

In death from narcotics nothing seems to me to be so effectual as artificial respiration; flipping, and other methods of a minor character, are trifles which may do good when life has not passed away, but the distinctive method known up to this hour is that of restarting the breathing. More will undoubtedly come, so that if we do not get a narcotic vapour which will not kill, a possession we hope for and have all but got in methylic ether, we have still to anticipate means of restoration even against the effects of more serious agents intended for the extinction of pain.

One suggestion I would merely add in this place. It is that in carrying out artificial respiration the operator should always begin, not by pushing in fresh air, but by drawing out. Drawing out removes any chloroform that may be resident in the bronchial tubes, and causes the blood in the lungs to give off its vapours; it does more than this—it causes the fresh air to re-enter without any effort or danger, and that, absorbed through the lungs, is a definite assistance. I have often pointed this out to my classes, and have shown that the very question of life or death may depend on the way the respiration is artificially recommenced.

CHAPTER XVII.

IN THE SPHERE OF PRACTICAL MEDICINE.

A GREAT many years of work are demanded before a man can acquire all the details of medical education. Medical life is hard, and often short. The early part of it is singularly arduous and exposed to danger. The studies and examinations are, in severity, beyond comparison with any other. The attendance in the dissecting-room is alone a tax which has to be felt to be understood, and the observations of surgical operations, much as they have been modified by the use of anæsthetics, are severe ordeals. The work at the bedside in the presence of contagious cases calls forth the most uncommon risk, and the variations of speech and mind of the sick are often of the most trying kind. The last named anxiety never quits practice, and is probably, on the whole, the worst. The other troubles, if they do not wear away, are tempered by nature, but the mental tone of the affected never loses its character and rarely its variability. Disease of the body is ever attended with a certain aberration of the mind, or, as usually expressed, "the sick have their fancies."

A truer saying was never uttered, and the doctor must always be ready to accept and meet it: it becomes a part of his duty; he will be praised to the skies for what he has never done, and he will be damned to the lowest depths for what he has never dreamed of, much less effected. People wonder why a doctor of the sick has so little faith in physic, and why he so little relies on any one of his brethren: they would not wonder if they knew. I have been obliged to write at least a thousand prescriptions for medical men, but I never heard of a hundred being taken even casually, nor of ten systematically.

As a body, doctors are good, generous, and industrious men: their anxieties do not immediately increase upon them by the sights they see; they may even leave a dying patient and partake in a friendly meeting as if nothing had oppressed them mentally—a fortunate circumstance for everybody as well as themselves. They are constantly misinterpreted, and on this point they are, as it seems, callous. They get into practice, and stick in a groove for the whole of a lifetime, feeling strongly that “all things are alike to all.” I once so greatly surprised and interested a bishop by saying that the writer of *Ecclesiastes* must have been a doctor, that he—the bishop—formed the same idea, with this reservation, “You mean a pessimistic or a godless doctor,” at which we both had our quiet smile.

The groove in which a doctor will stick is a narrow one, and as people are usually to the world just what they seem to be, the doctor is left to his fate. One of the best qualified practitioners I ever knew in London lived to the end of his life in a house where he kept an open shop. He saw his patients in a neat little room on one side of the shop, in which room he piled up the choicest books, collected the finest instruments that could be obtained, and expressed the best opinions that anyone could listen to. He knew what a qualified man should be; but he was never hard on any member of his profession, so far as I heard, except once in his life, and then he had just occasion, since he was snubbed by a bragging official.

In my own way I was, on the whole, fortunate. I made up my mind early to be a prescribing physician, and found ample scope for my labours in that direction. Four large public dispensaries—namely, the Blenheim Street, the Metropolitan, the Marylebone, and the Margaret Street—gave me fields for practice, and for fourteen years the Royal Infirmary in the City Road did the same—so that sometimes I would see two hundred sick persons a day, and every class of disease common in an English community. The practice was wide, and the customs witnessed were most singular. I remember once that a good soul of a woman who kept a fuel store in a side street off a crowded thoroughfare used to

bring her husband to me in a little cart with his body covered with small coal, under the idea that by this means she was keeping him warm. I found another woman with the medicine she was taking an ether mixture, and therefore volatile—making it warm in a long pointed tin vessel, such as is used for warming beer, in order that it might be agreeable to take. Several other vagaries of a like kind came before me, but they were all well-meant. Once I was called to visit a servant in Russell Square, who resided in a large, rich house, with kind people who subscribed to the dispensary. They were entertaining a party to dinner, and when I went in I was attended to at once by a motherly housekeeper, who took me upstairs to the patient, afterwards bringing me down again into a charming little drawing-room, while she went to her mistress, whom she brought away from her guests. The two women came into a room adjoining the little drawing-room, and I could not help overhearing their conversation.

“Has the doctor seen Rebecca?”

“Oh yes, ma’am! and we have only to send to the dispensary for the medicine.”

“What sort of man is he, and how did he come? Did he drive?”

“Oh! I think you’ll like him, ma’am; but—poor devil!—he is only a walking doctor yet.”

Then they both appeared before the “walking doctor,” heard his opinion, acted upon it, and became the tenderest and most successful of nurses.

All kinds of professional characters appear in the sphere of medicine. One man considers himself a practical man, and, because he finds it a good card, tells everybody so night and day. He doesn’t know the circulation of his own blood, or, even if he did, has forgotten it. But he is a practical man: says that “a grain of practice is worth a bushel of theory,” and usually thrives. He is a plausible creature. He never meets you but he puts out of the window of his carriage a strip of paper as long as your arm containing a list of the patients he has to see before he can sit down to his dinner. His wife declares that nobody waits at meals for him, and so she always keeps something ready for him. He gets out of the carriage with a step peculiarly his own; knocks at the door in his own way, and washes his hands in a manner that everybody might swear by. But altogether he is not a bad fellow; and when he retires he may not be sorry to fill up his time by becoming a Bible Reader or by holding the plate at the church door.

I recall with great satisfaction and pride an event which formed a striking part of my career. The profession had read my works largely, and its learned bodies over the world had conferred on me their honours with liberal hand; while several other societies—just out of the domain of physic, but in that of science—sent me their honourable decorations. The Royal College of Physicians of London had

made me one of its Fellows; the Faculty of Physicians of Glasgow, and the Pathological Society of Berlin had done the same; the Royal Society of London had conferred on me its degree—the blue ribbon of Science; the Society of Antiquaries had made me an F.S.A., and my University had conferred upon me the degrees of M.A. and LL.D.; the Imperial Leopold-Carolina Academy of Natural Sciences sitting at Dresden had enrolled me as its Dr. Haller of the nineteenth century; the Academy of Physiological Sciences of Turin had sent me its diploma; those useful bodies the Società Italiana d'Igiene and the Société d'Hygiène Publique of France had treated me in a similar manner; the Philosophical Society of America added my name to the list of those who, from the days of the illustrious Benjamin Franklin, had figured on its rolls; in Wales I was made an Ovate of the Eisteddfod; and on one occasion was requested by a small Welsh village to deliver a scientific lecture to an assembled multitude under the wall adjoining the church on a Sunday afternoon—a distinguished duty I had never expected, but gladly fulfilled. These and other honours came upon me; but there was not one I prized more than that which the Professors of Physic gave to me in the form of a testimonial consisting of a beautiful microscope, worth a hundred guineas, and a purse of a thousand guineas. They gave both, as their Chairman, Sir James Paget, expressed for them, in recognition

of the spirit in which the works by which I was known had been carried out. It is nearly thirty years since this event occurred, and it has ever been a gratifying remembrance, telling me what the members of the medical body felt and the class of work they deputed to me to continue to carry on. It is my privilege to say that the mission entrusted to me by the professors of practical medicine has been faithfully discharged; and although in respect to one grand subject that closely affects medicine both as a science and an art I have been guided by Nature—who is All-supreme—to differ on the question of alcohol from the majority of my brethren, I have no fear for the future. In fifty years the majority will think and act as I have done, and will praise, rather than depreciate, the researches and deductions I will endeavour to delineate in a following chapter.

Books, Essays, and Papers.

Up to the time, or nearly so, when the testimonial was presented to me, the different inquiries I had followed out had been made known in various ways. Public health had been discussed in the old *Sanitary Review*; many social topics had been subjects of discussion, in verse as well as prose, in a journal, conducted by me from 1862 to 1868, called the *Social Science Review*; the old *Medical Gazette*, the *Medical Times and Gazette*, the

Association Medical Journal, and the *Lancet* were periodicals in which a great many of my papers on medicine were written. To the *British and Foreign Medico-Chirurgical Review* I was a regular contributor, publishing every six months, for some years, the forensic Reports of that quarterly, besides other papers; and at last, in order to keep my communications in form, I started the *Asclepiad* on my own account, commencing with a small volume, and continuing later on in regular quarterly numbers, until, with the first attempt, as many as twelve volumes have been issued, or, in all, some five thousand octavo pages including about five hundred articles. In the *Asclepiad* the attempt was made to submit long-studied clinical observations; addresses that affected the public health and the public welfare; practical opuscula useful to those who are engaged in the battle with disease; outlines of some of the past great leaders in physic; original researches, and reviews.

It is not possible in this place to enter into details on any of the works named: they must stand for themselves, and answer for themselves in the pages in which they were originally placed; but there are a few of them I hold in particular memory as roads open for the future studious investigator, to which I might add some records of original treatises published independently of medical journals, and not infrequently in a separate form, as a pamphlet or as a book of different size—as, for instance, “Diseases

of Modern Life,” “The Field of Disease,” and “The Commonwealth.” The particular labours which have been most engrossing are included in some of the chapters of this volume, the researches on Reanimation and on Anaesthesia holding a prominent place. But others, of interesting character in their way, have been allied. An inquiry into the existence of a nervous ether, or a volatile medium spread out through living animal bodies—a medium that adumbrates under the external vibrations; connects one animal body with another, and is absorbed by the dead structures—excited considerable attention and discussion. An attempt to find out and describe, for the benefit of the world, the absolute signs and proofs of death was zealously and practically made, and the effort to change the colour of animal tissues, and thereby restore the natural complexion and features of dead persons, was, at least twice, successfully carried out.

Lectures.

In addition to the labours incident to the practice of attending on the sick, I had the duty of giving many lectures and demonstrations to my medical brethren and to those who were interested in medical labours. A course of Lettsomian lectures was given at the Medical Society of London on “Certain Phenomena of Life;” a course chiefly on “Medicines” before the Royal College of Physicians; a Croonian lecture, before the Royal Society of London, on

“Muscular Irritability after Systemic Death;” the Cantor courses, before the Society of Arts, on “Alcohol,” “The Preservation of Animal Foods,” “The Diseases Incident to Occupations,” “Nature and Man as Mechanicians;” and also some on varied subjects before the Royal Institution and the London Institution.

But the courses that cost me most time and attention were connected with certain “post-graduate” courses prepared for medical men, and delivered in my own private lecture-room, or, when more convenient, in one of the lecture theatres of the late Royal Polytechnic Institution in Regent Street. These lectures, entitled “On Experimental and Practical Medicine,” not unusually extended over many months, and were largely attended. The substance of some of them is included in previous chapters of this book, but not all. Some were devoted to the subject of “The Measurements of Life;” “The Art of Embalming the Dead;” “The Effects of Electricity on Animal Bodies;” “The Condensing Power of the Lungs;” “The Study of Disease by Synthesis;” “The Action of Extreme Cold on the Brain and Nervous System;” “The Effects of Injection of the Nervous Cavities;” “The Action of Chloral Hydrate and of Methylal;” “The Constitutional Character of Remedies;” The Influence of Various Medicinal Agents, such as Amyl Nitrite and the Members of the Nitrite Series;” “The Ethylates;” “The Negative Action of Opium

on Birds and of Tobacco on Goats;” “On Artificial Respiration and of Double-acting Bellows for Emptying and Inflating the Lungs,” with “Demonstrations on the Blood in its Extreme Fluid as well as Condensed Conditions.”

It would fill this volume altogether if I were to attempt to publish these lectures in detail, and it would be republishing what has already appeared in the *Medical Times and Gazette*, the *Lancet*, the *Society of Arts Journal*, in separate treatises, as well as in periodicals like the *Popular Science Review*, *Longman's Magazine*, and the *Gentleman's Magazine*. Two or three, however, deserve special mention because of their bearing on progressive medicine.

Synthesis of Disease.

In treating on the study of disease by synthesis I illustrated that rheumatism could be induced by the introduction into the body of organic acids like the lactic; that cataract could be temporarily induced by raising the specific gravity of the blood—a fact deduced from the experiments of Dr. Weir Mitchell of Philadelphia, and shown to be the result of the action of all saline substances that maintained their composition as such in the body, but not of substances like iodide of potassium, which underwent decomposition. I also showed that the blood is only capable of receiving a certain degree of dilution with water, and that when it is charged with the fifth of its own weight there must be exudation and dropsy.

Electricity.

A considerable interest was taken in my work on electricity. A current was made to flow from one pole to another, nineteen inches apart. Rigor mortis was developed. The current of electricity in various states was made, through various structures, including blood, and white and grey nervous matter. Marks were produced on the surfaces of membranes, and the varied effects of ordinary lightning were displayed as exhibited on animals and on men.

Researches on the Brain.

The influence of extreme cold on the brain was made manifest; and, for the first time, brain centres were artificially frozen, and the effects of freezing different parts were manifested by the perversions exhibited in muscle. The brain could be seen in the frozen state, and when the cold was withdrawn, perfect recovery of the unconscious animal could be observed.

A demonstration that created considerable interest was one showing the effects of injection of the brain. It was made clear that if into the cranial cavity of an animal like a rabbit—recently put to death without pain by the inhalation of a lethal vapour, such as the vapour of chloroform—a hollow needle were immediately introduced through the optic foramen, and if through it, directed by a small

syringe, a column of fluid mercury were introduced into the centre, the injection first appeared in the lower iliac veins, filling them and rising through the ascending vena cava to the heart; the inference was that the cerebro-spinal fluid empties itself into the venous system independently, and that, through venous obstruction caused by an obstacle present in the lower part of the abdomen, pressure of fluid on the brain may take place with symptoms resembling those of eclampsia or vertigo. This truth I once saw corroborated in a patient—visited with Dr. Cooper Rose—in whom consciousness, lost by pressure of fluid on the brain, was perfectly restored by the simple process of drawing off an accumulation of serous fluid lodged in the cavity of the peritoneum.

Cardiac Pulmonic Balance.

Great attention was paid to an attempt to determine the cardiac pulmonic balance, which may be presented in the course of disease. The force of the heart and of the respiration were shown to be due to the two motive powers of the body derived from the two primary forces—the attraction of the earth, which tells on the whole body, and the force of combustion, which develops within the body—each of them regulated during life by the respiring and circulating apparatus. The balance between the two forces, exhibited by the body, was shown to be essential, the balance disturbed being always a cause of danger, and, actually broken, always fatal.

Biometrical Measurement.

A subject that led to considerable discussion had reference to the measurement of life as an exact science in practical work, in assurance of lives, and in other relations, social as well as medical.

Auto-Poisons.

On several occasions the minds of the audiences were drawn to the acceptance of the view that the living body, under a perverted chemical process, could be the manufacturer of its own poisons. This was exemplified in instances of uræmia, and still more strikingly in other septic examples.

From the abdominal cavity of a patient, operated on for ovariectomy by Sir Spencer Wells, a pint of dark septic fluid was drawn from the peritoneal cavity, and was subjected by me to treatment as if it had been a fluid containing an alkaloid like morphia. It yielded a fine acicula crystalline substance, to which I gave the name of "septine," and which I showed to be capable of exciting in healthy animals direct septic disease, its intensity of action being so increased by extension of the infectious process that at last it could be diluted in the most remarkable degree and retain its virulent power. At the moment excitement was being created by what was later called the "germ theory"—a conception which was, in point of fact, a repetition of Dr. Dwight's animalcular hypothesis, founded on a

false analogy, and not, I thought, so clear as what I called the "nervous theory" of spreading disease, depending upon the conversion under nervous influence of specific poisons generated like the alkaloids of excretions and affecting the organism as septic particles that were thrown off by glandular exudations.

It has been fortunate for me that in the delivery of lectures, both at home and abroad, I have often used for brevity's sake words and phrases which afterwards took root, and which, to my own wonderment, became set forms of speech. Thus the term "cardiac apnoea," intended to convey the idea of breathlessness with open air-passages, breathlessness commencing not in the lungs but in the heart, has been employed as a familiar term in the medical sphere; and "hydrops bronchialis" is taking the like course. So, in a still wider sense, the terms "The Lethal Chamber," "The Synthesis of Disease," "The City of Hygeia," "The Devil in Solution," "Brandy Palsy," "National Health is National Wealth," "The Poverty of Wealth," and others of like quality have gained prevalence. The words as spoken suited the occasion in the first instance, and later on occasion suited the words.

Apart from lectures and personal practice, I found in the sphere of medicine much good from outside comminglings.

I once had to carry out a peculiar and special duty. I was commissioned by the late Mr. John

Churchill, the publisher, to write for the *Medical Times and Gazette* a set of essays on "The Medical History of England." I went from city to city, from town to town, and from hospital to hospital, in order to see the practice of physic and state of physic as it existed then; and afterwards—though I did not publish the facts—I got into the way of observing the medical history of other countries in which I happened to move. Here and everywhere the same professional traits were present, generosity being the leading spirit. In England I could not have met with that quality in better form. Every medical man visited was hospitable to the last degree: he strove to make his home mine; he put himself to every inconvenience to assist me; his wife was always his true helpmate; and his children, when he had any—and he mostly had—were his and his wife's second selves. He was more than hospitable in his own house: he would drive me all over the district in which he practised; point out to me its places of interest; recount to me the most remarkable stories of its history; visit his professional neighbours in order that I might personally know them; lead me through the hospitals he knew, and acquaint me with every detail, good or bad, of their construction; describe varieties of practice, and their results, and call my attention to any number of cases of disease. Constantly as we were walking or driving we would meet some person of whom there was a strange life history told to me clearly,

and not unusually corroborated by the person himself; so that if it had been my wish, and time could have been then at my disposal, I could have composed many a story from what I heard—in fact I did keep notes of the most remarkable.

The inquiry for the "Medical History of England" lasted many months, and the account of it extended over many hundred columns. Unfortunately, practice was ever calling me to London. I had to travel by night in my journeys; often had to write in the train, and to work like a slave at all times. My rest was very much broken, but I was in the prime of life, between thirty and forty years of age; was physically built for the task; could sleep on a board; mentally had my eyes open to all that was shown to me, and nothing impeded me. It has since more than once occurred to me to put the history presented, in regard to its more striking incidents, into one readable volume that might be as interesting to the general as to the medical reader: for I saw the pale of physic in its widespread distribution; met with its members in full life, in budding life, and in old age when they could tell stories of predecessors long gone and of customs and practices withered, or even dead and buried. Phantoms of the old friends haunt me in these days; sit by me as they did in the old time; tell me their experiences and histories, and show me their curiosities, so that I myself carry several generations of those within the pale of physic in loving memory.