-breeding bowel or other focus, the patient may become perfectly and permanently sane and normal. If, on the other hand, his physical needs are neglected while his doctor toys with fashionable psycho-analysis, psycho-therapy and other pseudo-scientific futilities, the brain material will be overwhelmed and will become permanently damaged so that recovery is no longer possible.

So far I have only given the views of a large number

of the most eminent authorities on mental disease. Their views are, of course, based not on guess-work but on practical experience. I would now give a few case histories which will show that insanity is indeed often caused by chronic bowel stagnation and auto-intoxication, and that it can be cured by suitable medication, by dieting, or by surgical means. The case histories quoted are necessarily few in number. It would be easy for me to fill a large volume with similar practical and unchallengeable proofs.

In Drs. Bucknill and Tuke's *Psychological Medicine*, 1862, we read on page 519 :—

J. C., a single man, in easy circumstances, of steady and temperate habits and cheerful disposition; his brother has had melancholia. Without any known cause, a change was observed in his manner and mode of life; he neglected his usual pursuits, and moped about, silent and abstracted; then he became restless, walked about his bedroom all night long, and refused food. This state of things was allowed to continue so long that, when called to see him, we found him very nearly at death's door; his teeth and tongue were covered with sordes, his breath had the foetid odour of a starved person, his face was of ashy paleness, his forehead cold and clammy to the touch, his pulse thready and his body emaciated; he was reported to have had no sleep for a fortnight (this was probably an exaggeration), to have taken very little food for the same time, and none for the last three days.

Wine and beef-tea were given every hour; and after these had produced a slight evidence of reaction, half a grain of morphia was administered. This treatment had the effect of somewhat improving the appearance of the patient, and calming his restlessness; a repetition of the opiate produced a few hours' sleep. The morphia was continued twice a day, and the improvement of the patient was evident from day to day.

The bowels were first acted upon by aloetic injections; and when returning strength rendered anything like purgation less dangerous, rhubarb and grey powders were given twice a day. In five days the patient was able to walk

in the open air, leaning upon the arm of an attendant. When first seen, he was unable to articulate.

We read in the same work on page 528 the following account :—

A gentleman of high endowments, single, of studious habits, having lived in a secluded part of the country, became gradually melancholic from ennui and want of mental excitement. When placed under our care he had refused food for some time, under the double delusion that he could not afford it, and that there was not room for it in his stomach; he was emaciated and weak, and slept very little, not more than one hour in the twenty-four.

The bowels were habitually constipated, the tongue foul, and the breath foetid. A teacupful of a mixture of beef-tea and good port wine was given him with a feeding-spoon every three hours during the day, a grain of muriate of morphia was given every night, and five grains of aqueous extract of aloes every morning. Improvement rapidly followed; in a month the patient was able to walk seven or eight miles a day, and the delusion had disappeared. A feeling of shyness, and want of volition, remained for many months, but yielded to gradually extended intercourse with society.

From Dr. R. Von Krafft-Ebing's *Lehrbuch der Psychiatrie*, Berlin, 1879-80, Vol. III, page 13, I would give the following case :—

Mr. Lanisnik, 51 years old, landowner, married, father of eight children, one of whom suffers from melancholia, was nervous and easily excitable since childhood. As he was talented, able and industrious, he raised himself from poverty to prosperity. He was always thinking about increasing his property, he was fond of good eating and drinking, etc. Four years ago he began to complain about pressure in the region of the liver, stomach troubles and headache. He slept badly. Since then his health has been bad. His frontal headache troubled him so much that he could scarcely do any work. Nevertheless, he had

to manage large properties and to over-exert himself. In course of time his headache became worse and his sleeplessness more pronounced. He complained about pressure and feeling of fullness in the abdomen, constipation, lack of appetite. Then came business troubles and death of the mother. The patient began to look ill, lost his appetite, became depressed, irritable, constipated and suffered from blood-pressure a good deal.

When received at the mental hospital patient was very worried and frightened, resisting, without appetite, constipated and had ice-cold hands. He had lost more than 30 lb. of his weight. As he suffered from catarrh of the stomach, suitable dietetic and medicinal directions were given. His bowels were regulated, he was kept in bed and was given a little opium. Five weeks after his arrival his stomach and bowels became worse, and his psychological condition suffered correspondingly. A fortnight later patient was convalescing and was sent home, direction being given to his local doctor. With careful dieting and treatment patient had a perfect physical and mental recovery. There were slight relapses only in case of constipation. All his functions became normal and he became again a bright, active, vigorous man.

In the same volume the following case is described on page 20 :—

On the 5th July, Mrs. A. W., wife of a business man, was received at the institution. There was no hereditary factor. She was married when 36 years old, had two children. Patient had always had a melancholy, depressed character, and was always very excitable and sensitive. Bankruptcy of a son worried her and prevented her sleeping. Gradually a psychic depression rose. Patient became silent, lost her appetite, sat all day long in a corner, had to be forced to eat. Expressed vague fears.

Patient gives the impression of suffering from melancholia stupida. Is fairly well nourished and has no abnormalities of the skull. Patient stands about and has to be induced to move. Resists passively movement and food, hardly speaks at all, but murmurs gibberish. Stands with a stooping attitude, her face full of fear, eyes staring

on the floor, every trifle frightening her. The skin is cool, dry, dirty, without secretion of perspiration, somewhat livid through impeded circulation of the blood in the capillaries, tongue very dirty, bad smell from the mouth, scanty liquid stools.

In the beginning treatment consisted in lukewarm baths, small doses of opium. Sickness, colicky pain and increased refusal to take food, accompanied by smaller liquid stools, caused exploration of the bowel from the exit. It was found that the big bowel was filled with a solid column of hard stool with a channel in the centre as thick as a pencil, by which the liquid stools were carried. Stagnation with large masses of fæces took place throughout the bowel.

Enemas and purgatives combined expelled enormous quantities of thick, hard and stinking clots. The effect of this treatment upon the patient's mental health was surprising. The motor difficulties disappeared at once, the mind was clearer, resistance ceased, patient began to eat and to talk, to complain about her troubles, explained that she feared a disaster, heard voices, was confused, etc.* She progressed from day to day physically and mentally. Stools were regulated. Patient ceased to hear voices and began to occupy herself with reading and work. In four weeks patient was restored to health. She said that her illness seemed to her like a bad dream. Immediately after the great evacuation of the bowels her head had felt quite different.

Dr. Chalmers Watson, in his paper "The Rôle of Auto-intoxication or Auto-infection in Mental Disorders," printed in the *Journal of Mental Science*, London, 1923, furnished the following case:—

J. H., age 54, joiner, recommended for admission by Dr. Stark on account of (1) depression, (2) general weakness, (3) headaches, and (4) constipation. First three for several years, the last for many years.

Statement from the wife.—Until ten years ago patient was in good physical health and mentally sound, taking more than an average interest in his house, family and work. Ten years ago had a severe attack of neurasthenia ;

off work for four months, this condition occurring in sequence to a severe attack of furunculosis (boils). Patient has never been the same since; for past three years has been very depressed, very quarrelsome and irritable; would often refuse to answer questions; had unwarranted delusions about his wife's conduct. Off work a great deal through illness. Before admission was more melancholic, with occasional incontinence of urine and fæces. No history or evidence of venereal disease. Patient's wife, an apparently capable and sensible woman, regarded him as now "imbecile" and unlikely to recover.

Personal condition.—Indifferent physique, weight 2 st. below his normal, depressed and self-centred. Marked pyorrhœa. Heart slightly enlarged, aorta dilated and general arterial sclerosis. Wassermann reaction negative. Blood-pressure 110. Urine cloudy, containing some epithelia and pus-cells, yielding on culture a moderate growth of staphylococci. Bowels extremely constipated, stools very offensive, showing excessive putrefaction with much mucus, and a bacterial flora greatly in excess of the normal. X-ray examination showed marked colon stasis with proptosis.

Treatment.—(1) Rest in bed; (2) light dry diet—no soups, no red meat, abundance of fluid between meals; (3) correction of sepsis; (4) aperients and intestinal lavage; (5) physical treatment; (6) remedial exercises in gymnasium.

Progress.—Within a week patient volunteered the statement that he felt better than he had done for ten years, and he steadily progressed towards a good recovery on the mental side and a fair recovery on the physical. A gradual and satisfactory improvement in the state of the urine and stools took place. Returned to work and to normal family life in twelve weeks, enjoying life, this improvement being fully maintained after nine months. The cardio-vascular lesions and associated visceroptosis will be permanent.

The same author told us:—

"Mrs. C., age 48, recommended for admission by Dr. Mowat as being very depressed and restless, uncontrollable

at home, in a state bordering on insanity. Duration, four months.

History of illness.—Was worried by a daughter's illness and later by a slight attack of influenza, became depressed and restless and behaved in a peculiar manner, e.g., was found by her husband one morning sitting in an ash-bucket in the street with half her clothes on, and on another occasion was found by him crouching behind a cupboard, and, when asked for an explanation, told her husband not to worry her. Previous health good, except that in the previous year was treated for her stomach and recovered slowly. Menopause eight months before admission.

Temperament.—Nervous type, happy in her home, an excellent housewife and mother; over-keen on keeping a meticulously clean house.

Physical condition.—Slightly pale and thin, with a characteristic look indicative of severe mental derangement. No evidence of organic disease. Blood pressure 100. Wassermann reaction negative. Urine rather scanty, cloudy, centrifuge deposit showing numerous catarrhal cells, some pus-cells, and bacteriological examination revealed numerous coliform organisms. Bowels constipated, and after being relieved, stools very offensive, a second wash-out of the bowel being a highly fæulent offensive return, similar to the first. X-ray revealed marked stasis in the terminal part of the ileum and in the colon with associated ptosis.

Treatment.—(1) Rest; (2) light dry diet; (3) abundance of fluid between meals; (4) intestinal lavage and aperients; (5) psychical treatment; (6) massage and remedial exercise.

Progress.—Rapid recovery, and left hospital for home, against our recommendation, in three weeks. Relapse and readmitted in a month. Condition similar to original though less in degree. Distinct suicidal tendency. Under treatment on the original lines, carried out for six weeks, followed by two months' convalescence in the country, the patient made an excellent recovery, both on the physical and mental side.

Dr. Henry A. Cotton, in his book *The Defective, Delinquent and Insane*, 1921, on page 147, described the following case:—

Psychosis in a young married woman, age 28, admitted 21st June, 1920. She had had one child. Her attack of maniacal excitement came on suddenly a few days before admission. She had very badly infected teeth and all of them were extracted, and her infected tonsils removed, with no apparent amelioration of the mental symptoms. She was too excited and unco-operative for radiographic studies of the gastro-intestinal tract, but a history of habitual constipation since early childhood caused us to suspect involvement of the colon. The fact that the administration of autogenous vaccine and anti-streptococcus and colon bacillus serum had no appreciable effect, also substantiated this opinion. She was operated upon on 12th December, 1920.

When seen a few days before the operation she was very much excited and refused to keep her clothing on. She had torn up a blanket and had it draped Hawaiian style about her, and claimed she was an Indian chief. She had had to be kept constantly in a room. She had had a special nurse in the hope that this would help her, but without avail. She was good natured, but at times inclined to be violent. Considerable concern was felt about her post-operative care, as it seemed impossible that she would remain quiet and not disturb her bandages.

At the operation the colon was found to be badly involved and a large segment was removed. Contrary to expectations, while she was restless the first day and night, the next day she seemed quiet and asked that her hands be untied, as they were tied with gauze bandages in anticipation of trouble. This was done and from that time to the present she has shown a normal attitude. Her mental condition cleared up and in less than a week the change from her previous mental state was remarkable, to say the least. At present, nine months after operation, she is normal in every respect.

The same author furnished the following account on page 90 :—

A married woman, age 44, accomplished, previously healthy, suddenly, in February, 1918, developed severe attacks of dizziness and vertigo, so that it was impossible

for her to raise her head from the bed. She had suffered from habitual constipation since girlhood, which had gradually become worse, and during this attack of vertigo there was much distension of the abdomen and considerable pain. She was admitted to Mercer Hospital, Trenton, in February, 1918, and after having her teeth X-rayed, all of the upper teeth and the molars and bicuspid of the lower jaw were extracted, but with no apparent benefit. Her dizziness was so severe that she was confined to bed and relief was obtained only when lying flat upon her back.

She remained in the hospital about one month and then returned home, but in April, because of a severe endometritis, the uterus was dilated and curetted, but the dizziness persisted. There was partial suppression of urine for some weeks, but this gradually improved and culture of the urine showed streptococci and colon bacilli. The stomach was examined by the Rehfuß fractional method and colon bacilli with a very low hydrochloric acid content was found. Autogenous vaccines were prepared and given, but with no apparent results. In the fall of 1918 her tonsils were removed, and for two months following this operation there was an entire cessation of all dizziness and peculiar head sensations, but after that the dizziness returned. In the spring of 1920, radiographic studies of the gastro-intestinal tract revealed an enormously distended descending colon, and an extensive resection or removal of the colon of the left side was done. She made a good surgical recovery and soon after this her headaches, dizziness and vertigo disappeared and now for over a year there have been no symptoms and she is entirely normal in every way.

Professor J. A. Nixon described the following case in the *British Medical Journal* of the 4th July, 1925, under the heading "Focal Sepsis as a Factor in the Causation of Neurasthenia and Insanity" :—

Just before the War I was called to see a young professional man who had attempted to commit suicide. The family history was exceedingly bad, and it was at first thought that the prospect of mental recovery was poor. An alienist, called in consultation, took a different view. He observed that the periods of depression to which the

patient was subject coincided with attacks of constipation, so severe as to be absolute for eight or ten days together; and he was strongly opposed to the man becoming an inmate of the asylum, even as a voluntary boarder. Advice was given as to the proper regulation of the bowels, and the patient was put in the care of friends. He completely recovered, and has been since 1916 an active and hard-working man.

CHAPTER V

How Chronic Constipation causes Neurasthenia, Insomnia, other Nerve Diseases, and Epilepsy

Disorders of the digestive functions fill a very important place in the clinical picture of neurasthenia. Their appearance sometimes marks the very beginning of the malady, and they usually last for its whole duration. Constipation is often established from the first.—DR. GILBERT BALLEZ, *Neurasthenia*.

IN the previous chapter I have shown by means of an overwhelming mass of evidence that chronic bowel stagnation and auto-intoxication are responsible for innumerable cases of melancholia, many other forms of insanity, and suicide. If chronic bowel stagnation is destructive of brain matter, it cannot be surprising that it leads to nervous affections of every kind. After all, brain and nerves are made of the same material. It may be said that the brain is concentrated nerve force and concentrated nerve material, or that the nerves are an extension of the brain.

The present age is often described as a neurotic age. Neurasthenia, which means weakness of the nerves, is widespread, and it is difficult to overcome by ordinary medical means. Frequently long continued neurasthenia is followed by melancholia, insanity, suicide. The present age is not only the age of neurasthenia, but also the age of constipation. The two go together. If chronic constipation is apt to

injure the brain, it will still more easily damage the nerves. Such injury cannot be made good by tonics, but only by dealing with the root cause. The enormous and ever-increasing sale of both aperients and tonics and the ever-growing demand for nerve stimulants and nerve sedatives of every kind, such as tea, coffee, alcoholic drink, tobacco, various drugs, etc., shows that constipation, neurasthenia and other nerve diseases go hand in hand.

The fact that neurasthenia and many other nervous maladies are caused by a sluggish, toxic bowel, is obvious to all who have given the matter serious thought. Unfortunately it is not the fashion to attribute an "interesting" nerve disease to so vulgar, commonplace and unpleasant a complaint as chronic constipation. It is far more romantic and seems far more scientific to hold responsible some mysterious gland or glands, or some obscure chemical process of the body, or a psychological "complex," or "the strain of civilization." In Dr. Eugene Lyman Fisk's book, *Health Building and Life Extension*, 1923, the question is asked on page 161:—

Do the intestinal toxins act directly on the nerves, producing neuralgia, psychic depression, fatigue, or is this general asthenia (weakness) the consequence of the intestinal stasis on the thyroid, suprarenals, and other endocrine glands? It is possible that both modes of action exist, but what is certain is that treatment of the stasis will cause the patient to regain his vitality.

Some writers on nerve diseases concentrate their attention on the more romantic and pseudo-scientific factors connected with nerve disease, such as the defective action of certain ductless glands, which, by the by, have become defective through the poisoning of the blood-stream, which in turn has become vitiated by a chronically foul bowel and the absorptions of toxins therefrom. Others seek the cause of nerve

disease in psychological theories and abstractions. Others again search industriously for wonderful chemicals which may, or may not, be found in the bodies of those suffering from nerve disease. As it is fashionable to attribute disease to mysterious causes, such as invisible germs, intangible psychological factors and equally mysterious glands and chemical processes, the plain obvious cause is generally neglected. Apparently doctors, like dressmakers, must follow the fashion. However, there are a few medical men who, like Sir Arbuthnot Lane, are candid enough to state that neurasthenia and many other nerve diseases are principally due to chronic constipation and auto-intoxication. We read, for instance, in Dr. Gilbert Ballet's book, *Neurasthenia*, 1911, on pages 54, 274, and 282 :—

Disorders of the digestive functions fill a very important place in the clinical picture of neurasthenia. Their appearance sometimes marks the very beginning of the malady, and they usually last for its whole duration.

Constipation is often established from the first; when it is obstinate and resists the majority of the usual purgatives, it happens that the patients remain three, four or more days without going to the closet. It is then accompanied by meteorism (bowel gas) and by sensations of weight or tension in certain parts of the abdomen. In such cases it becomes the subject of consistent hypochondriacal anxieties on the part of the sufferers, and in the end it may be complicated by pseudo-membranous enterocolitis.

Intestinal disorders are commonly associated with the gastric symptoms in neurasthenia. Constipation is very frequent, especially in female patients. Though it is sometimes slight and easy to overcome, more often it is resistant and tenacious; the patients complain that their bowels do not move naturally, and that they are obliged to have recourse to artificial means to make them act. This constipation, which is simple and painless in some cases, is at times accompanied by flatulence and borborygmi (noises), especially on waking in the morning.

In exceptional cases the patients take no notice of it; more commonly they worry themselves about it, and are more affected by it than is good for them, attributing to it, not always without reason, the flushes of heat to the face, the occasional vertigo, the respiratory embarrassment, and the abdominal discomfort from which they suffer.

It not rarely happens that the constipation is interrupted by short attacks of diarrhoea; the stools are then liquid or soft, and unload the intestines only very incompletely, leaving them more or less distended by hardened fæces, which are passed later with the aid of laxatives. There is rather a false diarrhoea than a true one. The usual diet of neurasthenics is not of a nature to lessen this trouble. Milk, unless it is badly digested, grilled meats, and starchy and doughy foods leave little residue, so that contraction of the intestinal walls is not set up by undigested portions of the food, and the atony is thus increased.

It is not uncommon to meet with an abdominal complication in neurasthenics, as to the nature and etiology (causation) of which there seems to be considerable disagreement; I allude to that which has been minutely described by Frantz Glenard, in a series of very remarkable works, under the name of visceral ptosis. It is a state of sinking of the abdominal organs, which are otherwise healthy, below their normal position and in the direction of gravity. It is more commonly termed enteroptosis.

Another nerve specialist, Dr. Francis Brook, stated in the Discussion on Alimentary Toxæmia at the Royal Society of Medicine, in 1913:—

Neurasthenia has long been suspected to be due in a majority of cases to a toxic condition of the blood originating in an alimentary toxæmia (poisoning), but hitherto no definite proof of that theory has been brought forward.

Clinically, what are the symptoms of a chronic toxæmia other than alimentary—for example, chronic alcoholism? Are they not prostration, restlessness, headache, irritability, nervousness, disturbed sleep, hyperæsthesia and pains, irritable temper, easy fatiguability, loss of concentration, and loss of memory; and do not these symptoms correspond exactly with the symptoms of neurasthenia?

We now come to the bacteriological evidence. For a long period it has been my practice to examine bacteriologically the fæces (stools) in every case of neurasthenia which has come under my care. At Liverpool, last year, at the annual meeting of the British Medical Association, I gave the details of fifty-four consecutive cases of neurasthenia. Every one of these showed an abnormal condition of the flora. At the present time my cases number 132, and I can only say that each successive case confirms me in my belief that chronic intestinal toxæmia is at the root of almost every case of neurasthenia trouble.

Another well-known authority, Dr. W. Ford Robertson, wrote on page 223 of his book, *Therapeutic Immunization in Asylum and General Practice*, 1921 :—

There is a rather important point that requires to be alluded to and put aside before I deal with the chronic infective conditions that I have found in cases of neurasthenia. Most persons afflicted with this malady suffer from intestinal stasis and its consequent toxæmia. The toxins (poisons) absorbed from the colon in these cases are no doubt varied in nature and origin, but they are chiefly formed by the action of saprophytic (putrefaction) bacteria upon the food residues. Absorbed in excess of the amount that can be destroyed, they produce lassitude, mental depression, slight degrees of mental confusion, more or less severe headache, and sleeplessness or drowsiness. All cases of neurasthenia accompanied by intestinal stasis are aggravated by absorption of these toxins.

If I should try to deal with nerve diseases as fully as I have done with insanity, this work would have to be extended to a number of volumes. It is scarcely necessary to give further proof that chronic constipation, which often injures the brain beyond remedy, gravely injures the nervous system, and in innumerable cases produces neurasthenia and other nerve diseases.

Insomnia may be produced by various factors, such as disease, over-eating, drug-taking, etc. However, among the various causes of insomnia, chronic bowel

stagnation and the consequent generation of virulent poisons which circulate through the body and disturb its normal functions stands pre-eminent. We read in Sir James Sawyer's book, *Insomnia: Its Causes and Treatment*, 1912, on pages 42 and 85:—

Toxic insomnia from insufficient excretion of waste products does not arise necessarily from dietetic excesses, but may be due to some failure of the excretory powers.

Clinical experience has suggested to me that insomnia may sometimes be a neurosis (nerve affection) having its origin in toxic absorptions by the gastro-intestinal mucous tract. Certainly intrinsic insomnia is found in practice to come and go with constipation and the relief of constipation. The explanation of such association of symptoms may be a toxic one. The word "copræmia" is coming into medical use, to signify a kind of poisoning of the blood by noxious principles derived from retained fæces (stools). Sallowiness of the skin, what may be called fæcal anæmia, anorexia (loss of appetite), "biliousness," and asthenia (weakness) mark this condition, and, in some cases, intrinsic insomnia may be added to its characteristics. In copræmic insomnia we have to deal with a form of sleeplessness which presents well-marked causal antecedents, and which yields brilliant results in practice when its causal foundations are removed by the application of a judicious selection from the large repertory of therapeutic resources at our disposal for the cure of coprostasis, as that condition arises in the various moods of habitual constipation.

I have often in my practice found a dose of calomel about three times a week enable the patient to sleep well and rid him of his imagined woes and dreams, while at the same time he has been dieted. As to the value of calomel, from another point of view, in the treatment of insomnia, Dr. Huchard, the eminent physician in Paris, lately declared that the administration of one-tenth of a grain of calomel three times a day was often enough to gradually restore the habit of sleep in cases of high arterial tension.

One of the most distressing of diseases is epilepsy, which attacks men unawares, causing them to collapse

suddenly, shrieking, in convulsions, followed by foaming at the mouth, loss of consciousness, vomiting, the automatic emptying of bowel and bladder, etc. Various mental disturbances, such as delirium and mania, are apt to follow repeated seizures. According to some of the medical textbooks "the pathology of the disease is unknown." However, we are told that there may be an hereditary taint or tendency towards epilepsy, that alcoholism, syphilis, poor physique, rickets, infectious fevers, injury to the head, menstrual disorders, etc., may dispose towards it. In other words, the writers of the textbooks do not know the causation of epilepsy. The incredible medley of "causes" put forward show their lack of knowledge and betray considerable confusion of mind. Epilepsy, like many so-called "diseases," is not a clearly defined disease, but is a clearly defined symptom which can be brought about by various physical damages, defects and maladies. One of the most frequent causes of epilepsy is chronic constipation and auto-intoxication.

Epilepsy is one of the oldest of diseases. The suddenness of the attack and the terrifying aspects of the sufferers created in the earliest ages the idea that epilepsy was not an ordinary malady but a divine infliction. The ancient Greeks called it the sacred malady. Hippocrates devoted a lengthy treatise to the sacred malady and showed that there were only physical disorders and diseases, that epilepsy was a physical disease which should be treated not by the priest but by the physician, and that the regulation of the bodily functions was rather called for than prayers and sacrifice. Hippocrates and his successors recognized that, unless there was damage of the brain or some other obvious cause, epilepsy was due to chronic constipation and to auto-intoxication. That may be seen by the routine treatment adopted by the Greek physicians. We read, for instance, in Celsus, Book III, Chapter XXIII :—

In cases of epilepsy the patient must be given enemas or be purged with black hellebore in order to empty his bowels, or he must be treated simultaneously with both if his strength allows. Then one should cut his hair short and rub his body with oil and vinegar. After three days fasting the patient should be fed, but he should not receive any soups and other soft and light foods. He ought also not to be given any flesh, particularly no pork. He should be given food of intermediate, nutritive value and he should avoid the heat of the sun, baths, fire, everything heating, exposure to cold, wine, sexual intercourse, fright, tiredness, and hard work.

The wise Greeks twenty centuries ago employed drastic purgatives, enemas, and a light, eliminating diet for the treatment of both insanity and epilepsy, recognizing that both were in numerous instances pure bowel complaints. The wisdom of the Greeks was forgotten when the darkness of the Middle Ages fell upon the world. Physiological medicine was replaced by superstition. Lunatics and epileptics were treated by the Church, the authorities and ignorant doctors as men possessed. However, at last the world woke up from its century-long slumber. Doctors turned to the study of Nature, and they re-introduced the Greek method of treatment and cure not only in cases of insanity but also in cases of epilepsy. In many instances they restored epileptics to health by the common-sense remedies used by Hippocrates and his successors. The well-known Dr. Tissot published in 1790 a special volume, *De L'Epilepsie*, in which he not only recommended treatment of epilepsy by purgatives and diet, but in which he showed by case histories that a cure could be effected by these methods. We read on pages 239 and 274 of his book:—

Five years ago a girl 11 years old came to me, who during the preceding 10 months had had six very strong attacks of epilepsy which I could only attribute to her bowel condition. I purged her with *poudre cornachine*,

repeating this treatment every week, and then every six weeks during a whole year, and since then she has not had a return of her trouble. With the same purgative given six times in six consecutive months I have thoroughly cured a girl of 9 years two years ago.

White meats, river fish, vegetables, the most digestible flour foods and fruit should form the base of the nutrition of epileptics. . . . I was consulted by an epileptic woman, who had been living during 15 months on eggs, meat, meat dishes, chocolates, etc., and changed her diet completely, allowing only a little meat and no chocolate, but giving her unlimited quantities of vegetables and fruit. The immediate effect of the change was an ever-continuing improvement of her digestion, good sleep and an ever-continued improvement of her general health followed by a complete cure.

In his comprehensive volume, *The English Malady : Or a Treatise of Nervous Diseases of all Kinds, as Spleen, Vapours, Lowness of Spirits, Hypochondriacal and Hysterical Distempers, etc.*, published in 1733, the celebrated Dr. George Cheyne, of Bath, recommended treating epilepsy by a non-toxic diet from which meat was rigorously excluded, and he gave interesting examples showing that a meatless diet was indeed able to cure epilepsy. The cure was obviously effected by preventing the formation of virulent poisons in a stagnant bowel which previously had habitually been filled with putrefying meat residues. Dr. Cheyne tells us on page 253 :—

Dr. Taylor of Croydon cured himself intirely and absolutely, of the most violent, constant and habitual Epilepsy that perhaps ever was known, after having, in vain, tried all the Methods and Medicines advised by the most eminent Physicians of his Time, by a total Diet of Milk, without Bread, or any other Vegetable, or any thing (besides a Spoonful of compound Peony Water sometimes to prevent its Curdling) confining himself to a Pint in the Morning, a Quart at Noon, and a Pint at Night, of the Milk of Grass-fed Cows in the Summer, and of those fed with Hay in the

Winter, the Milk of Cows fed with Grains always inflating him, and lying uneasy on his stomach.

He had continued in perfect Health and Vigour (having had several Children) seventeen Years when I saw him, and received this Account from him insomuch that he could have play'd four or five Hours at Cricket, on Banstead Downs, without Weariness or profuse Sweating, and probably might have continued many Years longer in perfect Health (as he did seven or eight Years more) had he not entered upon a different Regimen of Diet (as I am informed since I first wrote this History, in my Treatise of the Gout, by a person of great Credit) and come to eat Animal Food, by which, in a short Time, he was destroyed.

Some others have been cured by me, by a Regimen of Diet less strict, and the Medicines already suggested; but I believe none ever were cured who have been come to Maturity, without a very exact low Regimen, continued during all their Lives, the transgressing it for any long time always bringing their Disorders back, if not something worse: and I believe a total Milk, and Vegetable Diet, as absolutely necessary for the total Cure of Epilepsy, as it is for the Gout or a Consumption. Here were the proper Place to say something of Lunacy and Madness, being satisfied that the Methods here laid down are sufficient, and the most effectual for these Distempers.

The fact that epilepsy is in innumerable cases a disease of auto-intoxication which can readily be cured by the methods of the ancients has been proved by many eminent authorities. In his important book, *Die Epilepsie*, published in 1899 by Professor Otto Binswanger, we are given recommendations for treatment similar to those previously mentioned, together with case histories illustrating the effect of such treatment. We read, for instance, on page 306:—

A brewer, 27 years old, had suffered from epileptic fits for more than a year. They occurred in intervals of three or four months and he had altogether suffered six attacks. There was some hereditary tendency to epilepsy in his family. Besides, he consumed too much meat, and he had

much excitement. Bodily inspection showed that he was a sturdy, strong man, over-fat, who suffered from lack of appetite and obstinate constipation, which probably led to catarrh of the colon, colitis, with severe pain when going to stool, stools being mixed with mucus and blood. The patient had been treated with bromide since the beginning of his disease.

When he arrived at the hospital he was treated by means of a strict diet and by mechanical and medicinal means, which, combined, eliminated his bowel trouble. Besides measures were taken to reduce the redundancy of his fat. During his prolonged treatment no attack of epilepsy took place and the patient has now been free from the disease for a whole year.

Dr. Ernest Lugaro wrote on pages 167 and 236 of his book, *Modern Problems in Psychiatry*, 1909 :—

It is believed by many that the specific cause of true epilepsy is to be traced to an auto-intoxication dependent on some alterations in the processes of material change. There is no doubt that certain toxic substances, if they exceed a given grade of intensity of action, can bring about an outburst of convulsive attacks even in a perfectly normal nervous system.

Dr. E. Doumer, in a paper significantly entitled "Epilepsie et Constipation," published in the *Comptes Rendus de l'Académie des Sciences*, 1910, described the cases of three epileptics whose condition was vastly improved by correcting the functioning of their bowels and by putting them on a vegetarian diet. In the periodical, *Epilepsia*, Vol. IV, page 178, is a paper, "Traitement des Crises d'Epilepsie Commune par la Desinfection Intestinale," by Dr. Maurice De Fleury, in which the author described his experiences in treating twenty-one epileptics by energetically regulating their bowels and by replacing the former diet of the patients by a milk diet or by a milk and vegetarian diet. The author wrote :—

The results have exceeded my hopes. In twenty-one

cases of undoubted epilepsy there have been only two where my treatment has failed completely, probably because the injuries suffered by the brain were extremely serious. Among the cases there is that of an old man aged 74 years, who suffered from epileptic attacks since his childhood. These attacks disappeared in consequence of the treatment described but reappeared when the diet was abandoned and were stopped once more upon the recommencement of the treatment. The writer believes that, in order to obtain the most favourable results, strict vegetarianism ought to be adopted.

Dr. C. A. W. Berends, in his *Handbuch der Nervenkrankheiten*, 1830, dealing with epilepsy, attributed that disease in a large number of cases to a faulty diet and expressed the opinion that for its cure a strict diet is far more important than medical treatment. He tells us that he has effected a thorough cure of epilepsy by a very light diet continued during a year.

Dr. W. Ford Robertson, in his *Textbook of Pathology in Relation to Mental Diseases*, 1900, summarized on page 368 the researches of a number of scientists who had shown that epilepsy was in many cases brought about by auto-intoxication from the digestive tract, which should be treated by the methods of the ancient Greeks, with purgatives, etc. He wrote:—

Pommay, Massalongo, Zacchi, Herter, Herter and Smith, Voison and Petit, and numerous others, have clearly shown that epileptic fits are in certain cases associated with the absorption from the gastro-intestinal of toxic substances, developed in consequence of disorders of digestion. Agostini has carried out a most laborious series of experimental investigations which have given this fact a solid scientific basis. He has studied the toxicity of the gastric contents and urine, and also their chemical and physical characters, at various periods in relation to the fits. Of the value of his work it is scarcely possible to speak too highly.

The formation of the toxins is greatly favoured by gastro-intestinal disturbances, which, indeed, are able to determine the occurrence of fits; these can often be prevented, or

greatly diminished in numbers, by washing out of the stomach, and by the use of purgatives, saline enemas, etc. (Agostini). The gastro-intestinal disturbances consist chiefly in the occurrence of abnormal putrefactive processes in the contents of the alimentary canal.

Dr. L. J. Muskens stated in his book, *Epilepsie*, Berlin, 1926, on page 245 :—

It is very difficult to estimate how many cases of epilepsy are due to constipation, which may be due to hereditary sluggishness of the bowel (W. Harryman and S. Donaldson, *Journal of the American Medical Association*, 1913) or to a Lane kink of the bowel which has led to the first attack of the disease. In view of the frequency of epilepsy cases, in which attacks are eliminated not so much by the use of medicines as by that of daily enemas of soapy water, and the use of mineral oil, it may be concluded that the percentage of epileptics who suffer from the disease owing to constipation cannot be small.

Dr. Leonard Williams wrote in his striking volume, *Middle Age and Old Age*, 1925, on page 58 :—

The nervous system, of course, could not escape some serious effects when the nutritive fluid with which it is bathed, is charged with foreign toxic material. Hence arise headaches, rheumatic and neuralgic pains, depression, irritability, and lack of energy. The full effect upon the nervous system, though somewhat neglected at first, is in process of securing general and emphatic recognition. Alienists are now alive to the fact that chronic stasis may account for a very large number of cases which they are called upon to treat, and the testimony to this effect from all countries is rapidly increasing. Ainslie Walker, discussing this question in the *Medical Press and Circular* of the 20th August, 1924, cites the three following passages from the writings of leading American alienists :

Hamill and Blackfan, writing in the *Journal of the American Medical Association* as long ago as 1910, remark :

“The relationship between chronic disturbance of the intestinal digestion and convulsive seizures cannot be too strongly emphasized. It is almost criminal to assume that

because any child has had a series of convulsive seizures lasting over a period of months, or even years, it is necessarily epileptic. Such an assumption is a most liberal contribution to the production of epilepsy. The frequency with which it can be traced to these chronic conditions of the intestinal tract will be surprising and enlightening."

Again, Hill, in the *Transactions of the American Medico-Psychological Association*, wrote in 1905 :

"There is no question in my mind about the influence of auto-intoxication, not only in epilepsy, but in all forms of mental disturbance, not excepting paranoia."

Kemp similarly expresses himself in the same journal in 1905 :

"Epilepsy," he writes, "without question, may be in some cases directly attributable to auto-intoxication from the intestinal tract. . . . Many nervous conditions—neurasthenia, mental depression, and melancholia—can be imputed to auto-intoxication. Mental depression often accompanies, or is a symptom of toxæmia, and this condition may even progress to depressive insanity."

One of the most interesting books on epilepsy is a slender volume entitled *Chronic Convulsive Toxæmia (Epilepsy)*, written by a well-known American surgeon, Dr. Charles A. L. Reed, published in Chicago, without date. The book consists chiefly of articles of his which were printed in the *Journal of the American Medical Association*, the foremost medical weekly of the United States. Dr. Reed has come to the striking conclusion that in the absence of damage to the brain or other extraneous causes, epilepsy is in a hundred per cent of the cases nothing but the effect of auto-intoxication due to chronic bowel stagnation. Therefore he refuses to employ the word epilepsy, which to him is misleading, and replaces it by the name convulsive toxæmia, which indicates that it is a disease marked by convulsions and due to toxæmia, to auto-intoxication. In his remarkable volume Dr. Reed states :—

The term "chronic convulsive toxæmia" is here used as a substitute for the word "epilepsy."

Chronic convulsive toxæmia is a definite symptom-complex with a definite pathology.

Convulsion and constipation, each in varying form and degree, are, in these cases, constantly associated symptoms, each having the same pathologic (disease) origin.

The patient, generally without waiting to be asked, in the course of giving his history, will have complained of constipation. He says that he was constipated possibly from infancy, or since he had a fall, or a strain, or a blow on the abdomen; that this constipation began before his epilepsy; that his epilepsy is worse when his constipation is worse; that he takes physic continually; that he has constantly to increase its dose, and that he is worse as soon as he fails to "dynamite" his bowels. As a matter of actual observation, constipation exists in practically 100 per cent of the epileptics that come to me.

Chronic convulsive toxæmia, or epilepsy, has been spoken of as a disease without a pathology; I have found that it has a 100 per cent pathology. I, however, unlike other investigators, have found the primary and essential pathology in the belly, rather than the brain.

Clinical demonstrations establish the fact that in epilepsy there exists a mechanical distortion of the alimentary canal and an always present and persistent retardation of the faecal current. That this retardation is mechanical rather than either "atonic" or "reflex" is amply proved by the prompt disappearance of the constipation and its resultant symptoms in the great majority of cases after correction of the mechanical defect. This point settled, we need now to discuss the next equally demonstrable effects of the constipation. Thus, constipation necessarily implies that the watery element has largely disappeared from the intestinal content. It can have gone in only one direction, and that is, through the absorbents into the general circulation. It has also necessarily carried with it all substances which it has held in solution. These embrace a certain residuum of food elements, certain secondary products of ordinary chemical change in the food elements, certain abnormal fermentative toxins of bacterial origin (decomposition).

Dr. Reed's opinion is based upon the effect of his

treatment and it is illustrated by a number of case histories, from which I would select two representative ones, given on pages 66 and 67:—

M. Male, aged 39, September 26, 1912. Constipated from early life. Has been subject to "bilious attacks"; at other times to "the cramps," chiefly in the right lower quadrant. Had been frequently told that he had appendicitis, but never had chill or fever with the attacks. At frequent intervals during the last seven years, had nocturnal seizures which, as reported by his wife, were characterized by convulsions, frothing at the mouth and heavy breathing. This was associated with a ravenous appetite, frequent attacks of indigestion, which brought on the seizures. When he came to me, the evidences of profound toxicity were pronounced—pulse 62, temperature 97.2°, with simple melancholia to a degree that he was completely incapacitated for all business. Cæcum, hepatic flexure and transverse colon were found to be in the pelvis. Both ileal and colonic stasis marked. October 26, 1912, I corrected the position of the colon by parietal implantation. The constipation was at once relieved and he began to improve in both physical and mental tone. The *grand mal* seizures became less frequent and less severe. It was about nine months, however, before they ceased to return, and he has now been free from them for a little over three years. In the meantime his mentality has been restored and he has been engaged in business for the last three years.

B. Male, age 17. Was referred to me January 11, 1915. He was a healthy, robust young man who gave a history of constipation extending back to early childhood. His first attack was March 12, 1914, when he had three minor and three major seizures. They continued daily from that time on, missing only two days, until September, after which they began to decrease somewhat in frequency. When they did come they were in groups. He once had four, and at another time five major attacks in a single day. When he first came he was markedly toxic to a degree that beclouded an unusually bright mentality. An enlarged and ptotic cæcum was demonstrated by both X-ray and physical examination. January 13, 1915, an ileo-sigmoidostomy was done. The surgical convalescence was

prompt and uneventful, the constipation being corrected from the start. He had several attacks, both minor and major, during the ensuing three months, since which time he has had no seizures—a period of immunity of about nineteen months.

Dr. Reed was so strongly impressed by the fact that in ordinary epilepsy, which means an epilepsy where there was no extraneous factor to explain the disease, the malady was always caused by chronic bowel stagnation and auto-intoxication, that he urged that all the inmates of the institutions for epileptics should be examined with X-rays for chronic constipation and bowel abnormalities, and that treatment should be based on the findings with a view to curing these unfortunate sufferers permanently. He wrote on page 2 :—

(1) All institutions for epileptics should be provided with a well-equipped, competent and liberally-supported röntgenologic service.

(2) There should be a röntgenologic survey of the entire epileptic population of all public institutions for the purpose of determining the condition of the abdominal viscera, after the manner indicated in the following pages.

(3) Every patient should be investigated with reference to (a) the existence of constipation ; (b) its relation to the first development and later recurrences of the seizures ; (c) the position of the abdominal organs as determined by external physical examination in both the upright and prone position.

(4) After a careful and comprehensive diagnostic study, each patient should be given a course of medical and hygienic treatment.

CHAPTER VI

The Causation of Appendicitis, Hæmorrhoids, Colitis and other Bowel Troubles

Appendicitis is common in the more civilized European and American countries, rather uncommon in the more poverty-stricken countries of South Europe, and very rare in Asiatics, Africans and Polynesians. If, however, individuals from these races are taken into the service or society of Europeans and eat their food, they acquire the European's liability to the disease.—DR. A. RENDLE SHORT, *Appendicitis: its Causation, Diagnosis and Treatment*.

NOT very many years ago abdominal diseases were treated only by medical means. Surgeons did not dare to operate on the bowel because the danger was too great. During the last two or three decades enormous progress has been made in abdominal surgery. Operation for appendicitis, which formerly would have deterred the ablest surgeon because of the risk involved, is now undertaken by practically every surgeon, and if the operation is done in time the death rate is almost nil. In view of the vastly improved surgical technique and early recognition of bowel disease followed by prompt operation, one would imagine that deaths from appendicitis, gall-stones, intestinal obstruction, ulcer of the stomach and of the duodenum, etc., should have greatly diminished. In reality, the mortality from all these complaints has greatly increased and keeps on increasing. The

condition of our abdomens is a disgrace to civilization. In an editorial of the *British Medical Journal* of the 10th July, 1926, we read on page 83:—

The mortality from intestinal diseases has greatly increased in recent years. Thus between 1880 and 1919 deaths in quinquennial periods at Guy's Hospital due to peritonitis had increased progressively from 176 to 285; those from gastric ulcer from none to 83; from duodenal ulcer from none to 38; and from appendicitis from 9 to 91. These increases were the more serious since the standard of food and hygiene had improved greatly during those years, while abdominal surgery had advanced beyond all estimates.

Constipation, according to Sir Lauder Brunton and many other authorities whom I could quote, is "a disease of civilization." It is practically universal among the civilized, and is virtually unknown among primitive races and among animals leading a natural life. Chronic constipation has created the millionaire pill-vendor and the diseases of the bowel, such as appendicitis, colitis, duodenal ulcer, and so forth. Appendicitis, the fashionable complaint, which is destroying about three thousand lives in Great Britain every year, notwithstanding the ease and safety of the routine operation, has been spreading so rapidly that many surgeons have advocated the cutting out of the appendix in all children at the earliest opportunity.

Formerly appendicitis was one of the rarest diseases among the civilized. With the increase of civilization there has been a similar increase in both chronic constipation and in appendicitis. Medical men, alarmed by the extraordinary increase in that trouble among the civilized, and the rarity or absence of it among the less civilized and the primitive, who suffer little or not at all from constipation, have made a number of inquiries in order to find out whether, indeed, appen-

dicitis is a disease of civilization. The British Medical Association had such an inquiry made by its Science Committee. Its report, published in the *British Medical Journal* of the 31st December, 1910, informs us :—

Sporadic references are to be found in the textbooks, the American authors stating that it is comparatively rare in the negro.

Murphy states : “ Lucas-Championniere (1904) in an analysis of 22,000 patients among Roumanian peasants, found but one case of appendicitis ; they live mostly on vegetables. The Roumanians living in the city, chiefly on animal diet, are frequently affected—1 case of appendicitis among every 221 patients. The vegetarian diet of the Japanese and of the Indians of India seems to protect them against appendicitis.”

That these are not the only striking evidences of the influence of diet is shown in the evidence from other countries mentioned below.

Hare of Philadelphia states that “ appendicitis is more frequent in the well-to-do than in the poorer classes.” A comparison of the Poor Law hospitals with others in this country shows the same difference in incidence.

The following statistics and statements are quoted from a large mass of correspondence, and are of interest apart from any deductions which may be drawn from them. For comparison it may be stated that the death-rate in England from appendicitis is about 90 per million persons living. The names of the gentlemen to whom I am indebted for the information and statistics given below are mentioned in each case.

ABYSSINIA.

Dr. Frank Wakeman, Medical Officer to the British Legation, writes :—

“ During a residence of eight years or so in this country and a practice among all classes of the population, I have never come across a single case of appendicitis, nor have my colleagues, with whom I have at one time and another discussed the subject, ever met with what could be described as authentic cases of the above malady. It is generally

believed that this complaint, as well as enteric fever, does not exist in this country. Sporadic cases of gastric fever (so-called) are occasionally seen, but in no instance have the characteristic signs and symptoms peculiar to appendicitis ever been observed, and the disease usually runs a short course seldom attended with fatal results."

CHINA.

Dr. Douglas Gray, Physician to H.B.M. Legation, Peking, writes:—

"1. Appendicitis is an extremely rare disease in China. Some time ago inquiries were made, through the *China Medical Journal*, among all the medical practitioners throughout the empire, with the following results:—

44 said 'Yes'—the disease is very rarely seen.

69 had seen a few cases, but the disease is uncommon among the Chinese.

49 had not seen any cases at all.

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"2. In China the only sick reports available are those published by medical missionaries, most of which are of a lay nature and do not give detailed tables of the disease treated. In eight reports I can find no mention of typhilitic trouble; these are the only reports so far for the past year.

"3. The best kept statistics of disease and mortality are those in Hong-Kong. During the year ending December, 1906, out of a total of 8,379 deaths, 3 were due to appendicitis, and those, curiously enough, all occurred in one out of seventeen health districts. In the public mortuary, out of 2,140 post-mortem examinations made, appendicitis is not once mentioned as a cause of death, nor does it occur in the list of 215 surgical operations performed in the Government Civil Hospital.

"4. Foreigners resident in China have no immunity from it, notwithstanding the apparent freedom of the native population. The only hospital dealing exclusively with foreigners on a large scale is the Shanghai General Hospital, where out of a total of 1,203 admissions, 21 were for appendicitis, and of these 4 died.

" 9. No one here has been able to offer as yet any feasible explanation of the freedom from appendicitis, though most doctors think there must be a predisposing cause in the European diet.

" 10. I append some expressions of opinion by leading medical missionaries in China :

" (b) Dr. John MacGowan, of Amoy :—

" ' Foreign physicians who have opened hospitals and treated large numbers of those who have consulted them, have come to the conclusion that the large majority of the population are below par, and are suffering from indigestion.'

" (c) Dr. P. B. Cousland, of the London Mission :—

" ' For twenty years I had charge of hospitals and dispensaries in the Swatow district, the beds in the former ranging from 80 to 180. I never operated on a case of appendicitis, nor saw any of my colleagues do so.' "

PERSIA.

Dr. A. R. Neligan has very kindly sent me numerous statistics with a letter :—

The facts collected may be summarized as follows :—

1. Appendicitis is very uncommon among Persians.
2. It is proportionately much more common among Europeans resident in the country than among natives.
3. It is more common in Teheran, where the conditions more nearly approach those of the West than elsewhere.

An imposing number of medical men working among primitive races reported to the Committee that appendicitis was little known, very little known, or quite unknown, among the natives.

On the 25th July, 1914, the *Lancet* published a very important paper, " The Geographical Distribution of Appendicitis," written by the well-known Liverpool surgeon, Mr. R. W. Murray, who had undertaken an inquiry supplementing that of the British Medical Association. We read in that article :—

There can be no doubt that inflammation of the vermiform appendix is met with far more frequently now than

was the case 20 years ago. Not only so, but from my own experience I am convinced that the type of the disease has altered. When treating appendicitis 20 years ago my general practice was to apply fomentations and attend to the bowels. I very seldom had occasion to operate, and when I did it was merely with the view of opening an abscess. The immediate and after results of this treatment were satisfactory. To-day, owing to the more virulent type of the disease, such treatment would surely end in disaster, and in common with most surgeons (I wish I could say all surgeons), I arrange for an operation as soon as the diagnosis has been established. This line of action has been forced upon surgeons owing to the rapidity with which gangrene of the appendix occurs, and the frequency with which concretions are found within its lumen.

A few months ago I wrote to medical men practising in more remote parts of the world, asking whether they commonly met with cases of appendicitis, and if it occurred among the natives in that district.

I made a careful selection of the men I wrote to, most of whom hold hospital appointments and have been in practice in that district for some years.

The following are the chief points contained in the letters I have received :—

Nyassaland, Central Africa.

1. I have never seen appendicitis among the natives.
2. I asked Dr. Caverhill, of the Blantyre Mission, who has charge of the native hospitals and has been in this country ten years, and he authorizes me to state that in 5,000 in-patients he has never seen a case of appendicitis in a native.
3. I have met with four cases here in Europeans : two yielded to palliative treatment, two were operated upon.

A. H. BARCLAY.

Fez, Morocco.

Among the natives in Morocco appendicitis is a very rare disease. During my 16 years in the interior I can recall only two cases. I have seen several cases among Europeans, but my work lay chiefly among the natives.

E. S. VERDON.

English Mission Hospital, Jerusalem.

Amongst the Jews here we see appendicitis less frequently than at home. I have only attended 12 cases since 1909. A medical man here of my acquaintance has during the past four years seen only one case of appendicitis among the natives proper. Jewish living is rather more civilized than the native living.

C. H. CORBETT.

The Victoria Hospital, Damascus.

Appendicitis is fairly common in these regions. As you can readily understand, many such cases are overlooked or misunderstood. The medical men in these outlying districts are not always capable of diagnosing them. During the past nine months I have operated upon half a dozen cases.

FRANK J. MACKINNON.

In India appendicitis is commonly met with in the large cities, but there is a general consensus of opinion among medical men practising in India that this disease does not occur among the natives in the outlying districts.

Chung King, Western China.

In all my 16 years in China—most of it spent in West China—I have only seen one case of appendicitis in a Chinese, so am forced to the conclusion that the disease is very rare and hardly exists in the Chinese.

I beg to offer the following explanation why in my opinion the disease is so rare in the Chinese. Appendicitis is a rare complaint because a Chinaman eats on an average only two meals a day, but takes a good square meal of four or more bowlfuls of beautifully cooked rice and vegetables (meat or fish very seldom), and he sits down and takes a long time over his meal. The chief meat in China is pork, and the average Chinese cannot afford to buy it. The Chinese have beautiful white teeth, so that in addition to the time he takes over his meals he always masticates his food well.

RICHARD WOLFENDALE.

Pakhoi, South China.

I have not seen a single case of appendicitis during the ten years I have been in China. I think you will find that this applies to the whole of South China.

H. GORDON THOMPSON.

Moukden, Manchuria.

None of us have seen a case of appendicitis amongst the Chinese here. I am wrong—one of us saw one case which, however, was not operated upon. One of the Pekin men told me that cases do occur amongst the Chinese there, so we may hope still!

R. HOWARD MOLE.

Territory of Papua (New Guinea).

I have been in Papua for nearly ten years, living mostly in close contact with the natives, most of the time either as medical officer or resident magistrate, and have been struck by the rarity of appendicitis. While in this country I have seen a very mild attack in a European, one rapidly fatal case in a Samoan, and one typical attack followed by recovery in a native Papuan cook boy of my own. Beyond these three I have never seen a suspicious case, and it is remarkable that the only Papuan case was one where the patient had practically taken to European food and mode of living.

W. M. STRONG,
Acting Chief Medical Officer.

Yarloop, Western Australia.

In answer to your question about appendicitis, I do not often see it here. In our hospital in-patients average 120 a year, and only 2 per cent are cases of appendicitis. I believe it is very prevalent in the large towns.

S. C. MOORE.

British Solomon Islands.

During the past three years I have never met with a case of appendicitis amongst the natives or heard of one. Among the white population I heard of a man who was taken suddenly ill, shipped off to Sydney, and successfully operated upon for appendicitis.

R. H. S. MARSHALL.

Trinidad, B.W.I.

We have had a good many cases of appendicitis here during the last few years. They have occurred, however, chiefly among those of European birth or descent. Personally I have not met with any cases among the coloured races. The population of this island is about 330,000, and, roughly speaking, the whites would number about 4,000.

WILLIAM S. CLEAVER.

Kingston, Jamaica.

I send you a short catalogue of the cases dealt with at the hospital here, from which you will gather that appendicitis is not common. We have formed the opinion that race is not the factor to be considered, as the condition occurs among those who conform to the standard of European life, and is very rare among the natives who live a more or less primitive life.

J. A. ALLWOOD.

With regard to the Southern States of America, Dr. Howard Kelly, in his work *The Vermiform Appendix*, says:—

“The negro race seems to be comparatively exempt from this affection. In order to obtain some information upon this point I wrote to several surgeons practising in Southern cities which have a large proportion of negro inhabitants. The replies were unanimous in regard to the rarity of the disease in this race. Dr. L. L. Hill, of Montgomery, Ala. (in the “black belt”), with a coloured population of 9,000, could collect the histories of only four cases that had occurred among them, and found that the physician who had been consultant for a number of years at Booker Washington’s school, where there are about 1,400 coloured students, did not remember ever to have seen a case there; at the Alabama Polytechnic Institute, however, 20 miles distant, where there are 400 boys, there has been an annual average of eight cases. At the former school the diet is simple and the same for all, but at the latter the cadets live at different boarding houses in the town.

“There are 800 negro prisoners at one of the Alabama coal mines, and the physician in charge states that appendicitis is unknown among them. The explanation given for

the relative exemption of the negro is that their diet is simple, they take a great deal of outdoor exercise, and they are free from digestive disturbances."

In order to learn whether prisoners in this country, living upon a simple diet and taking adequate out-of-door exercise, are subject to attacks of appendicitis, I wrote to the medical officer in charge of Portland Prison. Dr. Watson kindly furnished me with the following particulars:—

H.M. Prison, Portland.

During the past ten years one case of appendicitis is known to have occurred. I do not think a well-marked case of appendicitis could have escaped detection during this period. The average daily population during the year ending 31st March, 1913, was 696.

W. R. K. WATSON, Medical Officer.

Authority after authority informed Mr. Murray that appendicitis was "quite unknown" among the natives.

In an address, "Faulty Food in Relation to Gastro-Intestinal Disorder," delivered late in 1921 in the United States, and reported in the *British Lancet* of the 4th February, 1922, and in the *Journal of the American Medical Association*, Colonel R. McCarrison, of the Indian Medical Service, made the following impressive statement:—

For some nine years of my professional life my duties lay in a remote part of the Himalayas, amongst isolated races far removed from the refinements of civilization. Certain of these races are of magnificent physique, preserving until late in life the characters of youth; they are unusually fertile and long-lived and endowed with nervous systems of notable stability.

During the period of my association with these peoples, I never saw a case of asthenic dyspepsia, of gastric or duodenal ulcer, of appendicitis, of mucous colitis, or of cancer, although my operating list averaged over 400 operations a year. While I cannot aver that all these maladies were quite unknown, I have the strongest reason for the assertion that they were remarkably infrequent.

The occasions on which my attention was directed to the abdominal viscera of these people were of the rarest. I can, as I write, recall most of them—occasions when my assistance was called for in the relief of strangulated hernias, or to expel the ubiquitous parasite—*Ascaris lumbricoides*. Amongst these people the abdomen over-sensitive to nerve impressions, to fatigue, anxiety, or cold, was unknown. Their consciousness of this part of their anatomy was, as a rule, related solely to the sensation of hunger.

Dr. A. Rendle Short contributed an address, "Appendicitis: Its Causation, Diagnosis and Treatment," to the *Lancet* of the 31st January, 1925, in which we read:—

Turning to the national distribution, we find briefly that appendicitis is common in the more civilized European and American countries, rather uncommon in the more poverty-stricken countries of South Europe, and very rare in Asiatics, Africans, and Polynesians. If, however, individuals from these races are taken into the service or society of Europeans and eat their food, they acquire the European's liability to the disease. Indian students in this country are by no means immune. In the United States it is even commoner than here, but is seldom seen in the "black belt" of Alabama or in negro schools or institutions. A missionary from Barbados tells me that he has never heard of a case in a West Indian negro, but whites are frequently affected; the population is about twelve blacks to one white.

Now the characteristic difference between those peoples who do and who do not get appendicitis is that the food of the latter is much simpler, contains a larger relative bulk of coarse vegetables, and often a smaller amount of meat. In some countries where appendicitis is very rare the amount of meat eaten is considerable; for instance, in Abyssinia and in Madagascar. We have no accurate statistics of the incidence of the disease amongst populations that live very largely on meat, such as the Eskimos and Paraguayans, but as far as we know there is no great amount of appendicular trouble. A curious and interesting fact is that apes in captivity acquire the human liability

to appendicitis (present in 10 out of 61 autopsies in chimpanzees).

In practically all the lands where it is rare or unknown, the diet contains a large proportion of vegetables and cellulose (roughage). If the natives desert their own food habits and take to European diet they get appendix troubles. Apes in captivity are liable to appendicitis, and their cage diet no doubt contains more food of the bread-and-milk variety and less coarse vegetables and roots than in the wild state.

The facts supplied by Dr. Short are very remarkable. I could easily fill fifty pages of this volume with similar opinions, but I would support Dr. Short only by a single quotation. Dr. W. J. Tyson wrote in his book, *Notes and Thoughts from Practice*, 1909, on pages 74 and 78 :—

The disease seems to be one of civilization ; it is rarely, if ever, met with among coloured races. Although the white people in the United States seem to suffer more than any other race from appendicitis, the negro inhabitants of the Southern cities are almost exempt. The same may be said of the coloured races of Africa, and Dr. Sandwith states that in Egypt they had to wait for some fifteen years after the English occupation to find an appendicitis patient among the Egyptians or Soudanese, either in hospital ward or in the dead-house. Dr. Sandwith goes on to say that during the last few years, however, some cases have been seen, and in January, 1906, whilst visiting Dr. Cresswell's hospital patients with him at Suez, he found five cases of appendicitis being treated in a ward containing only sixteen patients.

I believe that the most prominent and active cause of appendicitis is constipation, a lodgment of undigested matter, or faecal masses, in the bowel.

In the *British Medical Journal* of the 25th September and 2nd October, 1926, were published the following interesting letters, referring to an inquiry in the issue of the 18th September :—

" APPENDICITIS AND VEGETARIANISM."

SIR,—I was greatly interested in Mr. Hamilton Bailey's letter in the *Journal* of September 18th (p. 545) as it is also my own conviction that diet has a close relationship to the incidence of appendicitis.

For a considerable period during the war I was responsible for the health of a large Arab population in Mesopotamia, and met with not a single case of appendicitis. The staple diet of these tribes was rice, dates, and other fruit. At the same time, among a much smaller British population in the same district, whose diet included tinned and frozen meat, numerous cases of appendicitis occurred.

I am, etc.,

R. J. MCNEILL LOVE, M.S.Lond., F.R.C.S.Eng.
London, W.1, Sept. 18th.

" APPENDICITIS AND VEGETARIANISM."

SIR,—Referring to Mr. Hamilton Bailey's letter which appeared under the above heading in your issue of September 18th, he will find abundant testimony that appendicitis (and also cancer) are of very rare occurrence in non-flesh-eating peoples in the utterances of many Indian practitioners—R.A.M.C. and otherwise. (*Practitioner*, March, 1926.) Again, some little time ago I saw it recorded of a number of hospitals in Northern India that "of 50,000 in-patients treated in them for the past ten years only fourteen were cases of appendicitis"! The Surgeon-General of Egypt has also pointed out (annual return) that while the percentage incidence of cancer and appendicitis among the Moslem population is practically that of Europe, that of the Copts, who are vegetarians, is very small indeed.

I am, etc.,

ROBERT H. PERKS, F.R.C.S.Eng.

Primitive races leading primitive lives are free from chronic constipation and are free from appendicitis, but they rapidly fall victims to both constipation and appendix troubles when they adopt the food and the

methods of living of the civilized. We read in the *Journal of the American Medical Association* of the 27th June, 1925, under the heading, "Appendicitis among the Filipinos":—

There has been a steady increase of admissions of appendicitis in various stages in the surgical wards of the Philippine General Hospital for the last few years. Reyes has reviewed 1,135 cases and comes to the conclusion that there is both an apparent and an actual increase of appendicitis among Filipinos. The majority of patients belong to the student and the clerical classes, probably because of their adaptation to more modern, not necessarily always beneficial, habits of living and of eating.

I could easily fill dozens of pages with similar statements by reliable witnesses. It cannot be doubted that appendicitis is a disease of civilization, as is chronic constipation and all the most usual bowel troubles which afflict us. The connexion between appendicitis and chronic bowel stagnation is perfectly obvious. Dr. Samuel Gant, Professor of Abdominal Diseases, wrote on page 142, Vol. III, of his book, *Diseases of the Rectum and Colon*, published in 1923:—

Any lesion or condition that occludes the appendix, inflames or ulcerates the mucosa (membrane) opens the way for infection, because this organ contains numerous organisms that under abnormal conditions become pathogenic (disease-creating), causing specific or mixed infection.

It stands to reason that nothing is more likely to "inflammate or ulcerate the mucosa" than chronic bowel stagnation, causing the putrefaction of the stools, while the clearing away of that poisonous filth by most powerful irritating medicines, called purgatives, laxatives, bowel stimulants, health salts etc., acts often as the last straw. The danger of all these preparations will be described in a special

chapter later on. Sir Berkeley Moynihan, the President of the Royal College of Surgeons, stated in his *Essays on Surgical Subjects*, 1921, on pages 146, 149, 197, etc. :—

I believe that the etiology (causation) of appendicitis can be satisfactorily made clear. A number of cases of ulceration of the appendix are blood-borne bacterial infections. . . . The appendix contains a specialized collection of lymphoid filter tissues which lies at the most dependent part of the cæcal cesspool, its purpose being to filter away the bacteria and put an end to them. Bacteria are necessary for cæcal digestion.

There is a bacterial balance of power in the cæcum. So long as we live healthy lives, eat fresh food, and keep our bowels acting normally, the bacterial balance is preserved and the appendix can deal with the situation. If, however, we upset the bacterial balance by inattention to the bowels, by the mal-use of patent and well-advertised purges we upset the bacterial balance. Certain strains of coli, staphylococci, or streptococci can get on top in the cæcum, overgrow the others, and the appendix can no longer deal with them, so that the lymphoid tissue becomes inflamed and endangers life. If the observer will note the appearance of a normal well-formed stool and compare it with the foul liquid stool produced by a purge he can easily recognize how profound is the disturbance of bacterial balance in the bowel set up by a purge.

The first symptom in an attack of acute appendicitis is pain. It is always pain, and never sickness or vomiting, nor malaise, nor any other symptom whatever. The pain may be rapidly followed by a rigor or a sharp elevation in temperature, by vomiting, and frequently by diarrhoea. A slight elevation of temperature occurs without exception in cases of appendicitis in the early states. The symptoms one and all show a tendency to steady abatement if proper treatment is adopted, if the patient is denied food of all kinds, fluid or solid, and if aperients are strictly and sternly withheld.

It seems to be the natural and instinctive desire of the mother, wife, or nurse in such a condition to administer forthwith a brisk purgative. It is held that something has

“disagreed” with the patient, and the offending substance is to be sharply expelled. Castor oil is the usual remedy in the district where I practise, and it is administered unsparingly. It is no uncommon thing to be told that because the first dose was vomited (a most proper act of rebellion on the part of the stomach) a second, or it may be a third, has been given. A few hours after the aperient is swallowed, frequently in the early hours of the morning, the patient is seized suddenly with a new and more intolerable agony, vomiting occurs, and diarrhoea may be repeated. The abdominal wall becomes rigid, tenderness spreads rapidly across the lower part of the belly, and at last is everywhere present; the pulse rises steadily, and all the signs and symptoms of an acute peritonitis are ushered in without delay.

When an operation is performed, a gangrenous appendix, very probably adherent near its attachment to the cæcum, is found, and the peritoneum, already extensively and severely attacked by an acute inflammatory process, replies to the insult by pouring out freely a thin, clear, sterile, and actively bactericidal fluid. It is now about seven years since I was first brought firmly to the conviction that in cases of appendicitis it is the administration of an aperient that is responsible for the acute catastrophe of gangrene and perforation which ends in an acute peritonitis. I do not remember one single case that I have operated upon since in which it was not perfectly clear that the same sequence of events—pain, aperient, perforation—had occurred, and I therefore do not hesitate to say that in almost every instance of acute peritonitis due to the perforation of an appendix it is the treatment directed to the relief of the condition that is the cause of the serious and so often fatal catastrophe.

The taking of a purgative medicine is something more than an impressive antecedent—it is, in my judgment, a definite cause. The only possible exceptions occur in those rare cases where direct violence gives rise to a rupture of the appendix or the laceration of the adhesions which enwrap it. In cases of appendicitis, however acute their origin may be, perforation followed by an acute general peritonitis does not seem to occur if no aperient is given and if absolute starvation is adopted from the first. The

acute spreading or general peritonitis which occurs in this disease is due to treatment; it is a "therapeutic peritonitis." I am quite prepared to learn that this emphatic statement is received with a shrug of doubt and the tolerant smile of disbelief, but if strict inquiry is made into the intimate details of the history of the cases I cannot think that my experience of this disease will prove to be singular. In appendicitis perforation spells purgation.

The facts that I have already stated show that the indications for treatment at the onset of an acute inflammation in the appendix are absolute starvation, so that all peristaltic activity in the intestine is quieted, and the bacterial virulence of the contents of the bowel greatly reduced. The administration of fluids, which must reach the cæcum to be absorbed, and the turbulent action and the high bacterial malignity caused by an aperient, are to be avoided. It is in the cæcum that bacteria are most prolific and most virulent, and the vast increase in both these qualities which comes from the giving of aperients is especially to be avoided when the appendix, which opens into the cæcum, is inflamed.

The theme, then, which I desire to expound in this connexion is that appendicitis is a disease which derives its fiercest activities from the means which are taken to treat it; that acute spreading peritonitis is rarely, if ever, the result of an untreated disease, and that it is the administration of aperients which transforms a simple disease into one of the most serious type. Peritonitis so arising is surely avoidable; the catastrophe is the result of misguided therapeutic activity.

To give aperients to children who have a "stomach-ache" is homicidal, yet so far as I can hear it hardly occurs to a mother or nurse to do anything but this the most disastrous thing of all. While I am speaking of this let me say that the evidence now appears to me conclusive that the "bilious attacks" of children, accompanied by pain of a griping or colicky character, by vomiting, occasionally by diarrhœa, by slight fever, and by headache, and ascribed to the greedy indulgence in "indigestible" foods, are nothing other than mild attacks of inflammation in the appendix. When an attack more severe than all the rest is plainly one needing operative treatment, and the appendix is then

removed, nothing is again heard of the recurrent "bilious attacks."

If the general experience of others should coincide in these matters with my own, the conclusion must be drawn that in a very large proportion of the cases, probably I think in all, the serious complications of appendicitis could be prevented by a timely recognition of the disease, by absolute starvation from the first moment of suspicion, and by the strict avoidance of aperient medicines.

I have some practical knowledge of appendicitis, having been operated for that trouble. In my case there was certainly a long history of constipation relieved by artificial means regularly taken. The sequence of chronic constipation, artificial relief of that condition, and appendicitis, is by no means due to a chance coincidence. That is admitted by many physicians and surgeons who might be quoted in this place, and whose opinions and experience command respect. However, lack of space forbids going into the question more fully. Besides, the causative connexion between chronic bowel stagnation and appendicitis has already been pointed out by many of the eminent authorities quoted in the second chapter of this book.

If a patient complains about pain on the right side of the lower abdomen, doctors are apt to diagnose appendicitis and to urge immediate operation, which as a rule is performed. However, that operation does not always afford relief, because in innumerable cases a mistaken diagnosis of appendicitis is made, the abdomen is opened, and a perfectly healthy appendix is taken out. Happily for physician and surgeon the patient under the anæsthetic does not know what is going on while he is on the operating table. If, in consequence of chronic bowel stagnation, the cæcum is almost permanently filled with putrefying masses of liquid filth, that outraged part of the bowel becomes gravely injured, especially if, in addition, it is fre-

quently irritated with corrosive medicinal poisons in the form of pills, salts, etc., as has been pointed out by Sir Berkeley Moynihan. At last the worn-out and over-extended cæcum revolts against the outrage constantly inflicted upon it by becoming tender and sore, and the patient begins to complain about fullness, discomfort, and various forms of pain in the region where the appendix happens to be.

If the abdomen is opened, and the appendix is removed, some relief may be experienced if the appendix was indeed diseased, but there may be no relief whatever if a healthy appendix is cut out, especially if the patient continues injuring the cæcum by allowing it to remain permanently over-extended with masses of liquid, putrefying and acutely poisonous waste matter. After all, chronic intestinal stasis cannot be relieved by cutting out a healthy or unhealthy appendix, but only by regulating the working of the bowels by those natural and logical means which will be described in due course.

People are operated upon for true appendicitis and for false appendicitis. In either case there may be relapses which are neither due to the missing appendix nor to the surgeon who undertook the operation. They are due to the fact that the unfortunate patient was not taught after the operation how to keep his bowels in proper working condition. In Dr. A. Rendle Short's *Index of Prognosis*, 1915, there is a long article, "Appendicitis," written by Dr. Hugh Lett, in which we read on pages 71 and 75:—

Sir Frederick Treves went fully into this question in 1905, and made a valuable contribution to the subject by analysing the cases of 45 patients who consulted him because they were no better for the operation, or still had "attacks" which had been unaffected by the removal of the appendix. In the following table he gave a list of the patients who consulted him, and the varying conditions which gave rise to their symptoms.

PATIENTS WHO COMPLAINED OF IMPERFECT RELIEF AFTER
THE REMOVAL OF THE APPENDIX IN THE QUIESCENT
PERIOD.

Appendix imperfectly removed	2
Ovarian trouble co-existing	9
Persisting or relapsing colitis	8
,, local pain	7
Neurasthenia or hypochondriasis	5
Continued attacks due to gall-stones	3
,, ,, ,, ,, colic	2
,, ,, ,, ,, movable kidney	2
,, ,, ,, ,, stone in kidney	1
,, ,, ,, ,, an unexplained cause.	1
Tender mass in the right iliac fossa	5

Gastric and Duodenal Ulcer.—It would appear that appendix dyspepsia is a preliminary stage only, and that, if it is neglected, gastric or duodenal ulcer may supervene. This is only reasonable when we consider that in many cases, on opening the abdomen, the pyloric portion of the stomach is seen to be in a condition of spasm (Moynihan); this causes delay in the emptying of the stomach and so predisposes to chronic catarrh. Then again, hæmatemesis (blood vomiting) is generally recognized as being by no means uncommon in appendix dyspepsia, and in one case Paterson observed multiple erosions of the mucous membrane of the stomach.

That gastric and duodenal ulcers are associated with chronic disease of the appendix, cannot be denied. As long ago as 1908 Mohnert found that in 64 per cent of a series of gastric ulcer cases there were inflammatory changes in the appendix. Paterson says that among his cases of duodenal ulcer, extending over a period of three years, there was obvious disease of the appendix in 66 per cent. Moynihan, taking a short series of 14 cases of duodenal ulcer, examined the appendix in 12, and in 80 per cent found evidence of long-standing disease in it. McCarty and McGrath report that in 52 operations for gastric and duodenal ulcer, 26.9 per cent of the appendices which were removed were partially or completely obliterated. In my own experience, it is the exception to find a normal appendix in the presence of a gastric or duodenal ulcer.

Gall-stones.—These, too, apparently come into relation with chronic appendicitis. In several cases where the symptoms have been those of chronic cholecystitis (gall-bladder inflammation) I have found adhesions round the gall-bladder with some congestion of its mucous membrane, and a chronically diseased appendix. Here again, McCarty and McGrath have some very interesting statistics. In 57 autopsies on cases of cholecystitis, the appendix was partially or completely obliterated in 52 per cent.

Whatever the value of these theories may be, the fact remains that a patient who is suffering from chronic inflammation of the appendix is liable to have gastric or duodenal ulcer, or gall-stones, quite apart from the danger of a further attack of appendicitis.

The writer correctly states that “appendix dyspepsia” is a preliminary stage only, and that, if it is neglected, gastric or duodenal ulcer, gall-stones, colitis, ovarian trouble, neurasthenia, etc., may supervene. After all, appendicitis is not “a disease,” but merely one of the numerous symptoms of degeneration following upon chronic bowel stagnation. Unfortunately, chronic bowel stagnation, Lane’s-disease, is frequently overlooked by short-sighted or unbelieving medical men who readily diagnose appendicitis, mistaking a symptom for a disease, and the unfortunate patient may find that the “disease” of appendicitis is followed by gall-stones, gastric or duodenal ulcer, colitis, neurasthenia, ovarian disease, and many other abdominal and other symptom diseases characteristic of the master disease, intestinal stasis. The well-known surgeon, Mr. Harold Burrows, wrote in his book, *Pitfalls of Surgery*, 1925, on page 137 :—

The abdominal conditions which may be misread as appendicitis include constipation, gastric and duodenal ulcer, cholecystitis (gall-bladder inflammation) and gall-stones, tuberculous peritonitis, various lesions of the pelvic organs, intussusception, malignant disease of the bowel, and intestinal obstruction due to various causes.

The *Lancet* of the 17th January, 1925, published an interesting editorial article entitled "Uncalled-for Appendectomy," in which we are given a startling account of the blundering of physicians and surgeons, who mistake chronic intestinal stasis for appendicitis, and cut out a healthy appendix without relief to the unfortunate patient. We read:—

How often has the vermiform appendix suffered the fate of the innocent scapegoat and been cast into the wilderness for the sins of the abdomen? Dr. Henry Wald Bettmann, of Cincinnati, in a paper on "Diagnostic Errors Leading to Uncalled-for Appendectomy," places the figure high, and he supports his contention by many quotations from published articles, mainly American, which, if they represent the state of affairs prevalent at the moment in the United States, show the need for a very drastic revision of the diagnostic symptoms of appendicitis. "In 1920 Hugh Cabot stated that in large surgical clinics hardly a day passes on which patients who have had their appendices removed without relief do not present themselves. The following year R. F. O'Neil informed us that about 25 per cent of the patients in the Massachusetts General Hospital who had uretral calculi (stones) had had operations on their appendices or the abdominal organs before a correct diagnosis was made. In 1922 S. A. Chalfant called attention to what he called a notorious fact that the ultimate results of operations for chronic appendicitis are among the poorest in surgery."

The confusion in the minds of medical men regarding the morbid degeneration of the appendix and the unhealthy state of the bowels which produces the purely symptomatic complaint of pain in the appendix region and inflammation of that little organ is well illustrated by Doctors Pauchet and Gaehlinger, who wrote on pages 50 and 52 of their book, *La Constipation*, 1926:—

Certain authorities maintain that appendicitis is due to bowel stagnation, while others have expressed the

conviction that stagnation of the bowel is due to appendicitis. Those who express the former opinion tell us that, by the formation of bands, the cæcum becomes obstructed, that consequently dilatation takes place and that in the pouch thus formed putrefying materials accumulate and that consequently the big bowel functions with ever-increasing difficulty. At last complete stagnation results, followed by an acute or chronic infection of the appendix.

Okinczyc is of opinion that chronic appendicitis causes stagnation of the bowel. He tells us that the appendix is an organ which swarms with micro-organisms and that this microbic flora regulates the normal composition of the bacterial population of the intestines. The appendix is supposed to act the part of an incubator of micro-organisms, and if the appendix should become infected it could no longer regulate the bacterial composition of the bowel but would unceasingly infect the intestines, and would thus bring about inflammation, colitis, and intestinal stagnation.

If a patient suffers from constipation when his appendix has been removed, it shows, as a rule, that there is intestinal stagnation, that the operation, though useful, was insufficient to effect a cure.

Intestinal troubles, and particularly colitis, do not disappear when the appendix has been cut out. The patient can obtain permanent relief only by surgical or medical treatment of the troubles accompanying appendicitis. Removal of the appendix makes it possible to give the patient medical treatment under the best conditions, for a centre of infection which also influences the nervous system, has been removed. The patient must not be told that he has been cured because his appendix has been taken out. Otherwise he may be gravely disappointed.

As we can never be certain how far chronic appendicitis is responsible for intestinal troubles, it is only prudent to initiate medical treatment immediately after removal of the appendix. Dietetic treatment must be continued for a long time. Lack of directions leaves the patient under the impression that after the operation he may eat everything. Lack of directions has led to those sequels which have caused people to believe that the removal of the appendix is useless.

A very large number of people are afflicted with hæmorrhoids, or piles, which may incapacitate the sufferer intermittently or permanently, which give a great deal of discomfort and pain, and which often lead to the formation of abscesses, fistulæ, and other serious complications. When the resources of the physician are exhausted, the patient is taken to the surgeon and the offending part is dealt with by the knife or otherwise. Hæmorrhoids are treated in the textbooks as a separate "disease," although, as a rule, they are merely a symptom and sequel of chronic stagnation of the bowel. The textbooks which describe piles enumerate as a rule a number of causes, among which constipation is, of course, pre-eminent. Some of the authorities writing on hæmorrhoids blame not only constipation, but also "sedentary occupations" which are largely responsible for constipation, and "the habitual use of powerful purgatives," which of course would not be employed by the sufferer if his bowel was working normally. The distinguished abdominal surgeon, Mr. J. P. Lockhart-Mummery, wrote on pages 157 and 165-171 of his well-known textbook, *Diseases of the Rectum and Colon*, 1923:—

Chronic constipation is a common cause of hæmorrhoids because it results in pressure upon the pelvic veins, and so directly conduces to stagnation and engorgement in the hæmorrhoidal veins.

Occupation has an important bearing on the development of piles. The most important is a sedentary life. People in active occupations are less liable to them, because their circulation is necessarily more vigorous. Still, people of an active life are not by any means exempt from piles, and a large number of officers in the Army and Navy suffer from them.

In sedentary occupations there is no doubt that constipation and excessive feeding are among the main causes for piles.

Certain drugs help to produce piles, and one of the most important of these, in my opinion, is calomel; this drug

often causes the symptoms for which the patient seeks advice. I know of many cases in which patients have had slight internal piles which practically gave them no trouble until some one gave them a dose of calomel, and after that, for two or three weeks, they suffered great inconvenience from piles. I have certainly seen cases where bleeding was brought on by calomel. Aloes is also sometimes responsible for the same thing, as are many of the other more violent cathartics (purgatives).

A considerable number of cases of hæmorrhoids occurred among the officers and troops in the late war. It is a little difficult to see how exercise, even if carried to excess, should cause piles. It seems probable that the irregular dietary and habits which are inseparable from a military campaign were the real cause of so many men suffering from piles during the late war; certainly the number of men invalided to the base for piles was very considerable.

Constipation is certainly the commonest cause of internal piles; even when it is not the direct cause, it is certainly the predisposing cause in the vast majority of cases, and without it most of the other causes mentioned would be quite ineffective in producing piles.

The overloaded sigmoid flexure, which is the condition constantly present when a patient is suffering from constipation, causes pressure upon the pelvic veins and engorgement of the venous plexuses around the rectum and genital organs. Owing to the looseness of the cellular tissue surrounding the rectum, the rectal venous plexuses are but poorly supported, and thus engorgement of the rectal veins and the formation of piles easily follow.

The natural course of events is for the bowels to be emptied in the morning, so that the loaded sigmoid is not pressing upon the pelvic veins during the day while the individual is in the erect position. Many persons, however, habitually neglect this natural preventive against the formation of piles by not making it a custom always to empty the bowel before going about the day's duties.

Another way in which constipation tends to produce piles is by the straining at stool in which it usually results. Constant and habitual straining in time causes partial prolapse of the mucous membrane, and tends to produce a varicose condition of the lower rectal veins.

Finally, when piles have formed, constipation and consequent straining markedly aggravate the condition and accentuate the symptoms.

One sees extraordinary cases of neurosis with piles. Not long ago I was consulted by a clergyman who had been practically a melancholic for four or five years, and had actually spent nine months in a lunatic asylum as a melancholic. He had had to give up his living, and was unable to do anything. Some people thought he would be better for having his piles removed, though they were afraid the operation might send him out of his mind again. I operated on his piles, and he got quite well, though I did not think he would do so. The piles had been the chief cause of his worry, and after their removal he put on 1½ stone in weight within a few months, and became quite a rational person.

Dr. Samuel T. Earle, Professor of Diseases of the Rectum at Baltimore, wrote on page 243 of his great textbook, *Diseases of the Anus, Rectum, and Sigmoid*, 1911:—

Constipation.—This is unquestionably the most frequent of all exciting causes, not so much on account of the irritation resulting from hard and dry masses of fæcal matter passing through the anal canal as from long-continued pressure by these masses on the walls of the rectal vessels producing stasis in the venous plexuses, and also on account of the great muscular effort necessary to expel these hardened masses. The effect on the local blood-pressure of this unusual effort in defæcation is very much accentuated by the peculiar arrangement of the blood-vessels of the rectum.

Effect of Cathartics (Purgatives).—Hæmorrhoids are frequently the result of too strenuous efforts to overcome constipation by taking active cathartics, especially those containing aloes or podophyllin.

Diet.—As diet has been mentioned before as a causative factor in the production of constipation, the latter in turn may produce hæmorrhoids. The continued use of alcohol, by increasing the blood-pressure and disturbing the functions of the intestinal tract, is likely to produce hæmor-

rhoids, or if already existing, may be aggravated by even a few drinks a day.

Strain.—Thrombotic hæmorrhoids are nearly always the result of straining at stool, which causes rupture of the intima of the vein and this results in the formation of a thrombus.

Dr. A. B. Cooke, Professor of Anatomy, etc., informed us on page 231 of his volume, *Diseases of the Rectum and Anus*, 1914 :—

Those who frequently indulge in the excesses of the table are especially prone to hæmorrhoids. This applies both to the kind and quantity of the viands consumed. Over-eating, particularly of rich and highly seasoned foods, and the use of alcoholic beverages, alike conduce to hepatic engorgement, constipation, intestinal toxæmia, etc. In certain individuals indulgence in special articles of diet, e.g., shell-fish, has been observed to provoke acute "attacks of piles" as often as partaken of. In such cases the diet is properly classed as an exciting cause.

Likewise those of sedentary habit and indolent disposition are peculiarly susceptible to the disease. The several functions of alimentation require a certain amount of bodily exercise for their healthy performance, and the act of defæcation cannot be neglected with impunity.

In the volume, *Diseases of the Anus and Rectum*, by D. H. Goodsall and W. Ernest Miles, 1900, we read under the heading, "Fistula" :—

Constipation, when it is extremely obstinate, does undoubtedly sometimes cause an abscess from which a fistula may result.

One of the most intolerable and most intractable complaints is what is called pruritus ani, a maddening itching, especially at night, in the region of the bowel exit, which prevents sufferers sleeping and is apt to drive them to distraction. In the worst cases the trouble is dealt with by operation. This complaint also is one of the sequels of chronic constipation.

Messrs. Goodsall and Miles wrote on page 260 of their book :—

The most frequent primary cause of this redundancy of peri-anal skin is constipation. The over-stretching of the skin round the anal aperture, during the passage of a large and hard mass of fæces, causes the normal folds to be slightly torn, and thus opens up the path for septic infection. As a result of this, the folds become inflamed and œdematous. When the inflammation has subsided, they do not contract to their former size and, in addition, have lost some of their natural elasticity. This sequence of events is sometimes repeated with each subsequent constipated action of the bowels, and gradually leads to a marked increase.

Chronic constipation, accompanied by the usual "remedies," which remedy nothing, has much to answer for. It need scarcely be proved that colitis, duodenal ulcer, and many other bowel diseases are further symptoms and consequences of chronic bowel stagnation, not separate diseases due to separate ascertainable or unascertainable causes, such as certain micro-organisms, "an infection," the unsatisfactory working of various glands, psychological influences, the weather, and other factors which are frequently blamed.

CHAPTER VII

The Causation of Gall-stones and of Diseases of the Liver, Kidneys, etc.

Kraus of Karlsbad found that more than 80 per cent of his 2,269 patients with gall-stones were constipated.—
DR. ARTHUR F. HURST, *Constipation and Allied Intestinal Disorders*.

AN enormous number of people suffer from gall-stones. They exist to a greater or lesser extent in a very large section, but in many cases they do not give rise to pain or discomfort. On the other hand, in innumerable instances, gall-stones cause agonizing pain, not only in the neighbourhood of the gall-bladder, but in the chest, back, legs and elsewhere. Continued irritation by gall-stones, which eventually may completely fill and distend the gall-bladder to its utmost capacity, is often followed by the formation of pus, dangerous abscesses, and cancer of the gall-bladder. In an enormous number of cases which come to operation the gall-bladder has been so severely damaged and has so much degenerated that it has to be taken out. A drastic operation for gall-stones is, of course, very dangerous.

Why is it that gall-stones are so frequent among the civilized and are almost unknown among primitive races?

The civilized suffer severely from chronic bowel stagnation, while primitive natives have normally functioning intestines. The formation of gall-stones

is largely, and probably principally, due to the formation and absorption of virulent bowel poisons. It is true that many of the textbooks tell us that the causation of gall-stones is "unknown." However, some of them rightly accuse constipation and the various troubles caused by it, such as chronic indigestion, catarrh of the bile ducts, gouty tendencies, etc. For instances, *Gould and Pyle's Pocket Cyclopaedia of Medicine and Surgery*, 1926, states on page 397:—

Sedentary habits, constipation, tight-lacing, catarrh of the biliary passages and the gouty diathesis (tendency) are etiologic (causative) factors.

Dr. John Harvey Kellogg wrote on page 47 of his book, *Auto-intoxication or Intestinal Toxæmia*, 1922:—

It is now known that bacteria are constantly entering the circulation from the intestine. The blood of the portal vein always contains bacteria, especially after meals, when absorption is most active. In the passage of the blood through the liver most of these bacteria are destroyed or passed out in the bile, so that they do not in large numbers pass into the general circulation, except when taken in unusual numbers, or when the liver has become crippled and so no longer is able to perform its defensive work.

Bacteria are often found in the urine in great numbers, having been eliminated from the blood by the kidneys after having escaped removal by the liver.

The gall-bladder often becomes an incubating chamber for bacteria. Gall-stones are the result of the action of bacteria. Typhoid bacilli have been found in the gall-bladder many years after recovery from an attack of the fever.

We read in the *Essays on Surgical Subjects*, page 186, 1921, by Sir Berkeley Moynihan, President of the Royal College of Surgeons:—

So far as experiment serves to show, a stone can only develop in the gall-bladder (and the gall-bladder is the factory wherein all stones are made) if, with a mitigated

culture of micro-organism, there is some retardation of the outflow of bile. Sepsis and stasis must go together. The gall-bladder then puts forth its own efforts to protect itself, and secretes cholesterin, which being deposited upon the surface of the germs, clumped as they probably are, safely immures them. A gall-stone, then, consists of a deposit of cholesterin (alone or with the addition of other salts) upon a nucleus of organisms which have intruded into the gall-bladder. Every gall-stone, as I have said before, is a tombstone erected to the evil memory of the germs that lie dead within it.

Gall-stones are produced by micro-organisms, but these micro-organisms are, of course, not to blame for their formation. Hunting the microbe will not eliminate the diseases of the gall-bladder, but regulating our bowels will do so. In Osler and McCrae's standard work, *The Principles and Practice of Medicine*, 1925, we read on page 571 :—

All conditions which favour stagnation of bile in the gall-bladder predispose to the formation of stones. Among these may be mentioned corset-wearing, visceroptosis, and occupations requiring a "leaning forward" position. Lack of exercise, sedentary occupations, particularly when combined with over-indulgence in food, and constipation are also favouring circumstances.

Dr. Arthur F. Hurst stated on page 222 of his book, *Constipation and Allied Intestinal Disorders*, 1919 :—

Kraus of Karlsbad found that more than 80 per cent of his 2,269 patients with gall-stones were constipated.

Constipation, sedentary habits of life which favour constipation, a diet inducing constipation, and auto-intoxication following upon chronic bowel stagnation, cause the increase of these poisonous micro-organisms of the bowel which flood the body-juices and tissues, which get into the gall-bladder, and which there lead to the formation of gall-stones and to all the dangerous diseases springing from them. Dr. A. Bryce wrote

on pages 81 to 83 of his book, *Intestinal Toxæmia*, 1920 :—

The etiology (causation) of gall-stones is now thoroughly understood from the work of Lartigau. He showed that living organisms, absorbed from the intestine into the portal blood-stream, were passed through the liver, where most of them were killed as in a "sewage destructor." The organisms, both living and dead, were then expelled from the liver in the bile, which flowed into the intestine, and no harm was done. But in certain circumstances, as for example when the organisms were particularly virulent, an acute inflammatory condition, varying in degree according to the intensity of the affection, arose. In a lady who was first operated upon for cancer in the upper part of the breast and thereafter for appendicitis, I have seen subsequently a third operation for gall-stones (one big and three small stones being discovered), where the gall-bladder was not only filled with pus so far as was possible on account of the stones present, but nearly one pint of pus was removed from the outside of the gall-bladder. The causation in this case would have been inexplicable but for Lane's work on Chronic Intestinal Stasis, where all these conditions are mentioned as directly due to stagnation in the bowel.

But the degree of inflammation of the gall-bladder may be so slight as to display only an evanescent dyspepsia or catarrh of the bile-ducts, with or without jaundice, because the germs are less virulent and the bile has free exit from the bladder. Where, however, there is any retardation to the outflow of the bile, any stasis or stagnation (and sepsis and stasis usually go together), then the irritant presence of the organisms calls forth an increase and precipitation of cholesterin in the effort to protect the gall-bladder. The little band of organisms thus attacked is soon coated with the cholesterin and other salts, and becomes a gall-stone—a sign-post or monument indicating the entombment of this company of invading germs.

Many people are foolish enough to neglect the initial discomforts caused by gall-stones, which they ascribe to "indigestion." Unfortunately, neglected gall-stones lead to suppuration, to abscesses which are

apt to eat their way into the body in various directions, to permanent jaundice, to ulceration and passage of stones into the intestines, to obstruction of the bowels from gall-stones, and innumerable other complications.

Kidneys and liver fulfil exceedingly important functions in the body. They filter the impurities out of the blood, deal with the numerous poisons and harmful substances which we swallow or which are generated in our body, and convert them into less harmful or harmless substances by their wonderful chemistry, and eventually they assist in eliminating from the system that dangerous part of our internal refuse which is not dealt with in other ways. Dr. A. Bryce wrote on page 99 of his book, *Intestinal Toxæmia*, 1920 :—

The four millions of microscopic filters of the kidney (Malpighian corpuscles) can be damaged by toxins, thereby producing nephritis (inflammation of the kidney). In the same way the intestinal villi which are radicals or rootlets of the alimentary absorptive system can sustain damage by being gummed or varnished over by the most adhesive form of mucus, as is seen in a typical case of colitis. This diminishes both their absorptive and bactericidal powers, whilst the presence of little erosions and ulcers in the mucous membrane facilitates the absorption of toxins and micro-organisms. It is little wonder that nephritis and colitis alike are constant in the presence of toxæmia.

Curiously enough, the great majority of people are very anxious about the functioning of their liver, but are not at all interested in the healthy functioning of their kidneys, although trouble of the kidneys may lead to their inflammation, to Bright's disease, the hardening and suppuration of the kidneys, to the inability of these organs to deal with the body poisons, and to uræmia, in which disease, or rather symptom, the body tries to eliminate body poisons smelling like urine through the lungs and from every pore, and which ends with convulsions, coma, and rapid death.

Slight liver troubles force themselves upon our

attention by discomforts which cannot be misunderstood, for instance, by a "bilious" headache, a "bilious" temper, a "bilious" complexion, etc., which cause the average sufferer to take a dose of salts or some other medicine "for the good of his liver." The fact that the majority of those who suffer from slight liver troubles take a purgative suffices to show that the so-called liver complaints are in reality bowel complaints. Chronic constipation leads rapidly to liver congestion, which is the first symptom of most liver disorders and diseases. Sir Humphry Davy Rolleston wrote on page 107 of his book, *Diseases of the Liver, Gall-Bladder and Bile-Ducts*, 1912 :—

The more reasonable and by far the commonest cause of active hepatic (liver) congestion is to be found in the toxic bodies reaching the organ through the blood-stream. This may occur through the hepatic artery, as in fevers, especially malaria, and various infective conditions, though in the latter the process may pass on into inflammation or sup-puration.

But generally the poison is derived from the gastro-intestinal tract and reaches the liver by the portal vein. It therefore follows over-eating, and especially alcoholic excess, gout, gastritis, indigestion, dysentery. Physiologically active congestion of the liver occurs in digestion and is heightened by spices, pepper, mustard, and curries ; in great excess, such condiments may no doubt in a suitable subject set up acute and active hepatic congestion. Alcohol is an important factor, especially in hot climates, in producing acute congestion ; this probably explains why hepatitis is seventeen times commoner in Europeans than among the natives of India. Other toxins may be carried by the portal vein, as in constipation.

The microbic poisons which upset the normal working of the liver and bring about its congestion, which only too often is followed by a long string of serious and fatal diseases, are "generally derived from the gastro-intestinal tract . . . as in constipation." In

other words, the numerous diseases of the liver and the complications and morbid consequences springing therefrom are not separate "diseases," although they are treated as such in the textbooks. They are merely symptoms of the Great Disease of chronic bowel stagnation and auto-intoxication, of Chronic Intestinal Stasis.

Although the health of the kidneys is little regarded by the people in general, who concentrate their attention upon the free working of stomach, liver and bowels, the healthy functioning of the much neglected kidneys is of vital importance to us. The importance of the kidneys and the frequency and seriousness of kidney disease may be gauged by the large number of specialists for diseases of the kidneys. Unfortunately, kidney diseases, like all the diseases of the bowel, such as appendicitis, colitis, duodenal ulcer, etc., are rapidly increasing in accordance with the steady increase of chronic constipation and auto-intoxication. As a matter of fact, the majority of kidney diseases, like the diseases of gall-bladder and liver, appear to be caused by microbic poisons generated in the colon, the big bowel. Dr. Frank Kidd published in 1920 an important book, significantly entitled *Common Infections of the Kidneys with the Colon Bacillus and Allied Bacteria*, in which he showed convincingly that degeneration of the kidneys and the many disorders and diseases springing from that cause is another one of the numerous symptoms following chronic bowel stagnation and auto-intoxication. In the Preface and Introduction the author tells us :—

The tendency of the last twenty years has been to make medicine more and more complex and difficult, and to split it up into smaller and smaller groups. The time has come to try to make medicine more simple by elaborating wider principles that can embrace a large number of phenomena. If the student and practitioner are adequately trained by explaining to them the larger principles, they

can apply these for themselves to their cases in practice and obtain a wider interest and better results. In fact, they will thus learn to become investigators themselves into the early symptoms of common disorders.

Bacteria are not *the* cause of bacterial infections. I make this statement deliberately so as to startle the minds of the bacteriologists out of the settled state of complacency into which they have sunk. The discovery of bacteria has led medicine astray for the time being.

Bacteria are the *exciting* cause of bacterial infections.

I believe, and I am attempting to show in this book, that many bacteria which can become pathogenic (disease-creating) are almost universally present in the throat, bowel, and skin of almost all individuals. This is specially true of the colon bacillus, the streptococci, staphylococci, and pneumococci, the bacteria of nasal and alimentary catarrh, and it probably holds true of the tubercle bacillus also. In other words, these common bacteria are universal symbiotes on the human species, and probably every one of us carries them about on the mucous surfaces. Almost universally and almost daily these bacteria are invading the blood-stream in varying doses and are being distributed throughout the tissues and got rid of by the excretory channels. Only exceptionally do these bacteria become pathogenic and set up local and general inflammation.

The problem is not what we have been so long led to believe by the bacteriologist—"How are we to get rid of bacteria from the surroundings of men and from the so-called carriers?"—in other words, "How are we to sterilize the world of pathogenic bacteria?" It is in this way bacteriologists hope to prevent disease, by removing pathogenic bacteria from the world. This is really a hopeless problem as regards a large class of common bacteria. We never shall be able to sterilize the alimentary canal and other mucous surfaces, nor is it desirable that we should do so.

The real heart of the problem has been missed because, in their intense study of bacteria, bacteriologists have forgotten to study the infected human being. They have failed to notice the numerous factors which are at work to predispose a certain individual to pathogenic infection with bacteria which utterly fail to cause disease in the large majority of the race.

What, then, have they forgotten? They have forgotten that in the causation of disease predisposing causes of great variety must also be set in action to enable the *exciting cause*, the bacterium, to act. The bacteria, the exciting causes, are universally present. The predisposing causes are variable factors, and when present in a certain individual in one or more variants enable the bacteria to set up inflammation and fever, or in other words "disease."

Turn from hopeless endeavours to kill off all bacteria and direct attention and effort to preventing pathogenic infection, as, for instance, by improvement in methods of raising immunity, not only artificial but natural; and by an endeavour to educate the man in the street to live by simple hygienic rules based on the avoidance of predisposing causes.

What is new in my conception is that blood invasion by bacteria is a common daily occurrence in most healthy individuals and not a rare phenomenon, as Adami seems to think. So far from regarding the human body as sterile, I prefer to look upon it as "a bacterial sponge." Comparatively few of us who soak up bacteria daily actually become "infected" and react by inflammation and fever. Most of us simply soak up minute daily doses of bacteria, which serve to keep up our immunity.

Dr. Kidd's ideas about the true causation of "bacterial" disease coincide with my own. I have protested strongly against the fashionable but foolish methods of ascribing most diseases to hostile micro-organisms which should be fought by a serum, etc., in my book, *Cancer*, and particularly in my volume, *Good Health and Happiness—A New Science of Health*. Providence created not only the microbes of disease but also agencies in our bodies for defeating them. If we keep our body in normal health by living wisely, the unaided system destroys successfully with its own serums, etc., not only the germs which are supposed to cause the minor diseases, but even the bacilli of tuberculosis, pneumonia, cholera, leprosy, etc., as I have shown in my book.

Dr. Kidd has a vast experience in treating kidney diseases of every kind, and he has come to the conclusion that in the great majority of cases kidney disease is caused by the colon bacilli, by micro-organisms generated in countless millions in a chronically stagnant poison-breeding bowel. The logical way to fight kidney disease consists, therefore, not in treatment by medication or operation, by vaccines and serums, by glandular and psychological means, etc., but in keeping the big bowel clean and wholesome. Dr. Kidd, who is both a physician and surgeon, has not merely stated a doctrine based on speculation, but he has given us a teaching which, like that of Sir Arbuthnot Lane, is based on fact and on an unusually wide practical experience, and he proves his contention by a very large number of cases, of which I would give a typical example, described on page 12 :—

A female aged 14 years was admitted under my care at the London Hospital on March 2, 1914.

History.—She was quite well until five days previously, when she was suddenly seized with intense pain in the right side and started vomiting persistently. She had no urinary symptoms whatever. The bowels had not moved since the beginning of the illness.

Examination.—She appears extremely ill, with sunken abdominal facies, and was very restless. Her temperature was 105° F. and her pulse rate ran up from 120 to 160 within four hours of her admission. The tongue was clean and moist. The abdomen was tender and rigid in the front of the right loin and in the right iliac fossa.

Treatment.—I had her removed at once to the operating theatre and placed under an anæsthetic, and, thinking I was dealing with a case of fulminating appendicitis, I cut down the appendix. The appendix and peritoneum were found healthy, but I could feel a hot swollen right kidney, and I at once realized what the correct diagnosis was. I passed a catheter and drew off urine which appeared clear but on examination was shown to contain pus cells, hyaline and granular casts, and the colon bacillus in large numbers.

I turned her over and removed the right kidney. The wound healed by first intention. The next morning her temperature and pulse were normal and she appeared quite well. Her urine became sterile naturally in ten days, and she left the hospital on March 26 quite well.

On cutting the kidney open it appeared to be almost completely gangrenous from gross bacterial infarction (congestion). There was no healthy kidney substance left, and in places minute pin-point abscesses could be seen in the infarcted cortex. Cultures were made from the kidney substance and grew a colon bacillus in pure culture identical with the bacillus in the urine.

Dr. Kidd, having carefully investigated 140 cases of kidney inflammation, states on page 14:—

The actual exciting cause of pyelo-nephritis (kidney inflammation) is always a bacterium. Below are recorded 140 cases of pyelo-nephritis excited by bacteria other than the tubercle bacillus. The bacteria which excited the inflammation of the kidney were as follows:—The colon bacillus 117. A streptococcus 9, twice in conjunction with the colon bacillus. A staphylococcus 7, once in conjunction with the colon bacillus. A gonococcus 2, a proteus 1. The paratyphoid bacillus 1. The bacillus asiaticus 1. Para-Malta fever 1. Not determined 9.

It will be noticed that in the overwhelming majority of cases, viz., in 117, the colon bacillus was clearly to blame. Its name proclaims its origin. Some of the other micro-organisms mentioned may have generated elsewhere, but they also may have had their breeding-ground in an unwholesome and chronically stagnant bowel. A little further on the author sums up the "causes which stirred up bacteria already lying dormant in a primary focus," and he came to the conclusion that in no less than 94 cases bowel infections were clearly responsible for kidney disease in the 140 cases considered. Of course, if a man with kidney disease has a foul bowel, septic gums, unhealthy poison-creating wounds, etc., it is difficult for the

investigator to decide which septic centre was responsible for infecting the kidneys. The fact that in 94 cases out of 140 a bowel infection was clearly responsible is all the more remarkable as of the remaining 46 not less than 9 were due to septic gunshot wounds and 6 to operations in septic fields. It follows that in the overwhelming majority of cases a chronically stagnant and poisonous bowel poisoned the kidneys.

Summarizing the exceedingly important case histories which he had laboriously studied with all the most modern methods of science, the author came to the following most important conclusions on pages 54 and 71 :—

~ If a person becomes constipated for a day or two, colon bacilli can often be demonstrated in the urine. To my mind this is evidence that they have passed by way of the blood-stream to the kidney, which has filtered them out without being damaged. Instead then of searching for hypothetical chemical toxins in the bowel, I am convinced that a far more fruitful line of research would be to investigate the bacteriology of the bowel, the blood, the urine, and the tissues. I am convinced it will be found that it is the bacteria themselves which are absorbed into the blood and which cause all the mischief, and not the hypothetical toxins. At first sight it might be thought that this does not make very much difference, but the more the problem is pondered over, the more important will this distinction be seen to be. Such a conception, namely, "intermittent bacterial invasion of the blood-stream," emphasizes and strengthens the importance of general hygienic rules in the armament of preventive medicine. We have got to learn to live with our bacteria, not to run away from them. We cannot afford to neglect our bowel and fill it with the high-preserved foods of modern life. We cannot trick it constantly with the best advertised and most fashionable patent purges. Fresh food, with plenty of fruit well masticated, and a regular daily action of the bowel, are seen to be the best preventive of innumerable infections.

The bowel was the primary source from which the bacteria

invaded the body in ninety-four cases of this series. This proves the importance of a good habit in the daily evacuation of the bowel. There can be no doubt that fresh food and fruit properly masticated, taken at regular intervals and got rid of at regular intervals, is the means whereby Nature means us to maintain the bacterial balance of power in the alimentary canal. As long as this is maintained, the colon bacilli and other bowel bacteria live amicably with us and fulfil their rôle in digestion. It is only when we play tricks with our lifelong lodgers that they can do us harm by producing invasion of the bloodstream, secondary tissue infections, and localized bowel infections such as appendicitis, colitis, and gastric ulcer.

Men of advanced years frequently suffer from a very troublesome "disease," the enlargement of the prostate, a gland situated at the mouth of the bladder. Professionally this "disease" is called prostatitis. The enlargement of the prostate leads at first to very frequent urination. Patients may have to get up every hour. When the trouble becomes worse, urine accumulates in the bladder, cannot be evacuated, becomes putrid, and grave consequences follow unless a serious operation is undertaken for the removal of the enlarged gland. Enlargement of the prostate does not come about spontaneously. It is as a rule due to a clearly ascertainable microbic cause. Among the causative micro-organisms are to be found the micro-organism of tuberculosis, that of gonorrhœa, etc. Dr. Kidd has dealt with a considerable number of cases of inflamed prostate. In his book he described sixty-four cases which were "excited by germs other than the gonococcus and the tubercle bacillus." He summed up his findings of these sixty-four cases as follows on page 106 of his book:—

In this series of 64 cases the *exciting cause* of prostatitis was always a bacterium—the colon bacillus in 51, a staphylococcus in four, a streptococcus in six, a paratyphoid in two, a pneumococcus and a *Bacillus proteus* in one case

each. In one a streptococcus was allied with the colon bacillus, in another the colon bacillus was present in three attacks, and in the fourth and final attack a staphylococcus was present.

The primary sources or surfaces from which the bacteria entered the blood-stream appeared to be as follows:— The throat five, septic teeth two, the gall-bladder one, the bowel, upset by purges or constipation or ulceration or appendicitis or intestinal obstruction, 40 cases.

Again, the overwhelming majority of cases was due to the colon bacillus, and in forty cases the infection could be traced to a diseased and chronically constipated bowel.

The scientific investigation of various diseases by laboratory specialists is often not only exceedingly superfluous, but it is actually harmful by confusing and misleading both the general public and the medical men themselves. In innumerable cases of disease a "specific" micro-organism is found, which, however, has little to do with the causation of the disease. Innumerable diseases are brought about not by some mysterious microbe or ultra-microbe which may be seen by the microscope or ultra-microscope, or which may be so small as to be invisible except to the scientific imagination, but by some very ordinary, very commonplace and very unscientific cause, such as chronic bowel stagnation, faulty food, etc. After all, we cannot complain of disease microbes if we choose to breed them in our foul bowels in countless millions, or if we choose to live on food which encourages the settlement and the unlimited increase of putrefactive organisms and disease-producers in our intestines and elsewhere. Dr. Kidd strongly and justly criticized the laboratory investigators and stated his own views as to the causation of so-called "bacterial" disease on pages 89, 104, and 165 of his work as follows:—

One of the most unfortunate things is the undoubted tendency of the present-day laboratory workers to decry

clinical (bedside) medicine. Living shut apart in laboratories, they quite fail to realize the strides made by clinical medicine in the use of exact methods of examination. A number of these cases have been treated under the advice of vaccinists alone for some years. Is it wonderful then that cures were not obtained? Some of them had stones present in the urinary tract, yet they had never been submitted to X-ray examination. Others had mechanical causes, such as stricture, enlarged prostate, and hydro-nephrosis, hindering the proper drainage of the urine, yet no attempt had been made to ask a cystoscopist (bladder specialist) to find out and remedy these causes by surgical means. Others had primary sources of infection unnoticed and left *in situ* to cause constant reinvasion of the bloodstream, such as inflamed appendices, gall-bladders, ovaries, and so forth. Others had deep abscess, especially in the prostate gland, which had been present for years, never really closed up but never really properly drained. What wonder that these cases remained uncured? The attempts to capture clinical medicine by laboratory workers who have had insufficient clinical experience has been a sorry chapter in the history of medicine during the last fifteen years.

Clinical examination will require to be as thorough as ever. The problem is not solved simply by paying attention to the bacteria. Both factors vary, the bacterium and the patient. The bacterium, then, must be examined completely in every case in the laboratory, but the other variable factor, the patient, must still be examined as carefully as ever in the ward. At present there is a risk of the poor patient being left forgotten to perish in the ward while the bacterium is being petted and pampered in the laboratory.

Bacteria are not the sole cause of bacterial infections. Bacteria are simply the proximate exciting cause. The predisposing causes are of equal importance, and should never be forgotten in treatment. To break the vicious circle of predisposing causes is as effective in cure of bacterial infections as to break the bacterial circle.

Following the discovery of bacteria in the last century, much brilliant work has been done in developing knowledge of them. Unfortunately, bacteria have been studied too

exclusively in the laboratory cultivated on artificial media. Bacteriologists have therefore often lost sight of the human element, and have forgotten that what is really wanted is a knowledge of the varying behaviours of the bacterium and the human being, living together in a state of armed neutrality. A school of bacteriologists has grown up living apart from the wards, who might perhaps term themselves "The Sterilizing School," but which I would prefer to call "The Sterile School." Their observations lead them into a blind alley, when they forget the human being in their intense study of the bacterium. They develop the "test-tube" mind.

Practitioners are not engaged in fighting bacteria in the test-tube; their problem is how to control bacteria living in the human body. The bacteriologist's ideal has been to attempt to remove all bacteria from the world; in other words, to sterilize the world.

CHAPTER VIII

How Chronic Constipation causes Rheumatic Diseases, Arterio-Sclerosis, Heart Disease and Apoplexy

Chronic constipation is present in almost all cases of fibrositis, and its correction, though often overlooked, is imperative. Many subjects of fibrositis, indeed, comment upon the relative immunity they enjoy when a regular action is established, and there is no doubt that the overcoming of constipation is the clue to successful treatment in most of these cases.—DRS. LLEWELLYN and JONES, *Fibrositis*.

RHEUMATISM in its various forms is one of the most crippling, most painful, most widespread and most deadly of diseases, for it leads in innumerable cases to incurable heart disease. In 1924 the Ministry of Health issued an important Report, *The Incidence of Rheumatic Diseases*, which states on pages 2 and 3 :—

Each year these diseases are costing the Approved Societies nearly £2,000,000 in sick benefit, and the nation over 3,000,000 weeks of work from the insured population alone. Half this loss, both of money and of time, is due to chronic joint diseases.

Nearly half of the patients with acute rheumatism showed signs of recent or old endocarditis (heart disease). The inquiry has taken no account of chronic heart disease, largely rheumatic in origin.

Turning now to the question of causation, the Committee suggest that, in regard to acute rheumatism, the findings

of their observers support the view that tonsillar sepsis (poisoning) is an important etiological (causative) factor. Fifty per cent of the patients with acute rheumatism had enlarged or septic tonsils, and only 2 per cent of patients with acute rheumatism had a history of having had their tonsils removed. Dental sepsis appears to have been so frequently associated with the various forms of fibrositis (inflammation) and diseases characterized by chronic joint changes as to give some confirmation to the thesis that this condition produces or predisposes to these forms of rheumatism. . . . According to the observations made for the Committee, over 75 per cent of all the rheumatic insured patients over the age of 25 exhibited dental sepsis (poisoning) in some form or other, whilst in the patients with chronic joint diseases, the percentage was even higher than this.

It will be noticed that, according to the Government Report, rheumatism is very largely caused by poisons exuded by diseased tonsils, gums, etc. In the great majority of cases of rheumatism there seems to be a septic focus responsible for the outbreak. It may be that that focus is situated in the mouth, or in the tonsils, or elsewhere. Curiously enough the Government Report does not mention the possibility of rheumatism being caused by auto-intoxication from the bowel. If a small septic focus in the gums or tonsils can create mischief in the muscles and joints, a large septic focus situated in the bowels should certainly be able to do vastly more mischief. Why was this omitted? Besides, degeneration of the tonsils, teeth and gums is largely due to chronic bowel stagnation, as will be shown in another chapter. The writer of the Government Report was evidently reluctant to accept the simple common-sense teaching of Sir Arbuthnot Lane, although many eminent authorities specializing in rheumatic disease recognize that in a large number of cases rheumatic disease of the most serious kind is clearly due to chronic bowel stagnation. The *British Medical Journal* of the 20th February, 1926, contains

an important address, "The Orthopædic Aspects of Chronic Arthritis" (rheumatism of the joints) by Dr. Robert B. Osgood, Professor of Orthopædic Surgery at Harvard University. In the course of his lecture, Dr. Osgood stated:—

There is much to suggest that the path is very open by which bacterial or chemical toxins (poisons) may pass from the intestines, especially the colon, to the joints, and I urge most careful attention to normal evacuation of the bowels by means of mechanical correction of ptosis (drooping of bowels), abdominal massage, colonic irrigation and non-irritating catharsis (laxatives) by the mouth. A daily movement of the bowels, naturally or artificially produced, does not necessarily mean a safe and complete evacuation. The rather rare case, usually of short duration and fairly acute onset, which recovers spectacularly after the removal of a frank surgical focus (tonsils, gums) is quickly reported and too often considered the type. *The case which begins to improve when it is possible to bring about a more normal rate of passage of intestinal contents and to secure a more complete evacuation of the colon, is perhaps less spectacular, but we believe much more common.*

Writers on the rheumatic diseases and on other diseases as well seem exceedingly reluctant to find the cause of disease in so commonplace, so general, so vulgar and so unsavoury a factor as chronic bowel stagnation. As constipation is "unscientific" compared with a germ, they endeavour to disregard its existence or to explain away a factor which must obviously have a profound effect upon the health of our body, which must weaken its resistance to diseases of every kind, and must aggravate every disease from which we may suffer. In 1915 Doctors Ll. Jones Llewellyn and A. Bassett Jones issued a large volume on rheumatic disease which bears the title, *Fibrositis—So-called Chronic Rheumatism*. The name rheumatism, which every one understands, was considered not scientific enough. The authors have divided rheumatic

disease into several dozen sub-diseases, types, etc., which are described at length. In dealing with the causation of "Fibrositis," the authors devoted a special section to the question of auto-intoxication from the bowel. On page 54 there is a lengthy discussion, headed "Are the symptoms of chronic rheumatism explicable by an auto-toxæmia of gastrointestinal origin?" After discussing diamines, putrescin, cadaverin, cholin, neurin, indol, tyrosin and other horrible things, they conclude:—

It is but too clear from the foregoing brief résumé of recent experimental findings that the positive data on which our conception of auto-intoxication has been built up are, if not absolutely wanting, all too slender to establish its validity.

According to the learned chemists who work with quite unreliable instruments there is in the case of rheumatic disease no auto-intoxication from the bowel, and Messrs. Llewellyn and Jones readily endorse the chemists' opinion. However, with a regrettable lack of logic the authors contradict themselves in a number of places and prove that auto-intoxication from the bowels is indeed a most important cause of those rheumatic diseases which they have re-christened "Fibrositis." We read on page 39:—

There are many peculiarities in the general appearance and life history of so-called "rheumatic" individuals, which seem to indicate the existence of some constitutional anomaly.

In some cases of more marked nature there are distinct *objective* evidences of the existence of a toxic state of the blood-plasma (fluid), or what many prefer to term an "auto-toxæmia." Thus, very commonly, they present a sallow complexion, are somewhat wasted in appearance, and complain much of headache, lassitude, mental irritability, and often depression of almost pathological degree. Their skin, too, is frequently altered in texture, splashed

with pigment or marked with papules; the perspiration is either foul-smelling and excessive, or the cutaneous excretion deficient.

Commonly, too, they suffer from cold feet and hands, and many in our experience present symptoms clinically indistinguishable from true Raynaud's disease; while occasionally enlargement or decrease in size of the thyroid gland is noticeable.

The bodily temperature is more often than not sub-normal, and with it frequently associated unusually low blood-pressure, though in regard to this latter the variation or alternation of raised and lowered arterial tension is the more characteristic.

Deficient tone of the general musculature is in marked cases very obvious, and betokened often by a sagging abdomen, as well as by the readiness with which a state of pain through fatigue is induced.

Curiously enough the description of rheumatic patients is absolutely identical in every detail with Sir Arbuthnot Lane's equally detailed description of sufferers from auto-intoxication given in the third chapter. Nevertheless Messrs. Llewellyn and Jones deny that patients bearing all the characteristic peculiarities of severe auto-intoxication from the bowel suffer from that trouble because the chemists have not been able to recover from their bodies certain fearsomely named chemicals. However, typical rheumatic sufferers, as described by Doctors Llewellyn and Jones, not only look like sufferers from acute chronic bowel stagnation, but they actually do suffer, and very severely, from that complaint, and the learned doctors admit that their sufferings are strongly influenced by their bowel conditions. We read on pages 40, 43, and 60 :—

It is a matter of common experience that "rheumatic" pains are often preceded by, or associated with, flatulence, heartburn and other symptoms indicative of deranged gastric or intestinal digestion. Nothing is more certain, too, than that exacerbations or relapses of fibrositis are

very commonly preceded by symptoms of gastro-intestinal or hepatic (liver) disorder.

We have ourselves observed a most striking amelioration, and even cure, of arthritis and muscular types of chronic rheumatism follow radical treatment of the diseased foci (centres). The swiftness with which we have seen such disappear after the removal of carious (decayed) teeth, or the effectual treatment of nasal and aural (ear) discharges, suggest very strongly that these sites were the original foci of infection. The good results also which follow in many instances the systematic irrigation of the colon after the Plombières technique seem to carry a similar influence—viz. that toxic or microbic products in the intestine are thereby removed, and their absorption obviated or checked.

The majority of cases of fibrositis are marked by the presence of local foci of infection in the mouth or its accessory cavities, or, failing this, by gastro-intestinal disorders, notably constipation. In the presence of gastro-intestinal defects, whether secretory or motor, the pathological (disease creating) activities of the intestinal flora (micro-organisms) are accentuated and the processes of sub-infection promoted.

Messrs. Llewellyn and Jones “prove” in one part of their large work that “Fibrositis” is not caused by auto-intoxication, and in another part they demonstrate at length that it is caused by auto-intoxication from the bowel. The fact that bowel stagnation is an exceedingly potent factor in the causation of rheumatic diseases of every kind is perfectly obvious from the routine treatment adopted. In *Gould and Pyle's Pocket Cyclopedia of Medicine and Surgery*, 1926, we read, for instance, on page 750:—

Chronic articular rheumatism requires the avoidance of exposure and over-indulgence in meats, rich food, malt liquors, tea, coffee, etc. The bowels should be kept open by laxatives, and the kidneys should be regulated by diuretics.

Doctors Llewellyn and Jones themselves, after

having denied that auto-intoxication from the chronically constipated bowel is responsible for rheumatism, write on page 438, in dealing with treatment, under the heading, "Elimination of Toxic Products" :—

Chronic constipation is present in almost all cases of fibrositis, and its correction, though often overlooked, is imperative. Many subjects of fibrositis, indeed, comment upon the relative immunity they enjoy when a regular action is established, and there is no doubt that the overcoming of constipation is the clue to successful treatment in most of these cases. . . . Before leaving this all-important question of constipation in chronic fibrositis, we would record a plea for a more routine employment, in obstinate cases, of X-ray illumination of the gastrointestinal tract. For more commonly, perhaps, than is at present realized are there to be found in these states of alimentary toxæmia displacement of the colon with delayed transmission of its contents. The knowledge gained by skiagraphy (X-rays) as to the site of intestinal stasis will enable us to supplement or replace purgation by intelligently applied massage.

Although infection from septic gums, decayed teeth, diseased tonsils, etc., may produce rheumatic disease—these troubles themselves are caused or aggravated by chronic constipation—and although dampness, exposure and other factors may contribute to an outbreak, there can be no doubt whatever that auto-intoxication from a chronically stagnant bowel is one of the most important factors, if not the most important one. In many cases of intractable rheumatism of the worst kind, which has vainly been treated by attending to teeth, gums, tonsils, etc., it is discovered that there is serious stagnation in the bowel which cannot be dealt with by medicine, massage, and so forth, because the bowel has too much degenerated to be brought into normal working order by the means mentioned. In such cases a surgical operation is called for, whereby alone the normal functioning of the intestines can be

re-established. After such an operation rheumatic cripples are apt to recover miraculously. The President of the Royal College of Surgeons, Sir Berkeley Moynihan, stated in his *Essays on Surgical Subject*, 1922, after discussing at length and with high approval Lane's doctrine of intestinal stasis:—

In diseases of the joints, for example, rheumatoid arthritis, or tuberculous disease, stasis is held to be the essential indispensable factor causing the harm, or at least permitting it to take place. And the treatment of the severer forms, at least, of both diseases does not occupy itself with a direct assault upon the joints affected, but with the intestine from which all the evil has started. Cases are reported, and are shown to us, in which such treatment has had an effect beyond all one's wildest imagining. I have myself seen many cases of advanced—indeed, apparently hopeless—tuberculous disease of the hip-joint, or of the wrist or shoulder, in which an arrest of the quickly destructive processes took place almost at once when the colon was removed or a short-circuiting operation performed. And a sensible improvement has followed also in a few cases of rheumatoid arthritis in which, while nothing was done directly to the joint, the whole colon was excised. Of the occurrence of such events there can be no question. They do not, indeed, stand alone.

The evidence at the moment available allows us certainly to say that intestinal stasis does seem to stand in a causal relationship toward some cases of chronic joint affections, and that such cases exhibit a marked and instantaneous delay, or even cessation in the destructive processes, after operation upon the bowel, and that a complete recovery of the joint ultimately occurs.

There are hundreds of cases on record of patients who have been crippled for years by rheumatism, who could no longer move hand or foot, who had given up all hope of recovery, and who were miraculously cured by a bowel operation which gave them back the use of their limbs. Sir Arbuthnot Lane wrote on pages

86 and 88 of his book, *The Operative Treatment of Chronic Intestinal Stasis*, 1918:—

What can be more startling than the effect of colectomy upon a case of acute rheumatoid arthritis? One sees a patient who has lain on her back in agony for many months, or even years, dreading any movement in her swollen and painful joints. Within twenty-four hours after the colon has been removed the patient is able to move every joint in which bony ankylosis had not previously existed with great freedom and with absence of pain.

To see these patients rapidly regain freer and freer movement in those diseased joints, to see them progressively restored to health and happiness, and to watch their weight go up by leaps and bounds, is a joy to the surgeon.

Many of you may remember a child with rapidly progressive rheumatoid arthritis who had been operated on at the age of $10\frac{1}{2}$ years, and who was shown at the American Congress in London in July, 1914. She had lost every evidence of her disease except certain ankyloses which preceded the operation, and had doubled her weight in thirteen months. The following is a report of her case:

A female, aged $10\frac{1}{2}$ years, a helpless cripple, suffering from rapidly progressive rheumatoid arthritis, in spite of careful and constant treatment. She was short-circuited in November, 1911. The chart shows her weight before the operation to be 49 lb. She lost $2\frac{1}{2}$ lb. during the fortnight following the operation, her weight on November 13th being $46\frac{1}{2}$ lb. On October 1st, 1912, thirteen months after the operation, her weight was 87 lb., so that between November 13th, 1911, and December 24th, 1912, her weight had increased by $40\frac{1}{2}$ lb., or in other words, in thirteen months she had nearly doubled her original weight. On consulting Dr. Still's work on *The Common Disorders and Diseases of Childhood*, he puts the normal increase in weight at this age at 6 lb. in the twelve months. This shows that the improvement in her drainage scheme had produced an increase of more than six times the normal. Besides this abnormal increase in the growth of the child her disease was stopped abruptly, and she is now a vigorous, active, and healthy child.

I would now quote one characteristic case out of many reported in the *Woman's Medical Journal* of May, 1917, by Dr. John William Draper of New York :—

History of Mrs. R., age 55, referred by Dr. D. E. Drake, Newfoundland, N.J., October 26th to 28th, 1915.

Family History: Brother suffers from joint disease somewhat similar to patient, and has been told that there was a "stoppage in his bowel."

Chief complaint: Gradual stiffening of all joints and muscles; excruciating pain on motion; disability of upper extremities so great that for past two years patient has been unable to write; unable to use a knife and fork, and feeds herself under great difficulty with a spoon. She is still able to walk a short distance, but it causes great pain and her progress is slow.

Secondary complaint: Marked irregularity of her bowels, chronic constipation alternating with diarrhoea.

Patient was reasonably well until birth of her child 19 years ago, after which she nearly died of sepsis. Lacerations repaired and uterus suspended about 15 years ago. Erysipelas 4 years ago. Has much facial neuralgia and abscesses in her ears. Appetite—"Never had one: I absolutely hate the sight of food."

Her urine has been examined repeatedly with negative results. Has had three attacks of so-called nervous prostration and two attacks of pleurisy.

Patient is unable to carry on any of the ordinary affairs of life because of the chronic joint and muscular trouble. She is in pain all the time and feels as if she were turning to stone.

Physical examination: Moderate-sized woman; face pale and lined with pain. General negative, except as to joint. The lower jaw deviates slightly to the right. The joints of feet and hands are uniformly enlarged. The carpal (wrist) and metacarpal (palm) regions are scarlet, hot and exceedingly tender to the touch. Passive motion impossible on account of pain. The tarsal (foot) and metatarsal (instep) regions are swollen, normal in temperature and less tender. Passive motion limited. The hands are deviated to the extreme ulna (forearm) position, characteristic of so-called

arthritis deformans. The left hand is more swollen than the right. The elbows and shoulders permit moderate amount of passive motion; active motion, however, is extremely limited. Patient cannot touch her head or come anywhere near to it.

Abdomen: Costal angle about 90 degrees. Tenderness and rigidity on deep pressure entire right side. Splashing and "snow crepitation" over cecum.

Laboratory reports, etc.: Extensive laboratory studies were, of course, made. The blood, urine, feces, teeth and sinuses of the skull were negative. The tonsils and throat were negative. Abdominal X-rays showed persistent cecal delay (localized constipation) after the forty-eighth hour. X-rays one year after operation showed entire abdomen empty of barium within forty hours.

Operation: November 1, 1915, Polyclinic Hospital. Stomach pylorus and gall-bladder normal. Ceco colon bound down in a dense mass of adhesions, a typical elbow obstructive deformity as described by Lynch. Appendix free and appeared normal. Cecum an immense mobile organ, literally hanging free from the mass of adhesions cephalad to it and therefore capable of rotation with intermittent obstruction of the pedicle (ascending colon) in a way exactly analogous to the rotation of any pedunculated cyst. The caecal walls were attenuated and deeply pigmented—a sign, according to Pick, of the passage of toxins (poisons). Whatever compensation in the nature of muscular hypertrophy may have occurred at an early date had entirely broken down, the organ being in many ways analogous to a dilated heart, with broken compensation. It was recognized, therefore, that the only hope for this patient lay in the resection of the right side of the colon, and "developmental reconstruction," a term suggested for this operation by Professor Stockard, of Cornell, was done. It consisted simply in resecting the terminal 10 cm. of ileum and the ceco colon as far on the transverse colon as the middle colic artery. This was followed by the usual anastomosis and abdominal closure.

Thirty-six hours after operation the patient announced to the astonishment of all concerned that she felt sure the cause of her trouble had been removed; that she was free from all pain for the first time in three years, and was able

to sleep, and that she was going to get well. Time has proven the correctness of her intuitive conclusions. The patient was sent to Idylease Inn for prolonged course of massage and hydrotherapy under Dr. Drake, and for the first year improvement was continuous, interrupted only by pain in localized joints. This arose from over-use of these disused joints and the resulting breaking up of adhesions. In the past six months the improvement has been much more rapid. The patient is now able to do all her household work, considers herself 90 per cent efficient, and declares she would have the operation done again without the slightest hesitation if necessary.

Chronic rheumatism leads in innumerable cases to severe or incurable heart disease. It follows that in many cases chronic bowel stagnation leads by way of one of the rheumatic diseases to heart disease, great suffering and untimely death. However, this is not the only way by which chronic constipation is apt to induce disease of the heart. The arteries stand in the same relation to the heart in which the nerves stand to the brain. It has been shown in Chapters IV and V by a large mass of evidence that chronic stagnation of the bowel and auto-intoxication leads in innumerable cases to affections of the nerves which may eventually upset temporarily, or damage permanently, the brain, which is the centre of the nerves, which is "all nerves" in function and in material. Chronic bowel stagnation is undoubtedly a fruitful cause of high blood-pressure, arterio-sclerosis, and all the evil consequences to which the degeneration of the arteries will give rise. We read in the volume, *Blood Pressure—Cause, Effect and Remedy*, by Drs. L. F. Barker and N. B. Cole, 1924 :—

Prevention is coming to be of far more importance than cure. Indeed, it is easier; and economically, at least, it is of prime importance in the whole field of medicine, for sickness is far more costly to the nation in the loss of work and wages than all the perils of field and flood added

together. One need only think of the conquest of smallpox, of yellow fever, of typhoid, and of malaria, to be convinced of the financial value of preventive medicine.

But though the gospel of prevention of disease has become an integral part of the physician's creed, it creeps but slowly into the code of the non-medical man. He is all too accustomed, especially in America, to disregard his physical being until symptoms that will not be denied make it plain to him that something is the matter with him. This is the sad story of cancer and of tuberculosis. It is the layman's right, therefore, to have at his disposal such information as will help him to avoid the beginnings of disease; and, equally, it is his duty to inform himself of preventive measures, to the end that he may live out his threescore years and ten in comfort. Not less is the obligation of the physician to put his knowledge before the public in a simple and understandable form. Only thus does he perform his whole duty as a physician.

Delicate apparatus exist within the body by which the blood-pressure may be so varied locally as to afford more or less blood to individual organs. Were it not for these normal local shifts in pressure always going on in the body with changing activities and moods, it would indeed go hard with the organism and its balance. Now the stomach demands more blood for the purpose of carrying out its work of digestion; now the brain, in thinking; now the muscles, in their activities. All over the body are organs which, called upon to increase their activities, ask for more nutrition and more oxygen and require a greater flushing away of waste products. Just as more freight cars must be sent to the points of greatest commercial activity, so must more blood be provided for active organs; just as centres of trade change from one part of the country to another, so do the centres of greatest organic demand in the body change.

Excessive mental or physical work, and indeed excesses of all kinds, do seem to have a real causal effect in the production of disease of the arteries. Particularly is this true of over-eating. The heavy eater may also be physically inactive; gluttons are notoriously negligent of proper bodily exercise. Obesity after middle life is very often associated with high blood-pressure and some arterio-

sclerosis. Stuffing of the stomach puts a great load on the digestive system, and this in turn interferes with normal circulation and respiration precisely at a time when the digestive system is demanding an increased supply of blood for its complicated work. As we have seen, the blood-pressure is normally always higher just after a heavy meal. If the strain on the circulatory system caused by digestion be increased by overloading the stomach, and especially if the strain be habitually repeated, there will almost surely come a time when damage will be done to the arteries and "hardening" will gradually ensue. Moreover, very often the heavy eater is simultaneously an immoderate drinker of alcohol, an inordinate smoker of tobacco and perhaps inclined to excesses in still other directions. He who wishes to live so as to protect his arteries from damage, will avoid over-abstemiousness on the one hand and over-indulgence on the other; "safety lies in a middle course."

To say that good habits of personal hygiene, such as adequate sleep, plain food in moderate quantity, proper exercise, fresh air, frequent bathing, self-control and avoidance of all excesses, should be impressed upon the growing child is to utter a platitude; but we dare not fail to utter it, for far too often it is assumed that youth, with its buoyancy and elasticity, is proof against infractions of hygienic laws. Physicians now believe that many of the diseases of middle age, including the group of hypertensive disorders, can be followed back to an origin in long-established habits of faulty hygiene.

The elimination of harmful substances from the body demands constant attention and is largely dependent upon the formation and maintenance of several important habits. Waste products are removed from the system through the stools, the urine, the sweat, and the breath; and though the processes of removal are almost automatic, still we must see to it that the machinery is kept in good working order and that the channels of exit are not allowed to become clogged. Consider, for instance, elimination through the stools. The bowels should move satisfactorily at least once every day, and, best, at the same time each day. If they do not so move, some of the waste products are likely to be absorbed into the blood, where they may circulate and poison the tissues, before finding their way out of the

system by some other eliminative route. If the kidneys be damaged in any way, they, in turn, may fail to accomplish their whole function as scavengers. The skin, too, is an important organ for the removal of waste products, but it must be kept clean and active by bathing and friction if it is to serve adequately as a thoroughfare for the poisons that are given off through the sweat glands. Each of the trio of eliminators performs its functions best under special conditions that are provided by wholesome habits; thus the habit of eating liberally of green vegetables and fruit, and the habit of going regularly to stool, will go far toward ensuring a daily satisfactory bowel movement and the elimination of waste products through the alimentary tract; the habit of drinking plenty of water through the day favours elimination through the kidneys, and the habit of a daily bath followed by brisk friction keeps active the function of elimination through the skin.

“Roughage” must be included in the food if satisfactory movements of the bowels are desired; for this reason the daily ration should include two or more vegetables like spinach, cabbage, asparagus, lettuce, onions, tomatoes and celery. Oatmeal contains more roughage than other cereals and brown bread and whole wheat bread contain more than bread made of bolted flour. Artificial roughage may, sometimes with advantage, be introduced in the form of bran or of agar-agar. Fruits, with the exception of bananas, which are constipating to some persons, should be eaten freely. An orange or a baked apple at breakfast time, stewed prunes or stewed figs as a dessert at midday or in the evening, and a raw apple at bedtime, are especially helpful.

The habit of self-drugging for constipation is pernicious. When, after a fair trial, there is difficulty in securing regular bowel movements by means of the several habits above described, a physician should be consulted, for the treatment then required may be very different in different persons. The person who attempts, in such circumstances, to treat himself may easily do himself harm.

The elimination of waste products through the kidneys is, as we have said, favoured by drinking plenty of water. Six or eight glasses of water per day will not hurt the kidneys, but the drinking of too little water will result in the passage of a too-concentrated urine, which may irritate

the kidneys or the bladder. The faithful kidneys can be spared much overwork and injury if we take care to maintain the other channels of elimination (bowels, skin) in good function and thus keep down to a minimum the amounts of waste materials that circulate in the blood. There can be no doubt that the retention in the body of poisonous waste substances contributes to the development of disease of the arteries and of the kidneys. Neither the walls of the arteries nor the delicate secreting elements of the kidneys can be exposed to poisons year after year without suffering some damage.

It will be noticed that Drs. Barker and Cole attribute arterio-sclerosis to faulty methods of living. They discuss in the first place excesses of all kinds, particularly over-eating, and in the second place "the elimination of harmful substances from the body," and they give excellent advice how that elimination may be stimulated. Over-eating in itself is not so very harmful provided there is no undue delay in excretion. Unfortunately, those who over-eat go to excess as a rule in animal proteins which putrefy, and if they suffer from chronic constipation, as most of them do, relieving their trouble with highly irritant medicines, they will bring about a state of severe auto-intoxication which in course of time will damage irretrievably the arteries and the heart, and in the end one of the degenerated arteries in the brain bursts or gets blocked by a clot of blood and the patient dies of apoplexy, often only after having been lamed and crippled for years. We cannot wonder that, concurrently with the increase of chronic constipation, there has been a similar and very striking increase in chronic rheumatism, heart disease, arterio-sclerosis and apoplexy.

The way in which arterio-sclerosis develops is well summarized on page 54 of *Modern Medicine*, a book by Dr. Thomas Bodley Scott, 1919, who writes:—

Another cause of hypertension (high pressure) and subsequent sclerosis (hardening of arteries) which often

go hand in hand with the "strain" of life and its results, is intestinal poisoning or auto-intoxication. Owing to various reasons, excess of food, improper food, lack of proper resting time for digestion, and alcoholic or other stimulation, there is set up a chronic dyspepsia, gastric and intestinal, which leads to more or less constant absorption of ptomaines (poisons). These affect the liver and its healthy secretion of bile, and so a vicious circle is set up; they also affect the endocrine glands, especially perhaps the thyroid and the suprarenal, and through them the vaso-motor (arterial) system; and finally some of the excretory organs, especially the kidneys, which have an extra load thrown on them, a load which they can only carry for a time without injury.

This intestinal absorption of ptomaines demands very serious attention, for it is always frustrating one's efforts to lower pressure. If the diet and life can be wisely regulated, it can soon be put right.

The greatest modern authority on heart disease, Sir James Mackenzie, wrote on page 196 of his book, *Diagnosis and Treatment in Heart Affections*, 1916:—

There are patients from whom we cannot get a definite history as to the beginning of the trouble. In these cases we must exercise care to examine the condition of the other organs. It may be laid down that the intestines furnish the most common provoking cause. Many different morbid conditions of the gut are closely associated with the circulatory system—for example, dilatation of the stomach, with and without pyloric stenosis, stasis in some portion of the intestinal tract, constipation, and so forth. It is not, of course, the organic mischief present which directly causes the patient's complaint; but the organic change interferes with the healthy action of the digestive tube, and so, by retaining the contents of the tube, permits decomposition to be set up. The products of this decomposition are absorbed and act as the poisoning agent.

CHAPTER IX

Chronic Constipation, Asthma and Tuberculosis

In tuberculosis, one of the grave conditions that the physician is called upon to combat is the marked tendency to emaciation. This is the natural result of the toxic fever from which the patient suffers and the absence of appetite which commonly exists.

According to the writer's experience, careful inquiry will almost invariably show in these cases very obstinate chronic constipation and many evidences of intestinal toxæmia.—
DR. JOHN HARVEY KELLOGG, *Auto-Intoxication*.

ASTHMA is very generally considered in the text-books as a disease caused by some mysterious "foreign protein," by some obscure inborn constitutional defect, by over-sensitiveness to certain smells, by nervous irritability, etc. Tuberculosis is very generally believed to be due to a bacillus, breathed in with the air or swallowed in the milk or other food.

Very few diseases spring from a single cause. Most so-called diseases are not in reality separate "specific" diseases, but merely symptoms which may spring from a great variety of causes. That applies to a great many maladies, among them asthma and tuberculosis, which have this in common that, as a rule, they are considered as "chest diseases." This is of course a supremely silly classification, because there are hardly any local diseases such as liver diseases, kidney diseases,

and so forth. Most diseases are general constitutional diseases which lead to some local morbid development, to a malady which is merely a symptom of a general disease. Unfortunately most doctors treat, in accordance with the teaching they have received, not the constitutional disease which causes symptoms such as a rash, an inflammation, an abscess, sleeplessness, etc., but they treat the local symptom, mistaking it for a disease.

Asthma is caused, as a rule, not by a mysterious foreign protein or some other far-fetched cause, but by a badly functioning nose or throat combined with some digestive trouble. Men and animals, such as horses, are apt to be "attacked" by asthma during the night from Sunday to Monday, when they have had a particularly good meal combined with little, or no, exercise. Over-feeding, bowel congestion, and the development of bowel poisons, go hand in hand. Dr. Arthur F. Hurst wrote on page 227 of his book, *Constipation and Allied Intestinal Disorders*, 1919:—

From my own personal experience and from observations on numerous patients, I can fully confirm Ebstein's belief in the importance of the association of constipation with asthma.

Dr. Frank Coke published in 1923 an important volume entitled, *Asthma*, in which he stated on pages 67, 79, and 147:—

Sometimes patients and their friends notice warning symptoms before an attack develops. Many patients notice, but often too late, that they are very constipated when an attack begins. Others, observing a dirtiness of the tongue and feeling liverish, will ward off the onset by the help of a sharp purge.

General Symptoms.—There is usually constipation, often a dirty tongue, and a complete voluntary starvation.

Directly an attack becomes imminent, either by the appearance of the recognized prodromal (warning) symp-

toms, or because the free immune interval is at an end, a sharp purge should be given.

Dr. Chalmers Watson issued in 1917 an excellent little volume, *Lectures on Medicine—A Handbook for Nurses*, in which we read on pages 96 and 98 :—

Indigestible articles of diet, or a hearty meal taken late in the day, are often responsible for an attack. Constipation is also an important factor.

The prevention of constipation, avoidance of any irritation of the gastro-intestinal tract, correction of any colitis which may be present, and the careful regulation of diet to prevent the stomach or bowels being at any time overloaded with solid food, with liquid food, or by gases resulting from fermentation, are of the first importance.

The three quotations given could easily be reinforced by ten or twenty similar ones. However, lack of space prevents my dealing in greater detail with the alimentary causation of asthma which unfortunately is disregarded in most textbooks, with the result that thousands of sufferers from that most distressing complaint are kept ill although they might fairly easily be cured. It is a pity that the supreme importance of food and excretion in all diseases is not sufficiently studied by the medical profession, which largely wastes its time by hunting for the obscure instead of interesting itself in the obvious.

Tuberculosis is generally believed to be a germ disease. The micro-organism of tuberculosis has been known for nearly half a century, but a scientific antidote has not yet been discovered. The laboratory has failed us. Indeed, concentration upon the study of the microbic factor has retarded the elimination of this disease, as that of cancer. Tuberculosis, like most so-called diseases, is principally due to avoidable faults of nutrition and of excretion, not to bad air, dirt, and the relatively innocent tuberculosis germ. Eskimos and negroes, who live tightly packed in in-

credibly small huts from which air is rigorously excluded, do not become tuberculous unless they are infected by the civilized. Tuberculosis is a disease of civilization, of faulty feeding and delayed excretion, as I have shown at length in my book, *Good Health and Happiness*, and it is overcome not by a scientific vaccine or serum, but by regulating the patient's food. The open-air cure is chiefly of value by increasing the appetite of the sufferer. Dr. D. C. Muthu, medical superintendent of the Mendip Hills Sanatorium for consumptives, wrote on pages 169 and 178 of his book, *Pulmonary Tuberculosis*, 1922 :—

The age of bacteriology is passing. We are beginning to see that man is profoundly different from the lower animals, that contact or contamination with micro-organisms can no more cause disease than contact with evil can make us evil, that acid-fast organisms can be present in tissues without causing any clinical symptoms of tuberculosis in man or animals, that man creates conditions of pathogenicity for micro-organisms by his own vicious environment, and that immunity is a physiological and biochemical process residing in the cells and tissues of healthy individuals and is not dependent upon bacterial infection. The reign of microbes is due to man's fear and lack of knowledge—fear lest lurking in the air he breathes and the food he eats they would cause his destruction, and that in his attempt to kill them by boiling and sterilizing his food through lack of knowledge he destroys the very vital elements that make for his nutrition and life.

In summing up the main causative factors of tuberculosis, we find that not only deficient food and vitamine conditions, but also excessive physical and mental strain can induce chemical changes which impair normal metabolism, and weaken the defensive powers of the body. Hence poverty and insanitation with their associated evils on the one hand, mental stress and anxiety on the other, by causing faulty nutrition, become the chief factors of tuberculosis. How? Here there are three schools of thought to claim our attention. The orthodox believers in contagion affirm that the seed creates the soil, and that the tubercle bacilli

cause impaired metabolism and tuberculosis. The more progressive among them, taking their clue from biochemical and biological findings, assert that disorders of nutrition bring about abnormal tissue conditions and render them susceptible to the invasion of tubercle bacilli from without. A still more advanced school believes with Bechamp that such abnormal metabolism gives rise to changes in the tissue cells, which themselves become morbid bacteria, and thus micro-organisms are the products of the body.

There is a distinct connexion between faulty feeding, delayed excretion and tuberculosis. Bowel and lungs are very frequently simultaneously affected in the tuberculous. That was shown twenty-three centuries ago by the wise Hippocrates, the Father of Medicine, whose power of observation was not dulled and sterilized by a great armoury of scientific instruments. Hippocrates noted the occurrence of diarrhœa in the later stages of pulmonary tuberculosis, and his observations were commented upon by Galen, Celsus, Aretæus and others. He wrote in his *Aphorisms*: "Phthisical persons, who are losing the hair of their head, die if diarrhœa sets in. Diarrhœa, attacking a person with phthisis, is a mortal symptom." In discussing phthisis Hippocrates pointed out that the bowels of sufferers from that disease were sometimes constipated and sometimes loose.

That there is indeed a connexion between so-called chest disease and the bowel will not surprise the readers of this book or of my other volumes in which I have taught that disease is as a rule not local but general. After all the body is not divided into a number of watertight compartments, but is a single entity.

Tuberculosis germs are universal, but the disease is not universal. Tubercle bacilli are breathed in by the town dwellers every day of their lives in uncountable millions, but they do no harm to the healthy body. If the body is wretchedly fed, thoroughly chilled, or poisoned through a foul bowel or some other centre

of putridity, its power of resistance is so greatly diminished that it cannot overcome the tubercle bacilli but is vanquished by them. Hence, tuberculosis is sometimes a disease due to faulty nutrition, sometimes a disease of exposure, sometimes a disease due to chronic bowel stagnation and auto-intoxication, sometimes a disease springing from several of these factors combined. Dr. John Harvey Kellogg wrote on page 210 of his book, *Auto-Intoxication*, 1922 :—

In tuberculosis, one of the grave conditions that the physician is called upon to combat is the marked tendency to emaciation. This is the natural result of the toxic fever from which the patient suffers and the absence of appetite which commonly exists.

According to the writer's experience, careful inquiry will almost invariably show in these cases very obstinate chronic constipation and many evidences of intestinal toxæmia. The tongue is usually coated and the skin more or less pigmented, and the urine is loaded with putrefaction products.

It is highly probable that the vulnerability of the organism to the tubercle germ is in many cases the result of the lowered vital resistance produced by chronic intestinal toxæmia. When the disease has once obtained a foothold and the kidneys are required to bear an onerous burden in the elimination of the toxins produced by the tubercle bacillus, it is certainly highly important that the kidneys should be relieved of all unnecessary burdens and that the tax on the vital organs should be made as light as possible.

Dr. Kellogg does not stand alone. We read on page 90 of Dr. A. Bryce's book, *Intestinal Toxæmia*, 1920 :—

Many perplexing pulmonary conditions present themselves which, in my opinion, can only be explained by sub-infection. For instance, not every case of consolidation of the apex of the lung is tubercular. I have watched many cases in which the absence of the tubercular bacillus from the sputum and the existence of a perfectly regular tempera-

ture directly traversed the diagnosis of phthisis pulmonalis, and delivered the miserably apprehensive patient from incarceration in a sanatorium.

The presence of constipation suggests the possibility of absorption of streptococci from the colon and their invasion of a favourable pulmonary focus, and it is surprising how frequently streptococci are to be found in the sputum. It would be idle to deny that, should the condition not be quickly relieved, the tubercle bacillus might settle down and become firmly established; but I have seen bad cases of old chronic asthmatics in whom repeated attacks of hæmoptysis (blood spitting) occurred and yet nothing but streptococci, staphylococci, and pneumococci were ever found in the sputum.

The late Sir James MacKenzie was not only the greatest heart specialist of his time, but a general practitioner and all-round physician of the first rank. Although he was startled at first by Sir Arbuthnot Lane's contention that tuberculosis and many other diseases were largely due to chronic bowel stagnation, he was wise enough not to dismiss the new doctrine with a shrug or a sneer. He resolved to consider it carefully and to observe, and he came to the conclusion that many diseases, among them tuberculosis, are indeed due very largely, or chiefly, to intestinal stagnation. He wrote, for instance, on page 213 of his thoughtful book, *The Future of Medicine*, 1919:—

When I found that Lane stated that the lowered health, resulting from intestinal stasis, rendered the individual susceptible to the tubercle bacillus, I cast my mind back on the cases of consumption that I had seen in my practice. I found, on reflection, that among these, my regular patients, a number had contracted the disease while under observation. The majority had been in poor health for months or years before the disease was suspected, and I had attended at least half a dozen for gastric ulcer, like the man whose case I have quoted. When one reflects on the complete failure which has resulted from the many attempts to

understand the true nature of consumption and its remedy, a view so reasonable as Lane's merits a very thorough investigation.

Many of the most experienced physicians, some of whom seem to be quite unacquainted with Sir Arbuthnot Lane's work and views, have come to the conclusion that there is some intimate connexion between tuberculosis and a bowel which has become diseased and poison-spreading in consequence of chronic stagnation. For instance, Dr. Charles Sabourin, who as medical director of the Durtal Sanatorium for consumptives, has had an unusually wide experience in treating the tuberculous, wrote on pages 194 and 215 of his book, *Rational Treatment of Pulmonary Tuberculosis* :—

Taking the term appendicitis in its broadest sense, i.e. including both its acute and chronic forms, there is no doubt that the disorder is very common in tuberculosis. According to certain observations that I have been recording for some years, at least one-half of our sanatorium patients are suffering, or have suffered, from appendiceal trouble, and not a few of these have already been operated. It is not the acute, severe attack, often compelling the surgeon to act, which is of greatest significance among the tuberculous, but the chronic disorder, often dating back to childhood, with alternative stages of quiescence and activity, becoming lighted up again from time to time—with or without apparent cause—as is the case with practically all disturbances related to tuberculosis. Yet the sharp, acute attack, with more or less imminent necessity of surgical intervention, is by no means to be excluded from the clinical picture of this disease.

The condition then, is generally of the chronic type.

When chronic from the start, the condition present is "appendicular distress" with its misleading reflex effects, its neighbourhood reactions, and too often, with its toxic manifestations. These children have no appetite, are sluggish in all respects, are constantly becoming nauseated, vomit on the least provocation, take an aversion to things almost without reason, and fail to develop either in girth

or stature, except in instances of pathological (diseased) growth. They are lacking in colour, and their delicate appearance naturally results in their being spoiled and fed improperly, generally with food unsuited to their needs; in spite of all attempts to regulate the bowels, one is seldom successful in inducing normal and regular movements. Some show an inveterate constipation, oftentimes unamenable to laxative drugs, enemas, intestinal irrigations, or journeys to such resorts as Chatelguyon, etc. Others suffer unaccountably from alternating constipation and diarrhœa. Others still have constantly upset bowels, with unusually soft or completely diarrhœic stools.

Often these children complain, without much attention being paid to it, of sudden pains or lancinations, either in the inguinal (groin) region; the hip, lower, in the thigh; higher up, in the kidney region, posteriorly; in the region of the hilum of the liver and the pyloric area, anteriorly, or still further along the colonic arch, down to the iliac sigmoid.

This condition persists for years. Finally an attack comes on, more acute, of the type of an acute gastric or gastro-intestinal upset, with or without jaundice; more simply, in the form of a catarrhal jaundice without predominating gastric or intestinal accompaniment; or, in the form of an enteritis, acute or subacute enterocolitis, with maximal pain over the iliac colon, etc. Clearly, since the symptoms are so distinct in the region of the right iliac fossa, there need be no hesitation in the diagnosis; the disturbance must be an attack of appendicitis. But in cases belonging to the other types, how many of these attacks remain undiagnosed!

And by the same token, how many children continue with their "appendicisms" up to adolescence without its presence having been suspected.

This picture of tuberculous appendicisms has purposely been drawn in a rather sombre shade because the condition thus described is that which actually exists in a majority of the cases. It should be added, however, that some children show less symptomatic evidence of their condition of appendicular distress, and that the physician must really examine for it to find it. These children appear to be practically normal, they develop about as usual,

eat satisfactorily, have no pain, and exhibit a fairly good complexion; like the rest, however, they are subject to the various appendicular manifestations already enumerated.

In all of these patients, I may add, with rare exceptions, careful examination discloses the tuberculous taint.

It is under these circumstances that an appendiceal attack, generally of rather subacute or sluggish type, may initiate the clinical condition certain careful observers have described under the term appendicitis simulating pulmonary tuberculosis.

The essential features of such cases are as follows: Illness sets in in an adolescent or adult. Its seat of origin is not clear. Lung symptoms appear, oftener at the apexes, but also sometimes lower down in the chest. A fixed idea is conceived that the illness is an attack of tuberculosis. Soon, however, certain indications direct attention to the abdomen, and the fact is discovered that the condition is really an attack of appendicitis. Thereafter one of two things happens. Either spontaneous recovery occurs, and at the same time the pulmonary signs which had led to the apprehension of tuberculosis disappear; or, one is led to remove the appendix, and the apparent lung disturbance likewise disappears.

Pseudoenteritis (pseudo-bowel inflammation) due to Constipation.—Nothing is more thoroughly recognized by physicians than that constipation is a locally acting factor of the first importance in muco-membranous enteritis or enterocolitis (bowel inflammation). This applies likewise among tuberculous subjects, in women especially. Not a few of these patients, chronically constipated, have been suffering for months or years from a bowel disturbance characterized either by the mere passage of mucus-laden stools, or by irregularly recurring attacks of diarrhoea, occasionally interspersed, in a few instances, with painful and subfebrile attacks of sigmoiditis. Generally these are cases of ordinary faecal retention, as may readily be ascertained and demonstrated to the patients by careful inquiry into their habits as regards defecation (stool).

Many times have I emphasized the importance of this process of "deconstipation" in consumptives, and shown

that some patients begin to improve and master their pulmonary lesions only from the day when their bowel functions have been restored to normal regularity.

It is highly significant that, according to Dr. Sabourin, appendicitis, which is one of the most characteristic consequences of chronic bowel stagnation, is particularly frequent among the tuberculous, that among the sufferers from tuberculosis one finds a good deal of "inveterate constipation, oftentimes unamenable to treatment by laxative drugs, enemas, intestinal irrigations," that there is a great deal of "tuberculous appendism," that "deconstipation in consumptives" is of the highest importance, and that "some patients begin to improve and master their pulmonary lesions only from the day when their bowel functions have been restored to normal regularity." Dr. Sabourin's testimony is obviously of the very greatest interest. Other high authorities on the practical treatment of pulmonary tuberculosis have expressed similar views without, however, influencing the short-sighted treatment given to the tuberculous by the great majority of medical men who often contemptuously refer to chronic intestinal stasis as "Lane's stunt."

Dr. D. C. Muthu wrote on pages 16 and 199 of his book, *Pulmonary Tuberculosis*, 1922 :—

How does the tubercle bacillus enter the body? Pathologists are not agreed as to the chief mode of infection. For many years pulmonary tuberculosis was believed to be caused by the inhalation of tubercle bacilli. Koch, and after him Cornet, Flügge, and many others, maintained the inhalation theory. Koch went so far as to believe that tuberculosis of intestinal origin, even in children, was rare. But Von Behring, Chauveau, Nocard, believed in the intestinal origin, and Calmette, Guérin in France, Whitla, Symmers in this country, proved by experiments that the digestive tract was the commonest source of pulmonary infection. Theodore Williams and, more recently, Sir Thomas Oliver, also maintained these views. Now the

pendulum seems to be swinging back to the inhalation theory which is supported by many authorities, including McFadyean, Cobbett, Griffith, etc.

In ill-fed children and in strumous conditions, where there is gastric derangement with fever, furred tongue, constipation, etc., an inflammatory condition of the apex may be found associated with râles, which disappear when the patient is put under a proper diet, a course of salts and anti-dyspeptic treatment, and a life in the open air. We know that a severe gastric crisis in children may be followed by an attack of tubercular meningitis. All these ill-defined and dyspeptic cases suggest that there is a close connexion between early tuberculosis and gastric disturbance.

Dr. Albert Calmette, director of the great Pasteur Institute, stated on page 168 of his important work, *Tubercle Bacillus Infection* :—

The many experimental facts already cited attest that, as regards tuberculosis, all portals of entry through which the bacilli may pass into the lymphatic or into the blood circulation permit of the invasion of the lung. But they prove further, as Von Behring stated, and as I myself affirmed with Ravenal, Aufrecht, Klebs and many other investigators, that in all susceptible animals, man included, tuberculosis, in all its various localizations, glandular, pulmonary, etc., particularly in its slowly evolutive forms, results in an immense majority of cases, from an infection which is primarily lymphatic and later of the blood, and which originates in the absorption of tubercle bacilli from the digestive tract, principally through the buccal, pharyngeal and intestinal mucous membranes.

It must be stated, because true, first, that for man, the principal factor in infection is the bacillus freshly derived from tuberculous man; and secondly, that the path of digestive absorption is one of those which are open to the exterior and which offers itself most frequently and most readily to the penetration of the virus into the body.

To the layman tuberculosis is mainly, if not solely, a disease of the lungs, and so it is to the more short-

sighted doctors. Tuberculosis, being considered a local disease, is treated chiefly by local means. If the lungs are affected the patient is given an abundance of fresh air, good food, etc. However, as I have shown throughout this book and in my volume, *Good Health and Happiness—A New Science of Health*, most diseases are constitutional and general. This applies of course to tuberculosis as well. Tuberculous lesions are apt to appear in any portion of the body, although the lungs are a favoured dwelling and breeding-place of the tubercle bacilli.

Lately the medical profession has learned not only that there is an intimate connexion between the bowels and the lungs, as Hippocrates pointed out twenty-three centuries ago, but that intestinal tuberculosis is a disease-symptom of extraordinarily great importance, and those who have made a special study of tuberculosis of the bowel have become puzzled to know whether tuberculosis of the lungs infects the bowel, or whether the tuberculous bowel infects the lung. Doctor Lawrason Brown, consulting physician at the great Trudeau Sanatorium, and Dr. Homer L. Sampson are strongly of opinion that tuberculosis of the lungs starts not in the lungs but in the intestines, that all the current theories as to our being infected by breathing in the germs of tuberculosis, which promptly attack the lungs, are mistaken. At any rate, they have made out an exceedingly strong case in favour of their contention. We read on page 93 of their book, *Intestinal Tuberculosis*, 1926:—

After weighing all the evidence, it seems highly probable that the number of tubercle bacilli present in the sputum and, consequently, in the fæces, is less important than the prolonged contact of tubercle bacilli with the mucous membrane, whether in large or small numbers, is the most important etiological (causative) factor in the production of secondary intestinal tuberculosis.

Does intestinal tuberculosis precede, follow, or occur simultaneously with the formation of pulmonary cavities? The problem has not yet been worked out, but some facts might lead us to hold that the process of cavity formation in lung and bowel wall may go on simultaneously, and is due to some change in reaction capacity which occurs throughout the body.

Again bearing in mind Romer's work on the production of pulmonary cavities in experimental animals, it would appear possible that, not until large numbers of tubercle bacilli are absorbed through the ulcerated areas in the intestines, gain entrance to the venous blood and finally reach the lungs, would pulmonary cavity formation proceed in some patients. Tubercle bacilli, we know, are constantly passing through the walls of the intact and normal intestines. In experimental animals this has been proved by Ravenal and others. The occurrence of tuberculosis of the mesenteric glands in patients with pulmonary tuberculosis may be assumed as presumptive evidence that the glandular infection has occurred through the intestinal wall which may be intact. The difficulty of producing intestinal tuberculosis in animals, even when emulsions containing enormous quantities of tubercle bacilli are dropped down the œsophagus, and the great frequency of intestinal tuberculosis in advanced pulmonary tuberculosis in man, would point to the fact that the mere presence of tubercle bacilli in the intestinal contents, or even in the intestinal wall, is not sufficient to produce ulcerative intestinal tuberculosis. The explanation may lie in the fact that in pulmonary tuberculosis the swallowed sputum, overfeeding, indiscretions in diet and other causes may set up a catarrhal condition of the mucous membrane and so favour entry and implantation of the tubercle bacilli. In any case it appears that mere contact of the intestinal wall with the tubercle bacilli is not sufficient to produce intestinal tuberculosis either in man or in animals.

Autopsy figures show that at death intestinal tuberculosis occurs in from 50 to 80 per cent, or even more, of all cases of pulmonary tuberculosis.

How exceedingly far-reaching is the influence of the bowel upon the lungs in the case of tuberculosis is

strongly pointed out by Dr. Sabourin on page 190 of his book already mentioned, in which he describes the differences between those tuberculosis sufferers who are troubled with chronic constipation and those who are free from that complaint. We read:—

Laymen seldom realize the serious disadvantages, or even dangers, attending inveterate constipation. Among the tuberculous, as elsewhere, there often result headaches, migraine, gastric disturbances, sensations of weight, pain, flatulence, malodorous breath, loss of appetite, more or less persistent nausea, and subsequently abdominal disorder, colic, borborygmi (bowel noises), lumbar (back) pain, and griping, the latter more pronounced at the menstrual periods. A special manifestation in lung cases, however, is the reaction of the stercoral (bowel) intoxication upon the affected pulmonary tissues and upon the circulation and nervous system.

I have repeatedly described elsewhere the unfavourable reactive effects upon the lungs which constitute a most serious disadvantage of constipation, but it may not be amiss to refer to the subject again.

There are some patients, male or female, especially the latter, who, harbouring pulmonary lesions in an advanced stage of recovery, are unable to complete the closure of these lesions from the mere fact that they are constipated, even though their complete freedom from fever during many months has shown all active tuberculous disease to have disappeared. I could cite remarkable examples of patients with very discrete apical (top of lungs) lesions who, after having been treated for more or less marked bronchitis, with or without asthma, for months or even several years, recovered in a week from all these disturbances from the sole fact of having re-educated their bowel function. The important thing is that the existence of this state of affairs in the individual case should be recognized. After apparent recovery from their disease, these patients of course retain their pulmonary lesions, but in a sluggish or even "dry" form, requiring nothing more than an intelligently applied hygienic treatment to obtain a definite cure.

These reactive phenomena in the lung, as I likewise pointed out, may occur in an acute form as a result of quite a number of the intestinal disturbances which undermine the resisting powers of consumptives. All this is related to the question of tuberculous "issues" from the lungs. I shall limit myself here to pointing out the rather large number of tuberculous patients who owe to regulation of their bowel function the disappearance of cardiac and nervous disturbances so intense and lasting as to have rendered their lives an affliction, and which dissuaded them completely from the purpose of making an attempt to get cured of their lung condition.

The general public is well acquainted with tuberculosis of the lungs and has heard as a rule something about tuberculosis of the bones. The former is treated chiefly by fresh air, which is supposed to cure the lungs, and the latter by sunlight, artificial sunlight, etc., which are believed to cure the lesions of the bones. However, as tuberculosis is not a local disease, but a general disease of the body, we cannot be surprised that short-sighted treatment of the lungs or of the bones by these routine means has only too often very disappointing results. The body is not divided into strictly isolated compartments as the textbooks teach us, but is a single unit. Blood and the other fluids course continually through the body, and it is foolish to believe that lung disease can be cured by "putting the lungs right" or bone disease by attending to the bones. When a foul bowel has led to pulmonary tuberculosis, or to the tubercular degeneration of the bones in some weak spot or spots, medical science can obviously effect a cure only by dealing with the fundamental cause, the bowel, not by tinkering with one of its most noticeable symptoms, calling that symptom lung disease, bone disease, etc. Sir Arbuthnot Lane has cured numerous apparently incurable sufferers from tuberculosis, not by the fashionable fresh air and sunlight cure, artificial sunlight, cod liver oil, etc.,

but by straightening out and regulating a diseased and involved bowel by surgical means which in no other way could be made to function normally. He wrote on page 90 of his volume, *The Operative Treatment of Chronic Intestinal Stasis* :—

Perhaps tubercle is the disease that most commonly calls for operative treatment. I have now operated on a considerable number of cases of tubercle, such as tubercular ulcers of the intestine, huge tubercular glands in the mesentery, tubercular disease of the joints, with or without added infection, tubercular disease of the lungs, etc. The operation of colectomy has been successful in all except in advanced disease of the lung.

A man, aged 22 years, was sent to me in order that I might amputate his hand and wrist.

For six or seven months the right wrist had been very much swollen and very painful. During this time it had been treated by absolute rest, diet, and drugs without its steady increase in size, pain, and uselessness being at all influenced by treatment.

Except for his wrist he considered himself perfectly well. I sent him to Dr. Jordan, who showed the destructive changes in the wrist, and also that the delay in his drainage scheme was very marked.

A photograph shows a mass of enlarged glands in the chest above the root of the right lung. Presumably these glands were tuberculous. The patient exhibited marked evidence (both radiographic and clinical) of chronic intestinal stasis, and this was confirmed at the operation.

At no time had the patient ever complained of pain or discomfort in his abdomen, yet on examination not only was the end of the ileum found to be very tender, but many of the lower coils were very distinctly sore on pressure. Some suspicious lumps could be felt in the mesentery of the ileum. Colectomy was performed.

Very extensive ulceration of the ileum existed, and the floor of the lowest ulcer, which was in the immediate vicinity of the cæcum, was almost perforated. There were many large tubercular glands in the mesentery.

The ileum was divided about eight inches from its ter-

mination, two only of the ulcers being removed. He made an uninterrupted recovery, and left the hospital three weeks after the operation.

He was shown at the American Congress in July, 1914, when the swelling of the wrist had almost entirely disappeared.

CHAPTER X

Indigestion, Stomach Diseases, Cancer, Diabetes

It will surprise many to learn how very commonly there is imperfect intestinal elimination in the subjects of cancer, both in the very early, formative stages and throughout the whole course of the disease, which is further accentuated when the time comes for them to take morphine. So commonly have I recorded this, especially in private patients, that I might almost say that it is the rule.—DR. L. D. BULKELEY, *Medical Treatment of Cancer*.

INDIGESTION and constipation are the most widespread complaints among the civilized. As a rule people tell us that they are far more troubled with indigestion than with constipation. Some complain that they have a "weak" stomach, while others say that they have a "sour" stomach. The majority are far more worried about their stomachs than about their bowels. The latter can be "put right" according to the general notion, with pills, a dose of salts, an enema, or a combination of these, but the stomach is not so easily pacified.

Every experienced doctor is aware that most so-called stomach troubles do not arise in the stomach. In the vast majority of cases indigestion, attributed to a delicate stomach, is generated in another organ.

There is a wonderful co-operating mechanism which controls the whole alimentary tract from our mouth to the exit. As soon as we see tempting food, our

mouth begins to water. The salivary glands start pouring out saliva to deal with the food to come. Almost at the same time telegraphic orders are sent from the brain to the stomach to prepare for the reception of the food, and that organ pours out large quantities of digestive juice which is to prepare, sterilize, soften or dissolve the food which will presently arrive. Further orders are telegraphed, without our knowing anything about it, from the brain all along the twenty-seven feet of our bowels: "Get ready and make room." Along the whole tract of the bowels rhythmical contractions take place to move the food towards the exit so as to be able to receive the contents of the stomach which are to be further elaborated in the bowels, for digestion and absorption take place principally in the small bowel.

If there is a breakdown on a single-line railway, orders are telegraphed to stop trains or to divert them to sidings, because otherwise dozens of goods trains and passenger trains will become mixed up in an inextricable tangle close to the spot where the breakdown has taken place. On similar principles the twenty-seven feet of our alimentary tract are managed. If there is constipation, the brain is notified from the bowel, and orders are telegraphed thence to the stomach not to release the food until there is a vacant space for its reception. The result is that the stagnating mass of food lying in the stomach turns sour, bitter, putrid, poisonous. Hence people in that condition complain about indigestion, flatulence, acidity, sour eructations, pressure of gas on the heart, palpitations, rushing of blood to the head, headache, cold shivers, icy hands, a sense of weight, etc.

As the body is not divided into a number of hermetically closed compartments, but as all is movement, all is fluid, all is intercommunicating, the stomach is not merely filled with a sour, fermenting, seething mass of food which gives the discomforts mentioned.

Organisms of putrefaction generated in the bowel are not satisfied with their narrow domicile, but they go on extensive journeys of exploration. They travel to the stomach and convert that organ into a veritable sewer chamber. In case of serious bowel stagnation part of the foul masses putrefying in the gut, energetically seek an outlet, and, being unable to escape by the ordinary route, try to leave their place of imprisonment in the opposite direction. Thus the stomach may be filled with a horrible mixture of fermenting food and of putrid bowel matter.

Modern medicine strives to be "scientific." Every one of our bodily troubles has to be explained by the presence of a "specific microbe" which has "attacked us," by the faulty action of the wonderful chemical processes of the body, about which chemists and physiologists know very little, by the faulty functioning of one or several of the mysterious glands of internal secretion about which science knows as little, or by still more mysterious psychological factors about which scientists know even less. We cannot wonder that modern textbooks, which have carefully divided the body into countless compartments, each of which is supposed to be afflicted with special diseases of its own, quite irrespective of its neighbours, discuss "diseases of the stomach" as if they were caused by the stomach or limited to the stomach, as if there was no connexion between the stomach and its neighbour, the bowel. We read, for instance, under the heading "Indigestion," in the well-known textbook, *A Short Practice of Medicine*, 1919, written by Dr. R. A. Fleming, Professor of Medicine in Edinburgh, on pages 189-190:—

There are many causes of indigestion, but the following tabulated list is suggestive:—

1. Huge meals.
2. Badly masticated food, whether from the habit of bolting food or from bad teeth.

3. Excessive dilution of the stomach contents, as for instance by drinking too much water, thereby rendering the gastric juice less efficacious.
4. Exercise too soon after meals.
5. Unsuitable food, which may be due to (a) a badly proportioned dietary whether the excess be of carbohydrates or nitrogenous ingredients, (b) bad cooking, (c) certain indigestible articles of diet, such as crabs and lobsters, which have very long muscle fibres, and (d) excessive quantities of tea, etc.
6. Insufficient time between meals, especially if these meals are large.
7. Interference with stomach movements, owing to tight-lacing.
8. Excitement and emotion which may interfere with the process of digestion.
9. Existing pathological conditions constitute a numerous list. Bacteria in the mouth or about the teeth may interfere with both salivary and peptic digestion, anæmia and debility after any disease often predispose to indigestion, while local stomach affections, such as gastric ulcer, cancer, and gastrostasis or dilatation, are almost invariably associated with it.
10. Over-stimulation of the stomach by an excessive use of pepper, spices, pickles, and alcohol; closely associated as regards its detrimental effect is the consumption of undiluted spirits between meals.

The learned professor enumerates ten causes of indigestion, and he limits his list to large and unsuitable meals, too much drinking, over-exertion, excitement, tight-lacing and various diseases, among them ulcer and cancer of the stomach and the inevitable "bacteria." In his lengthy list there is not a single word about indigestion being caused by commonplace constipation, although in nine cases out of ten this is the case.

If an inexperienced medical practitioner happens to be a typical laboratory product and has read up the

subject in Fleming's textbook or some similar tome, and a man suffering with ordinary indigestion consults him, he will carefully inquire about the character of his meals, etc., and if he finds no cause in that direction he will either go microbe-hunting or will start searching for gastric ulcer or cancer of the stomach, etc. The unfortunate sufferer may at first be given a stomach tonic which for the time will probably allay pain and flatulence, but he will not be told anything about the bowels. After a few weeks of experimental treatment with various stomach medicines, the doctor may start microbe-chasing in earnest. He will have the stomach contents analysed for microbes, the stools for blood from a possible ulcer, and, if the patient can afford it, there will be a large number of elaborate chemical tests of the urine, of the saliva, of the stomach juice and so forth and so on. The whole man-power of a number of laboratories may be mobilized and concentrated upon the simple digestive trouble of a single individual. The most scientific, the most elaborate and the most recondite physical and metaphysical investigations will be made, and the most modern treatment will be tried in accordance with the findings of the laboratory sages. However, the poor patient's indigestion will become worse and worse until at last a high authority is consulted with regard to the "intractable case." If the consultant, disregarding the laboratory findings, empties the patient's bowels in the old-fashioned way and puts them permanently into proper working order, he will rapidly recover.

In approximately 90 per cent of the cases, stomach trouble means bowel trouble. Sir Berkeley Moynihan, the President of the Royal College of Surgeons, wrote on page 82 of his *Essays on Surgical Subjects*, 1921:—

The stomach is an organ full of sympathy for other sufferers. Hardly any of the viscera connected with the intestine, or the bowel itself, can be affected without the

stomach playing its part in the disturbance also. This it does by pouring out an excess of secretion, and by tumultuous and irregular activities. It speaks so loudly that its voice only is heard.

The same high authority told us on page 7 of his book, *The Pathology of the Living*, 1910 :—

I believe that time will show that possibly all, certainly nearly all, of the cases of protracted and recurring "dyspepsia" are due not to vices of secretion, though indeed these may be present, but to organic changes in one or other of the viscera. What a world of observations have been conducted upon the changes in the quantity and quality of the gastric secretions! Yet all the while the stomach was weeping only because of, and in sympathy with, the damage unceasingly inflicted upon other parts. It is all as though one should attempt to discover the place and the nature of a foreign body in the eye by an examination of the tears that flow so freely.

In the textbook of Dr. R. A. Fleming and many similar productions, indigestion is attributed, among other causes, to ulcer of the stomach. Of course, ulcer of the stomach causes discomfort, pain, and occasionally great suffering, which the afflicted readily describe as "indigestion." However, the sequence is not ulcer of the stomach—indigestion; but is the other way round. Indigestion in stomach and bowels—the two usually go together—cause stagnation throughout the alimentary tract, and putrefaction following upon it leads to the outbreak of stomachic ulcers. The stomach, being filled with foul decomposing material, degenerates, and an ulcer is formed or a number of ulcers appear, exactly as ulcers are apt to break out on or around a foul abrasion or wound on the outside of the body. Unfortunately many of these gastric ulcers become malignant, become cancerous. Dr. Alfred C. Jordan, the eminent X-ray specialist, wrote on page 145 of his excellent book, *Chronic Intestinal Stasis*, 1923 :—

A good many chronic gastric ulcers become cancerous. This statement has often been denied, but radiography affords positive proof of its accuracy. Early cases of cancer often show the typical X-ray appearance of a chronic gastric ulcer, with slight alterations due to the malignant involvement. In fairly advanced cases, where a tumour can be felt, the typical appearance of ulcer is still present, but grosser changes of shape can be seen. Sometimes the skiagram shows a veritable caricature of the picture of a chronic ulcer. In cases with a palpable tumour the origin from a chronic ulcer is more obvious in the X-ray picture than on direct inspection (at operation or at a post-mortem). Another proof—a very important one—all the patients exhibit the symptoms of chronic intestinal stasis, and the distended duodenum can usually be shown on the same picture as the stomach.

Thus we have a further illustration of the importance of chronic intestinal stasis in the etiology (causation) of malignant disease. When stasis is recognized by medical practitioners in its early stages, and rectified, there will be far less cancer, not only of the stomach and large intestines, but also of the bile-ducts, the pancreas, and the breasts. All must agree, therefore, that the early recognition and treatment of the primary disease—the intestinal stasis—is of the utmost importance.

Dr. Jordan stands by no means alone in his opinion. Sir Berkeley Moynihan, for instance, wrote on page 93 of his book, *Essays on Surgical Subjects* :—

In more than half the cases of carcinoma of the stomach treated by operation there is a history suggestive of the previous existence and of the recurrence of a gastric ulcer.

In about 25 to 30 per cent of the cases of carcinoma of the stomach removed by operation the claim that the malignant change is imposed upon a simple one appears on pathological grounds to be irrefutable; and every surgeon knows that in a small number—not less, certainly, than 10 per cent—of the cases of gastric ulcer, to all appearances simple in character, a microscopic examination of the specimen removed by operation reveals the early stage of carcinoma.

Readers of this volume who realize that diseases are almost invariably not local but general, are merely local outbreaks following upon general degeneration of the body, and who have learnt that the fouling of the whole body from a putrid, filthy, poisonous sewer in our abdomen leads to diseases innumerable, will have a shrewd suspicion that cancer is not a "local disease" as the textbooks tell us, that it is not due to "chronic irritation" which may follow a gastric ulcer, a scratchy tooth, etc., but a constitutional disease, a blood disease due to chronic poisoning of the body in some form or other. I have shown this so very fully in my book, *Cancer—How it is Caused, How it can be Prevented*, that I would refer my readers who are interested in the subject to that volume. Its study may enable many of them to escape that terrible affliction. However, I would give a few interesting extracts showing that there are medical men who realize that the present conception of cancer is wrong, that cancer is not a local disease, due to some chronic irritation or some mysterious germ.

If the current explanation was right, cancer should be approximately as frequent among the civilized as among the uncivilized. However, I have shown very fully in my book that cancer is a disease of civilization and that it is practically unknown among primitive races leading primitive lives, although chronic irritation is often far more frequent among primitive natives than among civilized people. Dr. A. Bryce wrote on page 102 of his book, *Intestinal Toxæmia*, 1920 :—

Is Cancer a Blood Disease?—The one positive fact that we know is that it practically never attacks any of the actively motile organs of the body, such as the heart or the muscles, and that it usually prefers to attack the well-favoured, well-fed, healthy-looking, even plethoric individuals rather than the thin, ascetic, apparently asthenic (feeble) and anæmic people who, though active, do not appear to be in the pink of health.

It less frequently attacks those who subsist almost entirely on a fleshless diet or live the simple life like aborigines mainly on vegetables and fruit.

Hence tissues and organs not subject to stasis escape its ravages, whilst those supplied with an excess of pabulum succumb.

It appears to me that the most probable causative factor is the disturbance of metabolism occasioned by the absorption of toxins (poisons) naturally formed in the intestinal canal. The great variety of toxins found there, which are constantly invading the blood and tissues of all, even in health, and perhaps in greatest numbers in the so-called most healthy-looking, are destroyed by the active tissues of the body. But on the other hand, these toxins deleteriously affect stagnant or weakened parts, such as those damaged by injury or previous disease, and constrain the cells or connective tissue of the part to assume a malignant character.

Dr. L. D. Bulkeley, head of the New York Cancer Hospital, states in his work, *Medical Treatment of Cancer*, 1919 :—

From long observation I am convinced that the action of the bowels plays a most important part in connexion with cancer. I am not aware of any laboratory studies which have been made concerning the intestinal discharge in this disease, and my deductions are entirely clinical (practical).

Sir Arbuthnot Lane, in one of his lectures on intestinal stasis, has recently emphasized the fact that one of the terminal results of this may be cancer, and the more I have considered the subject, in connexion with very many patients, the more the truth of this statement is impressed upon me.

It will surprise many to learn how very commonly there is imperfect intestinal elimination in the subjects of cancer, both in the very early, formative stages and throughout the whole course of the disease, which is further accentuated when the time comes for them to take morphine. So commonly have I recorded this, especially in private patients, that I might almost say that it is the rule, and

time and again I have noticed that if real constipation occurs there is an increase of pain in a cancerous lesion, with more or less of relief from active purgation.

The constant occurrence of this imperfect intestinal elimination points strongly to the possibility that the toxins produced by the millions of micro-organisms generated through intestinal stasis and faecal putrefaction are the real, incidental cause of cancer. While this is only a clinical conclusion, it is hoped that laboratory research turned in this direction will confirm the finding.

Cancer of the bowel is very frequent and its connexion with constipation is obvious. Sir W. H. Allchin stated in his article on "Diseases of the Intestines" in Quain's *Dictionary of Medicine*, 1894 :—

It has been estimated that in 80 per cent of the cases of intestinal cancer the rectum is affected; in 11.5 the colon; in 4.2 the cæcum, appendix and ileo-cæcal valve; and in 4.3 the small intestine. There is undoubtedly a predilection for those spots where any delay may occur in the passage of the intestinal contents, such as the flexures of the large intestine, especially the sigmoid.

The late Dr. Robert Bell stated during a discussion of Alimentary Toxæmia, at the Royal Society of Medicine in 1913 :—

I trust it may not be considered out of place if I say it seems to me a little short-sighted to occupy so much time in endeavouring to name and classify the various bacteria which invade the intestinal canal, for, after all, they are very protean in their character; their appearance and potency, either for good or evil, depending largely upon their pabulum (food) and environment. It is essential, therefore, that the diet should be so arranged as to encourage only the innocent, and not the malevolent, form of these useful or pernicious organisms, seeing the form they assume depends so much upon the soil upon which they are cultivated. Moreover, the resulting products of decomposition, for which they are responsible, and which we call toxins (poisons), without doubt depend entirely upon the nature

of the food supplied. It therefore should be one's aim to admit only such articles of diet into one's mouth, that the unutilized portion, when it finds its way into the colon, will give rise to the most innocent form of the products of decomposition.

In conclusion, I should like to state, as a matter of a fairly extensive experience, that I have never come across a solitary case of cancer in which the patient had not been a victim of chronic constipation, and I feel confident that cancer is not the only disease upon which an insanitary condition of the colon acts as a potent predisposing cause.

There is obviously a close and causal connexion between chronic bowel stagnation and diabetes. Dr. Arthur F. Hurst wrote in his book, *Constipation and Allied Intestinal Disorders*, London, 1919, on page 237 :—

Constipation is very frequent in diabetes; Saundby states that he has seldom made an autopsy on a diabetic patient without finding the colon filled with hard masses of fæces. The chief cause of the constipation is the increased resistance offered by the fæces, which are hard and dry as a result of the excessive secretion of water by the kidneys. The absence of vegetable food from the diet and the administration of opium or its derivatives are frequently accessory factors.

Dr. A. C. Jordan stated in his excellent work, *Chronic Intestinal Stasis*, London, 1923, on page 169 :—

There is much evidence that in glycosuria (sugar in urine) we have usually to deal with the subjects of chronic intestinal stasis. Indican is found in the urine, and also xanthin bases and tyrosin. Frequently we find the glycosuria associated with chronic gastro-intestinal disorders, which have existed for years. The keynote of successful treatment in glycosuria is the relief of the constipation which invariably exists.

Transitory glycosuria is well known to occur in rheumatoid arthritis, Graves'-disease, and chronic dyspepsia. There have been many cases of glycosuria in the subjects of

“appendicitis.” These complaints are among the end-results of chronic intestinal stasis.

My attention was first drawn to the connexion between glycosuria and chronic intestinal stasis in a tragic way. A young officer, aged 22, was sent to me for investigation of the alimentary tract. He had been perfectly well till four months previously, when he had an attack of “appendicitis.” An abscess formed in the right ilia fossa, and was opened at Gibraltar, and a pint of pus let out. Phlebitis of the left leg came on a fortnight after the operation, with thrombosis of the femoral vein. This kept him in bed seven weeks. The wound healed except for a small stitch sinus, and he made a good recovery. Ten days before coming to me, he became constipated and flatulent, passing wind by the mouth and by the rectum. There was no pain.

The most striking result of the X-ray investigation with bismuth was the discovery of extreme delay in the lower end of the ileum, the last coils of which were enormously dilated. Most of the bismuth had reached the lower end of the ileum after four and a half hours, but there was still bismuth in the ileum after forty-nine hours. The dilated terminal coil of the ileum lay in front of the cæcum. On pushing this coil toward the middle line of the body the ileo-cæcal entrance was uncovered, and the appendix was shown lying beneath the cæcum. Subsequently there was found to be great retardation in the passage of the bismuth through the large intestine, and practically the whole of it was still in the transverse colon after ninety-nine hours.

He was admitted to a nursing home with a view to operation. On examining his urine it was found, to the surprise of all concerned, to contain a large percentage of sugar. He went downhill very rapidly, and died in a few days of diabetic coma—no operation having been performed.

CHAPTER XI

Chronic Bowel Stagnation and Skin Diseases

A system saturated with toxins absorbed from an overloaded colon, is by no means an uncommon cause of a large number of apparently very different skin diseases.

Briefly, the treatment of a large number of general skin eruptions resolves itself into the scientific treatment of chronic constipation.—DR. SIBLEY, *The Treatment of Diseases of the Skin*.

¶ **NUMERABLE** posters and advertisements in the **I** press recommend to ladies a large number of expensive soaps, lotions, skin foods, hair washes, scalp ointments, skin tonics, hair tonics, etc., which are to perform miracles in improving their appearance. If these things did really improve their complexion or hair it would indeed be miraculous. Even the best soap can do nothing more than take the dirt off one's skin. A good complexion, a pure skin and good hair do not come from the outside, but are made in the inside of our body. The promises that So-and-so's soap, skin food or hair tonic will marvellously improve the skin or hair are fraudulent. Those who wish to have a milkmaid's complexion must lead a milkmaid's life. They must keep early hours, live on plain, wholesome food, go early to bed, eat plenty of vegetables and fruit, as the country girls do, and drink plenty of milk or buttermilk. Town girls, who overeat on constipating and blood-heating sweets, chocolates, rich ices, etc., who take strong tea and coffee,

smoke cigarettes, keep late hours, take many hot baths but have little exercise, except dancing in stuffy, dusty rooms, become congested, constipated, auto-intoxicated, and they advertise the effect of their unwholesome lives and the defects of their bowels by a pale, greyish, yellowish, impure, pimply, blotchy, unwholesome complexion, pale lips and gums, dull, lustreless, brittle hair. They may buy the most expensive skin soaps, skin lotions, skin foods, hair tonics, spend hours in "beauty parlours," have their faces steamed, massaged, electrically treated, anointed, use artificial sunlight or ultra-violet rays and wear masks at night, but they will not obtain a milkmaid's complexion. Three weeks of open-air exercise and healthy, natural food will vastly improve both their skin and hair, even if they have to use common soap for the former and ordinary olive oil for the latter.

In his excellent book, *Colon Hygiene*, 1922, Dr. John Harvey Kellogg wittily wrote: "A clean colon is worth a ton of cosmetics." A clean colon, cleansed not by irritating poisons, called laxatives, health salts, etc., but by pure and purifying natural non-heating food, gives babies their wonderful baby complexion. The schoolgirl's complexion varies very much from that of the baby's. Brilliant complexions are possessed by the naturally-living girls whose intestines function naturally. The others have a pasty, sallow, dirty-looking, cadaverous skin which no outward application, however "scientific" and however costly, will improve.

The pimples, blotches, discolorations and other blemishes which are characteristic of the chronically constipated, are, rightly considered, a mild form of skin disease. These relatively trifling outbreaks of the skin are preceded by a pallor, sallowness, poor texture, etc., which show that the skin is not in good health. An unhealthy skin is a weak skin. It cannot offer adequate resistance to those micro-organisms

which cause real, and sometimes very serious, skin troubles. People with healthy skins get very rarely "infected" by one of the numerous and extremely mysterious skin diseases.

If slight constipation is apt to give people a sallow, unwholesome and slightly diseased skin, severe and chronic bowel stagnation is apt to lead not only to the internal poisoning of the body, but also to the poisoning of the skin. It leads not only to general auto-intoxication and numerous internal symptom-diseases, but also to skin intoxication, skin poisoning, skin degeneration and many serious and intractable skin diseases which only too often baffle the physician who tries to cure them with an antiseptic lotion, a germicidal ointment, or some other outward application. A trouble which comes from the outside may perhaps be cured from the outside if the inside of the body is not affected, but a trouble which comes from the inside and which happens to affect the outside of our body by producing in the skin a symptom miscalled a disease, cannot possibly be cured by medically treating the skin. After all, most skin afflictions and infections, like so many of the diseases previously discussed, are not local diseases, are not skin diseases properly so called. They are merely outward symptoms of an impaired condition of the body in general through faulty nutrition, delayed excretion and consequent self-poisoning. It follows that treatment of many of the symptom-diseases of the skin with powerful germicidal washes, ointments, etc., cannot do any good to the patient, but may cause great injury.

Nature often tries to get rid of internal poisons by driving them out through the skin, causing an eruption, eczema, pustules, an abscess, etc. If a medical man, trying to stop this process with powerful medicaments, succeeds in blocking up the safety valves of the body, serious internal disease may develop. He has driven in the disease, not driven it out. Moreover, many of

the so-called germicides, antiseptics, etc., are acutely poisonous. Among the favoured "remedies" given to sufferers from skin disease is arsenic, which, whether outwardly or inwardly applied, is apt to lead to arsenic cancer, as I have shown very fully in my book, *Cancer—How it is caused, How it can be Prevented*, even if that deadly drug is given in extremely small medicinal doses. If arsenic in extremely small medicinal quantities may lead to such a terrible reaction in the body, we may safely conclude that a great number of the remaining powerful poisons which are rashly prescribed to sufferers from skin diseases may have similarly disastrous consequences although these may become apparent only after twenty or thirty years, an interval which usually elapses between the commencement of the use of arsenicated medicines and ointments and the outbreak of arsenic cancer.

Dr. A. Bryce wrote on pages 20 and 22 of his book, *Intestinal Toxæmia*, 1920 :—

Psoriasis, lichen planus, pityriasis rosea, erythema, eczema, are due to the excretions of toxins from the skin, and can be cured by the restricted rice diet, introduced by Bulkley. Probably lupus erythematosus, acne rosacea, purpura, and pigmentation of the skin are due to the same cause.

It is very interesting and significant to note that many kinds of skin disease make no progress towards recovery until the patient has been well dosed with an alkaline laxative mixture such as rhubarb and soda, or carbonate of bismuth with alkalis and calomel.

Dr. A. Combe wrote on page 180 of his book, *Intestinal Auto-Intoxication*, 1908, under the heading "Autotoxic Cutaneous (Skin) Diseases" :—

Cutaneous diseases are frequent in all auto-intoxicated conditions, but especially in intestinal auto-intoxications.

The question of the influence of the auto-intoxication, caused by abnormalities of digestion, metabolism (tissue

change) and excretion upon the genesis of a large number of dermatoses (skin affections) was discussed in Berlin at the last Congress of Dermatology and Syphilography.

The most authorized representatives of modern dermatological science resolved the question affirmatively. Radcliffe Crocker of London, Duncan Bulkley of New York, Jadassohn of Berne, Brocq of Paris, stated that in a large number of diseases of the skin, the lesions were caused by the cutaneous elimination of toxic substances.

Some act upon the skin by direct deposit, others by irritating the nerve terminations, others finally by their elimination through the cutaneous glands cause their inflammation. Undoubtedly these toxic substances do not all come from the intestine. The abnormalities in the nutritional exchanges (metabolism), the insufficiency of the antitoxic glands, the incompetency of the emunctories (excretory organs) of the organism. All these causes may, like the intestine, produce toxic substances capable of reacting on the skin and determining in it the same disorders, the same eruptions, in a word, the same dermatoses.

Observations reveal, Brocq states—and his observations are based on more than 2,000 urinary analyses—that, if alimentation is excessive, or too scanty, of bad quality, or not adapted to the surroundings and climate in which the individual lives, that if these aliments are badly digested, and particularly if badly elaborated in the organism (slowing of the albuminoid combustion), or if the excretory functions (kidneys, lungs) are vitiated, there will gradually accumulate in the fluids and organs of the economy various excrementitious products more or less toxic, which leave the organism morbidly vulnerable, and this is manifested in the skin by various dermatoses.

From this it appears that, while intestinal auto-intoxication takes a pre-eminent part among the productive factors of auto-toxins, it is by no means an exclusive one.

The appearance and the nature of the dermatosis but rarely indicate whether its origin is intestinal or not.

The cutaneous disorders are sometimes under the direct dependence of the intestinal infection, but more often not. While the intestinal toxins provoke more particularly certain dermatoses (prurigo, strophulus, urticaris, acne, certain eczemas), it would be a great error to conclude as

to the cause from the nature of the lesion, for only the examination and analysis of the urine can definitely answer the question.

The views of both Dr. Bryce and the late Dr. Combe may appear to my readers of doubtful value, for neither of them was a skin specialist. It may therefore be suspected that both Dr. Combe and Dr. Bryce went in pardonable enthusiasm too far. Let us then listen to a few well-known skin specialists. In 1913, during an important discussion on alimentary toxæmia at the Royal Society of Medicine, Dr. W. Knowsley Sibley, a well-known authority, stated:—

A very large number of skin eruptions are the external manifestations of a morbid condition of the general system, directly due to a toxæmia (poisoning) of the blood, the result of the absorption of morbid products from the gastrointestinal tract.

The secret of a good complexion is usually to be found in a properly regulated diet in accordance with the requirements of the individual case, and one so regulated as to ensure an efficient evacuation of all the organs of excretion, especially of the bowels, thus not permitting the by-products of digestion to remain long enough in the body to be in any way absorbed into the general system. The first sign of a want of balance between assimilation and excretion is usually to be found in the colour and condition of the skin, especially in certain regions of the body. A pasty or muddy complexion is often one of the signs of mal-assimilation, or of absorption from the contents of the large bowel, or both. The results of so-called hepatic (liver) derangements show themselves very quickly in the colour of the skin, and point to digestive disturbances of various degrees.

A large group of skin phenomena under the heading of urticarias, or nettle-rashes, has long been recognized as the direct result of gastro-intestinal influences and are designated "stomach rashes." Many other common diseases, both acute and chronic, are also determined by similar processes. Consider in the first place eczema, one of the commonest diseases the dermatologist is called upon

to treat. There is no doubt that the condition of the gastro-intestinal tract plays a leading part in a large number of these cases, and that proper attention to the regulation of the diet and of the bowels is necessary for satisfactory treatment.

The popular expression of a "gouty eczema," used to denote an eczema in a gouty subject, has much to commend it, for most of the phenomena associated with the term gout or goutiness, are but the varied expressions of a want of balance between the input and the output, or of a mal-assimilation and delayed excretion of the by-products of digestion, giving rise to various systemic disturbances, and among them numerous dermatoses.

Psoriasis, again, is often undoubtedly the result of toxic influences, derived from the gastro-intestinal tract, and a complete change in the diet from a too nitrogenous to a vegetarian one, will often cure an old-standing case. So again, acne, in its various forms, is generally associated with an overloaded bowel, and free purgation is often the most efficient treatment. The same may be said of many cases of purpura. Even in many diseases obviously due to the invasion of micro-organisms such as staphylococci, streptococci, or perhaps even the acne bacillus, a toxic condition of the blood, due to a systemic poisoning from faecal (stool) or other morbid absorption, is necessary for the growth and development of these organisms. From my experience I should say that, speaking generally, the immunity of the skin to micro-organisms is directly impaired by an obstructed drainage system.

With the exception of a few specifics for skin diseases, which are themselves the result of specific organisms, either local or general, practically all the other old and modern drugs prescribed by dermatologists act primarily and essentially as gastro-intestinal disinfectants or laxatives, or both. Moreover, all drugs which do not act in this direction are deleterious and positively injurious in the majority of cases.

Dr. Sibley's emphatically expressed opinion that chronic constipation is the cause of numerous very serious skin diseases may not appear absolutely convincing to my readers. It is quite true that, in a dis-

cussion, men of science are apt to make rash and risky statements, being carried away by their feelings or by the opposition or by the desire to convince the audience. A scientific man may make exaggerations in speaking, but he will be very careful in stating his opinion in writing. Seven years after the Royal Society discussion, Dr. Sibley published an important book, *The Treatment of Diseases of the Skin*, 1920, 3rd Edition, in which he unhesitatingly stated, on pages 27 and 49 :—

A system saturated with toxins absorbed from an over-loaded colon, is by no means an uncommon cause of a large number of apparently very different skin diseases.

In fact, it would be difficult, in the present state of our knowledge, to name many manifestations (excluding, of course, the obvious parasitical diseases, both animal and vegetable) which are not in many cases the external expression of a general unhealthy condition of the blood supplying the region, the result of a mal-assimilation of the nutritive processes, or more generally the consequence of a delayed excretion of the waste products of the digestive metabolism.

There may be chronic gastritis due to errors of diet, especially from the abuse of alcohol, producing a catarrhal condition, affecting not only the stomach, but also the hepatic system, and extending its baneful influences on into the duodenum and small intestines. More frequently still, the colon is found to be loaded with old-standing faecal accumulations, gradual absorption from which produces a general systemic poisoning.

Briefly, the treatment of a large number of general skin eruptions resolves itself into the scientific treatment of chronic constipation.

It is by no means unusual to detect large faecal accumulations in the colon in patients who have a daily action of the bowels, and this often occurs in individuals least suspected of carrying about in their bodies enough excretory matter to poison many persons.

I have often remarked that most, if not all, of the drugs which have been found of benefit in the treatment of general

diseases of the skin act chiefly, if not entirely, as laxatives, aperients, or disinfectants of the gastro-intestinal tract, and I believe their beneficial effect is due to their direct local action on the gastro-intestinal contents, rather than to any specific action of the preparations themselves, giving rise to the improvement, or cure, of the skin condition. The most popular drug with the older school of dermatologists was arsenic, which was prescribed as a specific for most of the more or less chronic forms of skin diseases. Arsenical preparations are among the most powerful bactericidal agents known to chemists, and it is undoubtedly to this and their irritating, and therefore laxative, effects on the intestinal mucous membrane, that their so-called specific action is probably due. Mercury, a specific for other skin diseases than those produced by syphilis, is essentially a most powerful germ destroyer. Liquor hydrarg. perchlor.—corrosive sublimate—even in very dilute solution, has strong bactericidal properties, and acts as a powerful and far-reaching intestinal cleanser.

I maintain, then, that with the exception of a few specifics for skin diseases, which are themselves the result of specific organisms either local or general, practically all the other old and modern drugs prescribed by dermatologists act primarily and essentially as gastro-intestinal disinfectants, laxatives, or both. Moreover, all drugs which do not act in this direction are deleterious and positively injurious in the majority of cases.

I have gone through all the principal textbooks on skin diseases published in England, America, Germany, France and elsewhere. Some are in the form of huge single volumes of a thousand pages or more, while other books are veritable encyclopædias composed of a number of volumes. In the usual way adopted by medical writers, skin diseases are treated as if they were specific and purely local complaints possessed of particular characteristics, caused by a specific micro-organism and other causes with particular and characteristic consequences and so forth which are learnedly and lengthily discussed. The older skin diseases are frequently given new and more scientific names, and

these old diseases are divided and subdivided into ten, twenty or thirty characteristic sub-diseases. Unfortunately, in most of these textbooks the all-important factor of bowel causation is either treated very lightly or is completely ignored. The majority of the authors tell us that each of these specific diseases should receive special treatment by special poisonous application inside and outside. Of course, there are exceptions to this general rule. For instance, we read in Dr. Milton B. Hartzell's important work, *Diseases of the Skin: Their Pathology and Treatment*, 2nd Edition, 1919, on pages 26 and 38:—

Disease of the skin occurs as the direct or indirect consequence of a considerable number of constitutional and visceral diseases.

That there is a more or less intimate relationship between gastro-intestinal disease and disease of the skin has long been observed, but we are still lacking exact information, for the most part, concerning the precise nature of this relationship, which is, without doubt, a very complicated one. The several forms of acne, urticaria, some eczemas, and pruritus, are examples of cutaneous disease which are frequently associated with, and more or less markedly influenced by, diseases of the stomach and intestines.

In many affections, perhaps in most, both local and internal remedies are indicated, and frequently both are equally valuable.

Laxatives and cathartics (purgatives) form a most valuable group of remedies in the treatment of many affections of the skin, and are especially useful in eczema and acne. The saline laxatives may be most conveniently and agreeably administered in the shape of some one of the many waters which are to be found in the market. Fractional doses of calomel followed by a laxative are often of the greatest use in eczema, especially the eczemas of children.

Dr. Hartzell's views coincide with those of Dr. Sibley.

One of the best known handbooks on skin diseases is

Dr. Henry W. Stelwagon's *A Treatise on Diseases of the Skin*, of which numerous editions have appeared. We read in the 9th Edition, 1921, on pages 76 and 1094:—

The most potent conditions in many cases, exciting or predisposing in character, are to be found in digestive disturbance. This acts by either reflex action or by, in some manner, interfering with metabolism (tissue change), or by direct influence through the resulting nutritional impairment, or by the probably more frequent development of ferments or toxins—auto-intoxication—to which last Pick, Hallopeau, and others have directed attention. I am firmly convinced that this last is one of the most important causes, and probably the sole cause, in many instances of erythema multiforme, urticaria, and similar affections—developing spontaneously in the gastro-products which had previously, or subsequent to their ingestion, undergone putrefactive or other change; and in the production of which constipation is often an important contributory factor.

Aperients find more than occasional use in cutaneous disease, and the maintenance of a free action of the bowels, especially in the inflammatory affections, cannot be over-estimated, as aiding in getting rid of toxic products, and usually improving digestion as well.

Erythema Multiforme.—The disease is not uncommon, constituting between 0.5 and 1 per cent of all cases. The causes which lead to erythema multiforme are still obscure. My own experience would give weight to the belief that the development of intestinal toxins, and probably toxins from other sources, is an all-important factor in many cases.

Treatment.—It is difficult to state how far treatment influences the course of the disease, but that it has no effect whatsoever, as many contend, is not in accord with my own observations. As it is probable that the development of intestinal toxins plays an important rôle in many of these cases, the treatment most commonly to be prescribed, and which in my experience is the most satisfactory, should consist of such remedies as sodium salicylate, salol, thymol, and sodium benzoate, in fairly full dosage. Conjointly

with one or more of these an initial purgative should be given.

Psoriasis.—Rheumatic and gouty tendencies are often of seeming etiologic (causative) import (Bourdillon, Gerhardt, Bulkley, Shoemaker, Corlett, Liveing, and others), and when pronounced, suggest the line of treatment likely to be most successful; in some extreme cases, more particularly those cases developing into dermatitis exfoliativa, and in those recorded as psoriasis rupiodes, arthritis symptoms, especially of a character of arthritis deformans, have been associated. Defective kidney elimination is also sometimes an element in those predisposed. Digestive and nutritive disturbances of all kinds are certainly provocative as to recurrences and of probable causative influence.

Eczema.—Digestive debility, dyspepsia, and its frequent accompaniment, constipation, must also be given a high place in discussing the causes of the disease—in fact, in my experience stand first in importance, such conditions often bringing on an eczematous attack in those of eczematous tendency, and which responds rapidly as soon as relatively perfect digestion has been re-established. Important an etiologic (causative) factor as it is in adults, it is even of greater influence in eczema of infants and children.

Admitting a parasitic agent, there are to be considered the predisposing causes which bring about the proper condition of the skin (proper soil) for parasitic invasion or prejudicial action, and without which contributory causes the parasitic agents may be found in the skin without becoming pathogenic (disease-creating).

The most easily demonstrable contributory causes in many cases, and which patients themselves soon recognize, are constipation and digestive disturbances. Night or day indulgence in indigestible foods, in beer or other alcoholic drinks, will often provoke a fresh outcropping in those with acne tendency.

As I do not wish to weary the reader by further lengthy quotations from the writings of eminent skin specialists, and as some may believe that specialists often have narrow, prejudiced views, I would add to the opinions of two physicians, Dr. Combe and Dr.

Bryce, previously given, the opinion of an eminent practical surgeon. One of the most exasperating skin diseases known to medicine is pruritus ani, or itching at the bowel exit. The itching is so severe that sufferers cannot sleep and are driven to desperation and occasionally to insanity. Surgeons are applied to by the sufferers, when treatment by physicians and skin specialists has failed. As a last resource the surgeon can stop the intolerable itching by cutting out a large flap of skin. Pruritus, like the vast majority of skin diseases, and like the vast majority of diseases of every kind, is due to the combined effect of faulty feeding and delayed excretion; it is a stomach and bowel disease, not merely a local skin disease, for the sufferers from pruritus commonly are victims of gout, rheumatism, inflammation of the bladder, diabetes, diseases of the liver, etc., all of which are known to be sequels of faulty feeding and delayed excretion, as has been shown in this volume. The eminent surgeon, Mr. J. P. Lockhart-Mummery, wrote on pages 602-605 of his book, *Diseases of the Rectum and Colon* :—

Pruritus ani is a peculiar condition in that it has only one symptom—namely, itching. It has no properly established pathology (disease history), and we are still very much in the dark as to its cause or the best method of treating it. It is by no means the trivial complaint its name would seem to imply. The irritation is often so intense as to be almost unbearable and to drive the patient to the verge of madness.

Pruritus is certainly much more common in men than in women, though it is by no means rare in the latter. Dr. Adler of Philadelphia stated that he found the patients suffering from pruritus ani in his practice to be men in 95 per cent of all cases. My own experience would not point to so large a preponderance of the male sex.

Pruritus is very likely to occur in persons of the plethoric type, who habitually indulge in excessive eating and drinking, and it is an undoubted fact that when such

patients are put upon a strict regimen the condition is always improved, or, in other and simpler words, there is a close association between pruritus and dyspepsia.

Among the constitutional conditions which are frequently ascribed as the cause of pruritus must be mentioned gout, rheumatism, nephritis, diabetes, and disease of the liver. With regard to gout and rheumatism, I am inclined to think that they are characteristic of the type of patient who suffers from pruritus rather than causes of the disease.

There are some patients who undoubtedly get attacks of pruritus as the result of indulgence in certain forms of food. Such patients say that they always have an attack of pruritus after eating shell-fish, or it may be strawberries; others, again, say that indulgence in alcohol, or tea or coffee, will bring on an attack, and excessive smoking has the same result in some cases.

CHAPTER XII

Diseases of the Teeth and of the Eyes

Many hundreds of examinations of the saliva of persons with coated tongues have been made in the laboratories of the Battle Creek Sanitarium. Colon bacteria are always found in the mouths of persons with badly coated tongues. The saliva of such persons, when allowed to remain for some days in a closely corked bottle, acquires a very pronounced faecal odour.

As a result of bacteria in the mouth the teeth undergo decay and the gums become the seat of bacterial growth. These pernicious organisms even penetrate to the roots of the teeth, producing abscesses and infections which may insidiously attack almost every organ and structure in the body. Rheumatism, neuritis, disease of the eyes, even gastric ulcer, duodenal ulcer, gall-bladder disease and appendicitis, may find their origin in these infections of the mouth.—
DR. JOHN HARVEY KELLOGG, *The New Dietetics*.

AT first sight it may seem far-fetched, unlikely and unbelievable, that bowel conditions may affect the gums and teeth. However, this is undoubtedly the case. The alimentary canal extends from the mouth to the lower exit, and serious degeneration in an important part of the tract naturally affects in the first instance the portions most intimately connected with the injured section. If the morbid processes connected with chronic bowel stagnation are apt to spread upward and to affect the stomach, as has conclusively been shown in Chapter X, why then should the trouble stop at the stomach and not travel further upward towards the mouth? Besides, the

health of the gums and of the teeth depends of course on the character of their daily nutriment. Gums and teeth which are steadily fed with wholesome blood and other body juices are more likely to be healthy than gums and teeth which are continually supplied with unwholesome material, with a mixture in which there is a considerable proportion of poisonous material. If auto-intoxication from the bowel leads to the depreciation and degeneration of the entire body, why should the teeth form an exception to the general rule ?

In the opinion of many authorities the disease micro-organisms bred in a foul bowel rapidly travel through the body in every direction, and particularly towards the stomach and the mouth. Dr. John Harvey Kellogg wrote in his excellent book, *The New Dietetics*, 1923, on page 551 :—

Many hundreds of examinations of the saliva of persons with coated tongues have been made in the laboratories of the Battle Creek Sanitarium. Colon bacteria are always found in the mouths of persons with badly coated tongues. The saliva of such persons, when allowed to remain for some days in a closely corked bottle, acquires a very pronounced faecal odour.

Fluid obtained from the duodenum by means of an Einhorn tube likewise shows in many cases colon germs in great numbers. These facts, taken together, clearly indicate that in persons suffering from so-called auto-intoxication the whole alimentary canal from mouth to rectum is swarming with poison-forming bacteria which are continually polluting the body with their offensive and highly toxic excretions.

The explanation of this wide dispersal of bacteria through the alimentary tract appears to be found in some recent remarkable observations made by Grützner, Bernheim and others who have shown that bacteria, lycopodium, and fine particles of various sorts introduced into the rectum may be carried to the mouth within a few hours either by reverse peristalsis or possibly

through the activity of the villi, or by both these means (Alvarez).

As a result of bacteria in the mouth the teeth undergo decay and the gums become the seat of bacterial growth. These pernicious organisms even penetrate to the roots of the teeth, producing abscesses and infections which may insidiously attack almost every organ and structure in the body. Rheumatism, neuritis, disease of the eyes, even gastric ulcer, duodenal ulcer, gall-bladder disease and appendicitis, may find their origin in these infections of the mouth.

According to Dr. Kellogg, the micro-organisms of disease bred in the stagnant bowel rapidly travel towards the mouth and attack the gums and teeth. It follows that those are mistaken who assert that rheumatism and consequent heart disease, gastric ulcer and other very serious troubles are caused by dental defects. Degeneration of teeth and gums does not take place spontaneously. In all degenerative processes of the body there is a cause. It follows that we cannot save our health by having all our teeth pulled out if the true centre of infection is situated not in the teeth and gums, but in the bowel.

Unfortunately modern medical science and modern specialization have perverted the medical art. Every portion of the body is, according to the textbooks, supposed to be liable to local diseases due to particular causes, such as a micro-organism. In consequence of over-specialization, the dentist often knows nothing about excretion and digestion, the bowel specialist often knows nothing about the teeth, and the brain specialist may know nothing about either bowels or teeth. It follows that many of the greatest specialists who know everything there is to be known about their own speciality know little or nothing about the most important inter-connected bodily processes. Over-specialization is ruining medicine.

The fact that bowel conditions are of the greatest

importance with regard to the health of the gums and teeth is known only to a few doctors and dentists, while the great majority, if told of these facts, will believe that that statement is so absurd as to provoke either loud laughter or silent contempt. However, some distinguished specialists have come to the conclusion that the doctrine of Sir Arbuthnot Lane is right and that the current teaching of science is disastrously wrong. For instance, a distinguished dentist, Mr. Harry Forsyth, contributed a paper to Sir Arbuthnot Lane's book, *The Operative Treatment of Chronic Intestinal Stasis*, 1918, in which we read on page 327 :—

I have observed many cases of pyorrhœa which were apparently associated with intestinal auto-intoxication in which recurrences after local treatment were early and frequent. When the intestinal stasis had been relieved by some operation such as appendicectomy, division of kink, local treatment and paraffin effected a permanent cure of the infection of the gums. I have known cases of pyorrhœa get well independently of local treatment with the use of paraffin alone, and others which have recovered after operations upon the gastro-intestinal tract.

While some eminent dentists have admitted that chronic bowel stagnation is bound to have disastrous consequences to the gums and teeth, there are prominent bowel specialists who have made the observation that bowel stagnation is bound to produce disease in the mouth. For instance, Dr. Charles D. Aaron, Professor of Gastro-enterology at Detroit, wrote on page 290 of his book, *Diseases of the Digestive Organs*, 1920, 3rd Edition :—

Chronic constipation produces alimentary toxæmia. The absorption of toxins poisons the whole system, inducing functional disturbances and organic diseases of a more or less serious nature. The oral cavity, providing a fruitful soil, soon becomes infected. On the other hand, pus which

has formed around the teeth and gums is carried into the intestinal canal, inducing or aggravating a general septic condition. The whole process is known as intestinal toxæmia. The absorption of toxins from the alimentary tract devitalizes the system and lowers its powers of resistance. Both oral sepsis and intestinal stasis must be corrected in order to bring about recovery in many obscure diseases.

Hygiene of the mouth is one of the most important considerations in the treatment of diseases of the digestive organs. Experimenters have been able to induce in the lower animals gastric and duodenal ulcer, cholecystitis, pancreatitis, appendicitis, neuritis, oöphoritis, rheumatism, arthritis deformans, goitre, enlarged lymph glands, and local and general diseases, by intravenous injection of specific micro-organisms taken from the mouth.

Unfortunately, many of those whose lives are made miserable with tooth-decay and pyorrhœa try to keep themselves in health by going frequently to the dentist's, having their teeth stopped and scaled, having treatment for pyorrhœa, cleaning their teeth assiduously with sterilized tooth brushes and with antiseptic tooth-pastes, mouth-washes, dental floss, etc., instead of attending to the defects of their bowel, which is causing all the time inflammatory and poisonous developments in the mouth. The latter can, of course, not be overcome by the dentist's art as long as the foul bowel is allowed to do mischief.

Many other high authorities might be quoted with regard to the inter-connection between a disease-breeding bowel and the diseases of the gums and teeth. However, lack of space forbids going into this very obvious matter more closely.

If a chronically stagnant and toxic bowel is able to poison our gums and teeth, we can scarcely be surprised if it inflicts similar injury upon our eyes. There is a good reason for the fact that primitive races leading primitive lives have an excellent digestion, an easy excretion, perfect teeth and faultless eyes, while the

civilized suffer universally from impaired digestion, crippled bowels, unhealthy teeth and gums, and poor eyesight. Sir Arbuthnot Lane's opinion that a toxic bowel will infect and gravely damage gums, teeth and eyes, is shared by some of the more far-sighted members of the profession. For instance, during the discussion on alimentary toxæmia at the Royal Society of Medicine in 1913, Mr. W. Lang, a leading oculist, made the following interesting and emphatic statement with regard to the effect of a toxic bowel in bringing about both pyorrhœa and impairment or total loss of vision :—

Until the medical profession at large recognize the importance of pyorrhœa and the gravity of leaving it untreated, one cannot reasonably expect the dental branch of the profession to do so either, especially as they are being taught to treat the mouth in a way that makes it impossible to avoid creating sepsis, by putting on crowns, and building bars and bridges that cannot be kept clean. Until this policy is reversed and everything is done to enable the mouth to be kept aseptic, the loss of sight, and even total blindness, due to pyorrhœa, will continue to occur.

A Dominion surgeon brought his young wife for rapid loss of central vision in one eye ; with it she could only count fingers. No definite cause for the central choroiditis could be found beyond very slight pyorrhœa, which was very soon cured. Improvement did not take place, and the vision of the second eye began to fail from the same affection. In a week it had fallen from 5/5 to 5/18, during which time it had been decided to remove the appendix, which had been acutely inflamed three years before, though now it was pronounced to be quiet. It was also decided to examine the gall-bladder, large bowel, ovaries and uterus at the operation ; they were all found to be healthy, and the appendix was free from adhesions, but had a bulbous end, and on being examined showed evidence of past inflammation. Just over three weeks after the operation, which was performed by Mr. Gordon Taylor, the vision of the first affected eye was 5/9 and that of the

second 5/5. Four months later the vision of each eye was normal.

A physician in good health went for a day's fishing in mid-October, 1908, before beginning his duties as an examiner at the College. When walking home in the evening he felt some discomfort in one eye, and although this got worse he continued for about ten days to read the candidates' papers with the other eye. When he came to me at the end of the examination he had a severe iritis with several adhesions; on being asked where was the source of sepsis he said he had a discharge from a molar tooth, which had existed for more than two years, and had followed an abscess at the root. This root was removed within twelve hours, the iritis subsided quickly under atropine and hot bathings, and on the ninth day the eye was white and the vision normal. A week ago he told me he had had no further trouble and it was now the better eye.

During the same discussion Mr. Ernest Clarke, another well-known oculist, pointed out that bowel stagnation leads to premature senile developments of the eye, to the hardening of the lens, which may rapidly lead to blindness or to a condition approximating blindness. Mr. Clarke stated:—

Two females, one aged 15½ and the other aged 44, had the same accommodative power—viz. 7D. In the girl this is about 4D, worse than normal, and in the woman 2D, better than normal. The girl was too young to show any outward sign of ageing, but she had a most unhealthy appearance and confessed to habitual constipation, and asserted that the bowels were often open only twice a week. On the other hand, the woman aged 44 looked ten years younger and had always paid the most scrupulous attention to the bowels, and for some time past had taken a daily small dose of petroleum oil.

To show how short a time is required to induce premature senility by intestinal stasis, I cite a man who two years ago, aged then 48, had 5D, accommodative power. In the interval he has suffered very badly with intestinal stasis, which he has very often not troubled to overcome (he had

never heard of petroleum oil !). His accommodative power is now only just over 2D ! He has lost more than half his accommodative power in two years. There was no other cause ascertainable except the intestinal one to account for his ageing ten years in two years.

A man, aged 48, with an accommodative power below the normal, who had no suspicion that he was suffering from constipation, had appendicitis. Lane operated and found a very bad state, pointing to many years of habitual stasis. On his recovery he was made to attend most carefully to the bowels, and especially to take lubricants, such as petroleum oil. The result is that now, after some years, his accommodative power is three years above the average, and he looks and is a much younger man than his years. This case also shows that by treatment we can give back a patient some of his lost youth by arresting the senile process in the lens and often in other parts of the body.

I think I have said enough to prove that premature hardening of the lens is a very constant sequela (consequence) of intestinal stasis, that this is a very useful and easily ascertained index, and that accompanying this process premature senile changes are occurring in other tissues of the body which may often be unrecognizable for some time, and that removal of the intestinal stasis tends to an arrest of the sclerosing (hardening) processes.

The opinions expressed by Messrs. Lang and Clarke with regard to the inter-connexion of bowel degeneration and eye disease were supported by another well-known oculist, Mr. S. H. Browning, who stated on the same occasion :—

The only reason we have at the present time for stating that eye diseases are the result of alimentary toxæmia is that certain eye conditions improve, or are cured, when the diseased condition of the alimentary tract is improved or cured.

In our present state of knowledge the disease which gives rise to the most eye trouble is pyorrhœa alveolaris, and it is now recognized, thanks to insistence of Mr. Lang,

that this condition is quite a common cause of iritis and irido-cyclitis, as well as of retinitis and choroiditis.

Some time ago I saw with Mr. Worth a young girl with severe irido-cyclitis (eye inflammation) and abundant keratitis profunda in whom the Wassermann and tuberculin reactions were negative; her teeth were good, her urine normal, and she had no leucorrhœa (white discharge). Examination of her fæces gave a nearly pure culture of pneumococcus. A vaccine was prepared and the patient treated with it. The improvement was immediate and the patient is now quite well. The girl was constipated and suitable treatment was carried out at the same time.

Another case was that of a man who was invalided home from China with double irido-cyclitis, the right eye being almost useless. He had been under treatment for some time without benefit. I examined the man for every source of infection and found that he had in his fæces a non-lactose-fermenting organism which was agglutinated by his blood serum in high dilution, and which proved to be a type of Flexner's dysentery bacillus. The man was reported to have had amœbic dysentery about two years previously while in China. After the seventh injection of a vaccine made from this organism his doctor wrote to me that his left eye was now quite well, and that the joint trouble that he was suffering from was also much improved.

Bacterial infection of the bladder is now taking its place as one of the causes of eye disease of a tonic nature, and I have seen several cases where the eye disease has improved with the treatment of the cystitis (bladder inflammation) by means of vaccines.

I believe that these eye conditions are toxic in origin and are not due to the presence of any organism in the eye, and I have examined the fluid from the anterior chamber of the eye in many cases without finding any organisms.

The largest and the most important work which deals with the connexion between the diseases of the eye and the diseases of the body is Professor A. Groenouw's monumental volume, *Beziehungen der Allgemeinleiden und Organerkrankungen zu Veränderungen und Krankheiten des Sehorganes*, Berlin, 1920.

In that book of 1,361 large pages the relation between diseases in general and the diseases of the eye is treated. We are shown that diseases of the eye may be caused through diseases of the lungs, diseases of the heart and of the general circulation, through diseases of the arteries and veins, through diseases of the mouth, of the throat, the stomach, of the bowels, through diseases of the kidneys and the bladder, through diseases of the female organs, through child-bearing, through skin diseases, through diseases of the bones, the joints and the muscles, through anæmia, thyroid diseases, diabetes, gout, measles, scarlatina, smallpox, malaria, sleeping sickness, typhoid, cholera, and numerous other maladies. As practically all diseases affect the eyes directly or indirectly, it is only natural that chronic constipation and consequent auto-intoxication should also have a profound influence upon the organ of vision. The writer tells us on page 3:—

The relations between diseases of the eye and general diseases are manifold, and may be classified into four groups:

1. Affections of other parts of the body, which directly or indirectly influence the eye.
2. Bodily affections which influence the eye through one of its nerves, which becomes diseased.
3. Eye troubles caused through diseases of the heart or the blood-vessels, which deteriorate the circulation, and which act directly or through the indirect action of the deterioration of the blood, which causes the blood to carry harmful materials to the eye, which have been received from other organs.
4. Eye diseases, which affect in their turn either the whole body or particular organs of the body.

We read on page 176, under the heading "Gastro-Intestinal Auto-Intoxication":—

Although disturbances of the activity of the bowel, particularly constipation, have been made responsible for various diseases of the eye for a long time, this matter has

received increased attention only of late. However, the connexion between auto-intoxication and eye disease has not been actually cleared up.

Gastro-intestinal auto-intoxication consists in abnormal changes which are taking place in the digestive apparatus, which creates poisonous matter that is absorbed in such large quantities by the body as to create symptoms of disease. Products of normal digestion may have a similar effect if they are created in abnormal quantities and are absorbed into the system. The most important indicator of protein putrefaction in the bowel is considered to be indicanuria.

In many cases it is not at all easy to determine whether eye disease is indeed caused by auto-intoxication. The diagnosis can as a rule be made only if disturbances of digestion in stomach and bowels and analysis of the urine force us to conclude that eye disease must be caused by auto-intoxication because no other causes can be discovered. Not infrequently one is able to conclude that eye disease has been caused by auto-intoxication because it often happens that eye diseases are rapidly cured when the regulation of the bowels has been effected, or when a disease of the digestive canal has been dealt with.

Among the diseases of the eye connected with gastro-intestinal troubles are hordeola, blepharitis, œdema of the eyelids, conjunctivitis, diseases of the cornea, keratitis parenchymatosa, herpes corneæ, neuroparalytic keratitis, skleritis, irido-cyclitis, diseases of the optic nerve, such as neuritis optica, neuritis retrobulbaris, atrophy of the optic nerve, glaucoma, short-sightedness, neuralgia of the eye, retinitis septica, and many others.

The author shows that many of these eye diseases have been experimentally produced in animals by the injection of bowel poisons, and he tells us that many have rapidly been cured by regulating the bowels, altering the diet, etc. These statements are supported by references to a vast scientific literature.

Most people who suffer from constipation are vaguely aware that there is an inter-connexion between the bowel and the eye. They often notice a weakening

of the eyesight when their intestines are in disorder, and a distinct improvement with the return of regularity through a change in the diet, a stay in the country coupled with a great deal of exercise which favours the excretion of poisons from the body, etc. I have experienced these changes in my own body, and I have observed them in numerous people. Nearly everybody knows a girl who was very anæmic, who suffered from intolerable headaches, and who was sent by the doctor to the oculist and given glasses to wear, the headache being attributed to eye-strain and defective sight. Correction of the bowels through dieting often leads to the disappearance not only of the anæmia and various other symptom-diseases, but also to an improvement of the eye. Some day the girl breaks her glasses and she notices that she can see quite well without them, that the dreaded headache does not return. She goes to the oculist and she learns that her eyesight has become normal. I have met with a considerable number of such cases.

Some years ago a much-cherished little dog of mine, who then was ten years old, apparently began to get blind. I took him to two veterinary surgeons who carefully studied the case and told me that the dog was indeed going blind with age, that nothing could be done, that it was a very ordinary occurrence. When I told my friend, Sir Arbuthnot Lane, about it, he immediately suggested that I should regulate his bowels by an appropriate diet, etc. I did so. The eyes of my little dog rapidly cleared up, and now, when he is years older, his eyesight is as good as it has ever been. His eyes, which were getting milky and opaque, became once more as clear as crystal.

The lens of the eye is one of the most wonderful organs imaginable. It is not a dead piece of machinery, like the lens of a microscope, but a living, throbbing organ which is immediately affected by changes in the general health of the individual. These changes

can now actually be seen by a wonderful microscopic apparatus whereby the lens of the living eye can be studied through powerful magnifying glasses. I have referred to this interesting matter in detail in my book, *Good Health and Happiness—A New Science of Health*.

CHAPTER XIII

Chronic Bowel Stagnation and Women's Diseases

Auto-intoxication plays so large a part in the development of diseases of the female genito-urinary apparatus that the gynæcologist may also be regarded as a product of intestinal stasis. If women were not imperfectly drained, the gynæcologist would not have been evolved.—SIR ARBUTHNOT LANE, Discussion on Alimentary Toxæmia at Royal Society of Medicine, 1913.

IN women chronic bowel stagnation is more frequent than in men and is often far more severe. Women have a larger abdomen than men and are consequently able to retain a much larger quantity of excreta. Besides, they are more refined, more bashful. Little boys in company will readily retire if they feel a physical need. Little girls often refuse to do so, and many grown-up women behave similarly. Besides, women rely to a larger extent than men on clogging and constipating foods, such as pastries, chocolates etc., they take less physical exercise which stimulates the activity of the bowel, they rarely take cold baths which have a similar effect, and many women squeeze in their waist with the result that their abdominal muscles waste and shrink and that the natural working of the bowel is impeded still further. In view of these circumstances we cannot wonder that women are far more constipated than men.

I have shown in the previous chapters that chronic

bowel stagnation leads to an enormous number of discomforts, disorders, defects and diseases of every kind. Chronic constipation, accompanied by auto-intoxication, weakens the body as a whole and thus predisposes it for innumerable diseases, diminishes the natural power of resistance and creates countless serious symptoms and sequels which are usually called "diseases" and which are supposed to be brought about by mysterious micro-organisms, glandular degenerations, defects in the chemistry of the body, abstruse psychological causes, etc.

A body which has been poisoned through and through in some way or the other naturally falls an easy prey to disease. However, as a rule disease does not attack the body as a whole. Almost invariably an unwholesome body, although unwholesome right through, develops a local disease, such as eczema, tuberculosis of the lungs, cancer in the breast, gout in the big toe, a defect of the eye, a disorder of the stomach, degeneration of the blood, weakening of the bones, hardening of the arteries, or some other local or partial so-called "disease."

The body is a single unit, as I have shown at length in my book *Good Health and Happiness—A New Science of Health*. Although the body may be poisoned throughout, symptoms, miscalled disease, may be purely local or partial. These local or partial effects of general bodily degeneration can easily be explained. If a chain is stretched to the utmost, it gives way by the bursting of the weakest link. If the self-poisoned individual has a weak spot in the liver through faulty feeding the liver may be "attacked." If his kidneys have been enfeebled by dietetic indiscretion, etc., the symptom and sequel of auto-intoxication may be called kidney disease. Besides, certain so-called disease micro-organisms possess what the scientists call "affinities." Some of these organisms, having obtained entry into the body, seek their way to the

lungs, as do tuberculosis germs. Others choose for their domicile and breeding-place the red blood corpuscles, certain nerves, etc. Thus the general weakening and depreciation of the body leads to a local morbid development which doctors may call a local "disease," but which is in reality a symptom of some general trouble.

As I have shown in the foregoing chapters, chronic bowel stagnation poisons the body as a whole and may lead to symptom-diseases of any organ or any structure, to so-called bodily disease or to equally misnamed mental disease. Women are in many respects far more delicate, far more sensitive and far more vulnerable than men, and one of the most sensitive portions of a woman is naturally the all-important generative apparatus, which easily becomes infected from the bowel. Besides, an overloaded and displaced bowel is apt to press heavily upon neighbouring organs, nerves and arteries, producing pain, inflammation, degeneration, etc. We can therefore not wonder that the chronically constipated women of civilization suffer from almost innumerable female complaints, called diseases, from which their primitive sisters, who feed and excrete in accordance with the laws of nature, are entirely, or almost entirely, free.

The fact that chronic constipation and auto-intoxication are largely responsible for the diseases peculiar to women is perfectly clear and obvious. The consulting rooms of gynæcologists are filled with constipated women who are life-long sufferers from so-called "diseases" of the uterus, vulva, vagina, ovaries, etc. If one inquires among the women who are absolutely free from female complaints, one finds as a rule that they have normally functioning bowels.

A local so-called disease, such as the degeneration of the uterus or its displacement, an inflammation or a growth, may be made to disappear by local treatment, but if that local disease is merely a symptom

of a general disease, such as auto-intoxication from the bowel, another organ or structure will presently be involved or the apparently innocent growth may become malignant, may turn to cancer. It is little use treating a sexual complaint of a woman by local or partial "remedies" if her trouble is merely the logical consequence of chronic constipation which, unless permanently relieved, is bound to lead to partial or local outbreaks in the abdomen or in the breast or in some other part of the body.

Sir Arbuthnot Lane, whose experience of women's diseases has been unusually wide and varied, who is an observer of rare perspicacity and who possesses intuition, vision and grasp of broad general principles to an extraordinary extent, showed in an address, during a discussion on alimentary toxæmia at the Royal Society of Medicine in 1913, that chronic bowel stagnation and auto-intoxication lead to the most far-reaching consequences to women, affecting their physical appearance and attractiveness and their bodily and mental health to an extraordinary extent. He stated :—

Auto-intoxication plays so large a part in the development of diseases of the female genito-urinary apparatus that the gynæcologist may also be regarded as a product of intestinal stasis. If women were not imperfectly drained, the gynæcologist would not have been evolved.

As regards the attractiveness of the woman, a matter of vital importance to her happiness, the loss of fat is a most serious factor. The formation of wrinkles, the prominence of bones, etc., are all most distressing and conspicuous features. The buttocks also become flat and flaccid, instead of firm and round, partly because of the disappearance of fat which enters so largely into their formation and partly because of the associated degeneration of the large gluteal muscles. The breasts also waste and flop downwards, and the whole form and contour of the woman alters conspicuously in the most objectionable manner.

The skin undergoes remarkable changes. It becomes thin, inelastic, sticky, and pigmented, especially where it is exposed to any pressure or friction. This pigmentation is observed first in the eyelids, whence it spreads gradually over the face. The neck becomes brown and later almost chocolate-coloured. The skin of the axillæ (armpits), abdomen, adjacent aspects of the thighs, and that covering the spinous processes of the vertebræ, becomes progressively darker and darker, and defined areas of even darker pigmentation may develop on these stained surfaces. The secretion from the flexures also becomes abundant and offensive. In some of the cases I have operated on this symptom has been such a marked feature as to render the patient very objectionable to others.

The darker the hair, the lower is the resisting power to auto-intoxication and the more conspicuous are the changes which result from it. On the other hand, if the hair is red or of a peculiar towy colour the individual has a maximum of resisting power to the action of these poisons, and that resisting power varies directly with the distribution and with the intensity of the redness of the hair. This is manifested very conspicuously in the influence exerted by the toxins on the appetites of the individual. The darker-haired subject will loathe the sight of food and frequently abhor any sexual relationship, while the red-haired subject rarely manifests these effects, even in the extreme conditions of intestinal stasis.

The muscular system degenerates in a very marked manner. The muscles waste and become soft, and in advanced cases tear with the greatest facility. In consequence the individual assumes positions of rest. In young life the muscular debility produces the deformities which are called dorsal excurvation or round shoulders, but which are more scientifically described as the "symmetrical posture of rest of the trunk," lateral curvature or scoliosis, which is better designated as the "asymmetrical posture of rest of the trunk," flatfoot, and knock-knee. These conditions are still further exaggerated by pressure changes in the epiphyseal lines. To subject these cases to exercises or to fix them in apparatus without also removing the primary factor in their causation—namely, auto-intoxication—is of little service.

The relaxation of the muscle wall of the abdomen deprives it of its function of compressing the viscera efficiently in defæcation (stooling) and results in the accumulation of fæcal matter in the pelvic colon. This elongates proportionately and renders the evacuation of its contents more and more difficult. The abdominal muscles cease to exert upon the several viscera that firm pressure which is requisite to keep them in their normal relationship to the spine and to each other, and the errors in drainage become further accentuated. The normal mechanical disadvantages of the female abdomen render these changes much more conspicuous than in the male subject. As I have already pointed out, the uterus suffers in the same manner, so that it flops or bends about in response to gravity and intra-abdominal pressure, and much trouble in it and in other structures ensues in consequence.

The muscular wall of the intestine wastes in a similar manner, so that, in an advanced case of stasis, the ileal wall is very thin and bluish or livid in colour, resembling the appearances seen at a post-mortem, and they give out a distinctly earthy or fæcal odour. The intestine has no rounded form, but, being inelastic, puddles like jelly in the floor of the true pelvis, forming innumerable bends through which its contents are transmitted with great difficulty.

The heart-muscle is influenced by the poison in the same manner. Here, however, we get two distinct conditions arising, varying, I believe, with complications in the most important excretory organ—the kidney, as well as in the circulatory system itself. In one group of cases the heart is soft, flabby, and the blood-pressure subnormal; while in the other the left heart is definitely enlarged, the aorta dilated and its walls atheromatous (degenerated) as are those of all the vessels, and the blood-pressure is abnormally high. I am greatly indebted to Dr. Jordan for demonstrating most clearly to me the changes in the heart and aorta in this class of case. Generally speaking, the soft heart and low blood-pressure are more common in the female subject, while the enlarged heart and high blood-pressure are more frequently observed in the male. Inflammatory or degenerative changes in the kidneys are much more commonly associated with the second group than with the first.

The toxins exert upon the nervous system a most distressing and depressing effect. This is perhaps the worst feature of the effects of chronic intestinal stasis. The patient is usually miserable. Sometimes the depression and misery is so great as to constitute melancholia, or imbecility.

Toxic patients sleep badly and have unpleasant dreams, or they may sleep very soundly all through the night and frequently fall asleep at any time of the day. They usually awake feeling miserable and unrefreshed by their sleep.

The breast behaves in a characteristic manner in auto-intoxication, so much so that it may be regarded as the barometer of the degree of poisoning. It presents at first induration, which commences in the upper and outer zone of the left breast, extending subsequently to the entire organ on both sides. Cystic or other degenerative change may ensue, and at a later period cancer appears with remarkable frequency in these damaged organs. I have found as many as seven distinct nodules of cancer in a hard, lumpy breast in which the presence of that disease was not suspected.

Another most important consequence of auto-intoxication is the lowering of the resisting power of the tissues to the entry of organisms. There are organisms which exist in large quantities in our drainage scheme, and which are only able to secure a foothold in our tissues when their capacity to deal with these organisms has been reduced. By far the most common cause of this lowered resisting power is auto-intoxication, resulting from intestinal stasis. One sees that from the earliest period. The resisting power of the mucous membrane being lowered allows of its infection by organisms which extend or involve the lymphatic tissue in the nasopharynx, producing adenoids and large tonsils, and later changes in the ear and nasal sinuses. These secondary manifestations of stasis produce cumulative symptoms and add their share to the depreciation of the vitality of the tissues.

I do not think I need call the attention of the obstetricians to the important part played by pregnancy in relieving the disabilities of the drainage scheme. The ascent of the uterus in the abdomen serves to raise the portions of the drainage scheme which have prolapsed, to tend to stretch

retaining bands, and to improve materially the effluent from the ileum, etc. Consequent on this the woman puts on fat, and pillows up the several organs, and tends to obviate their subsequent prolapse. It is in this manner that a toxic, thin, miserable girl may be converted into a plump, clean, happy one by a pregnancy.

The hair of the head falls out, either because of impaired nutrition of the cells or from the invasion of the roots by organisms. In the young subject, associated with this there is a new growth of a fine down over the cheeks, lip, chin, down the back and over the forearms, all of which conditions are very disfiguring and very distressing to the sufferer. These all disappear, more or less completely, with an improvement in the drainage.

The joints of toxic people, and especially of children, are very loose, and permit of considerable over-extension. We know that the fit or security of a joint varies directly with the development of the muscles which control it, and the feebleness of the poisoned muscles readily accounts for the insecurity of the joints. The skin is very liable to invasion by organisms, which form pustules, etc.

There are many diseases which cannot attack a subject unless the vitality of the tissues has been depreciated by auto-intoxication. There is no limit to the number of diseases in which stasis affords the chief, if not the entire, factor in their causation. I will confine myself to three to illustrate this point, as they lend themselves so readily and so obviously to demonstration. They are tubercle, rheumatoid arthritis, and Still's disease. I do not believe it is possible for any of these diseases to obtain a foothold except in the presence of stasis. I would exclude the direct inoculation of tubercular organisms through a wound, but this is a very uncommon mode of infection.

From the surgeon's point of view, the treatment of chronic intestinal stasis consists in facilitating the passage of material through the several portions of the gastrointestinal tract, and so obviating the mechanical and chemical results of any fault or faults which may develop along its length consequent on the peculiar mechanical relationship of the individual to surroundings as involved in the complex conditions of the civilization of the present day. In the vast majority of cases the use of a lubricating

material such as pure paraffin, which precedes the passage of food, application of some spring support to the lower abdomen which tends to keep the viscera up, and to control the delay of material in the small intestines and cæcum, and the avoidance of the use of such proteid foods as poison the tissues if retained for an abnormally long time in the intestines, are sufficient for the purpose.

Women suffer from chronic bowel stagnation and its numerous consequences from the earliest age. Many of the diseases of children are directly traceable to chronic constipation, as will be shown in the next chapter. When the little girl becomes a woman, when menstruation begins, the constipated girl becomes a sufferer from so-called sex complaints. Her periods are irregular, very weakening and often excruciatingly painful. Instinct, maternal experience and the medical adviser urge to get relief by resting on the back, and the horizontal attitude of the body proves beneficial to her, because in that position the displaced bowel and the engorged blood-vessels and organs are relieved and they function more easily than when the sufferer is sitting up, standing or walking about. In fact, lying down flat may almost be called the sovereign remedy in all women's diseases because it relieves the crippled and poorly functioning bowel and the pressure exerted by it to a considerable extent.

In the innumerable textbooks devoted to women's diseases hundreds of so-called separate "diseases" are described, most of which are merely symptoms and consequences of chronic constipation and auto-intoxication. All these are to be treated medically or surgically, each in its own manner, as if they were indeed separate local defects and disorders, and only incidentally the huge tomes on gynæcology mention the all-important factor of constipation. However, some of the standard textbooks occasionally point out, though as a rule quite briefly, that regulation of the bowel is of far-reaching importance in treatment of

female complaints of every kind. For instance, we read in the work *The Diseases of Women*, by Sir John Bland-Sutton and Dr. Arthur F. Gyles, 1916, on pages 445 to 447 :—

Constitutional treatment has but a limited field in its direct bearing upon the diseases of women. Indirectly it is very important, because many women who suffer from pelvic disease have their general health affected in various ways ; and in such cases the treatment of the pelvic condition will not suffice to restore health. The general condition must be attended to at the same time. The principal general disturbances found in gynæcological cases are associated with the digestive, nervous, and circulatory systems.

Of digestive disturbances the most important are constipation, flatulence, and intestinal stasis.

The disturbances of the circulatory system that are most often found with pelvic disease are varicose veins, œdema (accumulation of fluid) of the legs, functional heart troubles, such as palpitation and irregularity of the pulse, and occasionally actual heart-disease.

Aperients.—Many gynæcological conditions are associated with congestion of the organs affected ; this congestion is directly aggravated by constipation, and directly relieved by catharsis (aperients). For example, dysmenorrhœa (painful menstruation) is often materially improved by the administration of aperients for two or three days before the expected period.

In other cases a loaded sigmoid or rectum causes pain or discomfort by mechanical pressure ; a prolapsed and tender left ovary may give but little trouble when the bowel is clear, but when pressed upon by hard scybala (stool) it may cause acute pain. Again, a woman who has a marked rectocele may have only slight inconvenience when the bowel is empty ; but when it is full, the sense of discomfort and bearing-down may be very pronounced.

Of course the very sensitive sexual apparatus of women is that part which is apt to be most readily infected in case of chronic bowel troubles accompanied

by auto-intoxication and to suffer from extraordinarily varied symptom-diseases. Sir Arbuthnot Lane wrote in his book, *The Operative Treatment of Chronic Intestinal Stasis*, 1918, on pages 66 and 67 :—

In women who are toxic the infection of the genital tract is an extremely common and distressing feature. It manifests itself usually as an infection of the mucous membrane and muscle of the uterus, and is called endometritis or metritis. The continued presence of this infection brings about many troublesome consequences, the last link in the chain being here, as elsewhere in the body, cancer. Cancer is the last chapter in the three-volume story of *Chronic Intestinal Stasis*.

That the skin, depreciated in vitality and in resisting power, becomes invaded by various organisms, which produce many of the diseases of the skin, is familiar to us all.

Rheumatoid arthritis, like tubercle, is never present, except in association with auto-intoxication due to chronic intestinal stasis. Its severity may be accentuated by the presence of any other infection which exists in consequence of the stasis, such as infection of the uterus, gums, nasal and associated sinuses, etc., and some relief to the severity of the symptoms may be obtained by dealing with these secondary infections.

Readers may object that Sir Arbuthnot is a surgeon but not a gynæcologist. They may wish to hear on the subject a specialist in the diseases peculiar to women. Let us then listen to Mr. Harold Chapple, a well-known gynæcologist, who contributed to Sir Arbuthnot Lane's book previously mentioned a chapter in which we read :—

Observation shows that there is the most intimate connexion between stasis and gynæcology, indeed it is difficult to exaggerate it.

Firstly, there is the effect of the continued absorption of intestinal poisons on the woman herself. No single tissue escapes their baneful influence, and her general appearance in a marked case is quite typical. Her skin

is dry and stained, especially in certain areas, such as the folds of the body, the axillæ (armpits), inguinal (groin) regions, etc., the skin of the neck, and so on. Her sweat-glands exude an offensive secretion, and this is often a distressing feature. Her hands and feet are blue and cold even in warm weather, and this condition is due to her impaired circulation. The loss of the general body fat is often very marked, and this fact is of considerable importance in the support of the various viscera of the body. Her mental state is one of lethargy, depression, or irritability, and one has only to visit the wards of an asylum to see the marked relationship between chronic intestinal stasis and chronic melancholia. These patients frequently suffer from severe and frequent headaches. Their breasts are characteristic, and chronic mastitis (inflammation of breast) is a marked and almost common feature. This condition clears up very rapidly after successful ileocolostomy. The appetites of these patients are definitely affected, and the sexual appetite is often most markedly so. This loss is due to the general effect of the poisons absorbed and also to the destruction of the ovarian tissue either by the effect of the general toxæmia on the ovarian tissue itself, or by the destruction that ensues when the ovary is included in the adhesions that often develop in the iliac fossæ in these cases.

The thyroid gland is very markedly affected, and in severe cases may be in great part destroyed. Often its isthmus cannot be detected by the finger. The consequent loss of the iodine content of the gland in the general circulation materially affects the body metabolism and behaviour of the patient.

A very striking and gross example of the effect of chronic intestinal stasis on the thyroid gland was supplied by a patient suffering from marked stasis, and who had a large cystic swelling in the gland. It was of sufficient size to cause the anæsthetist to wonder if ether anæsthesia could be safely administered. Within six weeks of a successful colectomy the tumour was reduced to one-half of its original size, and it has since almost completely disappeared.

Intestinal stasis is the fundamental factor in several uterine conditions. Retroversion of the uterus is a very common condition and one that is apparently held respon-

sible by many gynæcologists for a variety of symptoms, though it is not always easy to follow on what grounds the opinion is held. It is often only an effect of intestinal stasis and two factors go to produce it. In common with all the other body tissues the supporting structures of the uterus are affected, and when great efforts are necessary to evacuate the bowel the uterus is thrust down into the pelvis.

One patient whom I saw illustrated this condition very clearly, for on one occasion when straining hard at stool her uterus became so impacted in the pelvis that it was necessary to give her an anæsthetic before a finger could be introduced into her rectum at all in order to replace the uterus. Clearly to treat such a condition merely by the introduction of a pessary or a suspension operation is to deal only with an effect. The uterus when in this condition becomes engorged, and when the menstrual hæmorrhage comes on it is often considerable.

One of the most difficult conditions a gynæcologist has to face is fibrosis (scar-like development) uteri. In those cases that are not due to an inflammation that has ascended from the vagina there is often a very definite association with intestinal stasis. Just as fibrous tissue is deposited in the breasts, thyroid, etc., so is it deposited in the uterus. Since I have been familiar with the condition of intestinal stasis, when it has been necessary to remove the uterus as the only means of controlling the excessive bleeding in cases of fibrosis uteri, I have during the laparotomy looked carefully in the abdomen, and the condition described by Lane as simple stasis has always been present. There have been no adventitious bands present, but the whole bowel was wasted and papery and resided almost entirely in the pelvis.

There is no doubt whatever that people suffering from marked stasis are more liable to the various infections that are due to the common organisms than others. This is obvious in cases of tubercle, etc., and infections of the uterus provide no exception to this truth.

The most intractable and the most varied diseases of women which have resisted every form of routine treatment, both medical and surgical, for years and

which therefore are often pronounced "incurable," are apt to disappear miraculously, rapidly and permanently if they are caused by a poorly functioning bowel and consequent auto-intoxication and if the free working of the intestines is brought about by appropriate medical or surgical treatment, or by both combined. I would bring forward a few examples out of a great many. Dr. John E. Breglia gave in the *Woman's Medical Journal*, of May, 1917, on page 106, an account of a woman of 48 who suffered chronically from an unaccountable jaundice, internal pains, indigestion, nausea, etc., for 18 years, during which time she was also troubled with chronic constipation. She was restored to health by a surgical operation, whereby bands which restricted the working of the bowel were cut away. Dr. Breglia reported:—

Mary Owen—48—U.S. Family history, negative. Personal, good habits; menses stopped in 1914; always constipated; "indigestion" for past eighteen years; suffered intense pain in epigastrium and precordium; unable to expel gas. These attacks came on every three or four weeks. At present time severe epigastric pains; constipated; attacks of syncope; often jaundiced; attacks longer and more often; considerable tympanite (gaseous distension); lost weight; nausea and vomiting.

Physical examination: Emaciated, anæmia; jaundice; heart and lungs normal; teeth in poor condition—sordes; abdomen distended; epigastrium swollen, painful and tender. Diagnosis: intestinal stasis. Operation May 7, 1915. Linear incision. Duodenum and stomach dilated—duodenum in pelvis. Band at duodeno-jejunal junction. Band incised transversely and sutured longitudinally.

Sequel: Patient has had no more pains or gastric distress; bowels move well; appetite good; gained in weight; feels fine. I consider this case cured.

In the same issue of the *Woman's Medical Journal*, Dr. Cleon W. Symonds gave the history of a woman, 31 years old, who suffered from chronic pains, lack of

appetite, distress, wasting, a poor circulation, accompanied by appendix attacks, which, as has been shown in a previous chapter, are, as a rule, a sequel of constipation. The freeing of the bowel from adhesions, etc., which had prevented its active working, restored the patient to normal health. We read:—

Patient G. C., 31, school teacher, presented herself on December 16, 1915, with a history of many years of indigestion. Twelve and ten years ago respectively she had two attacks of what were called appendicitis. Since then she has had feelings of discomfort, and at times actual pain, in the region of her appendix most of the time.

For the past year she has felt weak; has had little ambition for her work, which she has dropped; and complains of cold hands and feet, constipation and lack of appetite, with a constant distress in the lower right abdomen, of soreness, weight, and at times stitches of pain in the region of the appendix.

Examination showed a poorly nourished, pale woman of fair development, with sallow complexion, weight 97½ pounds, with sluggish circulation and cold hands and feet. Mucous membranes pale, tongue coated. Superficial glands and thyroid not enlarged. Breasts free from masses. Heart and lungs normal. Abdomen flat, soft, with marked tenderness in the right lower quadrant, where there was a movable tender mass, which rolled under the fingers; was soft and doughy in consistency. Stomach prolapsed, but not tender. X-ray examination showed moderate ptosis (drooping) of the stomach, dilated ileum, dilated and prolapsed cæcum, hepatic flexure prolapsed.

At operation the above findings were corroborated. The appendix was almost obliterated and firmly adhered to the cavity of the true pelvis. There was a band from the ileum into the pelvis near the attachment of the appendix forming a kink in the ileum at this place. Upon removal of the appendix and this ileo-pelvic band the ileum and cæcum could be placed in their normal position. The cæcum was stitched to the lateral wall by interrupted linen sutures. All raw surfaces were covered in to prevent the formation of future adhesions as far as possible.

Patient made a good recovery, with relief of her abdominal distress, constipation gone, the bowels moving once and twice a day; she requires no cathartics (purgatives), and appetite has been excellent.

In his pamphlet, *Chronic Intestinal Stasis*, New York, 1917, Dr. W. Bainbridge, a well-known surgeon, described the case of a woman, 42 years old, who had suffered for many years from abdominal pain, headache, menstrual difficulties and wasting, and who had become so weak that she had to be fed with nutritive enemata. The freeing of the bowel from adhesions, etc., restored the poor sufferer to normality and perfect health. Dr. Bainbridge wrote:—

L. T., female, age 42, single.

Previous History.—Had been suffering from epigastric and abdominal pain; marked constipation; large amount of gas; headache; dysmenorrhea (painful menstruation). Was under medical treatment during the summer of 1902; at this time a nurse was in attendance for seven weeks; loss of over 30 pounds in two and one-half years. General condition of the patient was so extreme when seen by me early in the fall of 1902 that rectal feeding had to be resorted to in order to strengthen the patient sufficiently to withstand surgical treatment.

Clinical Diagnosis.—Chronic intestinal stasis; uterine displacement.

Operation, October, 1902, at Alston's Private Hospital, New York City. Findings: Uterus retroverted; numerous adhesions; the enlarged, chronically inflamed appendix was twisted upon itself in two places, and in the centre of a mass of old inflammatory tissue causing colonic and ileal stasis; ovaries normal, except for congestion.

Treatment.—Adhesions separated; appendix removed; cæcum plicated and an ileo-pelvic band corrected; all inflammatory tissue was removed and raw surfaces covered; uterus anchored in its proper position. Uneventful recovery.

Status Præsens.—Examination August, 1916. Other than occasional constipation, the patient is in excellent

condition ; weighs 150 pounds ; looks the picture of perfect health. Patient states she has been teaching regularly since January, 1903.

In the *Woman's Medical Journal*, Dr. Bainbridge reported the case of a woman who suffered from a degenerative development of the breast which had become extremely painful. The lumps in her breast and a bloody discharge caused several doctors to diagnose cancer. As the patient had been suffering from chronic constipation, and as X-ray examination of the bowels showed adhesions, etc., the usual operation for establishing normal conditions of the excretory apparatus was undertaken, which restored the patient to normal health, caused her to regain weight and strength and brought about the healing of the diseased breast which rapidly became normal. We read in Dr. Bainbridge's account :—

A. B., female, aged 25, widow, two children.

Previous History. Always somewhat constipated. Early in March, 1915, began to have some discomfort in right lower quadrant of abdomen ; dragging sensation, and at times considerable fullness. Late in March, 1915, compelled to go to bed for a week because of severe pain ; no fever. Since then, at intervals, was unable to lie on left side at night without a dragging sensation and discomfort in right lower quadrant. In November, 1915, had acute lobar pneumonia. In December, 1915, a "lumpy condition" was noticed in the left breast, especially of the upper and outer part. In August, 1915, there was a bloody discharge from left nipple, which continued and was present when I first saw the patient in February, 1916.

Physical Examination, February 28, 1916 : Glandular lumps in upper and outer quadrant of left breast ; bloody discharge from nipple. Right breast practically normal. Distinct tenderness in the right iliac fossa, along head of cæcum and over appendix. Cæcum seemed to represent a large, heavy bag hanging over pelvic brim into the true pelvis. Some general enteroptosis (dropping of viscera). Very little superfluous flesh ; wiry.

Clinical Diagnosis: Chronic intestinal stasis; mobile and diverticulated cæcum; chronic appendix; accentuation of pelvic band at the site of last kink; "lumpy breast" from stasis.

X-ray Examination by Dr. A. Judson Quimby, February 29, 1916: "Kinked appendix; bands about terminal ileum and cæcum close to ileocæcal valve; probable membrane or adhesion involving ascending colon; mobile, ptosed cæcum; probable ileo-pelvic band."

Operation, March 11, 1916, Polyclinic Hospital. Findings: Marked pericolonic membrane; dilated terminal ileum; ileo-pelvic band; large dilated, pendulous, ptosed cæcum; chronic appendix adherent to ileo-pelvic band; accentuation of last kink.

Treatment: Cæcum and ascending colon plicated; interrupted linen; fastened into normal position; appendix removed; ileo-pelvic band bisected transversely and sewed up longitudinally; surfaces carefully infolded; interrupted stitches; abdomen closed layer by layer. Left breast carefully massaged to remove fluid from gland; considerable amount of brownish fluid extracted.

Subsequent History: Slight discharge from breast for one week following operation. Convalescence uneventful. Uplifting corset used; Russian mineral oil employed daily for a time.

March, 1917: Patient had gained in flesh and strength; is perfectly well; no discharge from breast since one week after operation; breasts are normal.

Remarks: This case was diagnosed by clinicians in several cities as cancer of the left breast, and probably of the right. The patient illustrates a class of cases that is often mutilated unnecessarily, where the real cause of trouble is not located in the mammary gland, but is in the abdominal cavity.

Of course, the cutting away of the breast, in accordance with the cancer diagnosis made by several doctors, would have done no good to the patient. The diseased bowel and auto-intoxication would have remained and degenerative developments, having been stopped in the breast by cutting it out, would undoubtedly

have developed elsewhere in a weak spot, such as the uterus.

One of the most distressing diseases to which women are particularly liable is Graves' disease, which is also called exophthalmic goitre, or Basedow's disease. The unfortunate sufferers are readily recognized by their protruding eyes, which give them a startling and terrifying aspect and by other extraordinary abnormalities. Sometimes the eyes stand far out of the sockets like balls, and in extreme cases one or both eyes may become completely dislocated. That horrible disease appears to be due to auto-intoxication from the bowel, although the textbooks in their usual manner either ascribe it to mysterious developments of the body chemistry or of the glands, or simply state that "the cause is unknown." We read, for instance, in Gould and Pyle's *Pocket Cyclopaedia of Medicine and Surgery*, 1926: "The cause of the affection is unknown, but it occurs frequently in persons of neurotic (nervous) habits." Of course, people who suffer from chronic bowel stagnation and auto-intoxication become plagued with nerve affections of every kind, as I have shown in Chapter V of this book. In Sir Arbuthnot Lane's opinion, exophthalmic goitre can always be cured by regulating the action of the diseased poison-producing bowel. He stated on page 95 of his book, *The Operative Treatment of Chronic Intestinal Stasis*, 1918:—

What the organisms or toxins are that determine the development of general hypertrophy of this gland, of exophthalmic goitre, or of adenomatous (tumour-like) changes in this organ I do not pretend to explain, but this I know, that in every case suffering from these conditions in which we have performed colectomy the disease has disappeared completely.

As it may be thought that it is a monomania of Sir Arbuthnot Lane to ascribe all existing diseases to

chronic bowel stagnation and auto-intoxication, I would furnish my readers with the following exceedingly interesting account of a severe case of Graves' disease, given by Dr. T. B. Scott on page 135 of his book, *Modern Medicine*, 1919. The author tells us that Sir Arbuthnot Lane brought about the free and easy functioning of an obstructed bowel with the result that the patient was cured and that the poor sufferer, who had shrunk to a pitiful skeleton, nearly doubled her weight in an incredibly short time and was restored to perfect health. We read:—

The extraordinary influence of the gastro-intestinal toxæmia in the genesis of Graves' disease is exemplified by a case recently admitted under the care of Sir Arbuthnot Lane at Guy's Hospital.

The subject was a girl of 19½ years of age, who developed in South Africa, Graves' disease of very serious type. The condition was of some eighteen months' standing. She had a marked rheumatic history, having had chorea at nine years, and "nervous debility" for six months at thirteen years. She had suffered from palpitation from the age of eleven. On admission to hospital she presented the following symptoms: great emaciation, dull abdominal pain, recurring attacks of nausea and vomiting, goitre of small size, prominent exophthalmos, tachycardia (rapid heart throbbing), severe palpitation and a heart's action so violent as to shake the bed, great pulsation of the carotids, abdominal and iliac arteries, great muscular weakness, pronounced tremor with a tendency to drop things, great nervousness, dizziness, severe headache, flushings, subjective sensations of heat, suppressed menses, loss of and greying of the hair, voracious appetite, and albumen and sugar in the urine; in short a case so typical and so severe as to leave no room for doubt as to its nature.

Röntgen-ray examination by Dr. Jordan revealed the presence of a greatly dilated stomach with pyloric spasm, an elongated duodenum, and a state of chronic irritation of the colon, resulting in unduly rapid emptying of the contents.

Sir Arbuthnot Lane performed gastro-jejunoscopy, and

removed an anchored appendix, which exerted a most marked control upon the ileal effluent, and freed a very tight terminal kink at the junction of the iliac and pelvic colon. The operation was performed on January 21, 1916, and was followed by two weeks' considerable pyrexia (fever). At this time the patient's weight was only 4 st. 10 lb., but, following the return of the temperature to normal, she began to put on weight and to improve in the most remarkable way. Seen on October 20, 1916, her weight had increased to 8 st. 5 lb., the exophthalmos had totally disappeared, the palpitation was completely gone and the tachycardia was greatly lessened, menstruation had returned, the muscular weakness, headache, vomiting and all the other symptoms, with the exception of the small goitre, had disappeared. The goitre was but little altered in size, and persisted, doubtless, owing to fibrotic (scar-like) changes. The patient felt and looked a different being, and could walk for a considerable distance without fatigue, while the greyness of the hair had disappeared and its scantiness was replaced by luxuriant growth.

Here, then, is a case of surpassing interest in which the symptoms of Graves' disease are definitely shown to have resulted from alimentary toxæmia.

There are many other cases reported in which intestinal stasis, gastro-enteroptosis and chronic colitis have for a long time preceded true Graves' disease, and in which all symptoms, except thyroid enlargement, have passed off after cure of the abdominal fault.

CHAPTER XIV

Chronic Constipation and Children's Diseases

Foremost amongst the evil results of habitual constipation in infancy I shall put marasmus.

A more serious outcome of constipation in some infants is a convulsion. In older children, as in infants, habitual constipation interferes in some way with general nutrition.

—DR. G. F. STILL, *Common Disorders and Diseases of Childhood*.

THE child is father to the man. The lives of men and women are made or marred in the nursery. In the olden days it was customary to give to the new-born baby wine diluted with water, light beer and elaborate soups which were supposed to be far superior to mother's milk. This "scientific" regime, recommended by the doctors of the past, has died out. Instead we endeavour to bring up our unfortunate babies on "the most scientific baby foods" which their manufacturers urge upon us in blatant advertisements. Mothers who might raise their children on the natural food supplied by Providence, bring them up on the bottle with diluted cows' milk and various pseudo-scientific concoctions obtainable at chemists' shops, and thus the foundation of chronic indigestion and constipation is firmly and truly laid.

The majority of us have become drug slaves in the course of our lives. Most of us require pills and salts to activate the working of the bowels. Soon after

the baby has arrived in the world, the pill-taking mother, grandmother, aunt, doctor or nurse insists that the little one must be given some medicine to open the bowels. The diluted wine given to new-born babes by the doctors of the past was probably not so harmful as the laxatives and purgatives thrust upon them nowadays by ignorant men and women, medical and non-medical, who do not realize that the naturally fed child has natural evacuations, while an unnaturally fed one will suffer from stomach and bowel troubles of every kind. It is a well-known fact that breast-fed babies are rarely constipated, while "scientifically fed" ones are commonly constipated.

Instead of bringing up our tender babies on the food intended for them, on milk derived from a wisely nourished mother, we raise them on a horrible mixture of artificial food, bought at chemists' shops, and of irritating, poisonous drugs, called laxatives, purgatives, health salts, etc. Ignorant or venal chemists will of course furnish a "scientific analysis," showing that the factory-made substitute for mother's milk is just as good as, or better than, the natural article. No chemist has as yet succeeded in analysing mother's milk. Still less is he able to supply a satisfactory substitute for the natural article or an improvement upon it. The coarse instruments of the chemist prevent him analysing any foodstuff. The all-important substances which exist in all food in extremely minute quantities, among them the vitamins, are beyond his ken. There are endless substances in milk, quite apart from protein, fat, sugar, etc., of which the chemical ignoramus gives us the percentages when impudently endeavouring to prove to us that they can provide an equally good, or a better, article which we are urged to buy over the counter.

There are many mysteries about milk. In the first place, we cannot ascertain its composition with the chemical implements at present at our disposal. In

the second place, we know that even the gross chemical composition of milk is miraculously changed day by day and week by week in accordance with the expanding requirements of the growing baby. In the third place, we know that mother's milk is not only free from contamination and putrefactive germs, is sterile, but that it is actually germicidal. Food manufacturers and the chemists in their pay have nevertheless the hardihood to assert that they can provide as good a food or a better one than that miraculous substance. Naturally innumerable babies die from constipation and its consequences, internal inflammation, diarrhœa, convulsions, etc., which are directly traceable to our folly in disdaining the perfect food of nature. Of course the position is different if a mother cannot feed her baby. However, a properly fed and fairly healthy mother can supply milk to her young child in nearly 100 per cent of the cases.

Constipation is the result of faulty feeding. We cannot wonder that chronic constipation is widespread among the pseudo-scientifically nourished infants. Dr. G. F. Still, Professor of Children's Diseases in London, wrote in his book, *Common Disorders and Diseases of Childhood*, 1924, p. 237:—

Results of Constipation.—Foremost amongst the evil results of habitual constipation in infancy I shall put marasmus, meaning by this rather failure to gain weight, or very slow progress in nutrition, than active wasting. If regular and thorough action of the bowels is ensured by daily administration of some suitable aperient, the weight will begin to rise without any alteration whatever in the feeding. Here, again the treatment that is required is often no change in the food or in the size of the feeds, but simply regular administration of grey powder, or some such aperient, twice or three times daily to keep the bowels working well.

I suppose that one of the commonest results of chronic constipation in infancy is screaming: the infant who is said to be "always screaming" is very commonly suffering from habitual constipation.

A more serious outcome of constipation in some infants is a convulsion.

The straining of a constipated infant is liable not only to cause passage of streaks of blood with the stools, but also to bring down the bowel itself in the form of a prolapse, or to produce some variety of hernia. Even in infancy constipation sometimes produces piles as in later life.

In older children, as in infants, habitual constipation interferes in some way with general nutrition, and although this effect is naturally less striking at an age when the gain in weight should normally be slow compared with that in infancy, still it is often quite perceptible to the medical man, as well as to the mother. Moreover, the general health is impaired in other ways; the child is sallow or of pasty complexion; above all, he is languid and easily tires on exertion. I always regard this complaint that a child "gets tired so quickly" as highly characteristic of two common disorders in childhood, indigestion and constipation. The child who is constipated is apt to suffer from headaches: the appetite is often very poor, the tongue is furred, sometimes the breath is offensive, and the child is "not getting on."

Dr. Robert Hutchison stated on page 97 of his well-known *Lectures on Diseases of Children*, 1925:—

The results of constipation in later childhood are even more far-reaching than in infancy, and for this reason: that you have the toxic effects superadded to those which are due to reflex irritation, which I have mentioned as being chiefly at work in the case of the infant. You will find that older children who suffer from constipation are always dull and languid; they suffer from headache and defective appetite, and in particular from disturbed sleep. They are restless and nervous at night. Again, you will find that, as a consequence of the toxæmia (poisons), their tempers become affected, and they are depressed, irritable, and peevish. You will also find, as a result of the retention of the intestinal contents and the production of an excess of mucus by the irritation of the scybala (hard stool) in the bowel, that the lodgment of worms in the intestine is encouraged; indeed, I would say that the treatment of

threadworms in most cases consists in giving regular laxatives. You will find there is a rarer consequence of constipation, and one which is apt to be overlooked, and that intermittent pyrexia (fever).

Unfortunately in practically every one of the numerous textbooks on children's diseases consideration of constipation is coupled with the recommendation of regulating the bowels with potent drugs, which are in most cases quite unnecessary and exceedingly harmful because they are apt to irritate the inside of the little ones and to make constipation habitual and chronic by teaching the system to rely on drugs for a function which should be natural, spontaneous and easy. We read, for instance, in Dr. Still's well-known book in conjunction with the sentences quoted above:—

If regular and thorough action of the bowels is ensured by daily administration of some suitable aperient, the weight will begin to rise without any alteration whatever in the feeding. The treatment that is required is often no change in the food or in the size of the feed, but simply regular administration of grey powder, or some such aperient.

In a large number of pages a considerable number of aperients is discussed and it is pointed out that certain of these induce "griping," an obvious sign that the aperient is doing serious injury and causing the abdomen to protest with the utmost vigour against the ill-treatment received.

The naturally fed average child, like every healthy animal, has three or four stools a day, soon after each meal. There is a wonderful automatic regulation of the digestive tract. As soon as we see food, the salivary glands become active. Tempting food causes our mouths to water. A dog or cat, when shown tempting food, will start dribbling at the mouth. As soon as we begin chewing, the stomach pours out large quantities of digestive juice, and as soon as we begin to

swallow the bowels get busy and move the food residues along towards the exit, so as to give room for the expected additional supply. We can therefore not wonder that practically all animals, primitive natives and human idiots empty their bowels automatically three or four times a day after each meal.

Civilization finds the process of evacuation disgusting and demands that it should be put under rigid control. For a time the baby is allowed to empty its bowel after every meal, but very soon it is told that it is "naughty" to have an evacuation at any time except in the early morning. Scolding and bodily chastisement follow. The poor little thing controls the automatic machinery of excretion with all its might by doing violence to nature, and after a little while the delicate automatic mechanism which couples a meal with a need for excretion breaks down for all time. The child is made constipated for twenty-four hours, and artificially induced stagnation may soon extend over forty-eight hours, several days, a week. Thus the formerly healthy and normal being is converted into a chronic bowel sufferer.

The textbooks on children's diseases, many of which contain more than a thousand pages, enumerate hundreds of carefully described separate "diseases," each of which has special characteristics of its own. Many of these so-called "diseases" are as different from one another as a canary bird is from a tortoise or from an earthworm. However, most of these so-called "diseases" are merely symptoms and consequences of faulty feeding and of delayed excretion, for the vast majority of these complaints do not "attack" the wisely fed children who possess normally functioning bowels and who are allowed to go to stool when nature demands it.

A child, who has been permitted to gorge on sweets may fall a victim to quite a number of separate so-called "diseases." It may suffer from indigestion,

from vomiting, from a headache, from a rash, from sugar urine, which will create the suspicion of diabetes, from convulsions, from insomnia, from diarrhœa, from jaundice, from an obscure fever, from asthma, from mysterious rheumatic pains, from an epileptic attack, from various nerve diseases, from a heart attack, etc. Against all these miscalled separate "diseases" the textbooks will prescribe specific "remedies" and the textbook writers will learnedly explain their "etiology" (in plain English causation) and discuss at great length all the microbic, chemical and glandular factors which are supposed to be responsible.

Exactly as a child who is allowed to eat chocolates *ad libitum*, may suffer from fifty different "diseases" which are the natural consequences of outraging nature, the chronically constipated child, the whole system of which is permeated with virulent bowel poisons, contracts countless different "diseases" which are merely symptoms and consequences of chronic bowel stagnation and auto-intoxication. All the diseases enumerated in the textbooks which are not directly induced by chronic constipation are, of course, seriously aggravated by the existence of a foul bowel which sends sewer-filth and sewer-gas to all the structures, organs, tissues and juices of the body. The vast majority of children's diseases are due to faulty feeding and delayed excretion, as I have shown in my book, *Good Health and Happiness—A New Science of Health*.

A single cause, such as chronic constipation, can lead to a vast number of different "diseases." Through the poisoning and weakening of the system, chronic constipation may lead to rickets in one child, to tuberculosis in another, to defective eyesight in a third, to anæmia in a fourth, etc. The constipated child "catches," of course, infective diseases of every kind much easier than the one possessed of a clean and wholesome bowel.

Exactly as one cause, such as constipation, may lead to an enormous number of sequels and symptoms which are mis-called diseases, there are diseases without number which may produce the identical symptom, for instance headache. If we wish to be ultra-scientific, we must not treat headache as a separate disease but divide it carefully into a hundred or more individual diseases. That attempt has actually been made by Dr. Thomas F. Reilly in his book, *Headache: Its Causes and Treatment*, 1926. In that volume the author treats separately, "toxic headache," which means headache due to some form of poisoning, and he informs us that it may be produced by typhoid fever, typhus, relapsing fever, influenza, coryza (nasal cold), tonsillitis, pneumonia, malaria, meningitis (brain inflammation), facial erysipelas, scarlet fever, dengue (a tropical disease), yellow fever, smallpox, syphilis, tuberculosis, trench fever, encephalitis lethargica (sleepy sickness), phlebitis (blood clot), goitre, Graves' disease, gout, diabetes, epilepsy, gall-bladder disease, and numerous poisons, such as nicotine, lead, iron and many others. It is interesting to read a book on headaches, as an enormous number of us suffer from that "disease," or rather from the hundred or so diseases which the scientist classifies as gouty headaches, diabetic headaches, etc. Although there are probably at least a hundred separate "headache diseases" known to the headache specialist, there is one of outstanding importance which affects both children and grown-up people. Dr. Reilly informs us on page 22 of his work:—

The commonest occurrence of a toxæmia headache is the headache of constipation and other digestive disorders. Various theories have been evolved as to whether the origin of the headache is reflex or toxic. The instant relief afforded by a purgative in such cases appears to be too rapid if the cause were toxic, and yet toxic products at other times often manifest themselves within a few seconds.

Constipation and its consequent digestive disturbances constitute the cause of by far the largest number of individual headaches, although they are not, perhaps, the most common complaint from the practising physician's experience, because most patients have learned to recognize constipation as a frequent cause of headache, and the treatment is obvious. The experience of house physicians in sanatoria and institutions where patients are confined to bed, will corroborate this statement. It may be stated that the chief function of a house physician is to keep the bowels of his patients open.

For the most part such headaches are of gradual onset, and are not continuous. They are frontal in character, and are accompanied by other evidences of digestive disturbances, such as coated tongue, loss of appetite, etc. Frequently vertigo is also present, and there is a disinclination for mental work. In the management of any headache whatsoever, this factor of constipation should be considered as likely to be present, either as a direct cause of the headache or as an added cause. For that reason there are very few headaches the treatment of which should not be begun with a purgative. Much care must be exercised in not being deceived by this relief, because almost all headaches are somewhat relieved, at least temporarily, by a purge.

In chronic recurring headaches, constipation is usually not the sole cause of the headache. There is almost always another pathologic (disease) condition present in addition to the constipation, the removal of which is of more importance than the regulation of the bowels.

Children are notoriously sufferers from headaches. Headaches, as Dr. Reilly rightly tells us, are usually "headaches of constipation." They can easily be dealt with by a purgative. However, these easily eliminated headaches are merely one of the symptom-diseases or disease-symptoms in the train of a foul bowel. Children who are much troubled with headaches are likely to develop in course of time troubles affecting the eyes, ears, nose, tonsils, throat, stomach and lungs, disturbances of the circulation, of the nervous system, of the brain, and so forth.

Some parents and doctors are wise enough to deal with headaches by purgatives, emetics, fasting, etc., designed to clear the bowel of its putrid contents and to stop auto-intoxication. Others are unwise enough to treat the headaches of children with aspirin, "headache powders," and various powerful, poisonous, habit-forming drugs, which take away the pain. Such treatment is as foolish as treating an unsightly ulcer by covering it with a pretty pink plaster. The great misfortune is that people learn to find relief from headaches and other bowel symptoms by taking poisonous drugs, ruinous to the constitution. Many people become veritable slaves to aspirin, a most pernicious drug, which anyone can obtain in quantities not only from chemists, but from grocers' shops and general shops in the smallest villages. Such people add to bowel poisoning drug poisoning in a particularly dangerous form.

CHAPTER XV

Consequences and Cure of Bowel Stagnation—A Striking Human Document

Give honour to the physician, for verily the Lord hath created him, and let him not go from thee, for thou hast need of him. There is a time when in his very hands is the issue for good.—*Ecclesiasticus*.

IN the preceding chapters it has been shown that chronic bowel stagnation is apt to cause auto-intoxication and to lead to innumerable serious diseases of body and mind. Many high authorities and a considerable number of case histories of patients have been quoted. As a rule, patients suffering from auto-intoxication complain only about a single symptom of their real troubles and that symptom is mistakenly called a disease by themselves and by the doctors. Some suffer in consequence of chronic constipation from an affection of the stomach, some complain of a "disease" of the gall-bladder, some have a skin disease, etc. In reality most of the chronically constipated and auto-intoxicated suffer simultaneously from a considerable number of troubles, but as only one of these is particularly prominent or painful, that chief symptom is the "disease" which most doctors recognize and treat symptomatically as if it were merely a local affection of the liver, or gall-bladder, or skin.

Although I have given an overwhelming mass of evidence showing that chronic constipation leads to

innumerable diseases, many readers may still feel some hesitation in believing that that very common trouble may have the most varied and the most serious consequences. It has been my good fortune to get in touch with Mrs. Edith Evelyn Eastlake, of 7 Clarendon Mansions, Brighton, a highly intelligent and extremely capable woman, who most kindly sent me a striking human document in the form of an account of her life and physical troubles which she herself has written. The case histories of patients so far given in this book are dry, unattractive, technical and very brief accounts drawn up by medical men, and lay readers may find it difficult to read them.

Mrs. Eastlake's statement is very different from these. It is long, detailed and extraordinarily interesting both to professional and non-professional readers. That poor woman was a victim of constipation from her earliest childhood and during about twenty years she suffered in consequence not merely from a single "disease" but from a large number, among them tonsillitis, stoppage of periods, ovaritis and other internal female troubles, tuberculosis of the lungs, neurasthenia, neuralgia, insomnia, albuminuria, colitis, œdema, extreme emaciation and prostration, grave circulating and blood disorders, paralysis of the legs, etc. At last the poor woman became a veritable skeleton. Her weight went down to 4 stone 6 lb. For many years she had been treated by excellent physicians regardless of expense with all the most scientific means available. To allay her terrible sufferings, she was freely given sleeping draughts at night, morphia in the daytime, etc.

When, after four years of the most acute suffering, she had arrived at death's door, and when she had become a baffling problem to all the doctors, Dr. James Collier took her to Sir Arbuthnot Lane. Sir Arbuthnot recognized that chronic bowel stagnation and auto-intoxication were the cause of all her symp-

tom-diseases and he advised operation, although he felt very doubtful whether the lady would be able to survive it in consequence of her extreme condition. She bravely consented, fully understanding the danger involved. The removal of the colon led to a miraculous recovery. Her weight rapidly increased from 4 stone 6 lb. to 10 stone 10½ lb. The hopeless invalid became a healthy, strong and happy woman. Her periods returned, her bowel began to act normally two or three times a day, she could eat everything, sleep well, enjoy life and marry.

I hope that all my readers will not only carefully read Mrs. Eastlake's wonderful and wonderfully told story, but ponder on the important lessons which it teaches. Let now Mrs. Eastlake give her own account in her own words, which have in no way been altered. Most testimonials rightly arouse suspicion because the names of doctors and patients are withheld or are hidden under initials. Hence the truth of the account cannot be tested. Mrs. Eastlake's detailed statement is very different from the case stories usually given. She has supplied in it her name and address, her maiden name, the names of all her doctors, etc., so that every part of her story can easily be investigated by the sceptical.

REPORT OF MRS. EDITH EVELYN EASTLAKE, *née*
BURFORD, GIVEN IN HER OWN WORDS

As a child I was not considered robust. I suffered from constant sore throats, coughs, and internal troubles through constipation.

At the age of 10 I was sent away to a boarding-school at the seaside, not so much for "schooling" as to run wild in the open air. For two or three years I was a little stronger and was getting fatter, though still subject to colds and sore throats. When about 14, and up to the age of 16 to 17, I constantly had bad attacks of tonsillitis, severe headache, and consti-

pation seemed to increase. My period did not come on until after my fifteenth birthday, and I always suffered a good deal of pain at the time. School examinations and other matters seemed to take a great deal out of me, and I generally had a bout of throats and general debility after them ; so things continued.

I left school at 18, stayed at home for about 18 months, when, although I was rested, and stronger, I had a great deal of internal trouble, for which I was given all sorts of baths and treatment (homœopathic). I then got sick of an idle life, and took up teaching in 1897, being devoted to children. I worked very hard to get a boy through his public school exam., with the result that, according to Dr. Henry Willson, of Weybridge, I soon began to get tonsillitis, relaxed sore throats, constipation and some amenorrhœa (stoppage of periods) and fell below normal weight. He reported :—

I thought she had latent tuberculosis (her family history was tubercular) ; finally her abdominal symptoms indicated ovaritis, and she became quite unfit for work. Dr. Kingston Fowler saw her at the end of 1898, and said the left lung had been touched, but that there was no sign of active disease when he examined her. He agreed with me that she should give up work and lead an open-air life.

Acting on this advice I stayed at home from 1899 to, I think, 1900, and my general health improved. I then, at the special request of their parents, returned to my old pupils and was with them until 1903, but during the whole time I was none too well. I would say that the remarks of Dr. Willson cover the period of my condition from 1897 to 1903. I then had another rest, but, being anxious to have an occupation, became confidential secretary to the late Sir Boverton Redwood, Bart. Though my life was very strenuous, I simply loved my work and my Chief. I went to him in 1904 and about 1906 began to feel very unwell.

Severe headaches and constipation worried me very much. I also began to get my old pain in the right side. However, I was so happy in my work, I would not give in and did not see a doctor until September, 1907, when I got a very bad throat described in an article written by Dr. T. A. Matthews as follows in *The Practitioner* of June, 1911 :—

Peritonsillar abscess, this was followed by albuminuria and œdema of the feet, which after some three weeks disappeared, and was succeeded by hysterical paraplegia (paralysis of leg), noisy cough and wasting ; the condition was improving when in February, 1908, she had what appeared to be a typical case of influenza.

On March 2nd when all acute symptoms had vanished and the patient had resumed her usual occupation, a peculiar lead-coloured tint was noticed in her skin, this became more marked daily, together with a slaty blue colouring of the lips, ears, tongue, and mucous membrane of the mouth. As she had been taking phenacetin (as directed by the doctor) I thought her condition was due to that drug, and forbade its further use on March 4th ; but despite this, the condition became daily worse. By the 8th the colour was very deep, and there was slight dyspnoea (difficulty of breathing), and on the following night I was summoned hastily and found her extremely cyanotic (blue), with great dyspnoea, and a small soft pulse of 160. Strychnine given hypodermically relieved the dyspnoea, but produced no alteration in the colour or pulse ; these attacks continued at frequent intervals for two days and in lessening numbers during the following week. Strychnine, amylnitrite and oxygen were tried, and while all relieved the dyspnoea, neither had the slightest effect upon either the colour or the pulse.

At this period the patient was to all appearance in a moribund condition. I noticed that the blood escaping from a puncture caused by a hypodermic needle was a mahogany colour and that it clotted slowly. For weeks the cyanosis remained uniformly the same, the pulse sank to and kept at 130. Dyspnoea came only upon exertion.

Insomnia occurred and in May (1908), as she was

becoming neurasthenic, a rest cure in a nursing home was decided upon. At the end of six weeks there was a little gain in weight, improved appetite, but still no change in colour, she began to complain of a feeling of being paralysed, but pointed out she had no loss of movement. In July Dr. James Collier, who had for some time been interested in the case, suggested that it was one of "Cyanosis Enterogenous." Dr. William Hunter, who saw the patient, agreed with this view.

In July, 1908, Dr. James Collier, who was a personal friend and very concerned about my condition, suggested my seeing Mr. Arbuthnot Lane (now Sir Arbuthnot Lane), but the suggestion was not acted upon. About this time I went away for a change to Ilkley, and, whilst there, had the most excruciating neuralgia, continued constipation, and internal pain, which, though not intense, made me pretty miserable, and in the end forced me to give up golf and tennis, both of which I tried to stick to, to take my mind off myself. I was away, I think, from the beginning of August to the latter part of September. The article of *The Practitioner* stated:—

The patient went away for a change, and I did not see her again until September; on her return the cyanosis was even more intense, dyspnoea (struggle for breath) was more frequent, and in spite of an improved appetite she began to waste. There was vomiting some hours after meals, trigeminal neuralgia was a constant worry and transient oedema of the knuckles occurred occasionally.

Soon after this I personally noticed the cyanosis was deeper after meals, and lessened after vomiting. This became gradually more marked. I kept a very careful note of everything and reported my observations to the doctor. I constantly wakened between 1 a.m. and 3 a.m., deeply cyanosed, vomited and then improved in colour. On one of these occasions I noticed that after vomiting the whole of my left ear

and cheek were distinctly pink, how long it lasted I do not know, for I got back to bed, and when I got up some hours later the blueness was quite as bad. I quote again *The Practitioner* article:—

The condition was unchanged at the beginning of October (1908) save that, although more food was taken, weight continued to be lost. In addition to the daily variation in the depth of the cyanosis, actual change of tint to a quite normal pink, at first for a few minutes only, but later replacing the periods of lesser cyanosis, now occurred. The earliest of these changes were very remarkable; without any warning or the patient being aware of it, the cyanosis was replaced in 15 seconds by a perfectly normal colour. This lasted about two minutes and then the cyanosis became as bad as ever in another 15 or 20 seconds. I saw one of these periods myself, and several others were seen by careful observers. On November 1st (1908) after a particularly severe attack of sickness the colour was normal for two hours, cyanosis recurring after the next meal (my own observations). During the month a continuous improvement was maintained, and no blueness in either skin or mucous membrane was seen after November 30th. Three months later (February, 1909) mucous colitis came on and has off and on worried the patient during the past two years, but there has been no return of any abnormal pigmentation.

During the whole of the two years mentioned in the previous paragraph I was steadily losing weight, abdominal pain increased rapidly, and became almost unbearable (I was given an amount of electrical treatment, injections of serum nightly in the spine for months, and drugs of every description were given me day and night). I had intense neuralgia. My period practically ceased in 1909, and in 1910 quite disappeared. Constipation was very acute, I was always taking medicine and having enemas, and over and over again had the greatest difficulty and pain passing urine. On more than one occasion in 1910 it had to be taken from me. I distinctly remember

that the abdomen, neck, and, I believe, groin were a very bad colour and the skin wrinkled. I had practically no sleep owing to intense abdominal pain, except from sleeping draughts, and the latter part of 1910 and the beginning of 1911 only when given morphia. This often was given too in the morning to enable me to go to town and do my work, so great was the pain. I would not give up my work. In fact it and my great Chief kept me alive.

My life was a veritable "hell on earth." I was getting thinner and thinner every day; at the end of 1910 my weight was about 6 stone; every week it got less. Sir Boverton Redwood (my Chief) and Dr. James Collier were getting more and more worried, and finally Dr. Collier insisted, and of course Sir Boverton agreed, having wished it himself long ago, that I must be taken to Sir Arbuthnot Lane. This was, I believe, the middle of February, 1911. It is almost impossible to describe my miserable condition when I saw Sir Arbuthnot. Practically all life and hope had gone out of me, I hardly cared whether I lived. My weight was just under 5 stone. However, Sir Arbuthnot's intense sympathy, goodness and great understanding heart filled me with a new hope.

Owing to my general and feeble condition Sir Arbuthnot decided to try the effect of short-circuiting (this operation was carried out at the beginning of March, 1911, my weight was at that time about 5 stone). I believe I am right in saying Sir Arbuthnot would have preferred then to have removed the colon. I got through the operation, and after a time went to Tikley again. My condition then became very bad through severe constipation and other complications. I was under an exceedingly kind doctor, who soon realized the seriousness of my condition, although my own doctor to whom he wrote could not; and after communicating with Sir Boverton Redwood and, I think, with Sir Arbuthnot, he sent me back

to London and Sir Arbuthnot. My own doctor did not return (he was away on holiday), so Dr. James Collier again helped me by seeing Sir Arbuthnot, and they decided something must be done at once, but sent me to Dr. Alfred C. Jordan to be X-rayed before a further operation.

I suffered intensely all this time and my weight was down to 4 stone 6 lb. when I saw Sir Arbuthnot. He put it to me most beautifully that my condition was very serious, and that there was a great risk that I might die if I was operated on; but that I certainly should die if I was not, owing to my ghastly condition. Again his understanding heart and tender sympathy filled me with faith and courage, as did the wise counsel of my Chief, Sir Boverton Redwood, and Dr. James Collier, who told me to trust in Sir Arbuthnot. So I decided to leave all in his hands and to his great skill.

And now comes the miracle of miracles. Here I am, ten years later, weighing 10 stone 10½ lb., the embodiment of the "Resurrection" as my friends call me. Five weeks after the removal of the colon I went down to Bournemouth to be under Dr. Hyla Greaves, who was so anxious, owing to all that he had been told, that he was prepared to have a nurse with me night and day. I begged him to see what I could do on my own by simply carrying out his instructions to the letter. He trusted me, with the result that every week saw an improvement, and a gain in weight. All pain in the abdomen practically vanished, my appetite improved, and, although at first I was still sleeping badly, I soon got over this. By the by, all morphia and sleeping draughts were discontinued. Sympathetic treatment and encouragement from Dr. Hyla Greaves, good food, fresh air, sanatogen, stout, milk and liquid paraffin was all the treatment I had.

I well remember that before Christmas I was able to walk to the Winter Gardens from the West Cliff, a good 30-minutes' walk, and I was walking every

day, having discarded my bath chair after about three weeks. Dr. Hyla Greaves was delighted with me. Incidentally he told me, and I believe he was a neurologist, that from the beginning he saw no indication of either hysteria or neurasthenia.

It had been said by my original doctor that, if I resumed my secretarial duties under a year's rest after the operation, I should only break down and again become neurotic. From Bournemouth, at the beginning of January, 1912, I went to Falmouth, to stay with Dr. David Trail and his wife. Dr. Trail was looking after me and he soon began to see that my heart was set on getting back to my work, and that I was longing for it. So he took the responsibility of saying I could go back at the end of February. He knew, of course, that I was going to Sir Boverton Redwood, who would take care of me. I did not break down, and from that day in 1912 to 1921 I have never been ill. I have never had a doctor and I have never had any medicine whatsoever.

I have worked very hard during the war on Government work with Sir Boverton Redwood, and had practically no holiday the whole time. From the time of the second operation, but only for 18 months, I wore a special belt recommended by Sir Arbuthnot, but that is all I did. I do not think I have had a sore throat since, and certainly never the same kind of cough. In fact, I think I can say I have had no cough at all. My period returned in December, 1911, became quite normal without any pain in January, 1912, and I have never had any trouble since.

My bowels have acted quite normally two or three times a day. I can eat anything and sleep well. My weight steadily increased. In December, 1921, it was 10 stone 10½ lb. For years I have been able to play tennis, dance, row, etc., in fact do everything that a healthy individual likes to do. I thoroughly enjoy life in every way. I have been happily married more

than ten years. A life which was a perfect "hell on earth" during the four years before Sir Arbuthnot saw me and came to my aid, is now filled with abounding happiness. To Sir Arbuthnot's skill I owe everything: Life, Health, Happiness, and even my husband, as, but for him, I could never have married. My feelings and gratitude are too deep for words, and I just long to let the world know what he can do if his aid is sought, and what he has done for me.

CHAPTER XVI

The Machinery of Digestion and Excretion —Its Organization, its Breakdown and the Consequences

The human organism is dependent for health and comfort on the efficient performance of the excretory functions. If, from want of elimination, waste products are allowed to accumulate in the system, toxic symptoms soon supervene.—DR. ERIC PRITCHARD, *The Physiological Feeding of Infants and Children*.

IN the previous chapters of this book I have shown, as fully as the necessarily limited space of a single volume allows, that chronic bowel stagnation leads directly or indirectly to a very large number of serious and very serious disorders and diseases. The imposing host of authoritative witnesses whom I have quoted makes that absolutely clear. Most of my readers will by now feel certain that chronic constipation is indeed "the most insidious and the most deadly of diseases" as I have stated on the title page. However, a few professional readers may not be convinced by the overwhelming testimony I have furnished, and they may call for further scientific evidence, while the great majority of readers will naturally wish to know how chronic bowel stagnation can be prevented, and how it can be cured if already firmly established. To satisfy both sets of readers, let us now consider the machinery and the working of the apparatus of diges-

tion and excretion, and let us then investigate the ways by which our bowels degenerate. The important facts given will at the same time convince the sceptical and furnish the necessary knowledge to those who would keep their bowels in good order or who would like to restore them to health and to normality.

The majority of us thoughtlessly wander through life, giving little heed to our bodies. We eat what we fancy, or what is recommended to us, and if, in consequence, we experience any physical discomforts we readily blame the stomach or the liver or the bowel for our troubles and "correct" matters by some medicament or other which momentarily may prove exceedingly helpful, and which, in consequence, is resorted to again and again until a habit is firmly established which in the end may prove disastrous.

The body is the most wonderful piece of machinery in the world. The most ingenious and the most perfect man-made engine is clumsy trash compared with the miraculous, automatic, self-regulating, self-cleansing, self-oiling and self-repairing apparatus which Providence had given us. It is true the eye is not so powerful as the telescope or the microscope, but then it acts not only as a telescope and microscope, but also as a photographic apparatus. It is a telescope, a microscope and a photographic apparatus in one, and we need not pull out a long tube to focus objects at various distances as we have to do when using a telescope. The lens of the human eye is not rigid as the lens of the telescope, microscope and photographic apparatus, but it is flexible and it adjusts itself instantaneously and miraculously to every kind of duty which it is called upon to perform. We cannot keep clean our windows, spectacles, etc., without scratching them, even if we use the most delicate cloth, leather, brush, feather, etc. The window of the human eye is kept clean and unscratched, if need be for a century, by being constantly wiped with the eyelids and washed

with the tears, a miraculous fluid which is slightly antiseptic and which not only cleanses the eye, but which also washes away dust and destroys the disease germs which may have settled on the particularly tender mucous membrane in the corner of the eye.

The apparatus of digestion and excretion is not mentioned in polite society. It is considered as something which is commonplace, gross, coarse, disgusting, loathsome. However, it is as wonderful a piece of machinery as is the eye. Unfortunately science is as yet quite insufficiently acquainted with the working of the body. Still, notwithstanding our fragmentary knowledge, I think I can make it clear to all that the digestive apparatus, as much as the eye, is a miracle of miracles.

In our mouth we manufacture the saliva, a fluid which is at least as wonderful and as efficient as the tears. There are three sets of glands which make saliva. Each of them produces a special liquid which is very different from that excreted by the other two, and, according to the nature of the food masticated, the salivary glands send forth one kind of juice or the other or an appropriate mixture. They prepare the food not only by making it slippery and easily swallowable, but they also effect necessary and important chemical changes. The salivary glands start working at the sight of food. They cause the mouth to water.

Also, at the sight of food the stomach starts pouring out large quantities of gastric juice which is highly acid. Hydrochloric acid is a powerful corrosive which dissolves leather, wood, metals. At the same time it is strongly germicidal. The normal stomach secretes each day from one dram to two-thirds of an ounce of pure hydrochloric acid, but no scientist can tell how the stomach is able to produce that powerful acid, nor how it is that the tender lining of the stomach is not damaged by a liquid which, undiluted, would damage the tough outer skin of our hands. The com-

position of the gastric juice also is carefully regulated by the body in accordance with the food we eat, for each kind of food is individually treated and chemically elaborated. Large quantities of hydrochloric acid are required for dealing with meat, small ones for dealing with bread, vegetables, etc., and very small ones for dealing with milk. Orthodox Jews must not take meat and milk at the same meal. Obviously the ancients knew far more about digestion than most of us imagine. Meat eaters require and produce far more hydrochloric acid than vegetarians, and people who have "weak stomachs" will do well to abandon meat. The advantages of vegetarianism to people with weak digestion was also known to the ancients. St. Paul wrote in his Letter to the Romans: "He that is weak eateth herbs." Hippocrates and his successors ordered abstention from meat for those who had digestive troubles, who excreted an insufficient quantity of hydrochloric acid.

The gastric juice, like all the juices of the body, including the blood, mother's milk, etc., is a natural disinfectant and germicide. We swallow countless millions of disease germs with our food and drink, but these are faithfully dealt with first by the nasal liquid and the saliva and then by the gastric juice by means of its hydrochloric acid. If a dog swallows a piece of putrid meat, all evidence of putrefaction is rapidly destroyed in the stomach. The meat is made wholesome and safe. We read in Vol. IV, page 96, 1835, of the works of the great John Hunter, who flourished a century ago:—

If very putrid meat is given to a dog, and the dog killed after some time, the meat will be found sweet, and all putrefaction at an end.

The stomach only prepares the food for digestion. The widely prevailing idea that the food is absorbed by the stomach is mistaken. Absorption takes place

in the very lengthy small bowel. However, the food, by the time absorption takes place through innumerable fine processes, the microscopic " villi " of the bowel walls, has been further elaborated with miraculous chemical juices poured out in huge quantities and in a composition which has been carefully adjusted according to individual requirements by the pancreas, by the gall-bladder and by the bowel itself. Professor J. P. Pavlov, the celebrated Russian scientist, wrote in his classical treatise, *The Work of the Digestive Glands*, 1910, on pages 3, 31, 32, etc. :—

The mechanism of digestion can no longer be presented in the abstract manner current in recent physiological teaching. The differences and complexity of the reagents indicate that the work of the digestive canal in every single case is elaborately planned, beautifully executed, and, above all, especially adapted to the task in hand. For each meal—i.e., for each set of materials to be dealt with—a suitable combination of reagents with special properties is produced. The properties of the digestive juices vary during the progress of secretion according to the same laws which hold good for variations in the hourly quantity. We can now appreciate still better the astonishing exactitude of the work of the glands : that which is demanded of them they furnish each time to a hair's breadth, no more and no less. They are capable of producing secretions of varying composition, with more or less ferment, or with different proportions of the individual ferments, when, as in the case of the pancreatic juice, several such are present. Moreover, other properties of the juices, not alone their contents of ferments, are likewise varied.

Researches carried out by Dr. Khizhin on dogs with stomach pouches have shown that feeding with mixed diets, as well as the separate administration of milk, bread or meat, etc., call forth each time special modifications in the activity of the gastric glands. The peculiarities in the secretion are not limited to the properties of the juice, but extend to the rate and duration of its flow, and also to its total quantity. The greatest digestive power belongs to the juice poured out on bread, which for shortness we may

name "bread-juice." "Bread-juice" contains four times as much ferment as "milk juice," and, in this respect, is four times as concentrated. Not alone the digestive power, but also the total acidity, varies with the nature of the diet. The acidity is, however, greatest with flesh (0.56 per cent) and lowest with bread 0.46 per cent). In a similar way the total quantity of juice poured out and the duration of its secretion are seen to be dependent upon the kind of food. This relationship is equally clear whether, in estimating the food, one takes its total weight, or its amount of dried substance, or, lastly, its content of nitrogen (since the gastric juice acts only on the protein constituents). Thus with a flesh diet, the maximum rate of secretion occurs during the first or second hour, the quantity of juice furnished in each being approximately the same. With a bread diet we have invariably a pronounced maximum in the first hour, and with milk a similar one during the second or the third hour.

The work of the pancreas, like that of the gastric glands, is also specialized in regard to the hourly rate with which the secretion is poured out on the different classes of food. If, in the feeding of animals, the kind of food be altered, and the new diet maintained for a length of time, it is found that the ferment-content of the juice becomes from day to day more and more adapted to the requirements of the food. When, under the influence of a given diet, a particular condition of the pancreatic activity had been established in our experiment animals, we were able, by altering the feeding, to reverse it several times in one and the same animal.

With regard to the salivary glands and their work, Pavlov told us on pages 71 and 73 :—

(1) The work of the salivary glands varies widely both in quantity and quality according to the degree and nature of the stimulation ; (2) the variations in the quantity and composition of the saliva secreted do not always run parallel, indeed they often markedly diverge ; (3) the differences, nevertheless, admit to a certain degree of systematic arrangement. Thus, if eatable substances be given to the animal, the drier and harder the food, the

more the secretion poured out by the mucous glands. Milk constitutes a striking exception to this rule, which particularly applies to the same glands. Much more saliva is poured out by them for milk than for flesh. The exception with regard to milk is of interest in view of the fact that when mucus saliva is mixed with it, a looser, more easily digested coagulum is afterwards obtained when it meets with the gastric juice. "Milk saliva" is very concentrated, the richest of all in organic solids; its volume is large.

Summarizing his discoveries, which were based on most ingenious experiments on animals and which are generally accepted by the scientific world, Pavlov wrote on page 147:—

Although much more remains to be done, we have reason to be satisfied with what has been accomplished. Our results, I hope, have for ever done away with the crude and barren idea that the alimentary canal is universally responsive to every mechanical, chemical, or thermal agency, regardless of the particular requirements of each phase of digestion. Instead of this hazy conception, we now see delineated an intricate mechanism which, like everything else in nature, is adapted with the utmost delicacy and precision to the work which it has to perform.

The chemistry of the body is so wonderful as to bewilder the greatest chemists, who have tried in vain to discover and explain all the chemical processes of conversion and re-conversion which take place. The body easily changes fat into sugar, or sugar into fat, and it lays down in the liver and in the tissues a food reserve of animal starch, called glycogen, which, in case of sudden need, is instantaneously converted into sugar in which form it can be absorbed by the body without delay.

Although the elaborated food is absorbed by the walls of the small bowel, digestion proper takes place not in the small bowel. Digestion means absorption and incorporation in the body. The wonderfully prepared food particles which are entirely different in

appearance and chemical composition from the bread, meat, vegetables, sweets, cheese, pickles, etc., which we have eaten, are carried from the bowel as a stream of pre-digested food to the individual cells which, in their countless billions, act like independent and intelligent little beings. They taste the food that is swept along and they absorb some, reject some, and excrete that part of the food they have absorbed which they find unsuitable, together with excreta of their own, and which are more or less poisonous.

In addition to the vast quantities of wonderful and highly individualized fluids poured out by the glands of the mouth and of the stomach, by the gall-bladder, the pancreas, etc., there are the still more wonderful juices which are elaborated in infinitely small quantities by the various glands of internal secretion, which have the most potent effect upon the body and its work. A slight deficiency in quantity or composition of juice emanating from the thyroid gland may convert a healthily-born, promising child into an imbecile, crippled dwarf. A slight deficiency in the fluid excreted from a gland at the base of the brain may have similarly far-reaching and disastrous consequences of a totally different kind. The fluids from all these glands are of course of the highest importance to the proper working of the apparatus of digestion and excretion. These glands are kept in health by proper food properly elaborated, and they in turn, if in health, contribute to the health and strength of the body as a whole and of all the parts composing it.

The average human being produces every day a bucketful of miraculous liquids of every kind. We produce and absorb per day approximately two pints of saliva, three or four pints of gastric juice, a pint or more of pancreatic juice, one or two pints of gall and all these juices are poured into the alimentary canal. However, we emit only little water in the form of urine, in the breath, in the perspiration, etc. It

follows that the bulk of those wonderful and totally different chemical liquids produced by the salivary glands, the stomach, the gall-bladder, etc., are not excreted, but are cleansed and purified by the body, are converted once more into saliva, gastric juice, gall, and so forth, and are used over and over and over again.

The most miraculous organs of the body are undoubtedly the extremely small ones, such as the glands of internal secretion which with the tiny fragment of a single drop can achieve miracles which it would be out of place to describe in this book. Unfortunately we know little about these glands. Their wonderful working is little understood by the scientist and it is perhaps beyond our limited intelligence. It is more easy to follow the working of a large organ. Let us then briefly glance at the activity of the largest gland in the human body, the liver.

The liver, like most of our organs, is not restricted to one function, but fulfils various duties. Exactly as the apparently clumsy and shapeless piece of flesh, the tongue, has the duty to cleanse the mouth and the teeth, to taste and to criticize the food, to swallow it, act as an organ of speech and as an indicator of our health, the liver has many widely differing functions. Its 20 million bile-making cells produce every twenty-four hours about a pint of bile which is needed for elaborating the food, and the composition of the bile is changed according to our requirements. Furthermore, the liver miraculously converts the sugar we have eaten into glycogen, or animal starch, and stores it up until wanted, - acting as a larder to the body. Again acting as a larder, that wonderful organ stores up iron, which is indispensable to our health, and vitamins. We require iron for the hæmoglobin which is contained in the red corpuscles of the blood, and they are needed to enable us to breathe. As mother's milk contains no iron, the new-born infant brings into

the world a nine-months' reserve supply of iron which is carefully stored away in the liver.

The miraculous vitamins are stored up in the liver, the faithful guardian of our health. Children and fully grown people who are ailing or weak through vitamin deficiency are given cod-liver oil. The greed with which all meat-eating animals and birds devour the liver, which is the first thing they tear from the carcass, proclaims their knowledge of vitamins and of the place where they are stored.

The liver acts not only as an aid to digestion and as a larder, but it is the great filter and crematorium of the body in which poisonous substances are made harmless by converting them into less harmful or harmless ones by means of its unique chemistry. For instance, the liver detoxicates and destroys the nicotine contained in the tobacco and prepares it for elimination by the kidneys. Many other poisons are similarly treated, and those which cannot be made harmless are stored away by the liver because they will do less injury if retained by that organ than if allowed to poison the system. For instance, lead and mercury, which we may absorb in various ways, and other poisons, are thus retained.

Part of the poisons which the liver has gathered up are excreted in the bile, which, according to the investigations of Bouchard, is six times as poisonous as the urine. These liver poisons are discharged into the bowel and are evacuated by it if the bowel acts normally. However, if there is chronic constipation, the bile is re-absorbed and is again excreted by the liver, and thus the gall becomes more concentrated, more poisonous. Hence absorption of the concentrated gall into the system, consequent upon constipation, makes us feel "liverish" or "bilious," gives us a yellow complexion and causes us to reproach the liver for a condition of affairs which as a rule is due to our own action.

This brief and very sketchy and fragmentary description of a small part of the apparatus of digestion and excretion shows the miraculous perfection of the machinery which Providence has given us, and which we only too often throw out of gear through sheer carelessness and gross abuse. One could fill a large volume with the miraculous activities of the digestive apparatus alone.

We have in our system not only countless perfectly devised organs and arrangements for dealing with food of every kind when the body is in health, and for making countless chemical elaborations and conversions which are beyond the ken of the chemist and of the physiologist, but we have in addition endless means for dealing with every conceivable emergency. Germs of disease, if not destroyed by the excretion of the nose, mouth, eyes, stomach, etc., are dealt with by the body in various ways, only a few of which are imperfectly known to science. Every kind of disease germ causes the body to produce the proper chemical or biologic antidote in its chemical and physiological laboratories. Every emergency of the body finds the body ready for appropriate action. Disease germs are fought, walled in, sweated out or eaten up by the body. A wound or contusion, a burn, a chill, etc., immediately leads to wise and effective defensive action. The means whereby the body protects itself, regulates itself, cleans itself, doctors itself with chemical and serums and keeps itself in health are miraculous, but as I have dealt very fully with this subject in my book, *Good Health and Happiness*, I would refer my readers to that volume.

Our stools may be loathsome to the eye and nose, but they are objects of the highest interest to all those who have sense enough to take an intelligent interest in their body. Most people mistakenly believe that the stools consist solely of food residue. People who undergo prolonged fasts may not have evacuations,

but then they are constipated, for even the starving body produces day by day considerable quantities of excreta which are despatched towards the bowel. Experiments made on animals show that a large proportion of the stools consists of body-waste, of the excreta of the cells, of dead cells and of other waste materials, most of which are poisonous. If in an animal a stretch of the gut is hermetically closed for a time so that no food residues can reach it, the interior of that isolated portion of the gut will after a time be found covered with apparently normal fæcal matter which has got there through the bowel walls. We read on page 580 of Professor W. D. Halliburton's *Handbook of Physiology*, 1923 :—

The fæces on an ordinary mixed diet contain comparatively little food residues, and a small quantity is excreted even during starvation. Voit and Hermann showed independently that an intestinal loop which had been emptied and separated from the rest of the bowel contained, a few days later, material identical with fæces, and consisting of intestinal juice, desquamated epithelium cells, and bacteria.

The increase in the amount of fæces which occurs when food is taken, even when the food is free from cellulose, is due to the mechanical and chemical stimulation which leads to an increase in the succus entericus (bowel juice), and in the shedding of epithelial cells. The fæces contain about 1 per cent of nitrogen, but this is chiefly contained in the bodies of bacteria, and the disintegrated epithelial cells. Addition of protein to the diet makes practically no difference to the nitrogen in the fæces under normal conditions.

The addition of cellulose to the diet increases the bulk of the fæces, partly because much of the cellulose is excreted unchanged, partly because it stimulates the mucous membrane to secrete more succus entericus, and finally because the larger food residue favours the development of bacteria.

On an average, from one-third to one-fifth (varying with the diet) of the weight of dried fæces consists of bacteria. The average weight of dried bacteria excreted daily

is 8 grammes; this contains 0.8 gramme of nitrogen, or about half the nitrogen of the fæces. Strasburger estimated that about 128,000,000,000,000 bacteria are evacuated in the fæces of a man every day. The vast majority of these are dead.

The intestinal contents travel more rapidly when vegetables are present, for the indigestible cellulose stimulates peristalsis, and therefore a large quantity of water escapes absorption in the colon. Thus on an ordinary mixed diet 35 grammes of dry substance and 100 grammes of water are daily excreted in the fæces, whereas on a vegetable diet the quantities are 75 and 260 grammes respectively.

The bowel of men and animals is filled partly with food residues, partly with uncountable dead cells, partly with equally uncountable millions of dead and living micro-organisms, partly with poisonous matter sent there by the liver and other organs.

Some short-sighted scientists, or rather pseudo-scientists, have proposed that we should get rid of this incredible accumulation of micro-organisms and poisons—it must not be forgotten that the micro-organisms of disease excrete the most powerful poisons known to science, poisons compared with which cobra poison is mild—by cutting out the big bowel and making an artificial opening in front of the abdomen, or by “detoxicating” or “disinfecting” the colon with powerful microbe-destroying chemicals. We should not blame the apparatus of excretion for the troubles which arise, not owing to its formation and microbic contents, but owing to our own faults. The colon of the normally living causes neither trouble nor disease, and the billions of micro-organisms contained in it do no harm to those who live in accordance with the dictates of Nature. Our bodies were meant to deal with micro-organisms and to overcome them. Besides, many of the microbic forms contained in our bowel

are necessary to our health. All attempts hitherto made to rear animals with sterile bowels have failed disastrously. By means of powerful chemicals we may possibly destroy the bacteria of disease in the colon, but we shall also slaughter the harmless and necessary organisms contained in it, which are our best friends, and we shall besides weaken and destroy the cells of which the bowel wall is composed, and which are made of material very similar to that of the disease micro-organisms.

Consideration of the working of our body makes it obvious to the thoughtful that excretion is as important as nutrition. Unless nutrition and excretion are properly balanced, plants, animals and men sicken, decline, and die. Over-nutrition accompanied by under-excretion is fatal to plants, animals and men, and the richest and the most wholesome food supplied will not improve matters, but will make them worse. Hippocrates taught twenty-three centuries ago in his *Aphorisms*: "If a body is unhealthy, the more you nourish it, the more you injure it."

Excretion is effected jointly by the bowels, kidneys, skin and lungs, which in their turn receive excretory material from the liver and from all other parts of the body. Dr. Eric Pritchard wrote on page 69 of his book, *The Physiological Feeding of Infants and Children*, 1922:—

The human organism is dependent for health and comfort on the efficient performance of the excretory functions. If, from want of elimination, waste products are allowed to accumulate in the system, toxic symptoms soon supervene. Waste products are removed from the body by the lungs, by the skin, by the bowels and by the kidneys; any one of these, or any combination of them, may fail in duty, but failure of one may, within limits, be compensated for by a corresponding over-activity of another.

The importance of free excretion may be seen from

the fact that all our bodily excretions are acutely poisonous. Their undue retention increases the virulence of these poisons very greatly, and their absorption leads to reduced health, sickness, disease and disaster. Dr. John Harvey Kellogg told us on page 68 of his book, *Colon Hygiene*, 1923 :—

Not the least important constituents of the fæces are the waste products which they contain, a fact quite too often overlooked. The mucous membrane of the intestine, like the skin, is an excretory organ. Although the extent of the intestinal mucus covering is only seven square feet, about one-third of that of the skin, there is reason for believing that its importance as an outlet is fully as great as that of the skin, and probably much greater. This fact has only recently been made known. By the researches of Roger and others, it has been shown that the mucous membrane removes from the body some of the most deadly poisons which are produced in our tissues, or which may be introduced from without. If, for example, a quarter of a grain of morphia is injected underneath the skin of a person, a large part of the poison will be found in the stomach and intestine within a half hour. This excretion of poisons appears in the light of these new researches to be one of the important offices of the stomach.

Lime salts which are no longer needed in the body are excreted through the intestine.

The bile poured into the intestine contains some of the most deadly poisons produced in the body. These poisons are often concentrated by re-absorption, the natural result of constipation.

The colon is not merely a receptacle for unusable food remnants, but is also an excretory organ, and the avenue through which the highly poisonous bile is discharged. It has been shown that the bile is six times as poisonous as the urine. The secretion of bile is continuous and its prompt discharge from the body is as important as the discharge of the far less poisonous urine.

Unfortunately people in general do not realize how poisonous are their excreta, which by no means con-

sist only of relatively innocent "food residues." Still more unfortunately most medical men are not acquainted with the normal working of the normal bowel. Every meal releases an automatic mechanism which moves the bowel contents energetically towards the exit. Normal animals leading normal lives, untrained babies, primitive savages and idiots automatically empty their bowels after every meal. Hippocrates, writing twenty-three centuries ago, mentioned casually that people in health went to stool three or four times per day. Civilization has destroyed the normal working of the all-important organ of excretion. Civilization ordains that we should empty our bowels only once per day, and the vast majority of doctors consider a single motion per day to be "normal." Practically every doctor believes that a "well-formed stool" is a sign of health. In reality, the single well-formed stool of civilization, which is not found in primitive races, is a sure and certain sign of constipation, of the absorption of the more liquid portions of the bowel contents by the body, and in many cases it betokens auto-intoxication, self-poisoning. After all, there is a limit to the power of the body to neutralize and make harmless the poisons thus absorbed. Dr. Kellogg wrote on page 117 of his book, *Colon Hygiene*, 1923 :—

A well-formed stool always means constipation. The significance is that the colon is packed full like a sausage and that the fæcal matters have been so long retained that they have been compacted by the absorption of water. The whole colon is filled, and the bowel movement is the result of the pressure of the incoming food residues at the other end.

When the body-wastes are promptly discharged as they should be, the colon never contains the residues of more than two meals and at the after-breakfast movement should be completely emptied so that the disinfecting and lubricating mucus which its walls secrete may have the opportunity

to cleanse and disinfect the body's garbage receptacle and thus keep it in a sanitary condition.

People are not only under the delusion that a single well-formed stool in the morning is healthy and normal but they are convinced that their stool is innocuous if it is relatively inoffensive to the nose. Only too often the excreta have little smell because the stinking and poisonous liquid and gaseous portions have been absorbed into the body. Dr. Kellogg wrote on page 38 of *Auto-Intoxication, or Intestinal Toxæmia*, 1922 :—

The fact that in many cases of extreme constipation the faecal matters have very little odour is not evidence of the absence of putrefaction, but rather is evidence that the putrescible material has been exhausted and the putrefaction products absorbed. It is only necessary in such cases to give the patient a laxative to find in the loathsome smelling stools that result abundant evidence of the active putrefaction taking place in the upper portion of the colon.

There is another misconception which occasionally becomes disastrous to people. Many believe that they are not constipated because they go regularly to stool, or because they have loose stools. Regularity in excretion and even diarrhoea may be found in the chronically constipated. The bowel tract is twenty-seven feet long. The colon itself is three feet long. People may every day get rid of a few inches of material near the exit and have the residue of a large number of meals habitually festering in their body. Besides, the bowel is not constructed on the principle of a glazed drain pipe, but is expandable. Occasionally bowels are filled with a bucketful of solid excreta, and there is a little channel through the centre of this horrible mess by which diarrhoeas may be discharged. Sometimes the bowel forms pockets in which waste material accumulates and becomes as hard as stone. The ability of the bowel to retain not only the normal

bowel contents but even bulky foreign objects for many months may be gauged from the following communication from V. P. Norman in the *British Medical Journal* of the 27th June, 1925:—

The following case of foreign body in the rectum is of some interest on account of the long time (seven months) before it was expelled, and the absence of any discomfort for several months. A married woman, aged 38, was operated on for a uterine fibroid in October, 1924. She was discharged from hospital on November 1st perfectly well, and remained so until last March, when she began to have increasing constipation and a sensation of fullness in the rectum. The constipation increased until, on May 19th, her bowels ceased to act, in spite of large doses of castor oil and Epsom salts. Feeling something protruding from the anus, she grasped it with her fingers and with difficulty removed a sodden inspissated piece of gauze, 8 in. long, 4 in. wide, and about 1 in. thick.

Dr. Alfred C. Jordan, the eminent X-ray authority, stated in the *Lancet* of 13th December, 1924:—

Stasis and toxæmia cannot be gauged by the number or consistency of the stools. Bismuth X-ray examinations show that a patient may have one, two, or more evacuations daily, and may nevertheless harbour stagnant fæces for weeks.

Decomposing masses accumulate in the cæcum and ascending colon where they act as irritants and set up catarrh of the mucous membrane—colitis. Fæcal material is carried through the irritated bowel in small quantities mixed with mucus till enough has accumulated in the pelvic colon and rectum to cause an evacuation. There may be several evacuations, but nevertheless the cæcum remains packed, the ileum is unable to propel its contents into the tensely filled cæcum, and the lower ileal coils become a cesspool teeming with micro-organisms which set up intense toxæmia.

This state of affairs exists in thousands of our fellow-creatures who, consequently, are living on the verge of a breakdown. Not to mention the serious general manifesta-

tions of neglected stasis, the local breakdowns in the alimentary tract include such familiar conditions as appendicitis, gall-stones, gastric and duodenal ulcer, and, worst of all, cancer.

The majority of scientists see in the microbe the cause of most diseases. It is understandable that laboratory workers who have exclusively devoted themselves to the study of microbes see in the microbe the principal or the only cause of disease, but it is exceedingly regrettable that a veritable microbophobia, or rather a microbomania, has taken hold of the great majority of the doctors themselves. It is questionable whether the microbe produces the disease or whether the disease produces the microbe. The character of plants, animals and men depends on their nutrition and surroundings. Why should this general law of life not apply to the lowly plants or animals which are visible only with the microscope and which are called microbes? The soil is more important than the seed, for the seed will germinate only on receptive soil, but will die on unreceptive soil. We invite the disease microbe by providing for its reception a congenial soil and we convert innocuous microbes into dangerous ones by feeding them with poisonous matter accumulated in our insides and greatly increase their virulence. We reproach the microbe for our own faults exactly as we reproach our innocent stomach, liver, or bowel.

The food residues accumulated in the bowel may undergo changes of two kinds. They may either ferment or they may putrefy. The difference between fermentation and putrefaction is of fundamental importance and can be made obvious. A forgotten apple will turn brown, pappy, smell sour, but it will not be extremely offensive. On the other hand, a forgotten piece of meat or an egg will tell us that putrefaction, not fermentation, has taken place, by a horrible stench. Proteins in meat and eggs produce putrefaction. Carbohydrates in fruit, grain, milk, etc.,

produce fermentation. It makes a great difference to people who suffer from bowel stagnation whether the stagnant masses in their inside undergo the relatively innocent process of fermentation or the acutely poisonous change which is called putrefaction. Dr. P. J. Cammidge wrote on page 364 of his valuable book, *The Fæces of Children and Adults*, 1914:—

Putrefactive Intestinal Indigestion.—The putrefactive processes in proteins that go on in the intestinal tract are of distinctly greater importance than the fermentative changes that occur in carbohydrates. The products of fermentation are for the most part harmless, excepting when they are formed in considerable quantities; but the substances formed in the putrefactive disintegration of proteins, being to a great extent toxic nitrogenous bases, an abnormal formation is much more likely to give rise to serious symptoms. Even in healthy individuals a certain amount of protein decomposition goes on in the contents of the lower parts of the intestine, and chemical investigation may show that these are considerably increased without there being any obvious clinical symptoms. It is only when the putrefactive changes are so great, or have persisted long enough to overcome the defensive mechanisms of the organism, that unequivocal clinical signs make their appearance.

Owing to the fact that the products of intestinal putrefaction contain an aromatic nucleus that cannot be disrupted by the ordinary cellular activities of the body, they appear in the urine, and afford a valuable index of the extent and character of the changes that are going on in the intestine. An analysis of the urine is therefore not only useful in making a diagnosis when clinical symptoms are present, but may also serve to detect the condition before any serious symptoms arise.

Dr. John Harvey Kellogg wrote in *Auto-Intoxication, or Intestinal Toxæmia*, 1922, page 28:—

Fermentation and putrefaction are antagonistic processes. Fermentation produces acid products which are for the

most part harmless to human beings but inimical to putrefactive bacteria.

This wise provision is of greatest importance in the economy of Nature. Vegetable foods contain sugars, starches and dextrines, substances which ferment, and so when undergoing decay do not in general give rise to the obnoxious and poisonous gases and other substances which accompany the decay of animal tissues.

Milk likewise ferments because of the large amount of sugar which it contains. Eggs and meat do not ferment but undergo putrefaction, giving rise to highly offensive and poisonous products. This is because of the absence of sugar. Eggs or meat placed in a strong solution of sugar will not decay. Sugar is well known to be a preservative.

Dr. Leonard Williams wrote in his book, *Middle Age and Old Age*, page 24 :—

The importance of natural food—food, that is, which has escaped the meddlesome hand of man—is nowhere better exemplified than in the behaviour of the bacillus coli communis. The character of this bacillus depends entirely upon the nature of the soil on which it feeds. When it is cultivated upon a bed of animal protein, as in the case of the ordinary mixed feeder of to-day, it is a highly putrefactive organism and may be considered one of man's worst enemies. It does not confine its attentions to the large intestine, but it organizes successful raids into neighbouring organs, there to set up various maleficent processes. If, however, this same microbe is grown on a pabulum which consists chiefly of carbohydrates, it ceases to be putrefactive, our worst enemy, and becomes fermentative, our best friend.

The problem which has so far presented itself has been that of so arranging matters as to ensure that the carbohydrates win through to the lower reaches of the intestinal tract, the normal habitat of the bacillus. The carbohydrates have to pass unscathed through the mouth; to slip past the duodenum; and in the small intestine to avoid the various activities of the succus entericus (bowel juice). If, however, the carbohydrate is presented to the

mouth in an insoluble covering of cellulose, it has no difficulty in passing unaltered through the various gastrointestinal agencies which could otherwise overwhelm it. In this way it reaches the colonic habitat of the bacillus coli communis, and transforms that bacterium from an enemy into a friend.

Professor Charles D. Aaron strikingly told us in his book, *Diseases of the Digestive Organs*, 1921, page 685 :—

Metchnikoff points out that the secretions of the bacteria differ with different food. If a little faecal matter be placed in two tubes, one of which contains chopped meat in water and the other chopped vegetables in water, the fluid in the first tube after two days becomes extremely poisonous to rabbits, while the fluid in the second is entirely harmless to them. The bacterial products are thus different in the two tubes, although the bacteria are derived from an identical source.

Dr. Anthony Bassler, Professor of Abdominal Diseases, stated in his book, *Diseases of the Intestines and Lower Alimentary Tract*, 1920, on page 169 :—

It is a well-known fact that bacillus coli grown in media containing only protein derivatives will produce indol, phenol, hydrogen sulphide, ammonia, and other products indicative of protein decomposition. It is apparent then that the organism of necessity utilizes the protein substances. Putrefaction is the result, because the medium becomes progressively alkaline, foul odours develop, and the resulting products are not only disagreeable to the senses, but are quite unfit for food. This is bacterial putrefaction.

The same organism in the same protein medium, containing in addition sugar which the colon bacillus can utilize, now produces an entirely different kind of decomposition ; in place of the products of putrefaction now appear lactic acid, small amounts of fatty acids, as well as carbon dioxide and hydrogen, which are characteristic of the breakdown of carbohydrate. The reaction now is permanently and progressively acid, the odour not offensive, and the products formed are innocuous and inoffensive. This is bacterial fermentation.

Dr. John Harvey Kellogg wrote in *Auto-Intoxication, or Intestinal Toxæmia*, 1922, on page 247 :—

Food is not the only source of putrescible material in the colon. The bile, intestinal mucus and other intestinal secretions that are constantly poured into the alimentary canal furnish a sufficient amount of putrescible material to maintain a luxuriant putrefactive flora. When these materials are promptly discharged from the body, however, there is not sufficient time for the development of the putrefactive process, which requires much more time than is needed for the development of the fermentative processes to which carbohydrates are subject.

In fasting, however, there is almost complete inactivity of the intestine. Food is the natural excitant of peristaltic activity. Whenever food is taken into the stomach, active contraction waves begin at once, traversing the stomach at the rate of three to five a minute, and passing along down the whole alimentary tract. When food is withheld, these movements cease, the biliary and other excretions accumulate and undergo putrefaction; the poisons are absorbed; the tongue becomes coated; the breath foul; the urine is loaded with the products of putrefaction and all the evidences of intestinal auto-intoxication become intensified.

From the important extracts given it will no doubt be clear to all readers that, as regards the bowels, putrefaction is far more dangerous than fermentation. Unfortunately, the danger of putrefaction is increased by the fact that meat-eaters frequently bolt their food instead of chewing it thoroughly, with the result that pieces of meat which have not been solved by the digestive juices find their way into the colon. Dr. C. A. Herter wrote on page 327 of his valuable work, *The Common Bacterial Infections of the Digestive Tract*, 1907 :—

The use of an excessive quantity of meat frequently goes hand in hand with imperfect mastication. The result is that masses of muscle fibre find their way through the

small intestine into the lower ileum and large intestine, where they are attacked by putrefactive bacteria. The putrefactive bacteria find in meat proteid and casein good media for their support.

The occurrence of large numbers of fragments of meat or smaller aggregations of meat fibres in the fæces (stools) is an indication of the imperfect utilization of meat and should operate as a signal for its more cautious and intelligent use. It has already been mentioned that the intestinal contents of carnivora contain many more putrefactive, spore-bearing bacteria than is the case with the herbivora.

Chronic constipation by itself would be only a minor trouble. Its great danger lies in its bringing about auto-intoxication, the poisoning of the body as a whole. Food, delayed in the alimentary canal, if it only ferments is relatively innocuous, but if it putrefies, very virulent poisons develop. Now the question arises whether these poisons are warded off or neutralized by the wonderful machinery of the body, previously described, or whether they overcome the miraculous body defences and work untold mischief. Some scientists deny that chronic constipation leads to serious self-poisoning. However, their denials are based on insufficient knowledge. Reading of this chapter and the following ones will open the eyes of many who have hitherto declared that chronic auto-intoxication cannot be caused by chronic bowel stagnation.

It is quite true that the normally formed and normally fed human body cannot easily be poisoned from the bowel. The organs of normally constituted and wisely living people are in perfect working order. They experience no undue stagnation of the bowel contents. That may be seen by studying those primitive races which lead primitive lives. Among them bowel stagnation and most other bowel troubles of ours are practically unknown. The position is very different among the civilized and the over-civilized.

The latter suffer very generally from chronic constipation and consequent auto-intoxication, for the following reasons :—

1. Their diet is wrongly chosen. It consists largely of refined, concentrated, clogging foodstuffs which induce constipation. They lack roughage, which fills the bowel and stimulates it into activity. They lack the indispensable mineral elements, which are of the highest importance for the normal working of the body ; and they lack vitamins. Vitamin starvation is particularly disastrous, for it weakens the body as a whole, and weakens and injures particularly the bowel walls, as will be shown in due course.

2. The methods of civilization favour constipation by the one-stool-a-day fetish, a faulty attitude during the act of excretion, lack of physical exercise, overhot baths, etc.

3. The accumulation of masses of stagnant matter in the bowel leads to mechanical strain and further degeneration of that organ. The colon may either become kinked and partly constricted or it may become elongated and drop into the pelvis, as has been shown in Chapter III. In either case the passage of the excreta becomes gravely obstructed. Besides, the muscle wall of the abdomen is frequently weakened through sedentary life, causing the viscera to become displaced and entangled.

4. People suffering from chronic bowel stagnation try to overcome their trouble by taking irritating and bowel-weakening purgatives, enemas, etc., which still further damage and even lacerate the already weakened bowel wall, and thus the way is opened for the absorption of poisonous bowel contents.

The four points briefly enumerated will be dealt with in the following chapters with the necessary fullness in order to carry conviction. However, it seems necessary to deal at once with the all-important question whether the bowel walls which, when in normal health,

do not give passage to the poisons which are generated within the stagnant bowel, will indeed absorb these poisons and send them into the system if the bowel walls are weakened through faulty feeding, mechanical strain consequent upon kinks, etc., and the corrosive action of highly irritant medicines.

The late Dr. A. Combe, who was at the same time an eminent physician and an excellent chemist, wrote on pages 12 and 74 of his book, *Intestinal Auto-Intoxication*, 1908 :—

A glance at the anatomy and physiology of the intestine and its annexes will demonstrate without difficulty that the intestinal canal was constructed and adapted in view of the intestinal poisons and for the purpose of combating them.

If the intestinal microbes and their products were so inoffensive, why should the organism have accumulated such abundant means of defence of the first, second and third order? Why should the digestive juices possess the power of neutralizing digestive toxins? Why should the intestinal epithelium (skin covering) play the antitoxic (poison destroying) rôle so well demonstrated by the experiments of Queirolo, Heidenhain, Charrin and Tedeschi? Why should the blood returning from the intestines be obliged to pass through the liver, the epithelium of which is endowed with mighty toxicolytic (poison dissolving) power?

Why should we find that third line of defence, the anti-toxic glands, thyroid, thymus, suprarenal, the zymases (excretions) of which modify and neutralize certain toxins of intestinal origin which circulate in the blood, as we definitely know? Why, finally, should the eliminating organs constantly reject and throw out the products of intestinal putrefaction, if these were harmless? Ammonia and acetone are eliminated through the respiration; the skin throws out with the sweat, indol, phenol and sulphoethers; lastly, the kidneys eliminate through the urine the majority of the intestinal poisons.

The economy is, therefore, powerfully armed against the substances continually formed in the digestive tract. What

does that prove! If not, that these products constantly formed by the enzymes (chemical changes) and microbes, contain poisons which may become dangerous to the organism.

Charrin and Cassin showed that a series of toxins lost their toxicity completely or in part when they were introduced into the body through the digestive tract.

Whereas a dose of bacterial cultures (filtered) equivalent to five is fatal when injected into the circulation, fifty times the same amount does not provoke any appreciable disorder when administered by the mouth.

If the superficial layer of the intestinal mucosa is denuded by curettage (scraping) or altered by heat (dry or moist), iodine, etc., and care is taken to clean the surface immediately after, it will be found that the same quantity of toxins is rapidly fatal.

Dr. A. Bryce stated on page 56 of his book, *Intestinal Auto-Intoxication*, 1920 :—

L. R. Dragstedt, James Moorhead, and F. W. Burcky (*Journ. Exper. Med.*, 1917, p. 421) state that it is undoubted that highly toxic substances are present in the lumen (hollow part) of the intestine in obstruction, although their presence has not been demonstrated in the blood. The fluid within isolated loops contains enormous numbers of putrefactive bacteria, and in the case of the loops in the lower portion of the intestine, perforation and general peritonitis result. Isolated loops of intestine which have been rendered aseptic before closing by washing with sterile water and ether gave rise to no toxic symptoms, and the dogs lived without suffering any ill effects. *So long as the bowel wall remained intact, no toxæmia resulted; therefore the fatal toxins are the result of the action of putrefactive bacteria upon necrotic tissue. All of which proves that the healthy mucous membrane of the bowel has great detoxicating and bactericidal properties.*

Dr. John Harvey Kellogg wisely told us on page 228 of his book, *Colon Hygiene*, 1923 :—

When the intestinal mucous membrane is intact, it is able to exclude most of the intestinal poisons, acting like a filter,

which permits only the useful substances to enter the blood. The liver, the largest gland in the body, possesses the power to destroy poison to a considerable degree. There are various other organs of the body, such as the glands of internal secretion, of which the thyroid gland is a conspicuous example, which aid in the destruction of poisons. The kidneys both destroy and eliminate poisons, and the skin and the lungs also share in this protective work.

So long as the defensive powers of the body remain intact enormous quantities of poisons may be produced in the intestine without apparently evil results. This is the reason why many constipated persons seem to suffer no ill effects from intestinal inactivity.

*In every case, however, the time comes sooner or later when the intestinal filter no longer acts sufficiently in excluding poisonous matters—*when the liver is no longer able to destroy all the poisons brought to the blood; when the thyroid and other glands have become worn out with over-activity; when the kidneys have ceased to be able to maintain the normal degree of blood purity by the excretion of poisons.

When the symptoms of toxæmia appear, the fact shows that the poison-destroying mechanism of the body is broken down; the great margin of safety which Nature provides against emergencies has been used up; the defences against autotoxins have been swept away, and the tissues are flooded with these subtle and mysterious disease-producing elements.

Dr. Langdon Brown, in the discussion on alimentary toxæmia, at the Royal Society of Medicine in 1913, warned us in the following words that the use of purgatives led to the wear and tear of the bowel wall, and its consequent weakening, so that it could no longer resist the poisons contained in the bowel and prevent their absorption into the body:—

Free purgation cannot be a panacea for alimentary toxæmia, since it may produce desquamation of the intestinal mucosa (wear and tear of bowel wall), thus depriving the body of a method of defence against absorption of toxins.

In view of the pronouncements quoted, even the most sceptical may realize that the bowel walls which normally do not absorb poisons from the bowel contents will do so if they have been gravely weakened or injured by faulty feeding, mechanical strain and highly irritant and corrosive purgatives. Unfortunately the bowel has no pain nerves. We may lacerate the bowel time after time with powerful purgatives or in other ways without being aware of injury unless we find blood in the stools. Colic and other so-called bowel pains do not come from the bowel itself, but from the outer tissues which, on behalf of the bowel, send forth signals of distress. That is well known to every physiologist.

In a number of chapters of this book diseases of the stomach, bowels, liver, gall-bladder, nervous diseases, brain diseases, etc., have been dealt with, and it has been shown by high and reliable authorities that these are largely, and sometimes chiefly, caused by chronic bowel stagnation and consequent auto-intoxication.

Those who through insufficient knowledge doubt that so commonplace and so widespread and apparently so trivial a trouble as chronic constipation may lead by way of auto-intoxication to the most serious diseases of body and brain, habitually ask the following two questions, which to them seem unanswerable: "If chronic constipation causes appendicitis, colitis, gall-stones, nerve disease, brain diseases, etc., in some people, why does it not cause these diseases in all people?" "If certain virulent poisons are created in the bowel and are absorbed into the system where they create disease, why do they lead to appendicitis or gall-stones in one case, and to insanity in another case?"

These questions can appear unanswerable only to those who are unacquainted with the very foundations of biology and medicine. As sceptics who habitually put these questions may not attach much value to the opinion of a layman, such as the author of this book,

I prefer not to answer them in my own words, but to leave the reply to Dr. Herter, to whom even the most sceptical and the most opinionated professional men will listen with respect. Dr. Herter stated on pages 274, 276 and 307 of his book, *The Common Bacterial Infections of the Digestive Tract*, 1907 :—

Instances are many in which clinical experience has made it clear that two persons of approximately the same weight react differently to the same drug, and do so regularly. This is true of commonly used drugs, such as strychnine, morphine, cocaine, digitalis, and antipyrin. A scientific explanation of these differences is for most cases not now possible.

Among half a dozen persons suffering from extreme indicanuria, one suffers from headaches (sometimes migraine-like), another is prone to lumbago, another, perhaps, has epileptic seizures, another mental depression, another progressive muscular atrophy, and still another suffers from cyclical vomiting. It would be well worth while to learn in how far these different manifestations of intoxication are dependent on common factors, or in how far on different agencies. There is good reason for suspecting that very similar bacterial processes in the digestive tract lead in one case mainly to digestive disorders and in others (owing to a lesser sensitiveness of the digestive tract itself) to better absorption of poisons and the development of more remote consequences such as gout, arthritis, anæmia, or nervous disorders.

As already mentioned when discussing the character of the toxic effects of the various poisons absorbed from the intestine, it is highly probable that different individuals react differently to the same toxic agencies. If, for example, there be absorbed from the intestine substances capable of damaging both the nervous system and the red blood cells, it is conceivable (assuming the same proportions and amounts of these substances to be absorbed in each instance) that one individual would become invalided first through damage to the nervous system, whereas the invalidism of another might come first through damage to the blood.

Dr. Herter authoritatively shows why the effects

of chronic bowel stagnation and auto-intoxication are not uniform. After all there is no uniformity in nature. Factories produce uniform objects by machinery. Nature produces variety. That is the fundamental law of organic life.

CHAPTER XVII

How the Bowel degenerates in Childhood, Youth, Middle Age and Old Age

Of the minor maladies of early life there is none commoner, or more far-reaching in its consequences, than that which I have chosen for my lecture to-day—namely, chronic constipation. And the subject is of interest, not only on account of its immediate significance, but because it is very probable that the habitual constipation of adult life, which every one knows is one of the most prevalent of the minor maladies of the people at large, often owes its origin to the neglect of habitual constipation in childhood.—DR. ROBERT HUTCHISON, *Lectures on Diseases of Children.*

IN the foregoing chapter it has been shown that the normal body works with wonderful wisdom and efficiency and that the miraculous machinery which Providence has given us silently and swiftly does all that is needed, that the wisely living and wisely fed individual does not suffer from indigestion, constipation and the numerous troubles which spring from them. It has also been shown in a brief, general and very summary way how constipation and auto-intoxication are brought about, and how the normally so reliable and efficient methods whereby the body defends itself against disease are weakened by auto-intoxication, with disastrous consequences to the health of our body, of our nerves, and of our brain. The transition from good health to disease by way of constipation and auto-intoxication is rarely a sudden one. As a rule it is so slow, so gradual, and so insidious,

that we scarcely notice it until great mischief has been done. The normal bowel becomes a weakened, crippled and diseased organ as a rule only in the course of a long number of years, and its degeneration begins only too often in earliest childhood and not infrequently immediately after birth. In order to make the position clear for the benefit of all, let us study the manner in which the bowel degenerates in childhood, youth, middle age, and old age—in fact, throughout the whole of our lives.

Civilization has established the rule that we should empty our bowels only once per day after breakfast. The baby, after having been allowed for a few months to empty its bowels in the natural manner after every meal, is presently scolded or punished for following its natural instincts. Thus constipation during twenty-four hours is artificially induced, and the normal and automatic working of the bowel is so greatly hampered by the violence to it that the wonderful automatic machinery of our digestive tract may cease to function. Chronic constipation sets in and the little thing is drugged with dangerous purgatives or is given almost equally injurious enemas. Some children are given purgatives immediately after birth owing to the criminal folly or ignorance of mothers, grandmothers, aunts, nurses, midwives and doctors.

Constipation in infants and young children is favoured still further by faulty feeding of the little ones and of the nursing mothers. A chronically constipated mother is more likely to have a constipated child than a mother whose bowels work naturally. The former secretes "constipation milk" while the latter produces a more normal fluid which stimulates the intestines of the child and brings about the normal functioning of its bowel. Dr. P. J. Cammidge, an eminent physician and bacteriologist, wrote on page 330 of his book, *The Fæces of Children and Adults*, 1914:—

Constipation in infants is most commonly due to faults in the diet, and is much more frequently met with in children fed by the bottle than in breast-fed infants. The intestines are normally stimulated to perform their functions by the fat and lactose contained in the milk. Up to the age of four months the bowels are opened from two to four times a day, and for the remainder of the first year are usually opened twice, but in some infants only once, daily. At first defæcation (stooling) is a purely reflex act, but after the second or third month the infant is gradually educated to defæcate in response to external stimuli, the act subsequently coming more and more under the control of the will.

The use of artificial foods is very apt to be followed by constipation, for they are generally deficient in fats and contain more or less unaltered starch. The premature use of starchy foods usually leads to a condition in which constipation alternates with diarrhœa.

Dr. C. A. Herter, the eminent American physician and bacteriologist, informed us on page 59 of his important work, *The Common Bacterial Infections of the Digestive Tract*, 1907 :—

Bacterial Flora of Bottle-fed Children. If one makes a comparison of the bacteria of the digestive tract of children fed on cow's milk with the flora which has already been described as characteristic of the digestive tract in breast-fed children, one finds many points of resemblance but also some typical and important differences. In general it may be said that the number of bacterial forms present in the digestive tract of children nourished with cow's milk is considerably greater than in the case of breast-fed children. This is true even where children are fed on cow's milk that has been sterilized by boiling or by pasteurization.

One of the leading British authorities on dietetics, Dr. Robert Hutchison, who is well known as a lecturer on children's diseases, told us on page 87 of his work, *Lectures on Diseases of Children*, 1925 :—

Of the minor maladies of early life there is none commoner, or more far-reaching in its consequences, than that

which I have chosen for my lecture to-day—namely, chronic constipation. And the subject is of interest, not only on account of its immediate significance, but because it is very probable that the habitual constipation of adult life, which every one knows is one of the most prevalent of the minor maladies of the people at large, often owes its origin to the neglect of habitual constipation in childhood. For it must be remembered that the bowel, after all, is a creature of habit, and if it is to be trained up in the way it should go, its education must be begun early, and carried out persistently. I feel perfectly certain that if habitual constipation in early life were taken more seriously, and were more perseveringly treated, we should hear much less of chronic constipation in older persons than we do.

Dr. Ronald Paterson, Physician for Children's Diseases at the Westminster Hospital, contributed a paper, "Constipation and its Management in Infancy and Childhood," to the *British Medical Journal* of the 13th February, 1926, in which we read:—

By far the commonest cause is the inability of the mother or nurse to establish regular bowel habits. To be entirely successful the proper training of the child should commence almost from birth. The infant should be placed on a soap-dish or held out several times daily so that a firm association is established between both the feel of the vessel and the attitude with the movement of the bowels. This simple fact is universally acknowledged and practised with success by the good nursery nurse or mother. . . .

In the management of the older child so much depends on how he has been trained in his infancy. If, in the first place, proper habits have been established, he knows nothing else, and approaches the vessel filled with self-confidence in his ability to empty the bowel. If, however, his infancy has been filled with periods when he was constipated or had diarrhoea with much purging and utter failure on many occasions to get the bowels to move, the vessel is approached in a timid fashion. The child doubts his ability to perform the act, and, in fact, has failed before it has been attempted.

It is not uncommon to be told that an older infant or toddler screams whenever placed on the vessel, and that it is only by means of purges that the bowels can be made to move.

Insufficient or wrong food may be a cause of constipation. Often in the breast-fed infant the first symptoms that the milk is failing is that weight is not gained and that there is obstinate constipation. In warm weather, when the child is perspiring, this may merely mean that more fluid is required, and drinks of water will quickly set this right.

The artificially fed baby, on the other hand, tends to be slightly constipated, as judged by breast-fed standards, and to pass an alkaline stool. It is thus seen that a nice balance must be attained between the constipating alkaline protein and the diarrhœa-producing fat and sugar. Coarse foods must be given which will form a residue stimulating the bowels to peristaltic action. Rusks, crisp toast, or coarse brown bread (instead of white bread and butter) and green vegetables containing plenty of cellulose should be insisted upon. Fruit, raw or cooked, should be given with at least one meal each day. A little molasses, honey, or malt, by its tendency to fermentation, aids peristalsis.

Dr. John Harvey Kellogg informed us on page 91 of his book, *The Itinerary of a Breakfast*, 1923 :—

The whole civilized portion of the human race is house-broken. The mother or nurse of every infant begins the work of training the child to control its bowels, which means to thwart the automatic process by which the wastes are normally dismissed from the body, and by the time the child is two years old—it is well house-broken and hence constipated. In this respect the infant house dog learns faster than the human infant.

A house-broken colon is a damaged colon. The natural automatic process of discarding the body-wastes demands a prompt response to the "call" for evacuation. As soon as the pelvic colon, the discharging gate, is filled and lifted ready for action, a desire for evacuation is experienced. When the fœcal (stool) matters begin to pass into the rectum the desire becomes so pronounced that it must be firmly resisted to avoid immediate evacuation. After a time the

desire disappears, but the faecal wastes remain in the rectum. The "call" is now lost. It may return later when the rectum is still more distended by the advance into it from the pelvic colon of additional waste matters. This "call" may be resisted also, and so the rectum may become distended to the extreme limit and will no longer give notice of the entrance of faeces even when it has been artificially emptied. In other words, the "call" is permanently lost, the rectum is paralysed.

Thousands of sufferers from constipation never have a desire for evacuation except when a laxative drug has been taken. When the call is lost, no warning is given of the condition of the colon and accumulation of waste matters may occur to an astonishing extent. Once or twice a week, perhaps, a dose of salts or of some other cathartic is taken for a sort of house-cleaning and the rest of the time, filthy, putrefying wastes fill and distend the colon and cause injuries which in many instances can never be repaired.

Dr. Julius H. Hess is one of the leading American physicians. He specializes in children's diseases. At the same time he is one of the highest authorities living on scientific nutrition and on vitamins, and he has many important discoveries regarding vitamins and other important matters to his credit. Dr. Hess showed on pages 15, 34 and 247 of his valuable work, *Feeding and the Nutritional Disorders in Infancy and Childhood*, 1925, that the high infant mortality was largely due to faulty feeding which favours the outbreak of many diseases and that pasteurized milk is a delusion and a snare. We read:—

One-fourth of the civilized race die during the first year of life, and 60 per cent of these deaths are due to nutritional disturbances, while a large portion of the other 40 per cent are primarily due to impairment of the infant's constitution by improper feeding. The mortality of the first year is nearly 60 times that of the fifteenth year. . . . The child must be fed not only to avoid the immediate dangers of acute indigestion, diarrhoea, and marasmus, but the more

remote ones—rickets, scurvy, and general malnutrition. These latter three are the most important conditions that predispose to disease in early life.

One of the greatest disadvantages of feeding infants on commercially pasteurized milk, as is done in many of the large cities, is the fact that the non-pathogenic lactic acid organisms are destroyed and many of the pathogenic (disease-creating) organisms remain which grow in the milk as it ages. Therefore, sweet milk does not necessarily mean good milk. The destruction of the lactic acid organisms prevents the souring of the milk which is of best aid in detecting stale milk. It is well known that milk may be sour and cause no symptoms.

Dealing with pasteurization of milk, Dr. John Harvey Kellogg told us on page 333 of his valuable work, *Auto-Intoxication or Intestinal Toxæmia*, 1922 :—

The impression generally prevails that it matters little whether milk is originally clean or teeming with micro-organisms, provided only that it is pasteurized. This confidence in pasteurization as a means of rendering unclean milk safe and wholesome is misplaced. While pasteurization lessens certain minor dangers, it enormously increases other and even greater evils. Clean milk is just as important as clean water, and there is no method by which milk once contaminated with stable filth can be made perfectly safe for use as food by either infants or adults without destroying some of the constituents which are essential to good nutrition.

It is of course to be admitted that pasteurization is a most valuable means of protection against infection from typhoid, tuberculosis, and other milk-borne acute infections, but pasteurization does not protect against infection of the intestine with the mischievous putrefactive organisms which because of their widespread action are, as a matter of fact, the cause of much more disease and many more deaths than are the bacteria which give rise to typhoid and other acute infections, or even bovine tuberculosis. In fact, pasteurization increases the danger of infection of the intestine with Welch's bacillus and other putrefactive organisms by destroying the lactic acid-forming organisms

which, when present, hinder the growth and development of the putrefactive flora. The destruction of these germs gives the putrefactive bacteria an opportunity for unlimited growth and development under favourable conditions either outside or inside of the body. If such milk is completely digested, no immediately harmful results may be observed, but there will be a steady accumulation of the putrefactive organisms in the colon; and if, as the result of indigestion or any other cause, undigested curds happen to find their way into the colon, active putrefaction in these residues may be set up, causing an attack of diarrhoea, colitis or even appendicitis.

Dr. Ismar Boas, Professor of Diseases of Digestion and Abdominal Diseases in Berlin, one of the highest authorities on the subject in Germany, stated on page 24 of his work, *Habitual Constipation*, 1923:—

There is no doubt that an unhealthy diet followed for years plays a most important rôle as a cause of constipation. This form, which I named "alimentary constipation" some years ago, often has its foundation laid in the nursery. The desire to give children the most strengthening food results in an exclusive diet of the so-called easily digested foods, such as milk, eggs, butter, white bread, meat and fish, sweet and fatty farinaceous foods, and chocolate and other sweets. In spite of this over-rich nourishment the children do not thrive; they tire easily, are backward in school, and have cold hands and feet. Though there may be a progressive increase in weight, the bowel activity leaves much to be desired. Such children are doomed to a life of misery if the parents are foolishly inclined to do the doctoring with regularly repeated doses of laxatives, or if, with the idea that unaided Nature will do all that is necessary, they let things run along.

The high authorities mentioned give a unanimous account as to how chronic constipation is artificially, unnecessarily, stupidly, wilfully and almost criminally produced in infants, babies and small children, and how conditions are created which inevitably lead to grave disorders and diseases in future years, and only too

often to permanent invalidism, to untimely death or to incurable insanity. Unfortunately the faulty methods and the faulty food of civilization which have converted the normal, healthy young human animal into a pitiable being with a crippled colon, continue to injure the individual in youth and adult life, and to the various factors which induce chronic bowel stagnation and auto-intoxication in childhood other factors are added. That eminent physician and scientist, the late Dr. C. A. Herter, described the vast influence of the colon, of its degeneration, and the resulting damage to our bodies throughout the lengthening years of our life, with scientific accuracy and impressive plainness and logic on pages 72, 89, 93, 99, 102, etc., of his great work, *The Common Bacterial Infections of the Digestive Tract*, 1907, showing that health and length of years, physical and mental capacity, depend mainly on the condition of our bowels. I hope that readers will carefully go through his description and arguments, notwithstanding the great length of the quotation:—

We find in middle life a large number of persons whose health is good or fair, but in whom the putrefactive processes in the intestine are distinctly more active than is the case with most younger persons who are representative of normal health. These persons, though in good health, are not robust. A period of sustained hard work is followed by considerable and perhaps annoying mental and physical fatigue. Moreover, these persons have found by experience that they must be more careful than formerly in respect to food and drink, emotional and sexual excitement, etc. Dining out and the use of alcoholic drinks are indulgences quickly followed by unpleasant consequences. Physical exercise out of doors becomes more and more a necessity to this group of individuals. They are conscious that it requires careful living to keep them in a condition compatible with the performance of their duties.

Period of Senescence.—The age of an individual must be measured rather by the physiological potential of his cells than by the number of his years. There are men who at

seventy have cells with functional capacities superior to those of other men who are little beyond forty, and who show their superiority in the ability to work without fatigue, to digest without any consciousness of the digestive processes, and to make large outputs of mental and muscular energy without ill effects. These persons retain soft arteries, are well nourished, and exhibit little atrophy of the subcutaneous areolar tissues, and hence show little wrinkling of the skin. They are, in short, candidates for an advanced age.

If we examine the intestinal bacteria and the urine of such people, we find conditions wholly in harmony with the unusual preservation of general functional powers and with the freedom from signs of disordered digestion. The fæces (stools) contain an abundance of viable bacilli of the bacillus coli group and the putrefactive anerobes are few in number.

Persons of this type are apt to die at an advanced age of some condition apparently quite distinct from disease of the digestive tract, especially thrombosis of cerebral vessels (from atheroma) or chronic myocarditis (heart disease).

I have not had a wide experience in the careful study of the bacterial conditions in persons above sixty-five years of age, but believe it safe to say that a large majority of such persons (perhaps 70 per cent of the population in the United States above this age) give evidence of distinct putrefactive processes in the digestive tract. These processes are in many instances characterized by their mildness. But if we compare these mild processes of putrefaction with those existing in the majority of persons under twenty years of age, we find a distinct difference between the two. I think it quite clear that the conditions in youth are much more close to the ideal physiological state of infancy and childhood than are those of senility.

As to the relation between the relatively active anærobic life in the intestine during senility and the development of the involuntional alterations in the tissues, it is difficult to formulate an opinion. Many factors may doubtless enter into the production of these cellular alterations, and it is difficult to assign to each of these its just position. One statement, may, however, be confidently made: *the*

onset of senility may be distinctly accelerated through the development of intestinal infections in which the putrefactive anærobes are prominently represented. I have observed this in cases where it has appeared to me a certainty that other toxic causes of premature senility could be excluded.

It appears probable that in considering the influence of foods upon the flora of the intestinal tract one should take into account the factor of rapid digestion and absorption in the upper part of the digestive tract. For example, in cases where a patient takes daily a large quantity of meat which is imperfectly masticated, there is much more opportunity for the development of putrefactive anærobes in the lower part of the intestine than if the same quantity of meat is thoroughly subdivided by mastication.

There is an important practical aspect to the fact that pathogenic organisms inhabit the intestinal tract without giving obvious clinical signs of their presence. A good quality of milk or meat, free from pathogenic bacteria, may be blamed for bacterial decompositions of a harmful kind which are in reality due to abnormal bacterial conditions prevailing in the digestive tract before the use of the food under suspicion. In certain conditions of the digestive tract an excessive or even a moderate meal of proteid food will precipitate an intoxication or a seizure of vomiting or diarrhœa. There are cases classed as "ptomaine poisoning" in which the digestive tract, rather than the food, is responsible for the observed disorders.

A strain of colon bacillus may in time come to vary quite widely from its original appearance upon a given medium. The cultural characters of micro-organisms are often much influenced by physical conditions pertaining to a culture medium. For example, Dunham obtained widely different appearances in growths of the same typhoid bacillus when grown in gelatin plates in which the gelatin possessed varying degrees of concentration and slightly different chemical characters.

The last two paragraphs of Dr. Herter's are of particularly great interest and importance. That great bacteriologist emphatically tells us that the

poisonous micro-organisms which injure us are often bred in the digestive tract, and that food, such as milk or meat, is frequently wrongfully suspected for an infection by disease germs, and that the character of the colon bacillus depends on the material upon which it feeds. Dr. Herter confirms the view which I have held for a long time, and which I have expressed in this book and in its predecessors, that the theories according to which we are "attacked" by disease germs and that these disease germs must be "fought" with serums, chemicals, etc., which are fatal to them, is wrong and disastrous. It seems that the healthy body keeps most disease germs at bay and destroys them, that the germ is not so much responsible for the disease as unhealthy bodily conditions are responsible for the appearance of a disease germ which originally was possibly a harmless inhabitant of the body and which has become disease-producing by feeding through countless generations on poisonous body products such as the contents of a foul colon. The life of most micro-organisms is very short. We know from practical experiments that by suitable feeding the virulence of disease germs may be increased enormously from generation to generation, while by other methods of feeding an extremely dangerous disease germ may be made comparatively safe, so that it can be injected into the human body without danger.

The fact that the character of the microbic inhabitants which swarm in our bodies in countless millions depends very largely upon our nutrition and upon the general condition of our body may be seen not only by every-day laboratory methods whereby the virulence of disease germs can at will be enormously increased or diminished, but also by the study of the diseases of captive animals. Scientists who are occupied in zoological gardens are aware that the condition of the intestinal canal of beasts and birds depends on their nutrition, that meat delayed in the colon causes

putrefaction and acts to them as a dangerous disease-creating factor, while a non-meat diet leads to comparatively innocent fermentation of the bowel contents, that consequently meat-eating animals and birds suffer far more seriously from auto-intoxication and the diseases springing from it than do the non-meat-eaters. One of the most interesting books on the diseases of animals is the important work, *Diseases in Captive Wild Mammals and Birds*, by Dr. Herbert Fox, 1923. We read in it on pages 419-423:—

Ingested food never contains the enormous amount of bacteria found in the faeces. The alimentary tract with its contents forms a most efficiently combined incubator and culture medium, in which bacterial growth exceeds that of any known location both in intensity and complexity. The range of reaction and composition of nutritive substances at different levels of the intestinal tract is such that a great variety of bacteria capable of growth at body temperature develop. The prominent types that appear in the flora of each order of mammals are fairly constant in their occurrence. They depend primarily on food ingested, and show well-marked seasonal variations, dependent again on changes in food. Faulty feeding may itself give rise to a toxic condition of the gastro-intestinal tube, and thus often prepares the soil for the development of organisms.

The intestinal flora also changes from the monotony of the infant to the variety of the adult. At birth the tract is sterile, but bacteria soon make their entry through the mouth in food and water. The majority of these organisms pass to the stomach where many are destroyed, but a number travel to the intestines where they may gain a foothold. There is always a mechanical transportation of intestinal bacteria from higher to lower levels. The most important normal factor in determining the intestinal flora in health is the chemical composition of the ingested foods. Animal protein develops more active proteolytic bacteria than vegetable protein, which accounts for the greater predominance of putrefactive infections in carnivores than in omnivores.

The author, after giving a lengthy table showing the mortality of wild animals and birds kept in captivity, commented upon it as follows:—

From this table a few facts stand out prominently. It is definitely shown that both birds and mammals on a diet of mixed animal and plant tissue show a low percentage of disease in the gastro-intestinal tube, liver, pancreas and kidney. Carnivorous birds and mammals, on the other hand, show an exceedingly large assortment of gastro-intestinal disorders, diseases of the accessory glands of digestion, and of the kidneys. Disorders of the thyroid gland are almost entirely confined to carnivorous mammals—7.5 per cent, compared to 0.25 per cent in all other orders.

The succulent vegetable diet was lowest in its relation to degenerative visceral disorders.

CHAPTER XVIII

The Effect of Vitamins, Mineral Elements and Roughage upon the Health of the Bowel and its Working Efficiency

No animal can live upon a mixture of pure protein, fat and carbohydrate, and even when the necessary inorganic material is carefully supplied, the animal still cannot flourish. The animal body is adjusted to live either upon plant tissues or the tissues of other animals, and these contain countless substances other than the proteins, carbohydrates, and fats.
—SIR GOWLAND HOPKINS.

IN Chapter XVI the four principal causes of chronic bowel stagnation and auto-intoxication were briefly summarized, and first place was given to the diet of civilization, to a faulty diet composed of ultra-refined, highly concentrated, soft and clogging food-stuffs which are highly constipating and from which the indigestible roughage which fills the bowel and which stimulates that organ into activity has been carefully eliminated. By over-manipulation the invaluable and elusive vitamins and mineral elements also have been abstracted from our food, and the result is disastrous to our organs of digestion and excretion, which become utterly enfeebled and degenerated thereby.

I have shown very fully in my book, *Cancer—How it is Caused, How it can be Prevented*, that vitamins play in our nutrition a very important part, that vitamin starvation, which is unfortunately universal among

the civilized owing to our methods of refining and overcooking our food, leads to numerous diseases and weakens the body to such an extent that it predisposes us for all degenerative diseases, among them cancer. In my book, *Good Health and Happiness—A New Science of Health*, I have shown at length the supreme importance of a wise nutrition and I have endeavoured to prove that the majority of our diseases spring in the first instance from the faulty diet which, by way of constipation and auto-intoxication, causes approximately 90 per cent of the disorders and diseases from which civilized men suffer.

Civilization has much to answer for. We choose our food with a view to pleasing our palate and eyes. We cultivate carefully our sense of taste to the exclusion of most other considerations and thus ruin our digestion and excretion, our teeth and eyes, our liver and lungs, etc., and involve ourselves in unending misery, chronic invalidism and painful, premature death.

As I have treated nutrition in general so very fully in *Good Health and Happiness*, and as I have dealt at length with vitamins in several chapters of my Cancer book, it would be inappropriate to go once more over the same ground. As the present work is devoted solely to chronic bowel stagnation and auto-intoxication, I shall deal in this chapter only with those grave nutritional faults of ours which directly and particularly injure the bowel.

Short-sighted chemists, filled with contempt for the supreme wisdom of Providence which has given us a miraculous body and miraculously perfect foods for its sustenance, have for decades endeavoured to improve upon the unimprovable work of Nature by providing us with scientific foods and have regulated our diet for ages. With their clumsy and quite unreliable instruments they have tried to analyse the tissues and organs of the human body and the various nutritional factors contained in our food. They have told

us that the human body is composed of such-and-such chemical elements, that we use up a scientifically determinable amount of heat, that we must replace it by so many "calories," and that we can do so most scientifically by consuming per day so many grammes of protein, carbohydrates, fat, and so forth.

Civilized mankind has been foolish enough to take the laboratory chemists at their own valuation. The writers of cook-books have hastened to spread the gospel of scientific feeding according to Liebig and others, and thus civilized mankind has been fed "scientifically" on protein, carbohydrates, fat, etc., in strict obedience with the calorie teaching. The result has been that civilized mankind suffers universally from a thoroughly diseased and totally degenerated apparatus of digestion and excretion.

While civilized men have, as a rule, weak bones, utterly defective teeth, or no teeth at all, diseased gums, septic tonsils, a ruined digestion, chronic constipation, and the innumerable diseases which spring from that terrible condition, animals living in Nature and primitive savages have almost invariably strong bones, perfect teeth, sound gums, a faultless digestion and an equally faultless apparatus of excretion. Primitive races and civilized men sicken and die from two totally different sets of diseases. Savages die from dirt diseases, exposure, want, violence, etc., which we have eliminated, and they die as a rule suddenly and almost without pain. We civilized beings are slowly tormented to death by chronic diseases of degeneration, the vast majority of which are almost unknown among primitive races, by diseases which are due in the main to faulty nutrition followed by chronic constipation and auto-intoxication. The chemists have inflicted immeasurable injury upon mankind. They have probably destroyed more lives than were lost during the Great War. The science of the food chemists has been a veritable racial poison,

at least as disastrous as syphilis, which, after all, attacks only a minority. The physical degeneration of the civilized races proclaims the fact that, although we are now able to draw foods from the ends of the earth and although the poorest beggars have now a greater variety of food at their disposal than the mighty emperors of Rome, mankind has never been worse fed than it is now, although our palates are agreeably tickled with the edible productions of all climes.

The food chemists have misled themselves and have misled us, their over-trustful dupes, by talking science to us instead of talking sense. In their short-sightedness they have treated the wonderful and mysterious human body as if it were a gross laboratory implement, as if we had in our inside not a stomach and other organs of bewildering complexity and efficiency, but merely a glass test-tube or some other elementary implement. Moreover, they have treated the equally mysterious and wonderful foodstuffs of Nature as if they consisted of a few lifeless chemical elements which can be analysed, reconstructed and improved upon by anyone who has learned the easy routine of a laboratory.

In the so-called "scientific analyses" of foodstuffs which are presented to us for our dietetic guidance, we are given exact percentages of the protein, carbohydrates and fat in our bread and meat, our vegetables and fruit and so forth. Until recently all the other elements in our food were unceremoniously lumped together under the contemptuous heading "Ash." The "ash" of our foodstuffs was considered as so much residue, so much waste matter, by most chemists and their dupes. Now the "ash" of foodstuffs contains about twenty mineral elements of inestimable importance to the body, among them, lime which is required for building up the substance of our bones and teeth; phosphorus, which is needed for the construction of the enamel of our teeth and which protects

them against decay ; iron, which we need in our blood ; an insignificant trace of iodine, which is indispensable for the working of the all-important thyroid gland, etc. Besides, the despised ash may be said to contain the vitamins, those mysterious intangible substances which disappear from scientifically over-manipulated food. We cannot wonder that the scientifically fed civilized suffer from weak bones, disgraceful teeth, poor blood, degenerated bowels, etc., defects for which we have to thank the chemists.

The learned chemists have not only utterly misled us about our food requirements and the composition of our foodstuffs, but they have "improved" all the foods which had hitherto kept mankind in excellent bodily condition. Chemists in the service of food manufacturers have eliminated the bran and the germ from our bread corn, the silver skin from our rice, and the outer covering from barley and other grains, all of which are fed to cattle and pigs. They have taught the millers to bleach the flour with poisonous chemicals and the butcher and packer to "improve" the meat with poisonous preservatives and dyes, all of which, we were told, are "perfectly harmless." They have taught producers to fake our butter, milk and cream, our tea, coffee, sugar, wine, beer and so forth. They have taught the housewife to concentrate upon the provision of "nutritious" food from which the roughage was carefully eliminated, to add soda to the water in which vegetables are cooked, to add poisonous chemical preservatives and dyes to her cakes, pastries, jam, etc. The chemists have starved and poisoned the world. They have impoverished the farmers and have made food-fakers and pillmongers millionaires. They have wrought more mischief than all the disease germs known and unknown to the bacteriologist.

The roughage, such as the outer skin of bread corn and other grains, the skin, core and seeds of apples and other fruit, and the "sugar waste" chemically

eliminated from raw sugar in the process of chemical refining, are extraordinarily rich in the twenty mineral elements which our body requires, and in vitamins. They are taken away from us and are given to cattle and pigs while the vitamins contained in the vegetables are killed by the housewife by cooking them with soda at the chemist's bidding. We cannot wonder that civilized mankind is mineral-starved and vitamin-starved. The chemists have deprived us of the mineral elements and vitamins, and have given us in their stead poisonous chemicals and preservatives which we swallow at every meal.

Some chemists have told us that chemistry would be able to refine and concentrate foodstuffs to such an extent that meals would become unnecessary, that an occasional pill would give us all the nutriment we require. The roughage in our food is not only extraordinarily rich in the indispensable vitamins and mineral elements, but it is equally invaluable as ballast. The fact that Providence gave us a very capacious stomach and bowel shows that we were meant to live not on highly concentrated scientific, but on bulky and not over-nutritious natural, food. If we do not adequately fill the bowel with food rich in indigestible residue, the insufficiently filled organ becomes torpid. The scientifically concentrated, perfectly digestible and entirely soluble foodstuffs lie stagnant in our insides, where they putrefy and poison us. They create chronic bowel stagnation with all its dangerous consequences.

Vitamins are necessary for keeping us in health. When the chemists had taught us for decades that men subsisted on protein, carbohydrates, fat, water and salts, they put their theories to the test by feeding animals experimentally on a scientific mixture of chemically pure protein, carbohydrates, fat and so forth, and they discovered that these wretched animals became diseased and died miserably, and that control animals which were not fed at all lived actually longer

than the unfortunate beasts which were "scientifically" fed. Never in the history of the world has a science experienced a more disgraceful exposure than that involved in the experiment mentioned, which was first made by Sir Gowland Hopkins, who stated in 1906:—

No animal can live upon a mixture of pure protein, fat, and carbohydrate, and even when the necessary inorganic material is carefully supplied, the animal still cannot flourish. The animal body is adjusted to live either upon plant tissues or the tissues of other animals, and these contain countless substances other than the proteins, carbohydrates, and fats.

Nevertheless, the unteachable chemists still fill their textbooks with worthless information of "food values" and "calories" which often spread over hundreds of pages.

The discovery of vitamins has shown that the infinitely small, the intangible, and the scientifically unascertainable is of the most potent influence upon our health. As the chemist cannot isolate the vitamins with the primitive instruments of his laboratory, he is driven to the far more reliable methods practised by our prehistoric ancestors. The modern biologic chemist ascertains the vitamin value of foods by feeding animals and observing results.

Vitamin starvation leads not only to general physical degeneration and to mysterious and terrible diseases of many kinds, but also to the grave degeneration of bowels and stomach. One of the most eminent biologic chemists and one of the greatest experts on dietetics and on vitamins is Colonel Robert McCarrison, of the Indian Medical Service. He has made many discoveries of fundamental importance, and he has produced exceedingly valuable books and papers on deficiency diseases and many other important subjects connected with nutrition. He has made highly valuable nutritional experiments on monkeys. They are

particularly noteworthy because the monkey is nearest to man with regard to the character of the body and of the digestive apparatus. We read on pages 210 and 223 of his classical work, *Studies in Deficiency Diseases*, 1921 :—

In the absence of vitamins or in their inadequate supply, neither proteins nor fats nor carbohydrates nor salts are properly utilized ; some are largely wasted, while others yield products harmful to the organism. In these circumstances life may be sustained for a longer or a shorter period, during which the body utilizes its reserve stores of vitamins and sacrifices its less important tissues to this end.

One of the earliest pathological evidences of deficient and ill-balanced foods, as observed in animals, is congestion of the gastro-intestinal mucosa. Such a state of congestion may well give rise, in children, to the gastro-intestinal catarrh which characterizes "mucous disease." This disorder is very common among children who are fed largely on sterilized milk, artificial foods, white bread, polished rice, poor butter, over-cooked vegetables and excessive quantities of sugar.

It is hardly necessary to comment on the great frequency at the present day of colitis of ill-defined origin. The state of chronic anæmia, the unhealthy skin, often evidenced by acne or seborrhœa, the loss of weight, the lassitude, the backache, the colicky pains in the abdomen, the bouts of diarrhœa alternating with constipation, the mucous stools, and the neurotic conditions of those afflicted by it, usually women, are familiar features of this intractable malady.

One of the most constant results of food deficient in vitamins is colitis. It is so frequent that it may rank as a cardinal sign of vitaminic deficiency. It may rise as the result of the absence of vitamin B alone, although it was more frequently encountered in animals deprived of vitamins in general. Many of the other features of this malady, as seen in nervous, constipated women, were reproduced in deficiently fed monkeys, such as the anæmia and unhealthy skin and the loss of weight ; even the

congestion of the uterus and ovaries, which is so often present in woman sufferers from colitis, was reproduced in monkeys. Unfortunately most cases of this character in the human subject are of very long standing.

I have myself no doubt that a proportion of them have resulted from the long-continued use of deficient foods from childhood onwards. I regard the experimental production of colitis as one of the most important results of these investigations. It indicates that, if the incidence of colitis is to be lessened in the future, attention must be directed to the dietetic habits of childhood. Otherwise a chronic colitis is likely to be established and to prove most intractable.

The histo-pathological changes occurring in deficiently fed pigeons and monkeys indicate one means by which both the abdominal musculature and the neuro-muscular system of the gastro-intestinal tract can be simultaneously impaired in functional capacity. Deficiency of certain food factors leads to atrophy of all muscular tissues as well as to the disordered function or actual degeneration of nervous tissue throughout the body. The abdominal musculature, and the nerve elements controlling it, must of necessity suffer along with other muscular and nervous tissues. It may be concluded, then, that defective action on the part of the abdominal musculature will ultimately result as a consequence of deficiency of vitamins.

In addition to this functional defect on the part of the abdominal wall, we find in pigeons, guinea-pigs and monkeys starved of vitamins unquestionable evidence in the wall of the intestine itself of neuro-muscular lesions of great significance.

We are, I think, justified in applying these results to the genesis of stasis in the human subject, more especially as this condition has actually been found to result from bad food in prisoners of war. As a factor in the production of chronic intestinal stasis, we must regard with suspicion human food which does not conform to standard in respect of its balance and vitamin contents. There can be no doubt that the food of children among the poorer, and often among the richer, classes is frequently dangerously faulty in these regards. Subsistence on such foods from infancy onwards is calculated to lead to defect of the

abdominal musculature, to neuro-muscular lesions of the intestines and to degenerative changes in the glandular elements of its mucous membrane.

In an address printed in the *Lancet* of the 4th February, 1922, entitled "Faulty Food in Relation to Gastro-Intestinal Disorder," Colonel McCarrison stated :—

The health of the gastro-intestinal tract is dependent on an adequate provision of vitamins. The absence of growth vitamins is capable of producing pathological changes in the tract which frequently assume the clinical form of colitis. This observation is of the highest importance in view of the frequency with which this malady is met with at the present day.

Deficiency of vitamin C is especially concerned in the production of congestive and hæmorrhagic lesions in the tract, and evidences of these may be found in animals which have not exhibited during life any of the clinical manifestations of scurvy in noteworthy degree. A state of ill-health of the gastro-intestinal tract may thus be a pre-scorbutic manifestation of disease due to insufficiency of this vitamin, especially when associated with an excess of starch or fat, or both, in the food.

The disorder of the gastro-intestinal tract consequent on vitamin deficiency is enhanced when the food is ill-balanced.

The pathological processes resulting in this situation from deficient and ill-balanced foods are :

(a) Congestive, necrotic and inflammatory changes in the mucous membrane, involving sometimes the entire tract, sometimes limited areas of it.

(b) Degenerative changes in the neuro-muscular mechanism of the tract, tending to dilatation of the stomach, ballooning of the areas of small and large bowel, and possibly to intussusception.

(c) Degenerative changes in the secretory elements of the tract—of the gastric glands, the pyloric glands, the glands of Brunner, the glands of Lieberkühn and the mucous glands of the colon. These changes are such as must cause grave derangement of digestive and assimilative processes.

(d) Toxic absorption from the diseased bowel, as evidenced by changes in the mesenteric glands.

(e) Impairment of the protective resources of the gastro-intestinal mucosa against infecting agents, due to hæmorrhagic infiltration, to atrophy of the lymphoid cells, and to imperfect production of gastro-intestinal juices. This impairment results not only in infections of the mucous membrane itself, but permits of the passage into the bloodstream of micro-organisms from the bowel.

(f) It is to be emphasized that the pathological changes found in the gastro-intestinal tract are more marked in some individuals than in others; and that, while all of them may occur in one and the same subject, it is usual to find considerable variation in the incidence of particular lesions in different individuals.

If, as Colonel McCarrison states, vitamin starvation leads indeed to "congestive and hæmorrhagic lesions in the digestive tract, to degenerative changes in its neuro-muscular mechanism and its secretory machinery, to toxic absorption from the diseased bowel and the impairment of the protective resources of the tract against infectious agents," then it becomes perfectly obvious that vitamin starvation causes the breakdown of the entire abdominal machinery and leads to chronic constipation and to chronic auto-intoxication, to Sir Arbuthnot Lane's stasis and all its consequences.

It will be noticed that Colonel McCarrison proved in the most convincing manner by practical experiments made on monkeys, which have been accepted by all scientific critics, that vitamin starvation leads to "disorder of the gastro-intestinal tract," "congestive, necrotic and inflammatory changes in the mucous membrane," "degenerative changes in the neuro-muscular mechanism of the tract," "degenerative changes in the secretory elements of the tract," "toxic absorption from the diseased bowel," "impairment of the protective resources of the gastro-intestinal mucous membrane against infecting agents,"

and "the passage into the blood-stream of micro-organisms from the bowel."

The *Journal of the Royal Society of Arts*, of the 2nd January, 1925, published a lecture, "Problems of Food, with Special Reference to India," by Colonel McCarrison, in which we read:—

The long-continued use of food deficient in vitamins gives rise to atrophic and degenerative changes in the cells which produce the digestive juices, in those also by whose means food is absorbed; so that the food is not so well digested or assimilated; it undergoes fermentation and putrefactive changes with the production of toxic substances, which in their turn contribute to the mal-being of the patient. A vicious circle is thus produced. Further, it causes atrophic and degenerative changes in the neuromuscular mechanism, which controls the movements of the gastro-intestinal tract, so that dilatations occur in various parts of it, colitis is set up, and ultimately the muscular walls and their nervous control become so impaired in function that difficulty arises in emptying the bowel of its contents. So constipation is brought about, and that very common condition to which Sir Arbuthnot Lane has given the name chronic gastro-intestinal stasis. In monkeys and guinea-pigs fed on such faulty foods I have even observed ulcers of the stomach and duodenum which have arisen in consequence of it, and on one occasion I found a recent cancer of the stomach in a monkey so fed which I suspect may have originated—indirectly, no doubt—in the same ways.

The greatest of all disease-producing agents which come into operation when the food of animals or of man is deficient in vitamins and faulty in other regards are pathogenic organisms (bacterial and other).

One experiment on wild monkeys impressed me greatly: a number of these animals were confined in the same room, each in its own cage. Some were given a well-balanced natural food, rich in vitamins, others the same food, which had been subjected to prolonged heat in the autoclave, in order to destroy these vitamins. The first group remained in perfect health: the second, on the vitamin-poor food,

showed many examples of amœbic dysentery. I found that some of the monkeys which received the good food were "carriers" of the amœba which is associated with this form of dysentery, but whereas they were protected from dysentery by the good food, those receiving the vitaminless food developed it. There were in the room in which the animals were confined equal chances for all to become infected with the dysentery-producing organism—the same flies, the same animal attendants, the same dishes, but the determining factor in the production of this malady was none of these things, but was faulty nutrition.

Colonel McCarrison has made obvious to the blindest that one of the most terrible effects of vitamin starvation consists in this that it leads to far-reaching damage throughout the alimentary tract, that stomach and bowels are very seriously injured, and that vitamin-starved monkeys suffer acutely from the peculiar diseases of civilization which affect both stomach and bowel, such as chronic intestinal stasis and colitis, which are specially mentioned. As, according to McCarrison, vitamin deficiency leads to the production of "congestive and hæmorrhagic lesions in the tract," we cannot wonder that disease germs generated from putrefying, stagnant food residues in the weakened and wounded bowel of the chronically constipated easily enter the system and cause the poisoning of the body as a whole. I could easily fill a large volume with similar information, for many biological chemists have made similar experiments which were followed by similar results.

In the *British Medical Journal* of the 23rd October, 1926, Colonel McCarrison published a very important paper, entitled "A Good Diet and a Bad One," in which he described experiments which he had made on rats. One set of rats were fed on "a good diet" similar to that eaten by the Sikhs who subsist on plain natural fare, rich in roughage, vitamins and mineral elements, while the other set of rats were fed on a

“scientific diet” of civilization, on refined and highly artificial food deprived of roughage, vitamins and the mineral constituents. Colonel McCarrison tells us:—

Two colonies of half-grown rats were employed, each comprising 20 animals, of which 12 were males and 8 were females. They were selected from among ten or twelve litters of approximately the same age, and were so distributed between the two colonies as to ensure, as far as possible, that the growth-potential of the two groups would be alike. The aggregate weight of the animals in each colony was the same—2,540 grams. They were housed in the same room, caged in a precisely similar way, and were equally well tended.

One colony received “a good diet,” designed to resemble that eaten by the Sikhs. It consisted of “chapatties,” made of whole-wheat flour (atta); uncooked vegetables (cabbage, potato, carrot); fresh fruit; sprouted “gram” (legumes); butter; fresh whole-milk; water; and fresh meat occasionally. Ten grams of butter, spread over the chapatties, were given for the whole colony every third or fourth day. Milk was supplied in amounts approximately 300 c.cm. daily, and fresh meat once a week to the amount of two ounces for the whole colony. Liberal quantities of chapatties, sprouted gram, uncooked vegetables, and tomato—to take the place of fruit—were given, so that the animals could select for themselves the amount of each they cared to eat.

The second colony received “a bad diet” designed to resemble that eaten by many Western people of the poorer classes. It consisted of white bread, made from American white flour; vegetables—cabbage, carrot, potato, etc.—cooked in water to which pinches of sodium bicarbonate and common salt were added; a substitute for margarine, consisting of coco-nut oil to which 100 grains of boric acid were added to every pound of the oil; tinned meat, which had been exposed to formaldehyde vapour for several hours; tinned jam; tea, well sweetened with sugar, to which was added enough milk to give it the customary tinge; and water.

On the termination of the experiment there were 17 animals alive and well in the colony which received the

“good diet”—10 males and 7 females. In the colony which received the “bad diet” 11 animals were alive at the end of the experiment—5 males and 6 females. The mortality from all causes in the former colony was thus 15 per cent, in the latter 45 per cent. But whereas the survivors in the first colony were well grown, sleek-coated, strong and active, those in the second colony were ill-grown, poor-coated, weakly and listless.

Of the 3 animals which succumbed in the well-fed colony one died from injury to the abdomen; at *post-mortem* examination it was found to be excellently nourished; its organs were in perfect health. A second animal died of pneumonia; the gastro-intestinal tract was not diseased.

Of the animals which died in the ill-fed colony 3 were killed and eaten by their fellows—so completely eaten in each case that little or nothing remained for *post-mortem* examination. The fact that they were killed shows that they were in a weakly condition.

The immediate cause of death in the other 6 animals was broncho-pneumonia; and this at a time when broncho-pneumonia was so rare in my stock animals that only three cases of the disease occurred during the six months in a rat population which averaged 375 animals daily. One consequence, therefore, of the “bad diet” was to lower the resistance of the lungs to attacks by microbic agents of disease—a consequence of faulty food, deficient in vitamins, which has already been emphasized by Cramer.

Three other *post-mortem* Findings.—Of these, the most constant and the most important were change in the gastro-intestinal tract which impaired its functional capacity. In illustration of this point I append the notes of two cases dictated at the time the *post-mortem* examinations were made:

“On opening the abdomen the first thing observed is the extreme dilatation and thinning of the whole gastro-intestinal tract; atony of the bowels; ballooning and transparency; intestinal stasis; giving the appearances now so familiar to us in deficiently fed animals, and first observed in pigeons and monkeys in 1919.”

Again, in another case:—

“This case presents an extraordinary contrast to all other rats’ intestines seen up to date. The lumen of the

bowel is very much narrowed, the bowel being in its whole course hardly thicker than a piece of grocer's string. There is no distension of the bowel nor 'air-locks.' Intestinal stasis is marked; the lower part of the bowel is filled with hard, oval, faecal masses situated one above the other, which, with the attenuated bowel between them, resemble a string of beads strung at bead-distance intervals."

This experiment demonstrates that a diet composed of wholewheat, milk, milk products, sprouted legumes, uncooked vegetables and fruit, with fresh meat occasionally, far surpasses in nutritive value that composed of white bread, tea, sugar, margarine, jam, boiled vegetables, and tinned meat, to which the common food preservatives—boric acid, formaldehyde vapour, and sulphurous acid—are added. The former promotes physical efficiency and health, but the latter gives rise to stunting of growth, to physical inefficiency, and often to disease. The maladies of which the bad diet is so apt to lay the foundation are lung disease and gastro-intestinal disease. I have repeatedly drawn attention to the influence of faulty and ill-balanced food in causing the gastro-intestinal diseases which are so common at the present day. The results of this experiment furnish additional proof of this influence, and suggest also that the common food preservatives may contribute their share to the harmful effects of such a food. The high incidence of lung disease in the ill-fed group emphasizes no less strikingly the influence of what one may call the "white-bread-margarine-tea-sugar-diet" in favouring the operation of pathogenic agents which attack the lungs.

It is worth noting that the naturally fed rats flourished, while those on a civilized diet suffered severely. As in the case of the monkeys, we find in the rats "dilatation and thinning of the whole gastro-intestinal tract; atony of the bowels, ballooning and transparency; intestinal stasis." If monkeys, rats and birds, when vitamin-starved, fall a prey to acute degeneration of stomach and bowels, the weakening of the bowel walls, their laceration and consequent auto-intoxication, it is fair to assume that identical

causes have identical consequences in the case of human beings. This, indeed, is the case. Abdominal operations made on sufferers from intestinal stasis, and the dissection of dead bodies of people who had suffered from intestinal stasis during their lives, reveal a similar condition. Professor Plimmer, the well-known scientist, has produced by vitamin-starvation appendicitis in birds. The connexion between vitamin-starvation, grave weakening of the bowel walls, and auto-intoxication has been proved up to the hilt. Yet there are scientists and physicians who deny facts which are obvious to all who take the trouble to study the technical literature existing.

The importance of vitamins for human beings may be seen by their importance for animals. We read in Dr. W. M. Tod's authoritative book, *Hints on Feeding*, 1924, on page 207 :—

By the old-fashioned plan of pigs kept in dirty styes, and fed on anything that happened to be cheap, or of no use elsewhere, it was quite common to find that it took 6 lb. to 8 lb. of meal to produce each 1 lb. of increased live weight in a growing or fattening pig. Now, by the keeping of pigs on grass, or on the arable land, or by giving plenty of green stuff in styes or yards, along with the correctly balanced rations of meal, it is possible to obtain each lb. increase in live weight for as little as 2 lb. or 2½ lb. meal, where the green stuff forms a fairly large proportion of the food ; or when the green stuff only forms a small proportion of the food, as with fattening pigs, it is quite easy to get 1 lb. of increase from each 3 lb. to 3½ lb. of meal consumed.

Professor R. H. A. Plimmer had a valuable paper, "The Doctor and Dietetics—Some General Principles," in *The Practitioner* of March, 1926. Mr. Plimmer, who is not only an eminent analytical and biologic chemist, but a leading experimenter who has raised the science of practical dietetics very greatly, stated in it :—

With slight shortages of the various vitamins characteristic symptoms take a long time in appearing. In most cases the first sign of illness is loss of appetite, followed by digestive disturbance. Animals may have stoppage of the gut, gastric or duodenal ulcer, or die of appendicitis or other troubles before the typical symptoms of the deficiency disease are shown. During the war the slow healing of wounds was found to be associated with shortage of vitamin C. Heart and digestive troubles are caused by shortage of vitamin B. Under all variations of vitamin shortage experimental animals are more susceptible to infections of all kinds. Animals fed on vitamin-poor diets have succumbed to epidemics of infectious disease which have not attacked other animals kept side by side with them, but fed on food containing enough of all the vitamins. Details of these experiments cannot be entered into here, but they all prove how intimately health depends upon a supply of food containing plenty of all the vitamins. Lack of cleanliness, bad housing, and confinement do not produce disease in properly fed animals.

The most serious loss of vitamin B occurs in the preparation of white cereals. The wholemeal contains ample vitamin B. With two-thirds of the nation's food consisting of white cereal foods and sugar, it is difficult to see how this loss of vitamin B can be made good by the remaining one-third of the diet, as few foods contain enough vitamin B to balance the deficiency in white cereals.

Vitamin C is the most easily destroyed. The anti-scorbutic properties of fruits and vegetables are lost by drying, heating, oxidation, such as occur in the ordinary domestic and commercial processes. The quantity in cabbage and potato is diminished by boiling for twenty minutes, and altogether lost by long, slow stewing. Heating twice is also totally destructive, as in the boiling of already pasteurized milk. Vitamin C is quickly destroyed by alkali as in the cooking of vegetables with soda to preserve their green colour. Infantile scurvy has been caused by the use of citrated milk. Sodium bicarbonate is equally injurious.

The *British Medical Journal* of the 28th March, 1925, contained a statement by Dr. Aslett Baldwin,

who said he had discovered an interesting fact while feeding goldfish, that goldfish which for eight months had been fed only on crumbs of wholemeal bread remained well and vigorous, while other goldfish which had been fed on the crumbs of white bread had all died. Men are not goldfish. However, the identical experiments made with dogs, birds, rats and other animals have all led to the identical result, to health and long life among the wholemeal fed, and to disease, sterility and death among the white-bread-fed. More than a hundred years ago an observant country doctor, William Buchan, wrote in his book, *Domestic Medicine*, 1797, on page 653 :—

People imagine, as the finest flour contains the greatest quantity of nourishment, that it must therefore be the most proper for making into bread ; but this by no means follows. The finest flour comes the nearest to starch, which, though it may occasionally prove a good medicine, makes bad bread. Household bread, which is made by grinding down the whole grain, and only separating the coarser bran, is without doubt the most wholesome.

Bread is often spoiled to please the eye. The artificially whitened, drying, stuffing bread, though made of the heart of wheat, is in reality the worst of any ; yet this is the bread which most people prefer, and the poorer sort will eat no other.

The vast superiority of wholemeal bread over white bread—the former contains an abundance of roughage, vitamins and mineral elements, of which the latter is scientifically deprived—has been shown in my book, *Good Health and Happiness*, in which a large number of important statements made by Hippocrates, Celsus and many other writers is given.

We read on page 136 of the Government Report *On the State of the Public Health*, 1926, published by the British Minister of Health :—

In an industrial area such as this where the burden of unemployment is very heavy, the quality of the food con-

sumed by many leaves much to be desired. Tea, white bread, margarine, potatoes and occasionally a little meat constitute the staple diet of many members of the population. Nursing mothers on such a diet present a characteristic anæmic appearance and their breast-fed babies are also anæmic and show other signs and symptoms of rickets—head-sweating, catarrh of intestinal tract and a great liability to sub-acute bronchitis. In bad cases of this type the mothers are allowed a pint of milk a day, but excellent results, even better than those obtained by giving milk alone, are observed if the mother can be persuaded to change her almost vitamin-free diet to one containing a sufficiency of these principles. Care is taken that the diet advised shall cost no more than she has been in the habit of spending. If wholemeal bread and beef dripping are substituted for the white bread and margarine, the mother's anæmia is greatly lessened and the baby's condition rapidly improves.

Weaning.—It is very common to see babies who have done well on the breast up to the sixth or seventh month go back and become anæmic from this age. Inquiry will always in these cases, elicit the fact that white bread, some patent starch-containing food, arrowroot, cornflour, oatmeal or other cereal has been given.

The importance of the mineral elements contained in unmanipulated food which is not "scientifically improved" is obvious to all who are acquainted with stock-feeding experiments. It would lead too far to discuss these in detail in this volume. However, their importance is known to every competent breeder. The British Government Report, *Research and the Land*, 1926, written by Dr. V. E. Wilkins, informs us on pages 209 and 213-216:—

In addition to the organic constituents, however, the animal body contains a small percentage of inorganic mineral matter which, when the animal or part of it is burnt, forms the "ash." The most important mineral elements included in this ash are calcium (lime), sodium, potassium, magnesium, iron, phosphorus, sulphur, chlorine

and iodine. They are, of course, present only in relatively small quantities.

Sheep.—On a ration of hay, swedes, oats, distillery grains and linseed cake with cod-liver oil, the addition of a lime-rich mineral salt resulted in about 20 per cent greater gain in weight than in control animals receiving no additional mineral matter. Another large-scale experiment was carried out with breeding ewes. Two groups, each of 20 ewes, were penned on about half an acre of pasture and fed on straw, hay, swedes, oats, and bran. One group received, in addition to the ration, 8 grams (nearly one-third of an ounce) of a soluble lime salt (calcium chloride) per head per day during the whole gestation period. In this group only six living lambs were got from the 20 ewes, compared with 21 in the other group receiving no lime salts. The lambs in the salt group were, however, on an average about 12 per cent heavier at birth. It is probable that the excess of calcium chloride had irritated the uterus, causing it to contract irregularly, as a number of the ewes aborted and there were many cases of malpresentation at birth.

A gallon of cow's milk contains roughly a quarter of an ounce of lime, one-third of an ounce of phosphoric acid, and one-sixth of an ounce of chlorine. These are the three minerals most likely to be deficient in the food. As not more than half of the mineral matter in the food is usually assimilated, double these amounts should be present in the ration for every gallon of milk.

We read in Dr. W. M. Tod's important book, *Hints on Feeding*, 1924, on page 214 :—

If the little pigs are to be born in strong and well-developed condition, the food of the sow must contain sufficient phosphate of lime for bone formation.

Neglect of these precautions often results in the birth of malformed, dead, or weakly pigs of small size, and the tendency to produce such pigs is greatly increased, even with sows on grass or forage crops, if the soil of the land on which they are grazing is deficient in lime.

Completely soluble and entirely digestible food, recommended to us in countless advertisements, is a

delusion and a snare. Roughage, indigestible material contained in various foodstuffs, is not merely "indigestible ballast" as some textbooks proclaim owing to the ignorance of their writers, but it is of the greatest value to our health. The vast importance of indigestible ballast as a stimulant of the bowel functions has been pointed out by many physicians and scientists. We read, for instance, in Dr. P. J. Cammidge's valuable book, *The Fæces of Children and Adults*, 1919, on pages 316, 317 and 325 :—

Well-cooked rice, bread made from finely ground flour, etc., carefully dressed meat, white of egg, and butter, all leave no appreciable residue to appear in the fæces. On what may be termed a "normal" diet consisting of such substances, the fæces consist mostly, or entirely, of the remains of the digestive secretions and the materials excreted by the gastro-intestinal tract.

The passage of the fæces on an exclusively flesh diet is much delayed both in men and dogs. In appearance, the stools resemble those passed during starvation, and are likewise free from any pronounced fæcal odour.

Since the composition of the diet is an important factor in the stimulation of peristalsis, foods which are very completely absorbed, owing either to their composition or mode of preparation, tend to produce constipation. A diet consisting largely of meat, or milk, is for this reason apt to produce sluggishness of the bowels, especially when all indigestible residues are removed from the meat, as is so frequently done by the expert cook. Carbohydrates, on the other hand, no matter how carefully prepared, do not tend to induce constipation, for, although they leave very little mechanical residue, they give rise to various acid products and gases which stimulate peristalsis. The fatty acids and soaps formed in the digestion of fats also act as stimulants to the movements of the intestine, so that a diet which is deficient in fat may cause constipation. A diet consisting principally of vegetables leaves a large cellulose residue which mechanically stimulates the intestine. If too little water is taken, or an excess of fluid is by any means drained from the body, fæces tend to become

dry and remain too long in the bowel. On the other hand, astringent drinks, such as strong tea, claret, etc., in excess, may confine the bowels. It is obvious, therefore, that an inquiry into the diet of a patient will often throw considerable light on the cause of his constipation.

In his popular book, *Constipation: Its Causes and Cure*, published without a date, Dr. Josiah Oldfield wrote on pages 20 and 46:—

The ordinary man in the street is exceedingly illogical; first of all he wants to live upon concentrated food because it is nutritious and contains no waste matter; and then, when he finds that as a result of this there is no work for his lower intestines to do, and that, therefore, he suffers from constipation, he promptly takes pills to cure the effect of the very method he advocates.

If we live on concentrated food with but little waste in it, we cannot expect to have waste to get rid of, and therefore we must be content with constipation.

People who eat natural rolled oats, or crushed wheat, or wholemeal flour, rarely complain of chronic constipation. It is where white flour and pastry flour and finely prepared cereals are used, with all their outer covering removed, that we find constipation most prevalent.

One of the best methods, therefore, is to at once replace part of the daily white bread by wholemeal bread, and to use for pastry and cakes a good stone mill flour and to take once a day a bowl of either Scotch oatmeal porridge eaten with toast, or crushed wheat porridge, or, still better, a dish of old English frumenty.

Another popular writer, Dr. W. S. Walsh, stated on page 14 of his book, *The Conquest of Constipation*, 1924:—

Foods that leave little waste after their digestion are not favourable to intestinal activity, since a certain amount of residue is necessary; coarse foods add bulk to the waste, and thus the intestines are better able to sweep themselves clean. Of foods that leave little residue, meat, eggs, white bread, polished rice, potatoes, might be mentioned. These

foods are good in so far as nutrition is concerned, but if they are eaten in large amounts, routinely, and to the exclusion of more bulky foods, constipation is favoured. In contrast to these foods, green vegetables, fruits, bran-containing cereals, and breadstuffs, supply the intestines with the bulk they require.

An unsuitable diet is probably the most common cause of sluggish intestines. A suitable diet is the chief means of cure. We need daily a certain amount of nutriment, but for intestinal health we require a certain amount of indigestible material in addition. The right combination of the two is the thing most desired.

Professor A. Magnus-Levy, a high German authority, contributed a section entitled "The Physiology of Metabolism" to Professor C. von Noorden's great work, *Metabolism and Practical Medicine*. We read in Vol. I, page 50:—

The formation of the faeces depends largely upon the residues left by the food.

The quantity is not a matter of indifference, for it, to a large extent, expresses the work that must be done by the intestine. The volume has a purely mechanical action, stimulating the wall of the intestinal canal, increasing the peristalsis, and causing the intestinal contents to move onwards. Herbivorous animals, like the rabbit, die when fed on food which leaves no residue. Adult human beings are not so constructed that they can exist on diets which leave no residue, or even so little residue as pure milk does; it is only during their childhood that they can live on nothing but milk for long periods. On residue-free diets the peristalsis is sluggish, and this causes disturbances which are subjective at first, but later cause objective upset of the digestion. The importance of these food residues is emphasized in the term "intestinal scourers" that has been given them. The carnivores, too, do not dispense with them willingly; just as they devour bones, so do the granivorous birds swallow sand, feathers and the like.

Dr. Samuel T. Earle, the well-known American Professor of Diseases of the Abdomen, told us on

pages 69 and 70 of his work, *Diseases of the Anus, Rectum and Sigmoid*, 1911 :—

The effect of diet in preventing or overcoming constipation cannot be too strongly urged, nor do we think the part it plays is half appreciated by either professionals or laity. When it is remembered that fully nine-tenths of the faecal discharges are made up of the indigestible constituents, the excess of those that are digestible, and the offal of our food, it will be readily seen from the recent great advances in the preparation of food that there is little of the indigestible or offal left, so that by these refinements of civilization constipation is induced, both by the concentration and the refined character of the food.

In order to prevent the nitrogeneous portion of our food from packing or from forming hard and scybalous masses, which it is inclined to do, it should be taken in connexion with a large amount of vegetables and fruit which contain a considerable amount of cellulose, this being almost entirely indigestible in the intestinal tract of man, except to a limited extent by the micro-organisms which it meets with in the large intestine and which are capable of breaking up cellulose to a limited extent. Consequently this constituent furnishes a liberal amount of indigestible material which separates the nitrogenous waste matters, acts as a sponge to retain the water, and furnishes a mechanical irritant for stimulating the afferent nerves of the intestinal mucosa. Therefore, our food should consist of a liberal amount of coarse vegetables, fruits with their peels, properly prepared cereals, and breadstuffs with their husks.]

Dr. W. Essex Wynter stated on page 29 of his book *Minor Medicine*, 1913 :—

The dejecta consist of the undigested and indigestible portions of the food taken and the residues of the digestive secretions with more or less poisonous matter returned from the liver in the bile, and the various micro-organisms which flourish in the intestinal tract. Their bulk necessarily varies with the quantity and degree of solubility of the food. Though absolute abstention does not completely abolish them, as may be seen in starvation and in newly

born infants, yet it has an important influence on the frequency and ease with which the rectum empties itself. The addition of such indigestible matter as the seeds and skins of fruits, some of the husk of wheat, as in brown or wholemeal bread, and the cellulose structure of vegetables, with whatever else that is unirritating and sufficiently comminuted to readily pass the pylorus, must be regarded as wholesome in assisting the regular action of the bowels. The effect of subsisting entirely on elaborately selected and prepared food, including fine white bread, from which these coarser elements are excluded; is entirely the opposite.

Dr. Arthur F. Hurst, physician at Guy's Hospital, told us on pages 28, 49 and 51 of his volume, *Constipation and Allied Intestinal Disorders*, 1919 :—

The degree of distension in the colon depends upon the diet, as vegetable food not only leaves a larger residue than animal food, but it also produces a greater quantity of intestinal secretion and favours the development of larger numbers of bacteria.

The extreme importance of the mechanical stimulation of the intestines is seen in herbivora, which die if they are given insufficient cellulose, and in carnivora, which require bones, and corn-eating birds, which require sand and feathers, in order to maintain their intestinal activity. In man severe constipation results if a diet completely devoid of vegetable food is taken.

The activity of the small intestine depends mainly on local reflexes produced by the chemical stimulation caused by certain articles of diet and of the products of their digestion, vegetable food being of much more importance than animal food.

As both the mechanical and the chemical stimulation of the intestinal movements is greater with a vegetable than with a meat diet, peristalsis (bowel activity) is more vigorous in herbivora than in carnivora and in vegetarians than in those who take a mixed diet.

The addition of cellulose to the diet not only causes some food residue to be excreted, but it also increases the other constituents of the fæces. The mechanical stimulation of the mucous membrane leads to increased secretion

and also to increased peristalsis, as a result of which more intestinal juice escapes reabsorption. The bacterial decomposition of carbohydrates, the digestion and absorption of which in the small intestine are diminished by the cellulose, produces substances which further increase the amount of intestinal juice in the fæces (stool) by chemically stimulating secretion and peristalsis. Finally, the presence of a larger food residue and of more intestinal juice favours the development of bacteria, which add still more to the bulk of the fæces.

The intestinal contents travel much more rapidly through the colon when the diet contains a large proportion of vegetables than when the latter are absent, a considerably larger quantity of water thus escaping absorption. Hence the quantity of water excreted by the bowel, as well as the weight of dried fæces, increases with a vegetable diet; on a mixed diet about 35 gm. of dry substance and 100 gm. of water are daily excreted in the fæces, whereas on a vegetable diet the quantities are 75 gm. and 260 gm. respectively.

Not only leading men of science and eminent physicians and surgeons have pointed out to us the very great importance of including an abundance of indigestible roughage in our diet, but many thoughtful dentists and oculists have become convinced that the disease conditions which they have to treat are in innumerable instances brought about by chronic bowel stagnation, followed by auto-intoxication, and that the conditions of teeth and eyes can often best be improved by a wisely-chosen diet which contains an abundance of coarse, indigestible, bowel-stimulating material. For instance, Dr. K. H. Thoma, a leading American dentist, wrote on page 173 of his excellent book, *Teeth, Diet and Health*, 1923:—

Unless evacuation takes place promptly and completely, bacterial decomposition will take place. The reason for retarded evacuation may be an organic condition, or lack of training to encourage the habit of regular bowel movement at least once a day. Generally, however, the conse-

quence of continued dietary mistakes is an important factor in chronic constipation. The use of too highly concentrated, purified, softened and almost predigested foods is one of the greatest shortcomings of our diet. Milk, eggs, and sugar, white flour with the bran removed, and vegetables or fruit, with the cellulose destroyed by too much cooking, are examples.

In such foods almost everything is absorbed and there is not enough waste left to give sufficient bulk to the contents of the large intestine. Evacuation, therefore, takes place only after long intervals, and the residue clogs the walls of the intestinal tract. This long retention of the residue gives bacteria a chance to form poisonous substances. Especially is this true if protein foods predominate.

I could easily quote a large number of other authorities, but I refrain because I do not wish to swell the size of this book unduly. The testimony given should suffice to convince the most sceptical that it is foolish and suicidal to live on the highly concentrated and ultra-refined foods of civilization, which are recommended to us in innumerable advertisements. The fact that certain much-advertised foodstuffs are "wholly soluble and entirely digestible," is not a recommendation, but a condemnation.

The numerous authorities given have recommended the consumption of an abundance of indigestible roughage with the food, not on theoretical grounds which need not carry conviction, but in consequence of their experience with patients. I must refrain from quoting cases on account of lack of space, but I would like to transcribe a very striking contribution which appeared in *The British Medical Journal* of the 6th November, 1926. Under the heading "Good and Bad Diets," Dr. H. D. Lawrence published the following interesting facts:—

The diabetic diet is the antithesis (opposite) of the usual modern "bad" diet, which is composed so largely of soft, concentrated carbohydrate foods, such as bread, which are

entirely absorbed in the small intestine. The diabetic diet, on the other hand, consists largely of bulky vegetables, which leave a large residue in the intestines, and extras, such as bran biscuits and agar jellies, which pass unchanged through the alimentary tract, are often added as a sop to appetite.

After the adoption of a typical diabetic diet, it is very rare to find any digestive trouble. The change is most noticeable in patients who have suffered from dyspepsia or constipation for many years before the development of diabetes, and in whom these symptoms were therefore not due to diabetes. In a short time they are able to eat anything, and rough and bulky vegetables and "heavy" meats, which previously gave them dyspepsia, cease to trouble them at all. Their appetites are excellent, and they usually eat a far bulkier diet than before without inconvenience and with relish. Most of these patients probably eat at least one pound of green vegetables a day. One of my patients who is allowed 15 grams of carbohydrate for breakfast insists on taking it all as vegetables, and starts the day with 18 oz. of cabbage along with his bacon and egg! I have never seen the constipation of a lifetime able to withstand such a diet.

It seems impossible to say whether this improvement in digestive power is due to the mere bulk of the food or to its richness in vitamins, particularly vitamin, B whose deficiency has been blamed for intestinal atony (weakness). I incline to the former view, because many severe diabetics eat no fresh fruit, and in winter their vegetables are practically all cooked, and yet they suffer from no signs of intestinal stasis. Another factor which may be important in improving the digestion of these diabetics is the reduction of the total calories in their diet, with the result that metabolism never suffers from a surfeit of food. When the digestive tract is offered little, it seems to make the most of it.

Be this as it may, it appears that the diabetic diet has some points about it which may be applied with advantage to the normal individual.

The vital need of roughage in the food is shown by experiments made on animals. Professor Howe,

Chief Assistant Professor of Dental Research at Harvard University, wrote early in 1926 a letter to Sir Arbuthnot Lane, in which he stated :—

I am writing you because I so often run across statements you have made that accord so exactly with the findings I observe in autopsies on the "macacus rhesus" monkeys and other animals on various diets.

You have mentioned the value of the indigestible residue in foods. I wish you might now observe some of the digestive tracts of these monkeys on diets which differed only in respect to this food factor. I think they would afford laboratory confirmation of all that you have said. We have paid considerable attention to "roughage," for without it the animals contract illness or become diseased.

The effect of cellulose is very evident. The glossy coats, activity of the animals receiving it, and their general well-being are very apparent.

Autopsy shows that the digestive tract is clean, the musculature tonic and the walls of the intestine wonderfully healthy. At the medical school at Harvard, where all autopsies are now made, I have seen the pathologists lay down the instruments and say, "Just notice the fine condition of this tract and of the internal organs."

On the other hand, the animals which do not receive much roughage show an atonic gut—often covered with mucus and slime—ulcers of the small intestine or more frequently in the colon. The mucosa is thickened, half degenerated, and microscopic examination shows the cells on the intestinal villi to contain mucus. Inasmuch as normal digestion cannot go on in such walls, and as the intestine is the gateway of digested food into the body proper, the general appearance of these animals is what one would expect—their fur is rough, the hair falls out, they are inactive, and show all indication of physiological degeneracy. Their teeth decay, or loosen and fall out, their bones become decalcified, and innumerable clinical signs of general disorder are all too evident. They will not live long on such a diet, however good it may be in other respects. This merely affords a little laboratory demonstration which confirms some of your ideas.

The fact that indigestible material, roughage, is necessary as a regulator of the bowel is known to every stock-breeder. Horses, cattle, pigs, monkeys, rabbits, rats and many other animals die miserably from constipation, auto-intoxication and their consequences if fed on the soft, wholly soluble and highly digestible foods of civilization. Our domestic dogs and cats, if fed exclusively on refined food, will in desperation eat grass, wool, feathers, birds, rats, mice, etc., bones, skin and all, in order to obtain the vitally important roughage. It follows that the ultra-digestible foods recommended to us by the chemists and food purveyors are indigestible, while the so-called indigestible foods are digestible. In Dr. W. M. Tod's important volume, *Hints on Feeding*, 1924, we read on pages 208 and 220, with regard to omnivorous pigs, the internal economy of which singularly resembles that of human beings:—

Pigs require a certain amount of fibrous or indigestible material in their food to keep up the healthy action of the bowels and prevent costiveness.

In the case of pigs fed with unlimited quantities of meals mixed with water or milk, and given in a sloppy condition so that the mixture can be drunk without chewing, it is quite certain that food is wasted, for a considerable proportion of the meal will pass through the pigs undigested. When the meals are given dry, so that the pigs have to eat more slowly, chewing their food and frequently going to the water-trough for a drink, the pigs will not over-eat themselves, and the food is more thoroughly digested.

With green-stuff it is different. The pig is not likely to over-eat that, and one of the important functions of the green-stuff, from a practical point of view, is to fill up the pig that is still hungry after having consumed its proper allowance of concentrated food.

A certain amount of fibrous material that is not digested is necessary for the healthy action of the bowels, and in the case of pigs confined to sties, and not regularly fed

with green-stuff, this fibrous material must be supplied in their meal mixture, and middlings or bran have been found to be suitable materials for this purpose.

Roughage, such as the wood-like material called cellulose contained in coarse vegetables, in bran which forms part of wholemeal bread, in the skins, cores and pips of apples, etc., not only stimulates the bowel into activity, but it may be that it acts also as a poison trap or as a neutralizer of poisons. In his paper, "The Doctor and Dietetics—Some General Principles," Professor R. H. A. Plimmer stated in *The Practitioner* of March, 1926 :—

In the absence of vitamin B, birds suffer from stagnation of food in the gut. Putrefaction then occurs, with the production of various toxins. Cellulose is a good absorbent of dyes and other chemical substances, so that it may serve as an absorbent of the toxins produced during the time of constipation, and thus prevent their harmful effect. China clay and charcoal, as used, may be a solvent of the toxins. In all cases, the toxin is removed and prevented from being absorbed into the blood. Roughage would thus appear to be unnecessary in a diet with sufficient vitamin B, but, in a diet containing a shortage it may act as an absorber of toxins arising from constipation and prevent their introduction into the circulation.

The same explanation may be given for the beneficial action of charcoal and chalk, which are so often used in the rearing of pigs. Roughage could serve further by forming a layer of impermeable material along the wall of the intestine preventing the absorption of toxin.

The late Sir Lauder Brunton, one of the wisest of physicians, wrote on page 696, Vol. III, of *Allbutt's System of Medicine*, 1897 :—

Constipation is one of the commonest troubles of civilized life ; and it occurs so frequently in people who are otherwise perfectly healthy, that to a great extent it must be regarded not as a disease, but as the natural result of artificial conditions acting upon a healthy body.

The natural stimulus to the movement of the bowels is afforded by the mechanical or chemical irritation exerted by the indigestible residues of food. In savage life these are abundant, because the food is not only coarse in quality, but imperfectly cooked. In civilized life the indigestible parts are so much softened by cooking that they do not exert the same irritating action upon the bowel that they would otherwise do. Thus in primitive communities the grain of all kinds, which forms such an important element in food, is bruised or pounded; and the meal, with a liberal admixture of sand and dust, is made into cakes, or boiled without further preparation. But in highly civilized societies the case is very different, for a great deal of the outer part of the wheat or other grain is removed, and the fine starch contained in the interior is the only part employed in making bread. This fine starch is wholly digested in the intestine, leaving little or no residue to stimulate the bowels; whereas the exterior of the grain, consisting as it does of hard cellulose, is almost indigestible, and passes through the whole intestine with very little change. It frequently happens that when people no longer restrict themselves to bread made with fine flour, and return to the more primitive bread, made either from whole meal or from bran, the bowels which had previously been constipated become regular.

The same high authority informed us in his book, *On Disorders of Assimilation, Digestion, etc.*, 1904, on pages 226-227:—

Primitive communities take food which is not only rather hard and generally imperfectly cooked, but leaves a considerable amount of indigestible residue. In our school-days we used to read how Cæsar and his troops carried with them little hand-mills and bags of corn or of wheat. The corn, or wheat, was put into the handmill and roughly ground. In this way the grain was imperfectly broken up, and so taken by the soldiers. Amongst uncivilized communities at the present day it may be simply pounded. In civilized countries, however, we have mills which not only grind the corn very finely, but separate the outer and more indigestible part of the grain from the starch which

constitutes the interior of the grain. We thus get rid, by the perfection of our machinery, of those parts of the grain which would leave in the bowel undissolved residues, and which would act thereby as a mechanical stimulus to the peristaltic action of the bowels. Similarly in regard to fruits and vegetables; we are accustomed to take them, not in their crude state, but well cooked, and if there are any indigestible parts either in the vegetables or in the fruits, they are generally removed.

Soft food, then, is one of the first causes of constipation, and in trying to treat constipation, one of the first means to which we have recourse is to bring our patients back to the conditions under which less civilized nations usually live. We advise them to take bread either consisting of whole meal or with a greater or less admixture of bran. We advise them to take vegetables in abundance, either cooked, such as cabbage, spinach, broccoli, brussels-sprouts, cauliflower, carrots, turnips, parsnips, and the like, or we advise them to take vegetables such as tomatoes, celery, and so on, raw as well as cooked.

Let us then not despise roughage, even if the most learned food chemists inform us that it is valueless because it is "wholly insoluble and wholly indigestible," and that it "may irritate the digestive tract." Experience is a vastly better guide than the pronouncements of theorists.

I would like to illustrate the importance of "roughage" by a single, very noteworthy, practical example made on a huge scale. In the Report, *A Medical Review of Soviet Russia, IV.—Change in Type and Incidence of Disease*, by Dr. W. Horsley Gantt, formerly Chief of the Medical Division of the American Relief Administration, Leningrad Unit, printed in the *British Medical Journal* of the 23rd October, 1926, we read:—

Chronic constipation almost entirely disappeared owing to the coarse quality of the food. Hæmorrhoids decreased. Most of the catarrhal and inflammatory conditions of the gastro-intestinal tract were greatly decreased (gastritis, chronic intestinal catarrh, chronic colitis, appendicitis).

From 1914 to 1917 the incidence of appendicitis cases was nearly constant (2.3 per cent), but in 1918 it dropped to 0.8 per cent and in 1919 to 0.01 per cent. Diseases of the bile ducts—cholecystitis and cholelithiasis—decreased gradually from 4.7 per cent in 1914 to 4 per cent in 1917, and dropped suddenly to 1 per cent in 1918 and 0.8 per cent in 1919.

We cannot wonder that men do not flourish who are deprived at the same time of the roughage, vitamins and mineral elements which Providence cunningly mingled with the food and which we were meant to consume with it.

Civilized people are deprived not only of roughage, vitamins and mineral elements which are indispensable to their well-being, but they are also deprived of water, the most natural and the most essential drink. Our body consists chiefly of water. The brain is nearly all water. We require a huge quantity of liquid to produce the wonderful juices wherewith the body elaborates the food, for every day a bucketful of saliva, gastric juice, pancreatic juice, gall and bowel juice is secreted for treatment of the otherwise indigestible and useless foodstuffs. Besides, our system has to be flushed and cleansed with water and we have to replace the vast quantity of liquid which we lose every day in the breath, in the perspiration, in the urine and in the stools. The providers of expensive substitutes for the most natural drink of men have, in their own interests, frightened many of us off plain water. There are numerous people who never drink a glass of water from year's end to year's end, believing it unwholesome, and being frightened by possible disease germs contained in it. There are others who drink water but who improve it to their harm by boiling or distilling it. If we do not drink enough water, we suffer from water-starvation, to which the body to some extent may become accustomed. We may then no longer experience thirst, but our body will suffer.

Being insufficiently cleansed and flushed with the water which it needs, it produces a thick and irritating urine to the injury of the kidneys. The body economizes water wherever possible. The bowel becomes water-starved, the stools become dry and hard and the functioning of the tract becomes seriously enfeebled, and chronic constipation is the result.

CHAPTER XIX

The One-Stool-a-Day Fetish, Posture and other Matters causing Constipation

The excrement is best when it is soft and consistent, which is passed at the hour which was customary to the patient when he was still in health and which is proportionate in quantity to the food taken. If these conditions are fulfilled, then the abdomen is in a healthy state.

In proportion to the food taken the patient should have evacuations twice, or thrice, during the day, and once at night, and his stool should be more copious in the morning, as is customary with people who are in good health.—HIPPOCRATES, *Prognostics*.

CIVILIZATION is synonymous with constipation, and its advance is accompanied by an increase of that trouble. The most highly civilized are the worst constipated. Hence they suffer also to the greatest extent from appendicitis, colitis, gall-stones, cancer, etc.

Civilization means refinement. Refinement decrees that it is vulgar to blow one's nose, although that act is healthy and necessary. It is still more vulgar to cough and spit, or pick one's teeth. Hence retiring for emptying one's bowel is considered offensive, disgusting and unpardonable. A refined woman will confess that she would rather die than leave the room. Refined people go to stool so surreptitiously that one might think that that physiological act was a deed of shame.

A baby born to people of refinement is as a rule a

healthy little animal. Like every animal it has a normal apparatus of excretion which automatically acts after every meal. At first the little thing is forgiven for its indiscretion, but soon a chronically constipated grandmother, aunt, nurse, servant, or family doctor will declare that a number of bowel movements during twenty-four hours is abnormal, inconvenient, objectionable, disgusting and probably unhealthy. A large number of constipated people, among them the majority of doctors, are under the extraordinary delusion that normality of excretion consists in a single motion after breakfast, and that two or three stools a day is unhealthy. To most a well-formed stool, which is a proof of constipation, is a sign of good health, and the normal loose stool of the primitively living, who empty their bowels after every meal, is a sign of bad health. Looseness of stool is confused with diarrhoea. Many parents, alarmed by their children having two or three loose stools per day, force upon them medicines to counteract this state of affairs. There is a superstition that loose stools lead to loss of strength, tuberculosis and other diseases of under-nutrition.

Food which has been duly elaborated by the body is absorbed by the walls of the small bowel. The indigestible residue, together with other excretory matters, is despatched to the large bowel, from which normally no absorption of food takes place. In going to stool we do not empty the small bowel, which is filled with semi-fluid pre-digested food, but only the big bowel.

In Chapter XI of his book, *Prognostics*, Hippocrates wrote :—

The excrement is best when it is soft and consistent, which is passed at the hour which was customary to the patient when he was still in health and which is proportionate in quantity to the food taken. If these conditions are fulfilled, then the abdomen is in a healthy state.

In proportion to the food taken the patient should have

evacuations twice, or thrice, during the day, and once at night, and his stool should be more copious in the morning, as is customary with people who are in good health.

The teaching of Sir Arbuthnot Lane that people should have an evacuation after every meal was apparently anticipated by the ancient Greeks.

Although the vast majority of doctors worship the one-stool-a-day fetish, some of the wisest specialists and general practitioners recognize that Hippocrates and Sir Arbuthnot Lane were right in considering three stools per day the normal condition. Dr. Leonard Williams wrote on page 114 of his book, *The Science and Art of Living*, 1925 :—

Having regard to the fact that the large intestine is a very absorbent organ, and that the matters usually therein contained are highly poisonous, it is probable that the contents should be ejected three times daily, once after each meal. The customs even of careful people are much more moderate than this, amounting to seldom more than once a day. This ought in reality to be sufficient, with two important provisos. The first is that the material which is thus allowed to remain in the bowel for twenty-four hours is not of a putrefactive nature ; the other is that the daily evacuation is really adequate in quantity. A very large number of people who go regularly to stool once a day, void a quantity which, though satisfying to themselves, is from a physiological standpoint fantastically insufficient. They relieve not the whole of the large intestine, but merely a third thereof, leaving the poisons from the remaining two-thirds to be reabsorbed.

Nor does this reabsorption constitute the whole of the damage. We have seen in the case of the stomach that the effects of continual overloading are distension of the organ and its dislocation downwards. The same holds good in the case of the large intestine. When the contents of this tube are but partially evacuated, the matter which remains behind, distends the lumen (width) of the tube and converts it into a miniature lake, a cesspool in fact. The weight of the cesspool is considerable, and it dislocates the whole tube downwards as far as it will go.

Dr. John Harvey Kellogg, the founder and superintendent of the Battle Creek Sanitarium, by far the largest and most successful establishment of its kind in the world, who has treated more than 100,000 patients and has therefore an unrivalled practical experience, is an open-minded man of science. He insists that all his patients should establish as promptly as possible the three-stools-a-day habit. He has urged this in numerous books, scientific papers and articles. For instance, he amusingly told us in his book, *Auto-Intoxication, or Intestinal Toxæmia*, 1922, on pages 8 and 265:—

From inquiry through a questionnaire sent to a large number of physicians, chiefly medical missionaries, located among primitive people, I have learned that three or four bowel movements a day is the prevailing habit among people who live in a natural or savage state. A physician located among the Bushmen of South Africa related the following incident:

A Bushman called for relief of constipation. The physician asked him, "When did your bowels move last?"

"This morning, Doctor," was the reply.

"But," said the Doctor, "I thought you said you were constipated?"

"I am, Doctor," the native replied, "I am horribly constipated. My bowels move only once a day."

The late Dr. Sheppard, who practised surgery for 30 years among the natives of Turkey, informed me that three bowel movements a day is the universal habit of the peasant people of Turkey. If the bowels fail to move three times a day a physician is promptly consulted.

The normal intestinal rhythm is three or four bowel movements daily, or at least one movement after each meal.

The chimpanzee and other of the larger apes move their bowels three or four times daily. I was informed by the animal keeper of the London Zoo that the large apes in that great collection uniformly move their bowels four times a day.

By correspondence with many missionary doctors

practising among primitive people in Africa and other foreign countries I have learned that the bowel habits of people living in a wild or primitive state are identical with those of the higher apes.

Dr. Kellogg wrote on pages 22, 25, etc., of his work, *Itinerary of a Breakfast*, 1923 :—

The food residues contain billions of bacteria, which sometimes constitute more than half of the whole mass of the fæces.

Under normal conditions, when all parts of the digestive tube are doing their work efficiently, the colon discharges its contents at least three times a day. The residue of each meal is dismissed after the second following meal. That is, the food residues from the daily breakfast should be discharged by a bowel movement between supper and bedtime.

When the colon is thus swept clean of all body wastes and food residues there is no time for putrefaction, and the stools are free from the loathsome odours of decay which are commonly present. Under such circumstances, the blood remains free from the pollution which must result from the stagnation of food residues which have been retained for many successive days until putrefaction processes have reached a very advanced stage. The liver, lungs, kidneys and skin are not compelled to act as sewers in attempting to carry off the filth which the colon has failed to dispose of.

So long as the body-wastes are disposed of in this prompt and normal manner, the terrible effects which arise from intestinal toxæmia or auto-intoxication are not seen. The skin is clear, the tongue clean, the breath sweet, the appetite keen, the mind active, optimistic and serene, sleep sound and restful, endurance great and resistance high. Unfortunately, this happy state is seldom met among civilized people who have advanced beyond the age of infancy.

The writer has gathered from various sources a considerable amount of evidence that indicates that under normal conditions, a normal man, living upon normal diet, which will include a sufficient amount of cellulose to furnish the normal stimulus to the muscular walls of the intestine,

will experience an evacuation of alimentary wastes at least three times a day, and, in many cases, four times.

The universally prevalent idea that one bowel movement daily is sufficient is proof of the universal prevalence of constipation. One bowel movement means constipation of a pronounced degree. X-ray examination after an opaque meal shows that persons whose bowels move once a day are constantly carrying in their colons the putrefying residues of five to ten meals or even a larger number. The colon is never empty even after a movement, and toxæmia is present and often shown in the coated tongue, foul breath, headache, depression, and other indications usually present. One bowel movement a day is very marked constipation.

It is necessary to take in food at frequent intervals. It is equally necessary to dispose of the food residues and body-wastes at frequent intervals. The kidneys remove poisons which are temporarily deposited in the bladder and discharged several times a day. The liver excretes daily twenty ounces of bile which, according to Bouchard, is six times as poisonous as urine, and this needs to be discharged along with other wastes as promptly and as frequently as is the urine. In other words, it is just as important that the colon should be emptied several times a day as that the bladder should be emptied several times daily. In fact, the bowels should be emptied at least after every meal.

Wild animals, wild men, healthy infants and idiots move their bowels as often as they are fed. Wild animals and wild men have better sense than to interfere with the normal promptings of nature. In well-managed idiot asylums the inmates are regularly taken to the toilet after each meal and before going to bed. When this is done, the soiling of beds and clothing is prevented.

In his work, *Colon Hygiene*, 1923, Dr. Kellogg insisted on pages 117 and 119 :—

That one bowel movement a day is normal and efficient evacuation of the bowels is another error which is universally entertained. One bowel movement a day is a positive indication of constipation. X-ray examinations of the

colon after a test meal show that in persons whose bowels move once a day the body-wastes are usually retained for fifty hours or more.

The bowels should move at least three times a day or after each meal. Four movements daily is a still better rhythm and is easily established by a biologic regimen. This the writer has proven not in a few exceptional cases but in thousands of patients who have been willing to take the trouble to train their bowels by means of a proper diet and other simple and natural means.

Let us not disdain Dr. Kellogg's views which I have quoted at length because he has a unique way of putting his case clearly and strongly. Dr. Kellogg is not a faddist, but an eminent physician of vast experience and a great benefactor of mankind.

Dr. Samuel Goodwin Gant, Professor of Abdominal Diseases, wrote on page 50 of his work, *Constipation and Intestinal Obstruction*, 1909 :—

If this warning of the approach of the fæces is appreciated and the contents of the rectum are promptly expelled, all is well, but, on the other hand, if the desire to go to stool is ignored day after day, the mucous membrane soon loses its sensitiveness, the muscular coat becomes weakened, and as a result large quantities of fæcal matter may accumulate in the rectum without causing any desire at all to evacuate the bowel.

Dr. William S. Walsh, in his book, *The Conquest of Constipation*, 1924, rightly told us in the opening passages of his work :—

Under normal conditions the body automatically rids itself of its food-waste. Whenever food or drink enters the stomach there are at once set up movements of the entire intestinal tract. The intestines, as most of us know, are hollow, muscular tubes, about 27 feet long, which, by their power of contracting and relaxing, churn food, break it up, and propel it; they also manufacture mucus, which keeps them lubricated, and digestive juices.

The object of the intestinal movements, after food or

drink enters the stomach, is to cleanse the upper intestines of waste, and thus to prepare a fresh surface for the material which will shortly enter them from the stomach. The desire to evacuate after a meal is a manifestation of these movements. The movements are more pronounced, and the person is more aware of them, after a heavy meal, as after dinner ; also when the stomach receives food following an extended period of rest, as after breakfast. It might be added that the desire to move the bowels after a full meal is also caused by the pressure of the distended stomach upon the transverse portion of the large intestine.

After digestion has been completed in the stomach, a matter of about two and a half hours, food begins to pass into the intestines. The mere entrance of food mechanically excites contractions of the intestines. The intestinal juices, and particularly bile, which are called forth when food reaches the intestines, also stimulate intestinal activity. During the process of digestion various chemicals and gases are formed, which further influence the intestinal movements favourably. Some foods, as certain fruits, excite the intestines by reason of their acids or seeds ; other foods, as the bran of certain cereals and breads, by their physical constituents. If a person is physically active, this serves to massage the intestines, jolt them and thus force the waste along.

Those who go to stool only once a day have very frequently not a complete, but only a partial, evacuation. The bowel is a very long tube. People may empty the last six or eight inches, while a yard or more remains filled with foul decomposing matter. That condition may become permanent. Every experienced physician meets patients who, having an evacuation every morning after breakfast, believe that they are never constipated and who yet have habitually in their bowels the residue of ten or more meals.

If we wish to have normal bowels, we must not only feed normally and empty our insides three times a day after meals, but we must also adopt the natural posture whereby alone completeness of evacuation can be ensured. The modern elevated seat is comfort-

able as a seat but very unhelpful for other purposes. The natural posture is that of the child and of the savage. In squatting down, the thighs press upon the abdomen and greatly facilitate the task. The high seat of the modern retiring place impedes the complete emptying of the bowel and causes pressing and straining which often results in rupture. Sir James Sawyer wrote in his book, *Coprostasis: Its Causes, Prevention and Treatment*, on page 19 :—

The best position of the body for successful defæcation, that is, for the complete and easy doing of the act, is the crouching position. This is the natural position, the position assumed when defæcation is attempted upon the "ground." The parts concerned in the act are then in the best position for its accomplishment. Moreover—and this is an important consideration—the hernial openings are then guarded by their natural physiological protection during the increased intro-abdominal tension which is a normal constituent of the act of emptying the lower bowel, and so the production of hernia from such tension is prevented. The inguinal form of intestinal hernia is a frequent result of straining at stool, when such straining is made in the usual position of the body upon a high seat. A fruitless effort at defæcation, when seated upon the usual high seat (a seat generally of the height of eighteen inches from the ground), will often be followed at once by success if the effort be thereupon renewed in the physiological attitude I have described. In habitual constipation I am accustomed to amplify and explain these considerations to the patient, and counsel the acting upon them before having to resort to drugging. It will be found in practice that the resumption of defæcation in this natural position for the act will often make the exhibition of laxatives unnecessary, and, if not quite unnecessary, at the least restrict by much their employment. Especially may women be so advised, and they will be found to be the patients most benefited.

Certain habitual postures of the body favour fæcal sluggishness, or even fæcal retention in the large intestine ; namely, a slouching posture, a stooping posture, and espe-

cially that form of arching backwards of the lower dorsal and lumbar spine, and doubling up of the abdomen, which occurs in sitting "all in a heap" in a large and low "easy" chair.

Those who wish to lead healthy lives will do well to return to Nature as regards frequency of stools and posture. In women constipation is more frequent and more obstinate than in men. They have a larger abdomen with a larger storing capacity. They take less physical exercise than men and drink less from a feeling of modesty, causing their excretions to become dry and hard. They have squeezed in their waists for centuries with steel, whalebone, rubber. Compression of the waist not only impedes the free working of the machinery of excretion, but weakens the muscles of the abdomen by limiting their blood supply.

The idea that it is disgusting and disgraceful to retire during the day is strongly impressed upon the children when they are still in tender years. The little one shamefacedly whispers "I have a need" even if only the parents are in the room. If there are strangers, the little thing will suffer acute discomfort trying to master Nature, and may thus destroy the automatic working of the machinery of excretion.

At most schools there is a rigid system of discipline. A boy or girl who wishes to retire at any hour except that set aside for the purpose is frowned upon, scolded or punished. Thus the constitution of many children is ruined for life. In many of the best and the most expensive establishments ten or fifteen minutes are allowed for visiting the toilet and the number of retiring places is frequently quite insufficient. If, for instance, there are six boys or girls for every lavatory, there may be only two minutes for each of them, but if one of them spends six or eight minutes in the place of retirement, several of the children may have no opportunity to use it. In some of the highest grade schools where this state of affairs prevails, a nurse

goes round every evening and asks every boy or girl: "Have you emptied your bowels to-day?" If the answer is "No," a purgative is given. Thus the schools convert thousands of healthy boys and girls into chronic drug-takers.

Many suppress their needs because the place of retirement is far away, cold, draughty, dirty, or smelly. Architects, builders and sanitary engineers should provide us with attractive conveniences and low seats which enable us to adopt the natural crouching attitude.

Lack of exercise and frequent hot baths are further causes of chronic bowel stagnation. Leg exercise, as in walking, benefits not only the leg muscles. Exercise of every kind stimulates the whole body, increases the action of heart and lungs, causes the blood to flow more rapidly and purifies it through deeper and quicker breathing. It also purifies the body as a whole by increasing the perspiration and thus promotes the elimination of body poisons through the skin. If we walk, and particularly if we walk energetically up hill and down hill, we exercise not merely the legs, but also the muscles of the abdomen and back, and these are strengthened and rejuvenated, while lack of exercise makes flabby our leg muscles and the important muscles of the abdomen which keep the bowels and other organs in position. Besides, the physical shaking of the body in walking, horse-riding, bicycling, running, etc., stimulates the automatic activity of the alimentary tract. Energetic exercise is accompanied by deep breathing. With every deep breath we massage the colon and awaken its natural propulsive energy. Many people are able to stimulate the colon considerably by deep-breathing exercise alone.

In the previous paragraph I have coupled lack of exercise and hot baths because the two go together. Pursuit of ease brings disease. The self-indulgent, who never use their legs for exercise, indulge themselves as a rule as well by taking frequent hot baths

and over-hot baths. Many women who lead purely sedentary lives take two or three hot baths per day, and they are foolish enough to believe that this benefits their health. While cold baths are splendid general stimulants and bowel stimulants, hot baths have a sedative action. They make people sleepy and constipated. Many people have been cured of constipation by taking every day a cold hip-bath. People who suffer from colic, diarrhœa, etc., are treated with hot baths, which reduce the activity of the bowels.

Self-indulgent people who never walk and who take too many hot baths, rarely drink cold water. They may take a tumblerful of plain hot water or of hot water with "health salts" early in the morning, but they shudder at the idea of taking a tumblerful of cold water on rising. A cold drink on an empty stomach has an effect similar to that of a cold bath. It stimulates bowel activity. Constipated people who are sent to watering places are ordered to take one or two tumblerfuls of cold water on rising, to go for a walk and then to take breakfast. Cold water and exercise combined before breakfast have a very salutary effect. Breakfast in bed is a most excellent institution for creating constipation.

Constipation is largely the result of self-indulgence. People who never take physical exercise, and who never take cold baths and who never drink cold water go through life in a slouching attitude and they loll in the easiest of easy chairs. People who stand, walk and sit upright, retracting their abdomen, keep the muscle wall of the abdomen taut and the bowel and the other abdominal organs are kept in their proper place, while those who slouch and who sit in a half-reclining attitude allow the outer and inner muscles of the abdomen to become flabby and the bowel and the abdominal organs to drop out of their normal position. If we wish to keep in good health, we must not indulge ourselves overmuch.

Hot drinks are constipating, and astringent hot drinks particularly constipating. Tea is an astringent. Over-consumption of tea has a very unfavourable effect on the bowel. Dr. Arthur F. Hurst stated on page 92 of his book, *Constipation and Allied Intestinal Disorders*, 1919 :—

Astringents, whether given by mouth or by rectum, exert a similar harmful influence on the intestinal mucous membrane. The constipation effect of tannin is particularly frequent among the poor, who, in addition to eating white bread instead of brown, and potatoes and bananas instead of green vegetables and apples or plums, diminish the irritability of their intestinal mucous membrane by drinking excess of tea. Strong tea, which is allowed to stand for long periods in contact with the leaves until it becomes very rich in tannin, is, with the exception of beer and spirits, the most popular as well as the most injurious of the beverages which find favour among the poor.

Constipation, as has been shown in Chapter IX, is as a rule responsible for so-called stomach troubles. On the other hand, indigestion is apt to favour constipation. Food which has not been properly elaborated by the stomach often causes stagnation. One of the most frequent causes of stomachic indigestion is insufficient mastication. All our food is so absurdly soft that we swallow bread, meat, vegetables, potatoes, etc., almost unchewed. Lumps of food which have not been sufficiently broken up, and which therefore have not been properly elaborated by the saliva and the gastric juice, are apt to impede the activities of the bowel. At dissection of dead bodies one finds frequently the bowels almost choked with hastily swallowed lumps of food. Every stock-breeder knows the importance of thorough mastication. Dr. W. M. Tod wrote on page 187 of his book, *Hints on Feeding*, 1924 :—

The corn for all horses should be crushed or broken,

but is better not ground into flour. Uncrushed corn, particularly oats, are apt to pass through the horses undigested. In fact, they will nearly always do this unless they have been crushed by the horse's teeth.

Men and pigs alone mingle food and drink. Pigs do it because they are given "pig-wash." Men do it deliberately. At table we wash mouthfuls of food down our throat because it is not polite to talk with one's mouth full. No horse-breeder would dream of giving his horses at the same time solid food and water, and even pig-breeders are beginning to learn that the traditional pig-wash is bad for their animals. Dr. W. M. Tod wrote in the book mentioned, on page 224 :—

A number of experiments tried some years ago in Ireland, in which several hundred pigs were involved, showed that on the average the dry-fed pigs weighed 7 lb. more at the time of killing for bacon than did the wet-fed pigs on the same quantity of food. This difference, though small, is appreciable if many pigs are fed, though it may be due as much to the fact that the dry-fed pigs only drank the water they required, while the wet-fed pigs may have had too much or too little water, according to prevailing conditions.

There is an old saying that God gave us the food and the Devil the cooks. Every good cook tempts us to eat far more than is good for us. Over-eating is apt to cause indigestion and constipation because it puts an undue strain upon the detoxicating organs, the liver and kidneys. Dr. Tod told us in *Hints on Feeding*, on page 203 :—

Over-feeding is very common in the case of rams being prepared for show or sale, and when, as usually happens, the foods given are of a highly albuminoid nature, illness often follows, particularly troubles with the urinary organs. When large quantities of such foods as peas and linseed cake are given, far greater quantities of albuminoids are supplied than the sheep can possibly use, and not only are the albuminoids wasted, but the strain put upon the kidneys

in getting rid of the excess of nitrogen is so great that they get out of order and illness results.

Over-feeding not only upsets the apparatus of digestion and excretion by weakening liver and kidneys, but also by imposing upon stomach and bowels work beyond their strength. In addition, over-feeding is apt to make men and women obese. The obese cannot take much exercise. Besides, masses of fat in the abdomen displace all the organs and tend to infiltrate the muscular walls of the abdomen. Thus a pendulous abdomen is developed, and through the sinking down of the bowel a form of constipation is created which it is very difficult to overcome.

Many people consume an inadequate amount of fat. In their fear of obesity numerous women severely restrict their consumption of butter, cream, nuts and animal fats of every kind. Fat is useful not only as a food, but also as a lubricant of the bowel. Besides, it keeps its contents soft. Extreme restriction of fat consumption predisposes to both tuberculosis and constipation.



CHAPTER XX

Mechanical Strain of the Bowels leading to Obstruction, Displacement and Pro- gressive Strangulation

Chronic constipation, like many other complaints of the present day, is in most cases a result of modern civilized life. Among native races and wild animals it is practically unknown.—Mr. J. P. LOCKHART-MUMMERY, *Diseases of the Rectum and Colon*.

IN the preceding chapters I have repeatedly criticized the medical profession for their stubborn refusal to recognize that chronic bowel stagnation is an infinitely more important factor in the causation of disease than the elusive micro-organisms, the mysterious glands of internal secretion, the intricate chemical processes of the body which defy the chemists and the still more baffling psychological factors which seem to monopolize the attention of would-be up-to-date doctors. A similar reproach must be addressed to the writers on anatomy. The great works on anatomy published in England, America and elsewhere, some of which are composed of a large number of volumes, describe and discuss in wearisome length the most insignificant portions of the human body, but they either do not mention at all the kinks, bands and veils, discovered by Sir Arbuthnot Lane, which are apt to obstruct, constrict and strangulate the bowels, or they dismiss the subject grudgingly in a few lines as if it were of no

significance. As the compilers of the great compendia hardly refer to these most important anatomical developments, they are as a rule not mentioned at all in most of the smaller textbooks on anatomy. Thus vitally important information is withheld from medical men.

The medical profession is kept in the dark on simple and plain matters of fundamental importance by both medical and anatomical writers, but they are overwhelmed with a flood of useless information derived from the laboratories. We cannot wonder that the vast majority of doctors are hunting for elusive microbes and still more elusive chemical, glandular and psychological factors, while turning a blind eye upon commonplace chronic bowel stagnation and all its grave and tragic consequences.

Chronic constipation leads to the accumulation of waste materials in the bowel. Their weight puts a considerable strain upon the intestines owing to our upright attitude. If we went on all-fours, the matter would not be so serious. Physical strain can more easily be borne by healthy than by unhealthy tissue. If the physical strain of weighty excreta carried falls upon muscles and structures which have been weakened by faulty feeding and by general auto-intoxication, serious degenerative developments are bound to ensue. Sir Arbuthnot Lane told us in his book, *The Operative Treatment of Chronic Intestinal Stasis*, 1918, on pages 25, 26, 33 and 40 :—

In civilization the trunk is retained in a vertical position during the entire daytime, the reclining posture being only assumed at night. While in the erect position of the trunk all the viscera tend to displace downwards towards, or into, the true pelvis, in the prone position the tendency is for them to fall upwards and forwards out of, or in a direction away from, it. If these attitudes were assumed in a normal association, the structures in the abdomen would retain their normal relationship to the abdominal

wall and to one another. If, however, the attitude of activity is not compensated for sufficiently by the corresponding resting posture, changes will certainly take place, varying in degree with the failure of compensation. The portion which is affected in the first instance is our drainage scheme, or, as it is commonly described, the gastro-intestinal tract.

The large intestine forms the cesspool of this tract. As it retains its contents for a comparatively long time, and as most of these contents are of solid consistence, it is natural that by its weight and situation it should tend to become displaced earlier in the lifetime of the individual.

I believe the primary factor is a delay in the passage of the contents of the large intestine. This is first obvious in its termination, where, to prevent a tendency to elongation of the pelvic colon, the return of faecal matter into the descending colon, and also to obviate the prolapse of the iliac colon into the true pelvis, lines of resistance are laid down. These appear early in life as streaks on the outer surface of the mesentery of the iliac and pelvic colon, and particularly at the junction of the iliac with the pelvic colon. These streaks appear first about the base of the mesentery and gradually extend along its surface. After a time they become thicker and more distinct, forming a definite band which later separates more or less completely from the peritoneal outer surface of the mesentery, except at its limits of attachment. The anchoring of this portion of the bowel by this particular collection of acquired or evolutionary adhesions I have called the first and last kink, since it is the first to develop and the lowest in position in the drainage scheme.

These acquired resistances do not exist at birth, and their development can be observed during the several decades of life. Continuing these bands which lie external to the cæcum are others which extend over the peritoneum from the under surface of the cæcum and take their share in supporting it.

The appendix not infrequently gets fixed in these acquired adhesions along the outer or inferior surfaces of the cæcum, and is made to take a share in supporting the weight of this organ. It may be secured by its extremity or at any point on its length. In the former case the drag exerted

upon it at its junction with the cæcum tends to interfere with the passage of material from it into the cæcum, while in the latter case this tube is also kinked at the point in its length where it is fixed by these acquired bands. In this manner material may be accumulated in the appendix, and inflammatory processes of varying severity may ensue producing "appendicitis." The transverse colon drops.

It is by no means unusual to have an extreme degree of stasis and prolapse without the organism having made any obvious attempt to obviate the delay by these bands. These bands illustrate the fact that, while the earlier efforts of Nature to help are to some extent efficient and advantageous to the individual, they all finally act to the detriment of the function they were originally intended to benefit.

In very marked cases of stasis these acquired ligaments or mesenteries may be seen at points on the under surface of the mesentery of the small intestine, where they may later do harm by fixing and controlling the effluent in the several loops of the small intestine.

The small intestine, in cases where there is definite local control of the effluent, is generally dilated, and in some cases hypertrophied. The dilation and the hypertrophy are both very evident in the terminal six or eight inches of bowel, and these features are accentuated as the seat of obstruction is approached. In the case of a sharply defined obstruction due to a tight controlling appendix, the line of hypertrophy may end very abruptly.

If the subject is still fairly vigorous, the bowel is very distinctly hypertrophied, but if the condition is very advanced, the intestine is dilated, its muscle wall is very thin, and it presents a bluish appearance, much as the wasted intestine often shows on the post-mortem table. The pull exerted by the prolapsed small intestines, rendered heavy with their accumulated contents, exerts, through the medium of the jejunum, a strain on the termination of the duodenum. The duodenum usually terminates vertically at the root of the transverse mesocolon, where it is continued into the jejunum as a gentle curve. The strain exerted by the jejunum produces a kinking of the duodeno-jejunal junction, together with a twisting of the commencement of the jejunum. This causes an obstruction to the effluent from the duodenum. To oppose this drag upon

the jejunum and the obstruction of the duodenal outlet consequent on it, resistances are laid down as peritoneal bands. These run upwards and outwards from the commencement of the outer aspect of the jejunum to the peritoneum, lining the adjacent abdominal wall.

At first these acquired or evolutionary bands or ligaments serve a useful and physiological purpose, but after a time, as they contract, they secure the bowel in this vertical position, and no longer permit it to return to the normal curve in any position of the body, so that the duodenal outflow is permanently obstructed, this obstruction becoming exaggerated at times when the patient is exhausted.

The author has clearly shown that the bowels may either be displaced downward, may "prolapse" in consequence of strain, or that Nature may endeavour to relieve the position by tying up the drooping bowel with bands, veils, etc., at those portions where the strain is most severe. These bands and ligaments are apt to become stronger and stronger in course of time, for Nature endeavours to compensate the downward strain of the overloaded bowel with a corresponding upward pull on the part of these bands. Thus they become shorter and shorter and the bowel is pulled up by them at some point or points. If the pull of these ligaments is pronounced, the aspect of the bowel at the point or points where kinks have formed resembles that of an uninflated inner tube of a bicycle or motor-car which has been hung on a nail. A clearly defined angulation or kink is formed. The excreta are held back owing to the constriction of the kinked bowel, and their accumulation and increasing strain downward leads to an increasing upward pull of the bands or veils. A condition approaching strangulation is created. These developments can be seen not only by the dissection of dead bodies and at operations, but also by studying patients by means of X-rays. An X-ray operator can watch the functioning

of the bowel and observe its formation by giving the patient a meal or an enema of barium or bismuth, minerals which are opaque to the X-rays. That distinguished authority on X-rays, Dr. Alfred C. Jordan, described the way in which overloaded bowels are apt to degenerate, either by forming kinks or by drooping and elongation, in his work, *Chronic Intestinal Stasis*, 1923, on pages 3, 4, 21 and 29, as follows:—

In quadrupeds the intestines are supported by the muscles of the abdominal wall; the bowels are slung hammock-wise. Man, by assuming the upright posture, has forfeited the hammock-like support of the abdominal wall, but he is still dependent upon the muscles of the anterior abdominal wall to keep the viscera in place. In health, these muscles retain their tone while the individual is upright, and in young healthy subjects the tone of the abdominal muscles keeps the viscera in place without conscious effort.

In health, prolonged exertion is required to fatigue the abdominal muscles. In stasis, however, these muscles are depreciated—like every tissue in the body—by the action of the circulating bacterial toxins. The muscles “give out” after a short and moderate exertion.

When the abdominal muscles fail, the mesenteries act as ligaments, and support the intestines.

The mesenteries are not suitable to act as ligaments, and: Either (1) the mesentery refuses the new function forced upon it, and slips down from its attachment; or (2) the mesentery makes an effort to adapt itself to its new rôle, and becomes thickened where the strain is greatest, so that some parts of the bowel are held up at their proper level. In the first case we get the phenomena presented in Glénard's classical description of visceroptosis (prolapse of intestines). In this condition not only do the intestines drop, but the other abdominal viscera, notably the kidneys. The result of the dropping is to force the heavier of the viscera down to the lowest point they can reach—in some cases the true pelvis, where they press upon the pelvic organs and excite symptoms attributable to these organs. Later actual pathological changes are

produced in the pelvic organs; in women, retroversion of the uterus is a constant accompaniment of general dropping of the abdominal viscera.

The second result follows in more robust subjects, when nature attempts to prevent the fall of the viscera by the formation of new bands to support them. These bands constitute the kinks and membranes which have been described by Sir Arbuthnot Lane. It is entirely due to his keen observation that the significance of these bands has been realized. As he puts it, "They represent the crystallization of lines of force." As they develop, their attachment extends around the circumference of the bowel, until, finally, firm bands are attached to the parietes from the bowel opposite to the mesenteric attachment.

Constipation is fostered in many ways. An infant, like the lower mammals, evacuates its bowels whenever the rectum contains an amount of fæces (stool) sufficient to excite the reflex act of defæcation. As soon as practicable the "education" of the child is inaugurated by a systematic attempt (on the part of mother and nurse) to prevent the child responding to the natural demands of the bowels. The child learns to be constipated. School life fortifies the teaching of the nursery, for a child who frequently asks permission to "leave the room" is looked upon with suspicion by his teachers. Throughout civilized life the call of the bowels for relief is subjugated to the interest of convenience or expediency.

Artificial feeding leads to over-filling of the stomach, for the bottle, however skilfully prepared and administered, is not perfectly adapted to the infant's digestion. The digestive disturbance due to artificial feeding causes pyloric spasm, and prevents the stomach emptying completely, so that each bottleful adds a little to the accumulation of food in the stomach. Some of the excess may be evacuated by vomiting, but sickness does not always occur, and the stomach may remain overfull.

When the stomach is over-filled, it weighs down the transverse colon, and the tension thus exerted on the mesentery interferes with peristalsis. The contents of the transverse colon solidify and stagnate. In attempting to void the solid fæces, straining occurs, which leads to elongation of the pelvic colon. Great elongation of the

pelvic colon is found in many of the subjects of stasis. Thus stasis commences, and pursues its evil course unless remedial measures are taken.

Elongation and dilatation of the large intestine are the earliest changes; they commence in infancy. The rectum becomes over-filled and distended; gradually it becomes dilated and unduly capacious. The elongation commences either before birth or in early infancy. Infantile constipation is usually due to bottle-feeding, or to an unsatisfactory condition of the mother's milk. A firm fæcal mass accumulates in the rectum, and straining takes place in efforts to void the mass. The straining gives rise to elongation of the pelvic colon, which increases steadily as long as there is constipation. When adult life is reached, the elongation and enlargement of the pelvic colon may be very great, and cause the accumulation of large quantities of solid fæces. There may be a daily evacuation, and the patient may not consider himself constipated, but a bismuth investigation proves clearly that the daily evacuation contains no more than a portion of the contents of the rectum. The whole of the enlarged pelvic colon remains full, and cannot be emptied except by a series of enemata.

Not only is the long pelvic colon a cause of severe stasis in itself, but its presence adds greatly to the delay caused by a kinked flexure or a dropped transverse colon. A kink of the iliac colon is a far more serious obstacle to fæcal progress when there is a long, full pelvic colon behind it, and a dropped cæcum with ileal torsion is never more pernicious in its effects than when associated with an elongated pelvic colon.

Although the writers of the numerous works on anatomy have, as a rule, disregarded Sir Arbuthnot Lane's discovery of the bands and kinks, some far-sighted medical men have recognized the great importance of these developments. For instance, that distinguished physician, Sir James Sawyer, wrote on page 24 of his book, *Coprostasis: Its Causes, Prevention and Treatment*, published in 1912:—

My friend, Arbuthnot Lane, points out that the human organism has not yet adapted itself with physiological

perfection to the erect posture. He teaches that our habitually erect posture during our waking hours leads to sagging downwards of the abdominal viscera, and that such displacements cause certain intestinal kinks, which lead to stasis of intestinal contents. He pursues this subject with much detail in a valuable paper, in which he cites the effects of gastro-intestinal stasis, of kinks, and "pulls," with consequent absorption of toxins, as they affect the appendix, the ovaries, the uterus, menstruation, the liver, the production of visceral cancer, respiration, tuberculosis, the skin, the mammæ, the kidneys, the sexual appetite, the mind, "neurasthenia," the pancreas, and the formation of gall-stones. This is a wide range of indictment; but it comes from a good and experienced worker, who supports it with physiological and pathological evidence, and it commands our attention in practice.

Drs. Pauchet and Gaehlinger in their work, *La Constipation*, 1926, dealt with the sinking down of the abdominal organs, particularly in women, as follows, on page 16:—

Patients suffering from weakness of the abdominal muscles were sometimes in their childhood over-nourished, and had a protruding abdomen, but those suffering from a weak abdominal musculature are particularly recruited from those who lead sedentary lives, who were not well looked after at school and whose parents attached more value to intellectual than to physical training. In the case of women, the pressure of too tightly fitting clothes, complete lack of gymnastics, and childbirth, followed by neglect to support the abdomen with a suitable belt during the period of nursing, are often responsible.

Ptosis, the sinking down of the internal organs and bowels, is favoured by the disappearance of internal abdominal fat, and it is often found in those who have lost a considerable amount of weight through various causes. This factor is one of increasing importance, because of late years many women, in order to have a fashionable figure, indulge in fasts or partial fasts, without endeavouring to replace the fat of which they are ridding themselves by muscles of good quality. It is regrettable that the benefits

arising from the campaign against the wearing of corsets is nullified by the methods whereby women strive to obtain a slender figure. When abdominal weakness has become evident, the internal organs sink down more and more owing to the law of gravity.

In his well-known handbook, *Diseases of the Rectum and Colon*, 1923, Mr. J. P. Lockhart-Mummery, the eminent surgeon who specializes in abdominal diseases, described as follows the formation of kinks:—

Chronic constipation, like many other complaints of the present day, is in most cases a result of modern civilized life. Among native races and wild animals it is practically unknown, but is all too common in civilized communities, and, indeed, forms one of the most frequent disorders of our great cities. Modern methods of dietary and the sedentary character of our daily life are largely responsible for the tendency to constipation which is so prevalent. It is one of the penalties we pay for the comparatively small use we make of our colons.

Quite apart from this there is, I think, no doubt that the large bowel in man has been put at a serious disadvantage by the adoption of the erect attitude. In animals the position of the colon under normal conditions is in the horizontal plane, while in man during most of the day it is in the vertical plane. As its contents are more or less solid, the colon works at a serious disadvantage as compared with what is the case in animals. This is to a very large extent compensated for by the more muscular abdominal wall of man. Man's intra-abdominal pressure is much higher than in most animals, and it is this which enables his colon to pass along its contents, in spite of the fact that it is apparently working against the power of gravity.

It follows from this that one of the primary causes of stasis is weakness of the abdominal wall, a conclusion to which most observers have come. Dr. Glénard of Vichy was one of the first to point out that the integrity of the abdominal wall was the key to the enteroptosis which frequently accompanies stasis in the colon.

The etiology of intestinal stasis, or rather the symptoms

which it produces, is still far from being settled. The most generally accepted view is probably that put forward by Sir William Arbuthnot Lane—namely, that the condition arises from a mechanical obstruction of the lumen of the bowel in the shape of an adventitious membrane, a band of adhesions, or a kink resulting therefrom.

In a normal individual the abdominal wall is a firm elastic structure which maintains a more or less constant pressure within the abdominal cavity. This pressure has been estimated to be as much in some persons as 10 pounds to the square inch. It is probable that it is always in a normal person sufficient to more than counterbalance the effect of the action of gravity upon the abdominal viscera, and that under normal conditions the intestines may be said to float within the abdomen, so that no drag is exerted upon the mesenteries.

If for any reason the abdominal wall becomes weakened, this state ceases to exist, and all the abdominal contents are subject to the effects of gravity, and tend in consequence to become displaced downwards. We see evidence of this in cases where the intra-abdominal pressure is suddenly altered, as, for instance, in persons who suddenly lose a great deal of weight. The loss of fat within the abdominal cavity, where much of the normal fat is stored, results in a decrease of space, greater as a rule than the abdominal wall can compensate for; and we know as a fact that marked loosening of the organs commonly results in such cases. The stomach and colon are displaced downwards, and the kidneys and liver become more or less loose. The same thing is not uncommonly seen in women after childbirth, when the abdominal wall has been badly stretched, and has been slow in recovering.

It will thus be seen that the key, so to speak, to enteroptosis is the condition of the abdominal wall, and that we should attempt to restore the abdominal wall to its normal condition by suitable exercises, or, failing this, to supply an artificial support to it in the shape of a suitable belt.

I could easily add further evidence, but refrain because this book is already rather long. Instead of calling additional witnesses regarding these dangerous

kinks, the existence of which has been denied by many professional men, I would quote a few cases which Mr. Lockhart-Mummery gave on pages 286 and 292 of his book. They show that kinks which fix and angulate the bowel are apt to lead to chronic constipation, the poisoning of the system, the degeneration of the abdominal muscles and of the abdominal wall and to numerous diseases. All these troubles are apt to disappear when the bowel is freed from constriction. The author tells us on the pages mentioned :—

The following case well illustrates kinking of the pelvic colon :

Mr. I., a gentleman aged 25, was brought to me by Dr. Leonard Williams on account of severe chronic constipation. He had suffered from this condition for three or four years. Every kind of non-operative treatment had been carefully tried, but he was no better and was anxious to have something further done. A sigmoidoscopic examination revealed a kink in the pelvic colon and fixation to the left iliac fossa.

On opening his abdomen a band of adhesions was found binding down the middle of the pelvic colon to the left iliac fossa and causing a sharp bend. The bowel was freed, and the peritoneum carefully closed in so as to leave no raw surface. He made a good recovery, and the bowels began to act regularly and without abdominal pain at once. When heard from six months later his bowels were acting regularly without aperients.

Another case was as follows :

The patient, a married lady, was recently sent to me by her doctor. For ten years she had been a chronic invalid with mucous colitis. She suffered from a chronic pain in the abdomen, which at times became severe, and was always worse on the left side. She had lost weight, and constantly felt ill and depressed. She had fits of weeping and misery on the slightest, and often upon no, provocation, and was unable to go about or enjoy life in the ordinary way. She had an earthy complexion, and her appearance when I saw her was typical of toxæmia or auto-intoxication. Her stools contained large quantities of mucus, and often

consisted of little else. A curious and unusual symptom was that the presence of anything in the rectum caused an uncontrollable desire to go to stool, and much tenesmus (pain).

She had been under medical treatment for years, and all the recognized non-operative measures had been tried. On examining the bowel with the sigmoidoscope, I found the mucosa quite normal in appearance. In the middle of the sigmoid, however, the bowel was firmly fixed and angulated, apparently by adhesions. The uterus was also found to be markedly retroflexed. It seemed probable that the tenesmus from which she suffered was due to the condition of the uterus, and a gynæcologist who saw her with me confirmed this view. I opened the abdomen and found a number of firm adhesions binding down and kinking the middle of the sigmoid flexure; these were divided, and the wound left in the peritoneum sewn up. The uterus was also drawn forward and anchored to the abdominal wall, so as to correct the position. The patient made a good recovery, and all her symptoms have now completely disappeared. When I last saw her, some months after the operation, she had put on weight, her complexion was good, she no longer had any mucous in the stools, and she told me she never remembered feeling so well and fit.

Faulty feeding leads to delayed excretion. The evil is made worse by the fact that civilization demands that the bowel should be emptied only once per day. Elimination of vitamins, mineral elements and roughage from our food, the one-stool-a-day fetish and the faulty teaching of the great majority of medical men that one motion per day is sufficient and that the normal stool should be well-formed are responsible for the degeneration of our bowel, of the abdominal walls, and of all the organs of our abdomen. Thus chronic bowel stagnation is firmly established, and the unfortunate sufferers endeavour to obtain relief by purgatives, enemas, etc. They are only too often encouraged in this by doctors who have been wrongly taught and who themselves have become slaves to

purgatives. Hence patients who might be restored to normality by altering their diet and their methods of living are frequently made chronic invalids. Temporary relief by artificial means is exceedingly dangerous. Purgatives daily used make the conditions of bowel sufferers worse and worse. The disastrous effect of purgatives, laxatives and enemas, which are so light-heartedly taken by the majority of civilized men, doctors included, will be fully described in the following chapter which should be read with the most careful attention.

CHAPTER XXI

Purgatives, Laxatives, Enemas and Bowel Disinfectants

In vain shalt thou use many medicines.—*Jeremiah* xlvi. 11.

TO most civilized men and women artificial means for opening the bowels are far more important than the daily bread. We can easily live without bread, but we cannot live with chronic and unrelieved constipation.

In the past medicines were nauseous. They were deliberately made nauseous by wise doctors who did not wish their patients to become habitual drug-takers. In old books the adjective "bitter" is almost invariably coupled with the substantive medicine. In my childhood I was dosed occasionally with horribly bitter powders, with repulsive liquids, with boluses which stuck in one's throat, etc. Now we have "elegant" preparations which are tasteless and which are so small that we can dose ourselves with drugs at the dinner-table without arousing anybody's attention. Of course, the smaller and the more elegant a pill is, the greater is its danger, because it contains irritants and poisons in a concentrated form.

Owing to the unremitting, pushful zeal of millionaire manufacturers who have made their preparations ever more attractive and who urge us unceasingly on posters and advertisements to swallow their pills and salts "for the good of our health," the majority of us take

purgatives and laxatives every day, and many take drugs at every meal. It is much easier and much more pleasant to regulate our digestion and excretion with daily doses of medicines "highly commended by the profession" than by altering our diet and our habits of life. Unfortunately the end is evil. The habitual taking of purgatives and laxatives is a vice, and, like so many vices, the beginning is pleasant but only too often the end is terrible and tragic.

The habitual taker of opening medicines becomes as much a slave to his drugs as does the habitual taker of morphia, and I think I may state without fear of successful contradiction that the pill habit is far more dangerous and far more deadly than the morphia habit. After all, the slaves to morphia are only few in number, and most of them have always been physically unsound and mentally unstable. Many of the morphia slaves were confirmed neurotics long before they took the first dose.

Both purgatives and morphia are habit-forming. The first doses are pleasant. A habit of self-drugging is formed, and the habitual taker of laxatives finds after a while that, like the morphio-maniac, he can no longer exist without his accustomed dose. Both pill takers and morphia takers discover in course of time that the dose has to be increased, or that another drug has to be substituted. The habitual morphia taker will change to cocaine, heroin, ether, and the habitual taker of laxatives will take more or stronger pills and more or stronger salts, he will reinforce the one with the other, and at last add enemas and internal douches to his "remedies," which of course fail to remedy his trouble. Naturally caused physical defects can be remedied only by natural means. Drugs may relieve symptoms for a time, but do not cure.

It cannot be doubted that drugs are one of the greatest disasters and curses of civilization. Purgatives have wrought far more harm than alcohol. The

three most potent factors in causing ill health, the degeneration of the race and the general decline of the physique are undoubtedly a faulty diet, delayed excretion and drugs. Probably drugs are by far the most disastrous of the three. Faulty feeding and chronic constipation are far less dangerous than drugs. If we did not possess any drugs, the faultily fed and the chronically constipated could not relieve their symptoms by unnatural means. They would be compelled to find relief by natural methods, by altering their diet and their habits of life.

Doctors and chemists combined unfortunately encourage us in violating the laws of nature day after day because they have for every trouble which has been brought about by our self-indulgence a pleasant drug or treatment which relieves unpleasant symptoms or pain, at least for a time. If we habitually over-feed and suffer in consequence from indigestion, we are given a pill or a draught and we continue over-eating. In due course our permanently ill-treated stomach gives way, and some incurable disease has been firmly and permanently established, thanks to the symptom-relieving drugs given to us. If, owing to the wrong choice of foods, we become chronically constipated, doctors or chemists will open our bowels daily with pleasant medicines which encourage us to go on living faultily until at last our crippled and diseased bowel causes the outbreak of an incurable malady, such as cancer. Women who take habitually poisonously strong tea are apt to suffer from severe headaches. The doctor, the chemist, or the local grocer, will readily relieve their pain with poisonous headache powders which will encourage the unfortunate women to continue drinking the nerve-racking liquid, and serious, and often incurable, injury will thus be inflicted owing to the drug upon their nerves and their brain.

The danger of drugs lies not only in their establishing

a habit, and in their enabling us to continue violating the laws of nature and common sense. I have shown very fully in my book, *Good Health and Happiness*, that most so-called diseases are merely symptoms by which Nature endeavours to effect a cure. That has been recognized by many of the greatest physicians and surgeons of the past, from Hippocrates and Celsus onward, whose teachings I have quoted. A large number of people die prematurely and unnecessarily, not from disease, but from drugs rashly prescribed by short-sighted doctors who mistake the symptom for the disease, and who, by "fighting" the symptom, outrage nature which had intended to relieve the patient by certain unpleasant manifestations. Inflammation, fever, eczema, boils, abscesses, etc., are frequently nature's methods of effecting a cure. By "fighting" and suppressing a beneficent fever or other natural symptom, well-meaning but ill-informed doctors only too often send their patient to the grave.

I would give only a single example out of many how those doctors who mistake symptoms for the disease may kill patients by means of drugs which give temporary relief, but which prevent the healthy functioning of the body. The well-known surgeon, Mr. Harold Burrows, wrote on page 148 of his book, *Pitfalls of Surgery*, 1925:—

Morphia has a powerful effect in subduing peristalsis (bowel movement), and it may bring about most troublesome results if used without good judgment. On one occasion I was called into the country to remove an appendix. The operation was uncomplicated, and without any misgiving I left the patient in the care of his medical attendant, who promised to let me know by the telephone if there was any hitch in the convalescence.

Seven days later I had a call to see the patient again, as he was very ill. I found him in a precarious condition with a pinched and anxious expression, a soft and frequent pulse, and enormous distension of the abdomen. His

bowels had not been open since the operation, and no enema had been given. Beside his bed was a bottle containing a white mixture, and directions were on the label for a dose of this to be given every four hours. The chief ingredients were bismuth and opium ! For the entire week the patient had been swallowing this in addition to ounces of castor oil and other purgatives. He died, as I believe, from tympanites (belly distension), or perhaps it would be more correct to say from the results of continued arrest of peristalsis due in the main to morphia.

Doctors are very lucky in being allowed to write the death certificates of their patients. If they were written by independent official doctors, the fact would be revealed that a great many people die not from the diseases mentioned in the death certificates, but from totally unsuitable drugging and medication aimed at the suppression of symptoms, as in the case mentioned by Mr. Harold Burrows. Unfortunately the great majority of doctors have become drug-slaves themselves, particularly with regard to purgatives. It cannot be doubted that a very large percentage of the doctors and of their patients die owing to the lack of knowledge, light-heartedness and unconcern with which doctors both take and order totally unnecessary purgatives and other drugs.

The danger of purgation was often pointed out by the ancients, although artificial evacuation of the bowel by all the methods at present employed were fully known to the Egyptians, Hindus and Greeks, who used them with great caution and circumspection. Hippocrates wrote twenty-three centuries ago in his *Aphorisms* :—

Persons in good health quickly lose their strength by taking purgative medicines or using bad food.

Use purgative medicines sparingly in acute diseases.

Celsus, the eminent Greek physician who practised in Rome about the time of Christ, wrote in his *first*

book—I quote the quaint translation of Dr. James Grieve of 1756 :—

When the belly is costive, so as to evacuate very sparingly, and from that cause flatulencies, dimness of sight, pains in the head and other disorders of the superior parts grow troublesome, then 'tis fit to take a purge, for what assistance can rest or abstinence afford in these disorders, of which they are the principal causes. He that wants to be lax, let him first use such food and wine as produce that effect, and, if they don't succeed, let him take aloes. But purging, though it be sometimes necessary, yet when it is frequent, becomes dangerous ; for thus the body will be habitually deprived of its nourishment, and by that means become valetudinary ; for a body in a weak state is the most liable to all kinds of disempers.

Both Hippocrates and Celsus advocated the sparing use of purgatives in disease and forbade them to persons in good health. The wisest doctors of antiquity and of more recent times have acted in accordance with these recommendations, but the modern doctors act differently. The generality of them recklessly drug themselves and their patients with purgatives taken daily. Thus the doctors themselves are largely responsible for the wide prevalence of chronic bowel stagnation and of chronic auto-intoxication with all its terrible consequences.

Happily a number of medical men have recognized the criminal folly of constant drugging. I would quote some of their warnings so as to convince the reader that I have not been wildly exaggerating in declaring that purgatives are more dangerous and more deadly habit-forming drugs than morphia, cocaine and other narcotics. Dr. Samuel Goodwin Gant, the well-known American Professor of Abdominal Diseases, condemned the habitual use of purgatives and enemas in the following words in his book, *Diseases of the Rectum, Anus and Colon*, 1923, on pages 181 and 191 :—

The pernicious habit of resorting to drugs or copious high enemas augments constipation that could be relieved or cured by suggestion, exercise, proper diet, massage, water drinking, etc., because patient or physician seeks quick evacuations without contemplating results. Many injurious sure-cure remedies are on the market, and some individuals take everything prescribed by anyone for constipation without knowing its value.

Drugs aggravate constipation because the patient relies on them instead of his efforts to obtain daily movements, with the result that peristalsis (bowel movement) and glandular secretion become inactive unless stimulated by a strong cathartic (purgative), the dosage of which must be gradually increased.

Enemata are indicated to promptly empty the bowel when stools have been delayed, and colon or rectum is filled with hardened fæces (stool).

Habitually overloading the colon with water—2 to 6 quarts—to procure evacuations is injurious because frequent large high injections, recommended by those having patented syringes to sell, distend the gut and lead to enteroptosis (prolapse of intestines), angulation, dilatation, or intestinal atony accompanied by diminished muscular tone and glandular secretion, which aggravate the constipated state.

Cathartics and enemata induce abnormal stimulation that procures an evacuation, but through resultant irritation to the mucosa (inner skin), and stretching or displacement of the bowel, their later effects are responsible for inactivity of the colon and rectum, which necessitates constantly increasing doses or larger injections.

The same high authority told us, on pages 17 and 203 of his work, *Constipation and Intestinal Obstruction*, 1909 :—

Constipation is a subject frequently discussed in medical societies and the current literature of the day, yet the number of failures following its treatment is surprisingly large. The failures are due in part to the fact that physicians too frequently prescribe remedies or advocate methods which offer temporary relief because they secure

an immediate evacuation, but which accomplish little toward effecting a permanent cure.

The proper education of the patient is a most important feature in the treatment, and it is absolutely essential that he should be taught certain things regarding his manner of living. He should know that overfeeding, fast eating, the partaking of meals at irregular hours and under unpleasant surroundings are, one and all, forerunners of constipation, and are to be avoided. He must also learn that we are creatures of habit, and that constipation is often acquired or prolonged, as the result of ignorance or indifference to the necessity of securing an evacuation daily and at a given hour, and, further, that the time spent in the toilet should not be devoted to reading, but given entirely to emptying of the bowel.

The clientele of every family physician should be warned against a promiscuous taking of patent medicines, cathartics, purgatives, and enemata, because of their pernicious results and the fact that they offer no permanent relief.

Purgatives frequently act as foreign substances within the intestine, excite peristalsis, increase mucous secretion, and cause an evacuation largely through the efforts of the bowel to eliminate the cause of irritation. The primary effect of cathartics in general, as well as of enemata, is to cause abnormal stimulation of the bowel, but their secondary effect is to induce a state of depression and inactivity, which persists for a much longer time than the stage of stimulation. When purgatives are administered frequently and continuously, their stimulating effect gradually diminishes, while the sluggishness increases. This explains the reason why the system rapidly becomes accustomed to laxative remedies, making it necessary for constipated subjects either to increase the dose or to change to another drug, as occasion demands, in order to secure daily movements.

Many of the medicines used to secure an evacuation produce deleterious effects other than their irritant action upon the bowel, proving harmful locally as well as to parts far removed from the intestine.

Dr. John Harvey Kellogg, the creator and medical superintendent of the Battle Creek Sanitarium, the

largest and the most successful institution of its kind in the world, wrote on pages 171, 395 and 581 of his volume, *Colon Hygiene*, 1923 :—

The habitual use of laxatives is the most certain method of producing the most intractable forms of constipation.

It is not too much to say that all laxative drugs are harmful. There is no such thing as a harmless laxative medicine. Laxative drugs act in different ways, and some are more harmful than others. "Salines" impose heavy burdens upon the kidneys, besides irritating the bowels. When long used they produce an obstinate intestinal catarrh, which aggravates the constipation. Almost without exception, laxative drugs increase the condition which they are supposed to cure. The most difficult cases to cure are those which have long made use of laxative drugs.

Not the least of the damage done by laxatives is the injury to the stomach. The drug is administered by the mouth for the purpose of relieving a difficulty at the other end of the digestive tract, than which it would seem nothing can be more irrational. In a large number of cases of constipation, the whole trouble is a loss of the rectal reflex. The fæces accumulate in the rectum or the pelvic colon because of failure of the discharging mechanism. What could be more really absurd and irrational than to irritate and worry the stomach and the whole twenty-five feet of small intestine, besides the cæcum and the greater part of the colon, just for the purpose of exciting to action the last six inches of the intestinal tube, the rectum?

Every chronic sufferer from constipation should know that there is no laxative drug known, the constant use of which is harmless. All laxative drugs are irritants. The more certain their action as laxatives, the more certainly will their continuous use for any length of time be followed by serious injury.

When the horse, ox, or cow loses appetite and becomes constipated, bran mash is the farmer's ready and efficient remedy. But, strange to say, the farmer never thinks of giving himself the benefit of this simple and natural remedy, but instead dopes himself with purgative pills or mineral waters which ruin his digestion, spoil his kidneys, increase

constipation, and ultimately induce colitis, one of the most common and most formidable of all the evil effects produced by constipation.

Dr. Ismar Boas, Professor of Abdominal Diseases in Berlin, told us on page 52 of his volume, *Habitual Constipation*, 1923 :—

Most persons regard purgative remedies only from the point of view as to whether they act or not and never think of the injurious consequences of their long continued use.

The well-known surgeon, Mr. Harold Burrows, stated on page 100 of his work, *Pitfalls of Surgery*, 1925 :—

Constipation has its own dangers in acute abdominal disease, whether the lesion be accompanied by peritonitis or intestinal obstruction. Moreover, bearing in mind that constipation itself may give rise to severe abdominal symptoms, and wishing to eliminate it as a possible cause of confusion, we may be tempted to give purgatives. A dose of castor oil given to a patient who has appendicitis or intestinal obstruction may do great harm. Many a patient has been sacrificed on the altar of this form of medical zeal. The effect of a dose of castor oil on an inflamed appendix is comparable to that of wrenching an acutely inflamed joint, and is likely to be equally harmful.

The disastrous effect of purgatives upon people with slight appendix troubles has been dramatically pointed out by Sir Berkeley Moynihan in Chapter VI.

A popular writer, Dr. S. Walsh, wrote in *The Conquest of Constipation*, 1924, on page 17 :—

Laxative drugs, when used habitually, tend to inflame the intestine ; again, they destroy the sensitiveness of the intestinal nerves. The irrational feature about drug laxatives is this : In constipation, the sluggish part of the intestine is the last few feet of the colon ; in order to reach this by means of a drug, the preceding 24 or more feet of intestine are irritated also. As we shall see later,

drugs are sometimes useful, but the less dependence one places upon them in constipation the better.

Another popular writer, Dr. Josiah Oldfield, stated on page 17 of his little work, *Constipation: Its Causes and Cure*:—

Drugs which are supposed to cure constipation have done more than almost anything else to perpetuate it. The majority of drugs are merely irritant poisons. It is sufficient to bite a small piece of bitter aloes to know how nauseous it is and how obnoxious to the delicate membrane of the body. The majority of purgatives act in this way, they irritate the membranes they come in contact with, so that they are stimulated to secrete fluid and actively to pass on the irritating substances. The whole way down the intestinal tract, therefore, this irritation continues until the offending morsel is ejected from the body, and for the time nature is relieved. The relief, however, is obtained at a great cost, namely at the cost of irritating the intestinal walls so that they are more or less injured.

Just as regular whipping only hardens the culprit, so does regular dosing with aperients only harden the intestinal walls with the result that the last state is far worse than the first. It is better to have a healthy intestine, even though it be sluggish and lazy, than to have a worn-out intestinal wall with its surface injured and aged by frequent purgative irritants.

If every purgative medicine were destroyed to-morrow, half the chronic constipation of the world would disappear. At all costs people should avoid the habitual use of purgative medicine; it is only in the rarest cases that they are necessary for those who live wisely.

Major R. F. E. Austin, of the Indian Medical Service, contributed to the *Indian Medical Gazette* of February, 1919, an article "On Cellulose and Chronic Constipation," in which we read:—

Whilst the use of purgatives of medicinal laxatives is at times very necessary and always justifiable when required as a temporary measure, their routine employment is

highly injurious to the stomach and intestines, as well as the liver and kidneys.

Von Noorden says, "Nothing is so bad as the chronic use of laxative drugs," and when it is remembered that they all force bowel action by irritation (wrongly termed by the laity "stimulation"), and constant irritation is harmful to the well-being of any tissue or organ, it is obvious that this eminent physician's teaching on the point is well founded.

Mr. J. P. Lockhart-Mummery, the eminent surgeon, who specializes in abdominal diseases, wrote on page 328 of his work, *Diseases of the Rectum and Colon*, 1923 :—

There is, I think, no doubt that we have reached the stage when treatment of chronic or habitual constipation by aperients can no longer be considered either rational or justifiable, and that constipation must be tackled on quite other lines than the favourite one of giving drugs, which merely increase peristaltic (bowel activity) or intestinal secretion. One reason why the use of aperients in these cases is particularly bad is that they tend to hurry the food through the stomach and small intestine, often without doing much to hasten it through the large intestine. The effect of this is that the patient is not able properly to digest the food owing to the rapidity with which it is swept through the small bowel, and, in addition to the bad results of undigested food being carried into the large intestine, the general nutrition suffers from lack of a proper supply.

Dr. P. J. Cammidge, the well-known physician and bacteriologist, stated on page 434 of his work, *The Fæces of Children and Adults*, 1914 :—

The indiscriminate and habitual use of purgatives is one of the most serious menaces to the health of the community at the present day. Owing to our modes of life, constipation is exceedingly common, but it is most unwise to treat every patient who complains of that condition, even when an examination of the stools shows it to be present, by purgative drugs. An attempt should always be made in

the first instance to regulate the bowels by a suitable diet and other hygienic methods.

Dr. A. B. Cooke, the American Professor of Abdominal Diseases, told us on page 63 of his work, *Diseases of the Rectum and Anus*, 1914 :—

An obvious and familiar cause of constipation is the habit of self-medication. The pernicious effect of this practice is beyond dispute. Yet its prevalence, already alarmingly widespread, is increasing at a rate which bids fair soon to make it universal. Fostered and encouraged by conscienceless advertisers, it belongs to the large and ever-growing class of evils for which a venal Press is responsible, and for the suppression of which the only rational hope at present seems to lie in the slow process of popular education.

Entitled to first consideration under this head is the habitual use of purgative medicines. Almost without exception the remedies of this class in general use are effective solely because of their irritant properties, and their frequent repetition necessarily results in overstimulation of the glandular mechanism and a low grade of inflammation of the mucosa. While conceding that the chronic proctocolitis (bowel inflammation) practically always present in long-standing cases of constipation may be produced by the mechanical action of the altered fæces, the author believes that repeated resort to purgatives is more frequently the true explanation.

During the discussion on alimentary toxæmia at the Royal Society of Medicine in 1913, Dr. W. Bezley Thorne condemned the ready use of purgatives in the following words :—

The fluid stool, especially if of watery consistency, is more active in the promotion of toxæmia than the formed, because it is in greater or less degree absorbed from the pelvic colon and the rectum, the mucosa of which is not endowed with the faculty of discrimination between fluid fæcal matter and, say liquid nourishment or a normal saline injection. The individual who frequently or daily

passes a watery stool, whether as a result of a morbid intestinal condition or of the ingestion of saline aperients, is undergoing rectal feeding on his excremental poisons.

Sir James Sawyer, an eminent physician, published a book, *Coprostasis: Its Causes, Prevention and Treatment*, 1912, in which he gave to the doctors the following directions on page 14:—

In the treatment of habitual constipation, I have formed certain rules of practice, which my experience has abundantly confirmed. They are these: (1) We should never leave the medicinal treatment of constipation of the bowels to our patients. (2) We should never prescribe drugs in the treatment of habitual constipation until we find that the constipation cannot be cured without such medications. (3) We should never prescribe drugs in the treatment of habitual constipation without the conjoined use at the same time of a well-selected and judicious combination of the numerous adjuvants of natural alvine (bowel) relief which are at our disposal.

To open the bowels is not to cure constipation, but only to relieve for a few hours one of its symptoms. The second of these canons, that of always withholding drugs until drugless methods prove insufficient, establishes a sound therapeutic principle, and is a counsel of perfection which is salutary in its aim, and should be followed generally.

Not only medical men of the orthodox school, but unorthodox practitioners also condemn the modern practice of treating constipation with daily drugs, etc. We read, for instance, on page 539 of Dr. E. H. Ruddock's *Homœopathic Vade-Mecum*, 1923:—

Purgation produced by drugs is an unnatural condition, and although temporary relief often follows the use of aperients, they tend to disorganize the parts on which their force is chiefly expended. The intestinal canal is not a smooth, hard tube, through which can be forced whatever it contains without injury; it is part of a living organism, and needs no external force to propel its contents on their way; nor can such force be applied with impunity.

Not only does the frequent use of purgatives over-stimulate the liver and pancreas, but also, and especially, the numerous secretory glands which cover the extensive surface of the intestinal canal, forcing them to pour out their contents in such excessive quantities as permanently to weaken and impair their functions, and so produce a state of general debility.

The normal action of the stomach and intestinal canal being thus suspended, nausea, vomiting, griping, and even fainting are produced. The brain and vital energies are disturbed, occasioning lowness of spirits with melancholy, alternating with mental excitement and peculiar irritability of temper.

Every breeder and feeder of animals is aware of the danger of using purgatives, and indeed medicaments of every kind. We read, for instance, in Dr. W. M. Tod's valuable work, *Hints on Feeding*, 1924, on page 190 :—

The fewer medicines and condiments that are given to horses the better, and any farmer that finds it necessary to be fairly constantly dosing his horses with purgatives and condition balls may be pretty certain that there is something wrong with his feeding. I have known a stable of nine farm horses that were properly looked after and fed, into which neither a veterinary surgeon nor a dose of medicine entered for over five years, and this kind of thing is possible with anyone who feeds and attends to the requirements of his horses in a common-sense manner.

Many of the unfortunate sufferers from auto-intoxication are told by their doctor that their system is being poisoned through the retention of festering and putrefying waste material. People in that condition can easily keep their inside clean and wholesome by natural dietetic means. That will be shown in the next chapter. However, instead of employing natural remedies they endeavour to "disinfect" their bowel "scientifically" with certain chemicals, either on the advice of a doctor or that of a chemist or of a

friend, or in consequence of blatant advertisements of bowel disinfectants. The various bowel disinfectants which are recommended to us as "most scientific" preparations are a deception to doctors and patients. There are, as far as I am aware, no chemical bowel disinfectants which will fulfil the lavish promises of their manufacturers and of the professional men who have given testimonials as to their efficiency. These preparations either succeed in destroying disease germs in the bowel, or they do not succeed in doing so. In the latter case the condition of the patient is not improved. In the former case these medicaments are likely to destroy at the same time the harmless and necessary microbic inhabitants of the bowel and to injure severely the delicate bowel walls and other portions of the body with which they come in contact. Professor M. Matthes, the high German bowel authority, wrote in his contribution "Die Erkrankungen des Darmes," contained in Von Mering's *Lehrbuch der Inneren Medizin*, 1909, on page 472:—

Until now it has not been possible to bring about absolute antisepsis of the bowel, and it is questionable whether antisepsis of the bowel is desirable. Disinfection of the bowel will destroy bacteria which are necessary and the bowel has the ability to disinfect itself and to prevent over-development of the bacterial flora.

The best protection of the bowel against infection is to be found in the rapid propulsion of its contents. Normal stools do not readily putrefy.

The bacteria which are normally found in the bowel and which are useful and necessary are apt to become noxious if they are given opportunities to develop their faculties of decomposition and putrefaction to an over-great extent, faculties which become evident in case of stagnation of the bowel contents. If undue delay takes place, substances are formed which irritate and may injure the bowel wall and which are directly poisonous. These poisonous substances may, however, be neutralized to a certain extent by the chemical activities of the bowel juice.

Dr. Chambers Watson wrote on page 70 of his *Lectures on Medicine*, 1917 :—

The question may be asked, "Are drugs of the intestinal antiseptic class of any value as an aid to treatment?" My experience with drugs of this class generally has been very disappointing. Drugs like salol, izal, dimol, and many others have been strongly advocated as wonderful intestinal antiseptics. I have tested these and some others very carefully, by observing the effects of administration on the state of the stools, on the urine and on the general condition of the patient, and with a negative result. At the end of a few weeks I have found when these drugs were pushed even beyond the full doses recommended for their use that no improvement whatever was observed in the state of the stools, so far as that can be gauged by the sense of sight and smell and the general bacterial content.

The *British Medical Journal* of the 27th February, 1926, published an authoritative article "On the Action of Certain Alleged Intestinal Antiseptics," by Dr. Lawrence P. Garrod, the well-known demonstrator of pathology at St. Bartholomew's Hospital, which contains the following striking disclosures based upon careful experiments regarding four widely used intestinal antiseptics which are recommended to the medical profession in all the medical papers :—

The experimental results obtained may be summarized as follows :—

(1) Four preparations, of which three are described as intestinal antiseptics, were found to exert no appreciable effect on the total numbers of living aerobic organisms in the fæces (stools) when administered by the mouth in adequate doses.

(2) Of the same preparations three were found to exert on the fæces *in vitro* an antiseptic action much greater for coliform bacilli than for streptococci, the concentration of the drugs being considerably higher than that in the intestinal tract which presumably follows their administration by the mouth. The fourth preparation had no evident action whatever in any dilution employed.

Dr. Garrod showed that four of the best-known "intestinal antiseptics" had "no appreciable effect when administered by the mouth in adequate doses." The fact that three of them had some effect when used "in vitro," which means in a glass basin in the laboratory, will hardly compensate patients for their waste of money and the damage done to their stomach and bowels.

Many people who suffer from auto-intoxication from the bowel are told by friends, chemists, and doctors, that they require some blood purifying medicine. Blood-purifying medicines are undoubtedly very beneficial to their makers, but their utility in purifying the blood is imaginary. Dr. William S. Sadler wrote with justified contempt on page 234 of his book, *The Essentials of Healthful Living*, 1925 :—

There is a deep-seated notion in the minds of most people that the blood needs purifying at springtime ; and for this purpose vast quantities of sarsaparilla and other patent medicines are swallowed by the victims of sluggish livers, despondency, constipation and auto-intoxication, in the vain hope of purifying the blood.

One cannot purify the blood by putting some ill-tasting or bad-smelling drug into it. The blood must be purified by the intelligent eating of pure food and the liberal drinking of pure water, and by the proper action of skin, kidneys, lungs and liver. These are the measures by which the impurities found in the blood are excreted and eliminated from the body.

Unfortunately the doctors are as easily deceived as are ignorant laymen. Dr. Edwin Bramwell wrote with justified indignation in an article, "A Plea for Accuracy in Therapeutic Deduction," published in the *Lancet* of the 7th February, 1925 :—

We clinicians are, in relation to questions of treatment, too often influenced by impressions or by expressions of opinion without analysing the reasons upon which our conclusions are based.

To quote from one of the last articles written by Sir William Osler :—

“ We owe a debt to the modern manufacturing pharmacist, who has given us pleasant and potent medicines in the place of nauseous and weak mixtures, but even the best are not guiltless of exploiting on the profession the products of a pseudo-science. The length to which organo-therapy has extended beyond the legitimate use of certain preparations is a notorious illustration of the ease with which theoretical views place us in a false position. Because thyroid extract cures myxœdema and adrenalin has a powerful action, it has been taken almost for granted that the extract of every organ is a specific against the diseases that affect it. This forcing of a scientific position is most harmful, and I have known an investigator hesitate to publish results lest they should be misapplied in practice. The literature on the subject issued by reputable houses indicates, on the one hand, the pseudo-science upon which a business may be built up, and, on the other, the weak-minded state of the profession on whose credulity these firms trade. For years the profession has been exploited in this way until the evil has become unbearable, and we need as active a crusade against pseudo-science in the profession as has been waged of late against the use of quack medicine by the public.”

CHAPTER XXII

The Prevention and Natural Cure of Chronic Bowel Stagnation

Wherefore do ye spend money for that which is not bread, and your labour for that which satisfieth not?

Hearken diligently unto me, and eat ye that which is good.—*Isaiah.*

There are many diseases which differ from those of repletion but are no less serious. They arise from defects in feeding. The treatment in these cases is varied and requires great circumspection. One must aim at a certain standard. But the standard of nutrition admits neither of exact measurement nor of calculation. Therefore we must be guided by the effect of diet upon the body.—HIPPOCRATES, *On Diseases.*

The best medicine is food seasonably administered.—
CELSUS.

All articles of diet come best direct from nature, as far as possible, and without more chemical or culinary meddling than is absolutely necessary. Food is one thing, physic is another.—SIR DYCE DUCKWORTH, *The General Principles of Dietetics in Diseases.*

The surgeon should not have recourse to operative measures till all simpler treatment has failed.—SIR W. ARBUTHNOT LANE, *The Operative Treatment of Chronic Intestinal Stasis.*

PREVENTION is infinitely better than cure. The former is certain, the latter is very uncertain. Prevention of constipation is so simple a matter that it can adequately be discussed in a single paragraph. Normality of the bowel is natural, constipation is unnatural. Those who live natural lives will never know the meaning of constipation, except in the rare instances

when children are born with a faulty bowel. Those who bring up their children as far as possible on natural food, accustom them to natural exercise and do not interfere with natural excretion after meals, will establish their abdominal and general health, while those who rear them under artificial conditions with artificial food and force them to suppress their desire for evacuation, will produce in them the great disease of civilization with all its far-reaching and disastrous consequences.

In this chapter the natural cure of chronic constipation will be discussed in accordance with the promise given by the sub-title of this book. As this trouble is due in nearly all instances to the violation of Nature, it can be properly cured only by natural means, by means which deal with the cause. Symptomatic treatment with pills, salts, enemas, etc., is worse than useless. It may create tolerable conditions for a time by alleviating unpleasant symptoms, but the end is evil. Many of the most serious diseases of the alimentary tract, among them cancer, appear to be due to the combined effect of chronic constipation and chronic purgation, and it seems quite possible that chronic irritation and laceration due to unwise medicinal treatment is the principal cause of the numerous and grave abdominal diseases which torment and kill the civilized and which are practically unknown among the uncivilized. If pills and salts did not exist, sufferers from constipation would for their good be forced to regulate their bowels by natural means, by an appropriate diet, exercise, etc.

In the course of this book a number of striking case histories have been given, showing that people who were reduced to the last extremity, and who had been suffering from a great number of bodily and mental diseases, which, however, were merely symptoms of chronic bowel stagnation and auto-intoxication, were rapidly brought back to physical well-being, happiness,

and mental health, by an abdominal operation. However, it should not be thought that an operation is the only, or the principal, or the most natural, means for overcoming firmly established bowel stagnation. Sir Arbuthnot Lane is one of the greatest pioneers in abdominal surgery. He has wrought veritable miracles. He has devised many new operations and has achieved the seemingly impossible. However, Sir Arbuthnot is not in favour of the rash and indiscriminate use of the knife. He wrote on page 73 of his work, *The Operative Treatment of Intestinal Stasis*, 1918 :—

It will be well to remember that, while the surgeon should not have recourse to operative measures till all simpler treatment had failed, the earlier colectomy is performed in the history of the disease, the better is the result. The youngest patients get by far the most out of the operation. As the sufferer approaches the end of her career, the benefit from this operation becomes correspondingly lessened.

It will be noticed that Sir Arbuthnot emphatically states: "*The surgeon should not have recourse to operative measures till all simpler treatment has failed.*" He approves of operative intervention only if all other measures have failed or are likely to fail, if the condition of the bowel is such that a practicable passage for the excreta must artificially be created.

Sir Arbuthnot has stated times without number that a grave surgical operation proclaims the failure of the physician. Many of the greatest surgeons and physicians of all time have made similar statements. Hippocrates and his disciples condemned avoidable operations. The great John Hunter said to his students more than a century ago :—

The last part of surgery, namely operations, is a reflection on the healing art; it is a tacit acknowledgment of the insufficiency of surgery. It is like an armed savage who attempts to get that by force which a civilized man would get by stratagem.

The late Sir James Mackenzie wrote on page 42 of his book, *The Future of Medicine*, 1919 :—

The improvement of surgical technique enables the surgeon to open the body and perform drastic operations with little danger to the life of the individual. His results are often so striking in their success that a somewhat exaggerated notion has arisen as to the value of his contribution to the progress of medicine. It has not been sufficiently realized that his interference is at a stage of disease when it has advanced so far as to have damaged tissue and grossly perverted function. He might be said to flourish on the failure of the physician—in the sense that the early and curable stages have been overlooked or unsuccessfully combated. In the vast majority of cases his operations are not cures, but the removal of the effects of disease by mutilation of the organ, and they often deal but with the more prominent causes of distress, the remote and provoking cause being undetected, as, for instance, in the operative treatment of gastric ulcer or appendicitis.

In the vast majority of cases Sir Arbuthnot Lane and other great surgeons advise patients to correct their bowel troubles by non-surgical means. I have quoted miraculous cures of numerous diseases springing from the bowel by operative means, not in order to exalt bowel surgery, but in order to make it absolutely clear that the cause of the numerous diseases lies indeed in a faultily-acting bowel. This is proved most dramatically if a hopeless invalid, who for many years has been suffering from an absolutely intractable chronic disease, is brought back to perfect health a few days after an abdominal operation which enables the intestines to function normally.

Chronic bowel stagnation, if ever so obstinate and ever so long established, can be cured in the vast majority of cases without an operation by gentle and natural means, such as diet and exercise. I speak from personal experience, and from observation on friends and acquaintances. I had suffered from chronic

bowel stagnation and auto-intoxication for about thirty years, had become a hopeless invalid and had become the victim of numerous so-called diseases, among them chronic indigestion, emaciation, appendicitis, pyorrhœa, neurasthenia, melancholia, etc. I refrain from telling the story of my sufferings and of my cure, effected without medication, etc., because I have given it fully in my recently published book, *Good Health and Happiness—A New Science of Health*, to which I would refer those who may wish to learn from my experience and from my methods.

In the four preceding chapters I have dealt at length with the four principal causes of chronic constipation, giving the first place to the faulty diet of civilization. Those who wish to bring their bowels back to normality must, before all, go back to natural, bowel-stimulating and bowel-strengthening food. They must abandon the usual diet of highly concentrated, over-refined and over-manipulated food, which clogs the bowels and leads to putrefaction and consequent auto-intoxication. They must live principally on food which is rich in roughage, vitamins and mineral elements.

Before revising their diet, and occasionally later on, sufferers from constipation should ascertain whether food eaten by them is excreted without delay, with some delay or with extreme delay. A good dose of charcoal mixed in porridge or some other food, gives the stool a black colour. They will notice when the black colour begins to appear and when it leaves off, and they can therefore gauge for how many hours the food with which the charcoal was taken has been in their insides. Normally food should be excreted completely within twenty-four hours or less. Those who have established the three-stool-a-day habit usually get rid of the residue within fifteen or sixteen hours. If there is only little delay, people may eat meat, fish, eggs, cheese, etc., in strict moderation, remembering

that the protein of these foodstuffs causes putrefaction. If, on the other hand, there is considerable delay in the alimentary tract, they should abandon meat, fowl, fish and rich cheese, and adopt a strict lacto-vegetarian diet, relying on one or two eggs per day, nuts, almonds, milk-cheese, milk, etc., for their protein supply. For those who do not take heavy exercise one or two eggs is ample. For those who take very heavy exercise, two or three eggs are sufficient. That has been my experience. On such a diet I can walk thirty miles a day without getting tired, although I am not a young man.

Meat, cheese and eggs putrefy and create poisons which, if absorbed into the system, lead to auto-intoxication and all its serious consequences. The ancients ordered a lacto-vegetarian diet to those who suffered from insanity owing to bowel troubles, and they treated in a similar way other consequences of auto-intoxication from the bowel, as has been shown in Chapter IV. The great John Hunter, who died in 1793, stated in Volume IV, page 113, of his works, 1835 Edition :—

All fæces (stools) have a tendency to putrefaction, but least in those animals which feed on vegetables. Indeed, the excrement from vegetable food alone could hardly ever become putrid if it was not mixed with the mucus of the intestines, and would even then be kept sweet by the tendency which undigested vegetables have to take on the vinous and acetous fermentation. But the fæces of those which live entirely on animal food in general very soon become putrid; and indeed often before they are voided; but such animals are either without cæcum or colon; or if not, what they have is very short; so that the excrement, not being long retained, has less time to become putrid.

Dr. Leonard Williams wrote on page 132 of his book, *The Science and Art of Living*, 1925 :—

There is one microbe which inhabits the large intestine or colon, known as the bacillus coli communis, which is a

very human kind of microbe. If he is fed upon meat foods and other cooked foods, like a carnivorous animal, he becomes fierce and dangerous, concentrating his activities on the manufacture of putrefactive products which he dispatches into the remotest parts of the body to do their dirty work. But if, instead of ordinary foods, he is fed upon fresh fruits and vitaminous vegetables, he ceases to be putrefactive, our worst enemy, and immediately becomes fermentive, our best friend.

Dr. John Harvey Kellogg, the founder and director of the gigantic Battle Creek Sanitarium, wittily wrote on page 26 of his book, *Colon Hygiene*, 1923 :—

The presumption is that a vegetable diet requires a long colon. Meat-eating animals, as the dog, have short colons. The frog, while in the tadpole state, is a vegetable feeder and has a very long colon. The adult frog feeds upon flesh and has a very short colon.

The trouble with the civilized colon is not that it is too long, but that it is put to a wrong use. Civilized man has adopted the diet of the dog, while having the colon of the chimpanzee.

The remedy is to be sought then, not in the extirpation of a portion of the body, but in a correction of those habits of life in which there has been a departure from the condition normal to the human species, and a return to practices and conditions which are physiologically and biologically correct for the genus *homo*.

Drs. Bach and Wheeler told us on pages 7 and 10 of their work, *Chronic Disease*, 1925 :—

The ordinary diet of civilized life predisposes to chronic bacterial infections of the intestinal tract. These infections vary in their virulence, but the essential factor which makes them dangerous is their chronicity. Single doses of their toxins by tests on animals may appear but slightly virulent (if at all), but the cumulative effect of them, absorbed day in and day out, year after year, is a potent cause of many varieties of chronic disease.

The ordinary stool, thus, as it were, standardized, varies

from hard masses to soft, even semi-solid, material; but with hardly an exception in adult life it is more or less dark, foul-smelling and alkaline in reaction. The alkalinity favours notably the growth of certain strains of organisms, and the compounds that cause the foulness are notoriously poisonous if absorbed in any quantity into the blood, a phenomenon favoured by the bowel stasis and retention of fæces which so often occurs, since one of the commonest poisonous effects is a deadening of reflexes and an inertia of muscle response. Constipation is directly encouraged and a vicious circle of phenomena easily established.

Now if an ordinary man or woman, in so-called ordinary health, will live for some weeks on a special diet, changes will ensue in the appearance and general character of the fæces. The diet with good quantities of nuts (well masticated), vegetables, salads, dairy produce, wholemeal bread, cereals, milk puddings; and for fluids, water, weak tea, milk; wines of all kinds are permissible but not spirits.

After a variable time, covering in any case some weeks and often running to months, the character of the fæces will change. They will become bright yellow, soft, semi-solid, entirely odourless and acid in reaction. Actions may become almost embarrassingly frequent, for peristalsis (though free from any painful sensations, and unaccompanied by gross fermentation and flatulence) is readily encouraged and any food taken into the stomach is apt to initiate muscular bowel movements that end in defæcation. Bacteriologically there is a great diminution in all organisms that thrive in an alkaline medium, namely, *Bacillus Coli*, *Streptococci* and spore-bearing bacilli. Of the utmost importance is the appearance of the lactic acid bacillus, virtually non-existent in the alkaline stools, but multiplying in response to this diet until it may constitute as much as 30 per cent of the total bacterial flora.

It will be noticed that Drs. Williams, Bach and Wheeler recommend particularly raw fruit and vegetables for sufferers from constipation accompanied by auto-intoxication, as did the ancients since the time of Hippocrates. Raw fruit and raw vegetables, such as salads, milk and milk-cheese, sour milk and flour

foods change indeed the intestinal flora. They encourage the growth of innocent and beneficial micro-organisms, discourage the development of the dangerous organisms of putrefaction, and appear to diminish the virulence of the poisonous bacteria. After all, it is only natural that the character of micro-organisms, as that of all animals and plants, depends on their nutrition. Dr. Charles D. Aaron, Professor of Diseases of Digestion, wrote on pages 685 and 690 of his volume, *Diseases of the Digestive Organs*, 1921 :—

Metchnikoff points out that the secretions of the bacteria differ with different food. If a little faecal matter be placed in two tubes, one of which contains chopped meat in water and the other chopped vegetables in water, the fluid in the first tube after two days becomes extremely poisonous to rabbits, while the fluid in the second is entirely harmless to them. The bacterial products are thus different in the two tubes, although the bacteria are derived from an identical source.

The antiseptic diet in intestinal toxæmia should consist of farinaceous and milk dishes, since milk in all forms, as well as the carbohydrates (with the exception of legumes), inhibits putrefaction. Milk is an antiseptic food, owing to its high percentage of milk-sugar, which liberates lactic acid and succinic acid through the action in the small intestine of the *Bacillus coli communis* and the *Bacillus lactis aerogenes*. These acids are capable of preventing the anaerobic bacteria of putrefaction in the large intestine from decomposing the casein of milk and the protein of nitrogenous foods.

A much greater effect on putrefaction is exerted by the various products of sour milk. The following may be mentioned :

Whey (the clear, transparent liquid residue expressed from milk curd coagulated with rennet or pepsin) is much used as a hygienic beverage and a dietetic remedy. Indeed, special establishments have been erected for "whey cures" in Baden-Baden, Creutznach, Levico, Meran, and Wiesbaden. In the beginning of the treatment, whey is sometimes difficult to digest, but the intestine soon becomes

accustomed to it. It may first be taken mixed with mineral water, but later undiluted, gradually increasing the daily quantity. It should preferably be taken on an empty stomach.

Buttermilk, owing to its small protein and fat content and its high percentage of milk-sugar and lactic acid, is well suited to the treatment of intestinal toxæmia.

Sour milk is much better tolerated than fresh milk, because it does not coagulate in the stomach and thus interfere with digestion. It slightly stimulates peristalsis and diuresis. Fresh cheese, made from either milk or cream, is recommended.

In Chapter XXI it has been shown that chemical bowel disinfectants which are recommended to us in innumerable advertisements are a delusion and a snare, that they fail to disinfect the bowel. A bowel filled with unwholesome material can neither be made wholesome by swallowing pseudo-scientific chemicals which, while unable to disinfect the bowel, may do great injury to our organs and tissues, nor can putrid accumulations be made innocuous by flushing the bowel with plain or medicated enemas without weakening the bowel walls and muscles. As all the artificial attempts at purifying the bowel have proved disappointing, people will do well to exchange the "most scientific" artificial methods of treating a toxic bowel for natural methods. They can clear up their intestine by reforming their diet, by filling the bowel with food which ferments but which does not putrefy.

In Chapter XVIII the importance of vitamins, mineral elements and roughage for the health and functioning of the bowel and of the body as a whole has been pointed out. So-called authorities on dietetics recommend us to live on a "well-balanced diet" in which protein, carbohydrates and fat are scientifically blended on a caloric basis. The spinners of unprofitable theories who have misled us for decades with regard to our diet now urge us that we should

study not only the energy values and the chemical values of food, but that we should add to this pseudo-scientific mixture a due quantity of vitamins, mineral elements and so forth. Of course, no one but a food scientist can follow the scientific guidance of the food scientists. The science of chemistry is as yet no science. Scientific feeding is an impossibility. Animals which follow their instincts, and primitive races, which know nothing of calories, vitamins and so forth, obtain a "scientifically balanced" diet. That may be seen by their physical appearance, the condition of their teeth, bones, alimentary tract, etc. On the other hand, some of the highest authorities on scientific feeding personally known to me suffer acutely from indigestion and constipation and betray the unwholesome condition of their insides by a fetid breath.

If we wish to feed wisely we must disregard the elaborate teachings of the food chemists. Providence has given us in innumerable foodstuffs a truly scientific diet. Most foods are complete foods which contain the roughage, vitamins and mineral elements which we require. Unfortunately, we destroy most of the vitamins and mineral elements by eliminating the roughage, which is particularly rich in vitamins and mineral substances, and those remaining are diminished or completely destroyed by refining, over-cooking, chemical treatment in factory and kitchen, etc.

If we wish to possess a naturally working apparatus of digestion and of excretion, we must live as far as possible on natural food. Scientific food does not exist, except in the imagination of a number of food manufacturers and their dupes. Natural foods cannot be scientifically improved. They can only be scientifically spoiled. Our digestion and excretion have been weakened by scientific feeding. It is therefore necessary for us to return to natural feeding.

We should select on principle foods rich in roughage,

such as coarse wholemeal bread, bran biscuits, wholemeal cakes, wholemeal flour for pastries, etc. Those who have difficulty in procuring wholemeal flour should buy wheat, wash and dry it and grind it in little mills of their own, such as those obtainable from Zachariah Parkes, Ltd., of Birmingham. Instead of ordinary overcooked porridge, they should eat bran porridge. To make bran porridge mix in equal *weight*, not measure, coarse oatmeal and clean bran, cook this mixture with as little water as possible for three minutes and eat either hot or cold, mixed with milk and brown sugar, honey or salt, with stewed fruit, lemon juice and nuts, or with milk and Marmite, which is exceedingly rich in vitamin-B. There is an old-fashioned dish called frumenty. Raw, unground wheat is thoroughly washed, and is either boiled until the berries burst, or it is boiled for a few minutes—this is the better process—and is kept standing in water in a warm place until the expanding berries open. To one pound of wheat three pounds of water should be added. Mixed with milk and sugar or with stewed or fresh fruit, nuts, raisins, etc., and flavoured with lemon juice, it makes a delicious dish, exceedingly rich in roughage, mineral elements and vitamins.

Vegetables should be eaten in abundance. Addition of soda, recommended in the books on cookery, may preserve their colour but destroys the vitamins. In cooking, no chemicals and no chemical dyes should be employed. To get the full value out of potatoes they should either be steamed in their skins and be *thinly* peeled before serving—the best part of the potato is the skin and the substance adhering to it—or the potatoes should be thoroughly washed and scrubbed and baked in their jackets. They should be broken open a few minutes before being taken out of the oven so that the steam can escape, and the skins be nicely browned and made crackly and be eaten skin and all. The skin, if done in this way, is delicious.

Meat ought to be eaten sparingly, if at all, and liver, blood, kidneys, should not be discarded, because these are richest in vitamins and mineral elements. Sugar should be eaten in moderation, and the rich brown cane sugar of the West Indies should be preferred to the over-refined white product, to the pure, "scientific" chemical sugar which is rather a chemical than a food, owing to the elimination of the mineral elements. Black treacle and honey are excellent foodstuffs which are of high value to bowel sufferers.

Spices, condiments, strong sauces, pickles, etc., are injurious to liver and kidneys. Strong tea, strong coffee and alcohol also weaken these important organs, which are devoted to the important function of making innocuous the self-generated poisons and the ingested poisons. Overmuch smoking also is injurious to the liver.

It may seem strange to many readers that I recommend porridge and wheat cooked only a few minutes, and therefore practically raw. It is true that, according to the chemists, insufficient cooking makes grain insoluble and indigestible. There is an excellent reason for preventing the total absorption of oats and wheat. The purpose of bran porridge and of frumenty, if prepared in the manner recommended, is to be absorbed only in part, while a considerable part should be carried to the big bowel in an undigested or partly digested form, where it will help to change the intestinal flora and to replace the dangerous process of putrefaction by the beneficial one of fermentation. Besides, the roughage of the bran porridge, the bran, is exceedingly rich in vitamins and mineral elements, and the indigestible bran flakes absorb water, keep the stool moist and soft and at the same time stimulate the bowel walls into activity.

That part of the oatmeal which has escaped absorption in the upper alimentary canal, and which is carried to the big bowel, will bring about its cleansing and dis-

infection by natural means, while scientific chemical bowel disinfectants fail in fulfilling that purpose, as has been shown authoritatively in the previous chapter. Dr. A. Bryce wrote on pages 122 and 146 of his book, *Intestinal Toxæmia*, 1920 :—

As it is by no means easy to change the intestinal flora without a special "cure" being undertaken, the artificial introduction of acid-producing germs is recommended; but they are quite useless unless they are provided with their own proper nutriment in the form of carbohydrates. The colon should contain at least 2 per cent of undigested starch to inhibit the growth of putrefactive germs. By this means acids, mostly lactic and acetic, are formed, which encourage colonic activity; whilst, when the putrefactive bacteria predominate, ammonia is produced, and this paralyses bowel activity.

The faith which is reposed in medicinal substances is childlike in its persistence. The demand for tonics to build up the system and medicines to clear the liver is quite on a par with something to purify the blood. Faith is a wholesome virtue, without which nothing of value can be accomplished; but it is wise to have faith in some great verity, and not to depend so much on substances of which we know little. It is much more satisfactory to depend on the natural building materials in foods.

Dr. John Harvey Kellogg wrote in his book, *Auto-intoxication or Intestinal Toxæmia*, 1922, on page 89 :—

Practically only two carbohydrates can be made to reach the colon without undergoing digestion and absorption—raw starch and milk sugar. Raw starch digests so slowly that, when taken in more than very minute quantities, a considerable portion will reach the colon and there be acted upon by amylolytic bacteria, which are always present; sugar is produced, supplying to the colon bacillus and other harmful bacteria the material necessary for changing the action of these organisms, so that they become protective instead of destructive through the harmless acids which they produce.

In the fruit regimen, half a pound of milk sugar is given

daily, the amount Torrey and Tettger found necessary for producing the change of the colon flora. With the fruit regimen the colon is kept empty and a sufficient amount of starch and fruit sugar reaches the colon to produce the needed acid fermentation. It is often advantageous to add to the regimen four to six ounces daily of lactose. In the after-diet, "brose," or half-cooked cereals supplies the raw starch needed to feed the sugar-forming and acid-forming bacteria and so secure normal bowel action and arrest of putrefaction in the colon and of the chronic intestinal toxæmia which results therefrom.

While active digestion is taking place, putrefaction and fermentation are restrained. When the several digestive cycles have been completed, fermentation or putrefaction becomes active—the nature of the process being determined by the dominant character of the food residues. If these are chiefly carbohydrates, fermentation results; if protein, putrefaction.

Normally the stomach becomes empty in about four hours after the beginning of a meal and the small intestine discharges the last remainders of the meal into the large intestine four hours later. In other words, the process of digesting and absorbing a meal normally occupies about eight hours. Three or four hours later the undigested residues of foodstuffs, mixed with excretory substances derived from the liver and intestinal mucous membrane, in a perfectly normal person may be discharged from the body. Under such circumstances the opportunity for putrefactive changes is so slight that the bacteria developed are comparatively few, and the amount of poisons produced is exceedingly small. In carnivorous animals the time required for the transit of foodstuffs through the alimentary canal is much shorter.

Strong cheese is apt to cause putrefaction and should be avoided. Mild, new cheese is preferable, and best of all is freshly-made milk cheese, which, unfortunately, is not obtainable everywhere. However, it can easily be made. Dr. A. Combe, in his book, *Intestinal Auto-Intoxication*, 1908, gives the following directions on page 269 :—

The milk is allowed to stand in a cool place for twenty-four hours until the cream rises. This is partly removed. To the skimmed milk is added either powdered or liquid rennet. The temperature should be about 77 degrees to favour the coagulation; when the latter is completed, the whey is allowed to flow off and the coagulated mass is taken up without breaking it and placed in little wooden moulds, with trellised bottoms, in which the cheese is allowed to settle and drip off the superfluous liquid; the process may be accelerated by placing little weighted wooden disks on top of the moulds. The remaining dry curd constitutes the so-called fresh cheese or pot cheese.

Among the best foods for the constipated is milk, although it is widely believed to be indigestible and constipating. Milk is apt to disagree because people take it wrongly. Milk is gulped down as if it were a drink. In reality it is a food, and should be sipped extremely slowly. The human baby, the calf, and other young things, spend ten minutes or more in hard sucking when taking a moderate quantity of milk. For some reason or other that gentle and apparently neutral fluid leads, if taken in this way, to an enormous outpouring of the three different kinds of saliva elaborated by the three sets of our salivary glands in our mouth. That fact indicates that thorough insalivation is absolutely necessary if we wish milk to agree with us. If we gulp down a glass of milk, as is usually done, it often forms a solid curd in our stomach, a kind of shapeless cheese, which the gastric juices cannot readily dissolve and which cannot go any further. Hence violent indigestion follows. The tough mass is often thrown up by the wise stomach which cannot deal with it, and people have died, killed by the curd thus formed owing to their folly. That experienced physician, Dr. John Harvey Kellogg, who has made an intensive study of milk, wrote on pages 318 and 324 of his work, *Auto-Intoxication or Intestinal Toxæmia*, 1922 :—

Milk is a sort of fluid tissue and, like other tissues, is prepared from the blood; hence it is not surprising that the profound scientific study to which this remarkable food substance has been subjected within recent years has brought to light the fact that milk possesses some of the properties of the living blood from which it is produced. While still warm with animal heat, freshly drawn milk, like the blood, possesses the power to combat and destroy germs. Milk contains various anti-bodies which are found in the blood, agglutins, antitoxins and opsonins. It must be admitted that these last named elements of milk have been so recently discovered that their relation and value to human life and health are not yet fully understood.

Milk should be alive, or at least uncooked. Pasteurizing, that is, heating to a temperature of 158 degrees Fahrenheit, destroys the anti-bodies of milk. When the milk is heated to a temperature of 176 degrees Fahrenheit the digestive ferments which it contains are destroyed. The boiling of milk modifies in a harmful way nearly all its ingredients and considerably reduces its nutritive value. Rats fed on boiled milk grow to only half their normal size. Scurvy sooner or later appears in babies exclusively fed on pasteurized or boiled milk. The subtle alchemy by which milk is prepared in the laboratory of Nature is upset by the crude process of cooking. Boiled milk will sustain the life of rats but it will not enable them to grow to full development, and reproduction fails altogether. Science is teaching us every day that the fine adjustments and adaptations of Nature cannot be safely ignored. We are gradually learning through the loss of millions of lives which have perished through our ignorance, that the foodstuffs which Nature designed for our use are not the haphazard products of wild and incoherent forces but are wrought out by a subtle and infinite wisdom which fits them to our needs so perfectly as to transcend our highest knowledge and defy the profoundest analysis.

If left to itself, raw milk does not decay but sours. Boiled milk rots. The acid-forming organisms which find their way into the milk from the air thus exercise a protective influence, preventing the toxæmia which results from intestinal putrefactions. When an infant is fed upon sterilized milk, the stools, which are naturally slightly

acid, quickly become foul-smelling through putrefaction, and the infant is thus exposed to highly potent disease-producing influences against which it is protected when fed upon natural, clean milk. A temperature of 240 degrees for half an hour is required to destroy the spores of putrefactive germs, and even such milk is likely to promote putrefactive processes in the intestine, especially in the case of young children. It is thus apparent that pasteurization and boiling of milk should be regarded only as makeshifts which mitigate to some degree the evils resulting from the use of milk contaminated with barnyard filth, but are not by any means a substitute for clean natural milk.

Strong tea is very constipating. Those who must have tea should take their tea weak and should choose China tea, which contains relatively little tannin, or take Maté tea, the South American drink. Coffee acts upon many people as a bowel stimulant, especially if mixed with chicory. The best proportion is one part chicory to two parts of coffee.

Acid fruits act as bowel stimulants and body cleansers. Sharp apples, lemons, grape fruit, etc., are very helpful. The idea that lemon juice makes people thin or is injurious to the stomach is mistaken. The stomach walls are, however, injured by vinegar. Hence vinegar should be replaced by lemon juice for every purpose. Fresh lemonade, not too sweet, is an excellent natural laxative.

Among the best foods for the constipated are salads. It is a mistake to limit one's self to salading proper, to lettuces, etc. The heart of cabbage, cauliflowers, brussels sprouts, raw carrots, raw onions, cucumbers eaten with the skin, watercress, dandelion leaves, and many other things make excellent salading. Raw cabbage is particularly useful because it is exceedingly rich in vitamins A, B and C. A salad made from any of these ingredients, to which cold boiled potatoes, finely sliced, may be added, together with a seasoning of lemon juice and oil, or milk, and eggs, with a

trifle of pepper, mustard, some salt, and perhaps sugar, will make a delicious dish. Those who find such a salad indigestible can gradually train their insides to appreciate the novelty. By easy steps we can accustom our digestive apparatus to become used to any amount of roughage, and we shall find that the apparently indigestible is exceedingly digestible.

Those who suffer from bowel troubles, who have anatomically a fairly normal bowel, and who have become utterly dependent upon dangerous drugs in the great majority of cases re-establish complete regularity of their functions by merely changing their diet. In addition to the foods suggested, they should take cold water early in the morning, take some exercise before breakfast, and act as follows: They should get up, drink slowly a tumblerful of cold water to which a little lemon juice may advantageously be added, wash themselves, plunge two or three times into and out of a cold bath, having gradually accustomed themselves to the shock by lowering the bath temperature very slowly from day to day. After one submersion, or several, they should energetically rub their skin with the roughest towels obtainable, and particularly their abdomen, until they are glowing with warmth. Then they should get quickly into their clothes and go for a sharp walk or run, and take on returning a portion of bran porridge with stewed fruit or fresh fruit and lemon juice, an egg, wholemeal toast, thickly buttered, with honey or milk cheese, wind up with a cup of coffee with chicory, half milk, and then go to stool, adopting a crouching position. Such a breakfast is one of the finest correctors of bowel sluggishness. Luncheon and dinner should be wisely chosen in accordance with the general directions given in the foregoing pages.

Before going to bed another tumblerful of cold water, or of cold water with lemon juice, should be taken,

and in the course of the day plenty of fresh fruit should be consumed.

Of course, one cannot generalize in dietetic matters. We are not uniformly made. Hence there can be no model diet, and feeding by calories is foolish. Animals have a wonderfully wise instinct in choosing their food. Every keeper of animals knows that puppies or kittens from the same litter do not feed uniformly, but that each animal selects with an unerring instinct the foodstuffs which its particular constitution requires.

Those who wish to recover their health by dieting must rely partly on expert guidance and partly on their own observation. Different diets are needed for the fat and the lean, for those who are plethoric and those who are anæmic, for those who do hard bodily work, and for the sedentary, etc. Besides, a wise physician will study the instinctive likings and inclinations of his patient, which may have a sound physiological foundation, and try to awaken his dormant food instincts. The great Hippocrates taught, twenty-three centuries ago: "An inferior food, appreciated by the patient, does more good than a superior food which he dislikes."

In the foregoing pages only a fragmentary and sketchy account of a diet which will cure firmly established chronic constipation has been given. There are countless dishes which are useful for dealing with that trouble. Bran porridge, frumenty, vegetable salads, etc., can be replaced, and they *must* be replaced if they prove indigestible or are not liked. Besides, a wisely chosen diet may not only eliminate chronic bowel stagnation, but may cure most of the so-called diseases which accompany it.

The medicinal value of many foods is extraordinarily great, but unfortunately it is quite unknown to the doctors. I would illustrate the advantage of "medication without medicines" by wisely chosen food by

means of a single example. The routine treatment of anæmia consists in giving chemical iron in the form of pills, such as Blaud's Pills, and various mixtures. The chemical iron thus ingested leads, it is true, to an increase of the iron in the blood, but it is exceedingly injurious to the system, for it spoils the teeth and damages both the stomach and the bowels. The same amount of iron which is given in an unnatural, chemical form in pills and mixtures can be supplied to the patient in the form of natural iron in the shape of spinach, watercress, yolk of eggs, raisins, nuts, almonds, etc., which are exceedingly rich in the form of iron which is most suitable for human consumption. The food iron improves the blood and does no injury to teeth, stomach and bowels.

The laboratory has swallowed up the doctor. In the olden days medical men knew the medical value of herbs and of the principal foods. The modern doctor, the scientific doctor, knows nothing about either, knows nothing about real dietetics, and he endeavours to cure deviations from natural health by the most unnatural means, which are supposed to be ultra-scientific, such as rare chemicals, glandular extracts, insulin, radium, serums, etc., the rash use of which involves very considerable risk to the health and life of the patient. We cannot blame the doctor but should blame his tuition, which is neglected by the medical schools, and at the time of writing there is not a Chair of Dietetics at any of the British Universities.

Many people become constipated because they drink too little. This applies particularly to women. A glass of cold water between meals flushes out the system, benefits the kidneys, improves the appetite and the digestion and prevents the hardening of the stools. Cold water has for most people a much greater stimulating effect than hot.

Many people recommend for indigestion and consti-

pation sipping water as hot as the patient can bear it. That is dangerous advice. Very hot drink or food may be comforting, but they are apt to lead to very serious troubles. They are comforting because they increase the flow of blood towards the stomach and the flow of the gastric juice. On the other hand, they are apt to do grave injury to the delicate lining of the stomach which has no pain nerves. Those who habitually scald their stomach with tea, coffee or soup at a temperature of about 150°—the tough outer skin of the body will tolerate only about 110° in a hot bath—often fall a prey to serious diseases of the stomach, particularly cancer. A starving animal will not touch food at the temperature at which we take it habitually. An animal perishing with thirst will refuse drink which many of us find only pleasantly warm. Primitive natives never take food or drink at extreme temperatures, nor will they touch iced food and drink if offered to them. We cannot wonder that cancer of the stomach is widespread among the civilized, and extremely rare among natives and animals.

In the four preceding chapters the four principal causes of chronic constipation were dealt with. Faulty food was described as the first and principal cause, and the one-stool-a-day fetish as second in importance. Those of my readers who adopt a diet similar to that outlined above and who consume an abundance of roughage, vitamins and mineral elements in the form of food which, as far as possible, is in its natural condition, will in the vast majority of cases have a natural and copious action after breakfast. However, one stool a day is insufficient. It means constipation. It is not natural to retain body-wastes during twenty-four hours. No animal and no primitive native does it. Sufferers from constipation should therefore retire three times a day, after meals, and possibly before going to bed, and spend regularly the necessary time in the place of retirement, even if at first they have no

result, until the natural method of elimination is once more established.

It is generally believed that the normal stool is well-formed and brown. Both consistency and dark colour are symptoms of constipation. The stools of primitive natives are loose, like rather liquid porridge, and they are not dark brown but a light brown, yellow-brown, yellow, or of khaki colour, in accordance with the character of their food. Those who have taken up the regime outlined in this book need therefore not be alarmed at the unusually light colour of their excretions, which may cause many to believe that their liver is out of order and that they require a liver stimulant in the form of salts, a liver pill, calomel, etc. After a few weeks the three-stools-a-day rhythm will be firmly established and the general health of the patient will be immensely improved.

The third cause of chronic constipation consists in the mechanical strain of overloaded bowels which either may cause the intestines to sag and the bowel to become prolapsed, or which may cause it to become tied up with supporting bands and ligaments, which often create sharp angulations and kinks which obstruct the passage of the bowel contents. This is a matter which, if not curable by gentler means, may call for operation. However, the majority of civilized people possess such anatomical irregularities of the bowel and abdomen in consequence of universal constipation. They can improve matters very greatly by strengthening the abdominal wall which keeps the bowel and the other organs of the abdomen in their proper position by physical exercise, such as walking, horse-riding, bicycling, deep-breathing, certain specially devised abdominal gymnastics and massage.

People can massage their abdomen before getting up, kneading round and round the navel, starting low down in the right groin, kneading upward, then, going horizontally from right to left below the ribs, down

the left groin and back to the lower part of the right groin during five or ten minutes. Slow, gentle but deep kneading is very helpful. Such kneading may also be done in a warm bath, and the body may either be flatly extended and relaxed or the knees may be drawn up.

Of room gymnastics two of the most effective ones are the following: Lie down on the floor, putting your feet under a wardrobe drawer or some other suitable piece of furniture, and slowly raise the trunk to the sitting position and then lower it, doing this a number of times. Then lie down and raise both your legs slowly to the perpendicular position and lower them a number of times. Both exercises are done chiefly by the muscles of the abdominal wall which are greatly strengthened thereby. The habit of walking about with the abdomen drawn in is also helpful, as well as vigorous drawing in and pushing out of the abdominal muscles when standing, walking or sitting. Those who wish for further guidance with regard to abdominal exercises should read Mr. F. A. Hornibrook's excellent book, *The Culture of the Abdomen*, published by William Heinemann, and the same author's work, *Physical Fitness in Middle Life* (Cassell & Co., Ltd.), both of which have gone through a considerable number of editions.

Those who are unable to undertake the physical exercises suggested should either massage themselves or be massaged, do deep breathing, etc., and if they require an artificial support for their sagging bowels, they should obtain a suitable belt, of which there are several on the market, among them the Curtis Belt, made by H. E. Curtis & Son, Ltd., 7 Mandeville Place, London. Only a rigid metal shield in front of the abdomen will keep the sagging viscera up. Flexible belts made of wool, cloth, etc., are of very little use.

Among the best physical exercises for assisting a

displaced or torpid bowel are all the occupations which are carried on in a stooping or crouching position, or which give work to the abdominal muscles, such as digging, weeding, walking up and down stairs, walking up and down ladders, sitting down in a squatting position, etc. Obstruction due to a kink or to prolapse of the bowel is greatly eased by lying down flat on one's back. Half an hour's recumbent repose after every meal may help many of those who despair of establishing the three-times-a-day habit of evacuation.

In Chapter XXI, I have shown at length the great danger of purgatives, laxatives, enemias and chemical bowel disinfectants which are a fruitful cause of disease. The vast majority of bowel sufferers will be able to establish perfect regularity and normality by the dietetic means and exercise described, combined, if necessary, with self-massage and a well-fitted rigid belt. Those who are still troubled may require some artificial assistance, but they should not take any of the currently used purgatives and laxatives, all of which are highly irritating and which are absorbed into the system, where they cause injury. The only remedy that can be recommended is liquid paraffin, which was first introduced by Sir Arbuthnot Lane. That substance is not absorbed by the body. It lubricates the bowel walls and at the same time makes the stools loose and slippery. The oil should be highly refined, heavy and thick to fulfil these objects. There are several good brands but the best I know is a Russian oil, sold under the trade name Colonol. It should be taken three times a day, half an hour before meals. We read in the *Dispensatory of the United States*, 1926, on page 827, under the heading "Petrolatum Liquidum":—

It was not used to any large extent until Lane introduced the use of the heavy Russian liquid petrolatum in the treatment of chronic constipation. Since this time it has

become a favourite remedy for this purpose. The action is purely mechanical, rendering the fæces soft and perhaps lubricating the bowel.

Dr. John Harvey Kellogg stated in his book, *Colon Hygiene*, 1923, on pages 396 and 400 :—

Paraffin is not acted upon by any of the digestive juices, and is not absorbed. It prevents the drying of the fæces, lubricates the colon and rectum, and also to some extent prevents the absorption of toxins from the intestine.

One of the most interesting features of the many-sided useful activities of paraffin, is its behaviour towards intestinal toxins. These toxins consist, not only of bile acids and alkaline wastes of various sorts excreted by the intestinal mucous membrane, but, in addition, of a great variety of ptomaines and toxins produced through bacterial action, especially in the colon, and also in the small intestine. Paraffin is a highly active solvent, and readily dissolves these waste and poisonous substances, many of which are more soluble in paraffin oil than in water. The result is that the paraffin oil, itself not absorbable, takes up a very considerable portion of toxins found present in the intestinal tract, and thus prevents their absorption.

When paraffin is used, it may always be seen in the stools, showing a brownish or blackish colour, due to the substances which it holds in solution. In a laboratory test made by a competent chemist by request of the writer, it was found that when paraffin oil was shaken with a watery solution of indol, more than half the indol was quickly taken up by the paraffin. The use of paraffin thus affords an effective means of hindering the absorption of infective toxins, and conveying them out of the body.

The only bowel antiseptic and detoxicant which is effectual is not a chemical but a mineral natural product, Kaylene, which, like liquid paraffin, neither injures the mucous membrane nor is absorbed into the body. It is a remedy of the greatest value in auto-intoxication, colic, cholera and all other microbic diseases of the intestines.

If, notwithstanding suitable diet, exercise, etc., there should be constipation, a small enema of cold water may occasionally be taken. Large enemas extend the bowel overmuch and weaken it, and warm water enemas cause the relaxation of the bowel, while cold water injections strengthen the bowel and stimulate its activity.

Occasionally constipation is due to a disturbance of the circulation of the blood in the abdomen, and it can be relieved by a cold water compress in the following way: Put a small towel or piece of flannel into cold water, wring it out, fold it into a size of about eight inches by ten inches, put it flat on the abdomen when going to bed, cover it well with a piece of oiled silk or thin rubber, and put a flannel bandage around to hold it in place. Ten-tail bandages, obtainable at the chemists, are best for the purpose. No water should ooze out from the bandage, chilling the body. The cold compress becomes warm, and during the night the abdomen is given a kind of local steam bath, which frequently re-establishes regularity.

Those bowel sufferers who for years, or for decades, have experienced great and increasing trouble, and who have vainly endeavoured to improve their condition by self-medication, by medicines prescribed by their doctors, by electricity, massage and visits to the various cure-places, need not despair, for they may recover perfect health and normality by the natural and logical treatment described. Only in a few obstinate cases the help of the surgeon may be required. However, those who have suffered from chronic bowel stagnation and auto-intoxication for a very long time must not expect that they can be cured in a few days or weeks. A great improvement may be brought about very rapidly, but thorough and permanent reform and complete and reliable regularity can often be established only in the course of months or of years under the guidance of an expert. Professor Samuel Goodwin

Gant wrote on page 191 of his book, *Diseases of the Rectum, Anus and Colon*, 1923 :—

To obtain the best results the patient must surrender himself to his physician for the necessary length of time and fully carry out instructions, since nothing is gained by an occasional visit and indiscriminately resorting to drugs and enemata to obtain daily evacuations.

The same authority told us on pages 202 and 208 of his book, *Constipation and Intestinal Obstruction*, 1909 :—

It is a great mistake to minimize to the patient the difficulty of curing constipation ; on the contrary, the sufferer should be informed that, in order to be successful, the treatment must necessarily extend over several weeks and sometimes months, and that he must make it his business to get well. There is no satisfaction in the treatment of a patient troubled with chronic costiveness who will not place himself completely in the hands of his medical adviser and carry out his instructions to the letter, irrespective of the loss of time and bodily discomfort.

Personally, I do not accept patients who will not place themselves in my hands and submit to a regular course of treatment, covering a period lasting from six to eight, and occasionally ten, weeks. The patient can gain nothing from an occasional visit to the office for advice and treatment, in so far as a permanent cure is concerned ; whereas a great deal can be accomplished with the systematic handling of persons suffering from constipation.

When systematically and properly treated, the majority of people suffering from chronic constipation can be permanently cured without the aid of internal medication. Strong as it seems, this statement is based upon seventeen years' experience in the clinic, hospital, and in private practice. Personally, I have not, with a very few exceptions, used medicines in the curative treatment of this affection in many years, and the results obtained from the non-medicinal plan have been vastly superior to those accomplished by drugs in the earlier years of practice.

The public at large, and our costive clientele in particular,

should be made aware of the many reliable therapeutic procedures at our disposal, which, when properly employed, effectively prevent and cure constipation. Prominent among such remedial agents are dieting, water-drinking, small cold enemata, baths, douches, exercise in the open air, bodily movements, massage, mechanical vibration, electricity, psychotherapy, and, under some circumstances, surgical operations, which, when employed either alone or in combined treatment, are sufficient, as a rule, to overcome the most obstinate cases of chronic constipation.

A serious constitutional disorder which has been firmly established in the course of a great number of years is not susceptible to a lightning cure. It can only be corrected and finally eliminated by patient and unremitting endeavour, by natural means. Amateurish treatment, or self-treatment with loudly advertised remedies, which, according to their makers' pronouncements, "cure" constipation instantaneously, are exceedingly dangerous because they merely alleviate symptoms for a short time, but ruin the constitution for all time. The late Sir James Sawyer, in his book *Coprostasis*, 1912, addressed to the doctors the following advice on page 34 :—

There are three canons which should guide your treatment: (1) You should not leave the medicinal treatment of their constipation to your patients; (2) you should not prescribe a drug in the treatment of habitual constipation until you find that the constipation in the particular case before you cannot be cured without drugs; and (3) you should not prescribe drugs in the treatment of habitual constipation without the conjoined use of a judicious combination of the numerous adjuvants of natural alvine (bowel) relief which are at your disposal, and which you should select especially according to your experience of their use in practice, and combine them in particular cases of costiveness suitably to the individualities of your patients.

You should ascertain fully the characteristics and ways and circumstances of life of each patient, and then arrange the details of your treatment in each case upon such

knowledge. In all therapeutics the individuality of the patient is the supreme law. None but a skilful prescriber can treat constipation best. To "open the bowels," to force the appearance of a copious, "stool," cures not constipation, but only relieves for a few hours one of its symptoms.

Sir James Sawyer rightly states that "the individuality of the patient is the supreme law." Dietetic treatment for curative purposes must be individual, must be effected under expert guidance. Self-dieting by the sick and the ailing is as inadvisable as self-doctoring. No one can treat himself impartially. Doctors who are ill usually go to a colleague for treatment or advice. A wise diet must not only be individual but it may have to be changed from time to time because it is apt to lose its effect. Moreover, the right dose is as important in matters dietetic as in matters medicinal. Over-consumption of roughage may lead to the stagnation of undigested food. Considerable caution is required and no general laws as regards curative diet applicable to all can be laid down. After all, constitutions differ. The plethoric and the anæmic, the stout and the thin, the old and the young, the strong and the delicate, cannot be fed alike.

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THERE ARE NO INCURABLE DISEASES—WHY MEDICINE FAILS TO CURE. HOW TO CURE HEART DISEASE. MIGRAINE AND NEURALGIC HEADACHES. HOW A BABY WAS SAVED—A LESSON IN HOMŒOPATHIC PRESCRIBING. NERVE AND BRAIN CASES. SOME OF MY FAILURES. GALL STONES AND KIDNEY STONES. GASTRIC AND DUODENAL ULCER. CHRONIC RHEUMATISM AND ARTHRITIS. CHRONIC CONSTIPATION AND ITS SEQUELS. THE NEW ART OF DIAGNOSING. EXOPHTHALMIC GOITRE. TUBERCULOSIS OF THE LUNGS. FIBROID TUMOURS AND OTHER WOMB DISEASES. MYSTERY DISEASES. DIET AS AN ART. PARALYSIS AND DISSEMINATED SCLEROSIS. ENLARGED PROSTATES. DRUGS AND MEDICINAL TREATMENTS. SURGICAL CASES CURED WITH MEDICINE. CANCER. INDEX.

FROM CHAPTER I

Apart from the exceedingly unsatisfactory official and more or less standardized art of healing with treatments based on the delusive name of the disease, not on the condition of the patient, there is an extremely valuable unwritten art of healing which the able and successful practitioner acquires by decades of experience and observation. Unfortunately this wonderful and invaluable knowledge is only too often lost to mankind, as it was in the case of my father. Every successful doctor is besieged by those in search of health. He has scarcely enough time for meals, sleep, and the most necessary relaxation. He has, therefore, no opportunity to write down his experiences. Besides, such publication might lead to severe criticism on the part of his colleagues. For years I have urged in vain friends of mine, eminent physicians and surgeons, to write down, or dictate, their practical experiences for the benefit of all. Books of this kind are infinitely more important than the bulky, but largely useless, textbooks.

Many diseases apart from cancer are declared to be incurable in the textbooks. The printed assertion of incurability is readily believed by medical students and doctors of insufficient experience. A long life and the careful observation of actualities have taught me that *there are no incurable diseases*. If, as happens not infrequently, a disease disappears which the doctors had declared to be incurable, the patient is shown misleading textbooks containing this statement and he is told that in his case a miracle has happened. Such miracles occur every day—especially to competent doctors. The incompetent never see such miracles among their patients.

Careful study of the medical literature and personal experience and observation of an unusually large number of desperate cases have convinced me that there are incurable individual patients, but *there are no incurable diseases*. Cancer, disseminated sclerosis and all the chronic diseases are difficult to treat, but not infrequently they can be cured.

As I had failed in my attempts to cause some of the ablest doctors to give their experiences to mankind, I reluctantly resolved to describe myself the methods whereby the most intractable diseases may be cured, drawing upon my experience. I have described the cures contained in this work in simple and technical language and have withheld no information. There is no mystery about them. I have put all my cards on the table. Therefore the readers of my book, both professional and lay, if they have any aptitude, may be as successful as I have been, or more successful. Moreover, I have described all cures, as far as possible, in the language of the patients themselves, quoting their actual letters. The whole of this book is based on documentary evidence which may be scrutinized and which, with the permission of the patients, I shall gladly place at the disposal of any duly accredited and impartial medical body interested in the subject-matter of this book, provided professional discretion can be guaranteed.

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