

took me on pleasure trips down the Clyde, or on yachting expeditions along the western coast, in which many incidents occurred which could not possibly escape the memory, and, as impressions, are still alive—pictures retained in the organ of the mind.

Since the days already referred to some changes have taken place. An attempt has been made to unite Dundee with St. Andrews, but the effort has not succeeded, and at the present moment St. Andrews stands as an independent school with three additional chairs; one of Botany, another of *Materia Medica*, and a third of History. Anatomy has also taken its position there, and in addition to the red-gown male students, ladies have entered its colleges, and in very considerable numbers have taken the degree of LL.A. and even M.A. As an Association we graduates remain the same except that our numbers are smaller.

CHAPTER XXIV.

REVOLUTIONS IN PHYSIC.

Blood-letting.

THERE is no greater revolution of a medical kind I can recall than that relating to the treatment of disease by the letting of blood from the body. It is the rarest thing in these days to see a doctor carefully carrying about him the means for instantly producing venesection, and I have lately seen two who thought it necessary in bleeding a man to proceed by exposing a vein with forceps and scalpel, neglecting, at the same time, the old-fashioned fillet which we were accustomed invariably to use, and which everyone knew how to apply. The transformation is astounding. I have in my waistcoat pocket a pretty tortoiseshell case holding two bright little instruments called lancets, which were presented to me on Christmas Day, 1844, as a first necessity in medical practice. The people went with us heart and soul by their commendation, and thought nothing of our drawing off even a pint of blood. Nor was the doctor alone in this ancient art, for although the writer of *Gil Blas* had

fiercely and widely exhibited Dr. Sangado, and had possibly produced a good effect, blood-letting went on. Even after *Gil Blas'* day the surgical barbers set up their poles, with the red and blue lines, representing arteries and veins, and the customer walked in to be bled as readily as he does now to be shaved or shampooed.

It was not always that a person who went to be bled was in bad health, for it became a popular idea that regular bleedings at "spring and fall" were necessary, that the body might be kept in health. The collecting of persons to be bled became a steady source of income, and one of my early friends, in buying a practice, was actually obliged to pay specially for "spring and fall venesection." The fact that anybody ever died from the practice was unheard of, and the skill of a man in performing venesection was frequently a recommendation to his patients, while at this day the practice of systematic bleeding has almost passed away.

Why blood-letting became in a few years unpopular so that few men now dare to encourage it, is difficult to say, for it was really a remedy, and Dr. Munk has recently told how a President of the Royal College of Physicians—the well-known Sir Henry Halford—fell into disrepute because so late as 1845 he failed to bleed an ailing practitioner who was travelling with him, leaving him at Tring to be attended by Mr. Dewsbury—a local surgeon who had no punctilious scruples. What also is strange is

that blood-letting was both old and potent, and that, considering the body as an instrument, it was on the right tack. If it had never been known, and was only now just discovered, it would probably be on the crest of the wave, and the adopters of it would ride thereon amid acclamation. It may yet revive, and another old plan may also come to life again—that, namely, of drawing off blood from a diseased body and transfusing into another vein of it a healthier blood.

The art of blood-letting collapsed, but it did not drop suddenly and altogether, for when the once familiar lancet ceased to hold sway, the lighter local methods, by cupping and leeches, still prevailed. I knew a gentleman—a dentist by profession—who was so expert a cupper that he was sometimes called upon to cup as often as five times a day, and, with that and the dental work combined, had his hands quite full from morning to night. I also knew a professed cupper—the late Mr. Beck. Lastly, I knew a firm of doctors who paid £250 a year to one house for the leeches they required.

Blood-letting, in its course of more than a thousand years, was not always wrong. The late Sir George Paget of Cambridge was, some half century ago, in consultation with me at Elmdon in Essex in the case of a Mr. Clarke. Mr. Clarke was lying near to death with double pneumonia, a disease that had followed the act of leaning out of his bedroom window one cold night. We

feared he could not recover, but as a last chance we drew from his arm a full pint of blood. It was magic! it was like pulling him out of a pond. His dark and troubled face became ruddy, and, to make a long story short, he began to breathe by the affected lungs and to recover from that hour, living for many years after, and honouring me by calling on me in London on several occasions. I once saw the late Dr. Willis of Barnes save the life of a child, convulsed from congestion of the brain, by drawing off blood from the jugular vein. I feel quite sure that I myself have saved life by bleeding in apoplexy; like Galen, I have noticed the relief of pain from the abstraction, and, as already stated, the late James Wardrop, when anæsthesia by vaporous inhalation was still unknown, produced deliquium or faintness, and therewith insensibility, by bleeding, and then performed, painlessly, operations which would otherwise have caused great suffering.

Some think that the cessation of the abstraction of blood was nothing less than an evolution of the science and art of medicine. It was, however, a very rapid evolution, the like of which has never before been seen. It has been so rapid that in my own career I have been the cause of stopping two legal trials based on entirely opposite extremes. In my early life some men driving a cart rather furiously were thrown out in trying to pull up at a public house, and one fell so heavily that he was

stunned and quite insensible. A neighbouring rival young surgeon was called in, and, being imbued with the new ideas just coming in about blood-letting, refused to draw blood from the wounded man. It was an unexpected refusal, and in the end the friends of the man commenced a legal action for malpractice. They came to me for evidence on the old and established side, as they thought. I, seeing the difficulty, and also inclined towards the new ideas that were springing up, persuaded the relatives of the supposed neglected man not to pursue the course they had commenced, and resolutely refused to give any evidence in their favour, as did also the members of the firm with which I was then connected; in the end the pleadings were withdrawn—so that my opposition to the practice of blood-letting had its influence.

Much more recently a practitioner in London, having attended a lady in her accouchement, saw symptoms for which he thought it right to bleed, but the lady died. Her husband, therefore, came to me complaining, and begged me to give evidence against the practitioner, in an action for malpractice, on the ground that blood had been improperly abstracted. I could not, for I had actually recommended it as a remedy for the very class of case in hand, and the action was withdrawn.

In the history of the world and of the habits and beliefs of mankind there is no revolution more remarkable than this of blood-letting. If the blood

is the life this revolution means the saving of life; and I think I may say that when the life-blood was let there was one disadvantage, namely, that the patient was very often an undue time in regaining power. I never saw anyone killed by a system, which the long antique pole in varied colours, before it was rotten to the core, proclaimed in every village.

A man one day, when thunder was in the air, sought the shelter of a windmill. A flash of lightning came across him and laid him low. He was carried as a dead man to the nearest chirurgeon, and I remember his helpless body being borne into the garden and placed on an old-fashioned settee. The surgeon had no fears: he had learned his art, and performed it bravely. He exposed the two arms of the man, and tried to draw blood from both at the same time. It was his only chance, he said, for taking off the tension of blood; but it was the right chance—it succeeded, and the helpless mass that was carried in by other men's aid walked out by its own. The fact is far too tense and demonstrative to be forgotten, and blood-letting can only be laid aside absolutely when it is seen with full perspicuity in the clearer light of the future.

Mercury, Opium, Antimony.

The revolution that took place in regard to blood-letting has not been, by any means, the only

revolution that has occurred. The administration of mercury, especially in the form of calomel, or calomel and opium, was almost as general a practice, and it is curious to remember how mercury commonly ran in concert with blood-letting. We were told to bleed and then to mercurialise, and salivation or complete mercurialisation was accepted as a definite line of treatment. I have seen swollen gums and loosened teeth from mercury many times, and have come into contact with several persons whose teeth had been completely destroyed under the mercurial *régime*. In some institutions, as, for instance, the Haslar Hospital, mercurial inunctions were the order of the day, and not infrequently were carried on until salivation developed itself. In the treatment of acute pneumonia mercurial treatment was for a time set aside in favour of antimonial. We were advised to give antimony in the form of tartar emetic, *coup sur coup*, until the system was completely palsied by it. The patients were rendered sick literally; the action of the heart was reduced, and the pulse extremely lowered. Sometimes it even seemed as if patients died from the treatment, and they always were brought into a state of debility from which they slowly recovered. The times have altogether changed, and antimony as well as mercury have passed out of date in civilised medicine. Antimony seems almost to have lost its place, and mercury is merely claimed by a comparatively small number

as necessary for the treatment of specific disease, or occasionally as a purgative of the alterative kind.

Counter-Irritation.

Together with blood-letting, and mercury or antimony, blistering as a counter-irritant had its full swing, and in writing the Life of John Snow I have recorded what he told me—namely, that a master of his who had a large practice kept a drawer in which a returned blister from one patient was used for another, such was the demand for counter-irritation. The idea of counter-irritation has not altogether died away, and I must confess that, although I have never used a blister that has previously been used, I do sometimes apply blisters for particular purposes, not without effect of a favourable kind. I and others frequently employ counter-irritants of a milder nature, such as mustard and other allied medicaments. We have, however, in regard to counter-irritants, greatly modified the tone, and we certainly are much less disposed to poultices of all kinds, especially to such as press heavily on the chest and affect the breathing.

Purgation.

I remember very well when the Hamiltonian system of medicine was in high favour. Hamilton was a northern physician, and taught that it was always a good plan freely to relieve the bowels.

He was fond specially of saline purgatives, and there was a good story told by the late Sir Astley Cooper which bears on the purgative method. Sir Astley was accustomed to meet a Scotch physician who would say to him,—

“Weel, Mr. Cooper! we have only twa things to keep in mind, and that'll serve us for here and for hereafter. The first is always to keep the fear of God before oor een, and that will serve us for hereafter. The next is always to keep oor boo'els open, and that'll serve us for here.”

There is a good deal of sound common-sense in this northern teaching, and I sometimes think we do not adopt it in this present day as we might do, but whether that be so or not we have mightily changed, and apart from some watering-places where there are springs of a purgative nature, we rarely think of following up persistent purgation as a means of cure.

I need not dwell any further on what has been said about the gradual disuse of alcohol in disease, neither need I touch on the abolition of pain as the most striking feature in this century of medical advancements.

The Stethoscope, Sphygmograph, and Sphygmophone.

The stethoscope was coming into common use when I entered physic, but I knew of at least one doctor who had never employed it, who considered it useless,

and who, when he saw it in the hands of someone else, would ask, with a good-natured laugh, "whether it were possible through it to hear the grass grow?" It was not professed that we could hear the grass grow, but the stethoscope instituted a true revolution in physic, and we, in our later day, were reaping the benefit. We followed our masters, Laennec himself, Hope, Andral, Louis, Chambers, Latham, and Williams, as our authorities, and we were not wanting in knowledge, but we were not content. Soon after the middle of the century we formed in London a Society which we called "The Society for the Study of Chest Disease," and were industriously but quietly engaged at new work in investigating diseases of the lungs and heart. We met in the evenings at each other's houses, partook of tea and light refreshments, and then proceeded to work. Most of us, if not all, were engaged in hospital practice, and we were able to request some patient to come to us, whose case we carefully examined and discussed, by which means, in the end, he became as much benefited by our combined experience as we were by our observations. A great many of us, deeply interested in chest disease, were thus bound together in useful work, and a few are living still, though the majority are dead. The observers I best remember, as if I could speak or write to them still, are John Snow, William Baly, Francis Webb, Andrew Clark, Francis Sibson, Risden Bennett, George Johnson,

Frederick Anstie, John Cockle, and Thomas Hawksley. Snow was a genius; Baly, a consummate German scholar, who translated Müller's *Physiology* and was a clear observer, became appointed Physician to Her Majesty, and would have made a great mark before now had he not been killed in a railway accident; Webb was one of our classical scholars and physicians, an F.S.A. of strong antiquarian tastes; Sibson was a fine clinical artist; Andrew Clark was keen and penetrating; Risden Bennett, who became a President of the Royal College of Physicians, was exact and critical; George Johnson was minute, critical, and cautious; Anstie was zealously acute; Thomas Hawksley was never so satisfied as when he was hearing the views of his colleagues, and John Cockle was most suggestive.

One day there came to London a Mr. Groux, who had a singular development of the chest. He resembled, in the way of construction, a man presented by William Harvey to King Charles I. in order that the King might place his royal hand over the heart. The bony structure covering this part was incomplete. The bony structure over the heart of Mr., afterwards Dr., Groux was also so deficient that the movements of the heart could be seen and its pulsations felt as if it were a distinct organ. Several of us had Mr. Groux before us for examination, and watched the pulsations, both of his heart and arteries, by fixing feathers with wax over the pulsating centre. Out of these and pre-

vious researches sprang the instrument called the sphygmograph, by which we caused the pulse to write its own message, an entirely new art. The sphygmograph was most thoughtfully devised by Professor Meyer and simplified by Anstie, Mahammed, Pond, Dudgeon, and myself. I made the sphygmograph, when in use, cut the lines on which the movements of the pulse could be traced. I caused the body to be inverted so that the pulse could be read while the body was standing on its head, or was laid at any angle. Also, after Professor Hughes had invented the microphone, I constructed a new instrument—the sphygmophone—which caused the pulse to deliver sounds through a telephone, so that it could talk as well as write. We had now two new ways of taking pulse-records in addition to the process known from time immemorial of feeling it, counting it, and guessing at its quality.

Hydropathy and Homœopathy.

It has often been asked of me what I think of the introduction of new systems of medicine such as hydropathy and homœopathy, and what is my experience of them as I have seen them in the course of my life. I may say candidly, and without any desire to be hypercritical, that no system of medicine, standing apart from the old high-road of medical science, has ever impressed me as a new and great development. I recall

hydropathy springing into great position for a time through the labours and ingenuity of a German peasant named Priestnetz, and I have known the introduction of hydropathic establishments at home and abroad. They have provided little specially curative, but have induced numbers of people to sally forth from their homes and places of business to get fresh air and rest. Arbuthnott wrote to Dean Swift to go to Geronsker "because the Geronsker waters would not carry," by which he slyly conveyed that it was not the waters that cured but the journey, with change of air, habit, and scenery. We might apply the same reading to modern hydropathy, and, acting on this very principle, many of us physicians have often recommended, with the best intentions, the hydropathic process of living, and apparently, in numerous instances, with the best results. In fact hydropathy, revolutionary as it has sometimes seemed, has been occasionally an aid to scientific medicine.

In the early days of my career the system called homœopathy had come into full prominence, the physician named Hahnemann having been its promoter, and, some think, its founder. He does not appear to me to have been the founder, but he certainly was the first expounder. In the same University where Hahnemann taught, the University of Hallé, there lived through a long life Michael Albertus, and he, the great journalist of his time, published three essays, one styled "De

Curatione per Similia;" another, "De Curatione per Contraria," and a third, "De Curatione per Expectationem." The three embrace the whole art of medicine from the first to the last, and he is the wisest physician who adopts them all as occasion may call for them. Hahnemann, after some fluctuations, seized on the "Per Similia," built a system upon it, and established a schism, under the term "similia similibus curantur." We must understand the plan to understand the man. He began by giving large doses of physic; saw the evils; dropped to infinitesimal doses; saw the good; and then, in order to account for the results of the contrast, invented the dogma about similars, a convenient invention that seemed to account for everything he saw. In plain words, he took Nature into his firm and then did not acknowledge the partnership, or perhaps did not know of it, a concession we ought to allow. Hahnemann made a great commotion and division among professors of medicine, the like of which had never before been seen since the days of Paracelsus, if then. It was, perhaps, a necessary commotion, but as we saw it in its early times it appeared to be an error, and gave rise to much anger and tumult, in which the public took part. It led to the introduction of the absurd opposing word "allopathy," as descriptive of a system which we never saw; it fixed in the mind of the people the impression that when a doctor was called in something must be done, even though a globule were

concerned, and it gave rise to all sorts of silly notions as to the effects of globules and infinitesimal doses. The homœopathic administrations also were not always sincere; they were sometimes really active remedies like bichloride of mercury in full dose, although in globular form, and created curative effects that could not be acknowledged. Some accounted for symptoms, misled by the fanciful statements of the naturally recovering sick, and claimed the advantages from the new system to be superior to those of the older. Nature does not try to save, but in her course she often saves without going out of her way, and the homœopathists had the advantage of this fact. We, of legitimate physic, could not sympathise with their system, and they could not help, in accepting it, separating it from ours as if they felt separation their safety, even though, in examination for their diplomas, they concealed themselves under what they might conceive to be the allopathic veil.

As time has gone on matters seem to have become a little more settled. It is felt that to brand a regular profession with the term "allopathic" is simply grotesque, and that, as a descriptive term, allopathy is just as ridiculous as homœopathy, while treatment by expectation is becoming day by day the safest, and very often the quickest, of our endeavours after cure—natural recovery. It will take a good many generations to repair the damage that has been done by the breach that has occurred. It is impossible

for men of legitimate physic, however liberal they may be, to foster a delusion, and it is hard, if not impossible, for men who have committed themselves to an error to make the acknowledgment.

Surgical Revolutions.

Up to this time I have dwelt only on the revolutions that have taken place in medicine, and now it is necessary for a moment to refer to those that have taken place in the field of surgery. In early days, as has been already intimated, the object of the surgeon was to be very quick in all his operations; celerity was his fame, and to see an observer take out his watch in order to note the seconds during which a Liston, a Lawrie, or a De la Garde could remove a limb was a perfectly natural event. Anæsthesia has taken away this art of celerity to so considerable an extent that every bold and thoughtful man, physician, surgeon, or general practitioner, can perform an operation at his comparative leisure, if not pleasure. Anæsthesia has also permitted many operations, and with success, which could not previously have been dreamed of.

There have been certain other advances which have belonged to our time. Through the labours of the late Dr. Strohmeyer, and in our country the late well-known Dr. Little, the art of subcutaneous surgery, which John Hunter seems to have glanced at but let alone as a practice, has been most wonder-

fully developed, to the great advantage of those living bodies that are deformed, crippled, and unable to carry out with facility the ordinary duties of mankind.

Another great advance has been in the performance of such operations as ovariotomy, by which from the female subject the ovarian cyst, loaded with fluid, has been removed entirely from the abdomen, and the lives of women previously doomed to death by disease have been saved. I have already shown in *Asclepiad*, Vol. XI., p. 98, that the suggestion of this remarkable operation was first made to Erasmus Darwin, on March 29th, 1793, by Mr. Power, a surgeon of Market Bosworth in Leicestershire, but it has required a full century for complete development, a development which has led it to become one of the most startling improvements in surgical art, the chief steps of which I have seen taken, with all the controversies connected with them, in my own short life.

Treatment of Wounds.

The greatest advance of all, perhaps, has been made in the treatment of wounds. In my young days disease was a field of uncleanness and a mass of corruption. The sick-room and sick-ward were almost as bad as the dissecting-room. Wards were kept closed, and the excretions of the patients were barely concealed. The excretions were literally

stored in the utensils beneath the couch that they might be preserved for the doctor's inspection. In these days cleanliness has become universal, and the improvement that has taken place in water-closets alone is one of the most astounding characteristics of civilised communities. Preventive art has changed the whole system of cure, and, such has been the progress, it becomes difficult to trace out the value of individual methods. Many think the introduction of antiseptics was the cause of prevention; some others believe in purity—pure air and pure water—as sufficiently remedial, and that nothing extraneous is wanted. It has always seemed to me that iodine and similar bodies that may be called antiseptics have played a conspicuous part in the results, and I was probably amongst the first to use iodine in its antiseptic form, but it is so obvious that the evolution may have been due to cleanliness alone, it is hard to come to a conclusion.

Remedial advocates, by mixing up many subtle questions, such as the action of antitoxin, immunity agents, and assumed bacteriological inquiries, have made some of the worst failures, and have not cleansed the world, as they have proudly supposed, of its current causes of disease, while they have, unfortunately, drawn the minds of men away from some of the most important physical problems in regard to the relation of disease to heat and cold, to climate, electricity, influence of journeyings in space.

and effects of heredity, problems that lie straight before the sight and that will have to be solved.

Treatment of the Insane.

No greater change in medicine has taken place in the two past generations than in the management of those members of the community who differ from the mass of their fellows in being of what is called unsound mind. Persons of unsound mind have ever been the mystery of mysteries of this mortal life. They may be built outwardly like the rest of the world, as it seems to us, but inwardly are evidently different. They have the same general construction, but their actions are special and often apparently wandering and objectless. They are at best the irregular verbs of existence. Whatever their peculiar characteristic depends upon, it is not of recognisable quality. Insanity is ruled by laws of its own, and it seems to be hereditary by a reproduction which descends along the chain of life. The insane organisation is like an instrument out of tune, and, as the wolf in a violin, insanity is never actually absent from any animal instrument whatsoever. Insanity is a thing of itself, but as it usually takes the human family to develop in, it forms an element of humanity. It is not entirely confined to the human family, for there are insane animals—insane horses, for instance—but it is most notably seen in the human form, and has played most important parts in the human family. It has

shown itself at the head of the social group, ruling it according to its own manner; ruling it beneficially or savagely, usually savagely. Anon insanity has taken its place in the religious sphere, stamping itself there, and occasionally making for itself a name or reputation for virtue or other qualities that call together worshippers; gets itself into the niches of temples or the pictures of art, and at last is recognised in living forms, running amongst its fellows as pitiable or dangerous, or requiring to be kept under watch and control, and calling forth either sorrow or laughter.

Whatever form it takes, and however obscurely it may manifest itself, insanity is, by comparison, weak; its irregularities cause it to bend, and it may, conscious of its feeble guidance, be glad to be guarded, ever distrusting itself, and wanting companionship and support from what it may even consider enfeebled aid. Savage it may not be, though it often is, showing itself off by unexampled deeds of violence. It may build a tower that shall try, like Babel, to reach heaven; it may strive after fame by finding heroes and inventing wars with all wantonness and bloodthirstiness; but in the end it falls and its deeds are set at nought because it has no cohesion.

We are beginning at last to understand better the meaning of insanity. We feel it indicates a faulty instrument requiring superintendence, and so we are becoming more humane in its treatment, as who

should say, "May not any of us become mad?" or as though we say, with truthfulness, "Do we not, as we creep into old age, become childishly insane?" as if we were played out and laughed when the rest wept, or treated as a joke that at which the rest wondered.

The way in which, in the history of the world, the sane, as they are believed to be, have treated the insane, is the most curious of pictures, often, in fact, as if insanity had governed insanity and as if nothing but force prevailed, or as if the insane could be made to change their nature and become rational.

If the sanest man in the world were to breathe for a few minutes a simple gas, like nitrous oxide, put before him, he might lose his mental balance and do the silliest things and acts that could be imagined. If Dame Nature were to diffuse through this atmosphere a little of the same gas, which she could easily do by means of her electrical vibrations, and which, for anything we know, she may do, or may have done, all persons exposed to her humour and rendered practically insane might die laughing at the scene, caring nothing about it. If the sanest man in the world were to drink too much of a liquor, such as alcohol, he might go stark, staring mad; and if all the world did the same, the world would share his fate, and do stranger things than are done in any asylum, a fact we can easily learn by seeing what happens when one drunken person advises or tries to correct another.

I have not digressed, but that which I want to recall is the great change that has taken place in my recollection as to the nature and treatment of the insane mind and matter. We seem, at last, to acknowledge that every man and woman born has two natures; that these may not be truly balanced; that they may take into themselves, willingly or unwillingly, agents which upset the balance; and that kindness is the only corrective of that class of human ill, disordered or unbalanced mind.

I remember when, in regard to the insane, there was nothing in force except Law, and that Law barbarous. A mad person was a mad person; he was unaccountable for many of his own acts, as he is still, but he was under the eye of the Law, and they who had charge of him were not. The madman was treated much as a lower animal, although altogether distinguishable from one; or, being on the borderland of insanity, he might be recognised as above the same, and might be supported in doing what affected the mass and what nobody else dared to do. He might, in fact, be worshipped, or he might be cursed. The worshipped mad are objects of idolatry; the cursed are objects of oppression. How they have divided, or have been divided, is a strange feature in the life of man, for while some quite common by birth have risen by their madness to be kings and emperors, others born as kings or emperors have been sent by their contemporaries

to durance vile. One man whose name we all remember was born of such a generous nature that he declined the legal robe because in it he would have had the duty of condemning some of his own kind to death, and yet in the end became one of the most incomparable of murderers, and himself died a felon's death. Another man, born to nothing, rises for a season to everything; puts himself at the head of a great slaughtering power; loses his place altogether, and as a mere slave dies in mid life declaring himself what he is not, the *tête d'armée*. A third man, born in the purple, and considered by some a good man, rises eventually to his full glory, and, sitting at the head of the rulers of the land, to their wonder addresses them as "My Lords and Gentlemen, and Woodcocks cocking up your tails;" and then, condemned as a lunatic, is taken to a place of confinement; put under the care of an ignorant, bloated-looking old man, dubbed a doctor; is shown to the people at a shilling a head, as if he were a curiosity of the place; is actually whipped by a keeper, whose son, the bearer of his father's clothes, I have myself seen, and from him heard the details. The victim, as artists have shown, becomes an entirely altered man in physique and expression, but, recovering, for a brief period tastes his glory again and then fades away.

In other examples the differences between faith, failure, and sin has been manifested in the same person, and over and over again the difference

between sin and faithfulness, or, to speak more plainly, between sin and righteousness, has been seen in the most characteristic personal manner, and yet it is not until our own times that we have known the sane and insane so marked and managed that the sane should take an intelligent view of the insane, and should, being fortunately the more numerous, be allowed power, tempered by intelligence and humanity.

It looks as if the marvellous change that has taken place in the treatment of mental perturbations is the most extraordinary the world has ever witnessed; it is a change far more astonishing than anything physical we have observed, and I was once commissioned to find out how the change commenced. The duty was rather a difficult one, but fortunately, in an insane asylum at Lincoln, I was able to trace the basis of it, the details of which I supplied with great care in the old *Medical Times and Gazette*, and may again set forth in a narrative form. It is sufficient here to point out as a revolution that the humane treatment of insanity has been one of the great features of the reign in which we all have had the good fortune to live. In the change Love has cast out Fear.

Social Changes: Lady Doctors.

References have been made to the revolutions that have occurred in regard to various modes of treatment of disease, but some social ones have been

developed that deserve notice. I refer first to the admission of the female sex to the duties of physic. The time was when the apparent impossibilities of this change stared us in the face, but now lady doctors numerously exist and promise to continue unless the fashion wears itself out. It was always selfish of men to try to stop it, and the very effort to kill it encouraged the growth, as I once had proof. Even women's discouragement itself favoured the growth. There has never been the faintest moral reason why women should not become doctors, or mathematicians, or chemists, or anything professional they might find themselves fitted for and that could be appropriated by industry, but if the race is to continue there are natural physiological reasons that must ever stand in their way. Wives and mothers cannot by any device or industry rival men. No provision has been made for such a contest; on the contrary, Nature seems to declare that what she intended the female to be as a part of the race was a good mother, as the first business. Nature is so determinate in all long runs of her own designing, that an imperfect generation might spring out of the choicest female doctors, unless we could succeed in changing the sympathetic nervous build, and establish an organisation in which the brain and its parts should reign supreme. Meantime it is surely very bad practice, to say nothing of manners, for men to interfere in this matter by act or word.

The Art of Pharmacy.

The changes that have taken place in the work of medical men generally have, as a matter of course, influenced in a remarkable way the art of Pharmacy—have, in fact, instituted a new order of society. I recall when the chemist and druggist was recognised as nothing more than the dispensing half of him—physician or surgeon—who was considered the consultant. It is true that the general practitioner who met the consultant in practice usually took charge of the prescription and dispensed it at his own surgery, but in time the prescription began to be sent to some leading chemist, and this especially in large towns. Originally the prescription bore no other names but those of the consultants, the physician signing his initials, the surgeon his name in full. Richard Bright would sign simply “R. B.”; Brodie would sign beneath that “Benjamin C. Brodie,” the general practitioner leaving his own name out altogether. The custom underwent revolution; the general practitioner began to sign as well as the rest, and did so in the form of initials, like the physician, and at this moment does so, generally, while not infrequently the consulting surgeon follows the same course. It has also become not uncommon for the chemist and druggist to dispense medicines systematically for a general practitioner. I do not think it is a good plan that the physician or surgeon should merely

prescribe. Galen held that every man who treated disease should supply his own remedies, and I have no doubt he was right. The prescription is a danger. It passes from one hand to another, and, as I have known, is sold; in its dog-Latin it is read by the afflicted and understood by them, so that they know what they are taking as well as the doctor himself knows. The sick can thus compare one man's remedy with another's, to the confusion of everybody. A sick gentleman came to London; consulted five physicians as well as myself; went home laden with our prescriptions, and got the local druggist to select and prepare that which he considered the most suitable. The whole affair becomes ridiculous, injures physic, and undermines that confidence and faith which every patient ought to feel in his medical practitioner, be he physician, surgeon, or general attendant.

The revolution in the dispensary business is quite remarkable. The druggist was once a remnant of the old apothecary of the *Romeo and Juliet* type, and it was hard to distinguish between the apothecary and the druggist. The druggist inoculated, bled, cupped, drew teeth, and kept an open shop. Sometimes, indeed, he did something more; he kept stores or groceries, and was quite as *au fait* with raisins and currants as he was with blue pill and rhubarb. Now all is changed, and the chemist and druggist is a kind of semi-qualified man who seems to live by dispensing drugs for the

sick under the care of some member of the medical fraternity.

The actual change that came over the life of the chemists and druggists was initiated by Jacob Bell, one of their own body, a popular pharmacist of Oxford Street, London. Bell has been dead a long time, but I knew him personally very well. He was a Quaker; a very marked and ambitious man; an admiring friend of the late Sir Edwin Landseer; industrious, rich, and active. He was like a spark—always brilliant. For his own fraternity he had, I am sure, the best feeling and intentions, and founded the Pharmaceutical Society, a very distinct and able organisation, having its own Council, its President, its other officers, and its Journal. It has had for its support influential men of the world, and does not fail to tempt the doctors themselves.

I have followed the history of this Society through the whole of its course; have witnessed its advance in science, and have suggested its closer connection with Medicine in a form which Medicine does not like to recognise, but which is as sure to come as day follows night.

The most striking mode by which the pharmacist becomes a new feature in physic is his bold advance on a presumed scientific principle. As physic has advanced, the administration of medicines and so-called cures has receded. In the first number of the *Journal of Public Health*—1855—

I ventured to predict such a revolution in the following terms:—

“The tendency of medicine, which, a century ago, was directed towards the division of diseases into many hundred forms, and the formation of the most elaborate and complex nosologies, is being in this day reversed; and the whole meaning of modern medical inquiry is to prove that disease is a unity, with a variety of phenomena, and that the causes of disease are reducible to a few elementary forms. This philosophical yearning after fixed principles as to the nature of disease is influencing the whole system of medicine. If the elements of diseased action are few and simple, the principles of prevention or cure are, it is thought, few and simple also. The *materia medica* is thus undergoing a thorough revision and curtailment. The viper no longer yields its body to the formation of a ‘specific’ medicinal broth; the philosophic oil of bricks has become a droll myth, despite its magnificent name and former great reputation; a smell of the blooming dog-rose is now held to be as remedial a proceeding as the deepest draught of an infusion of its lifeless leaves, and these, and a thousand other *remedia admirabilia* which we might mention, are gone or are going into the catalogue of the things that have been. Meanwhile a new *Pharmacopœia* comes in sight, which all can read. Its principles are preventive, its objects wide, and its elements—some seven only, and the world’s general property—are no more

than *Pure air, Proper nourishment, A regulated temperature, Bodily exercise, Cleanliness, Mental education, Good morals.* Thus, in some of the most important sections of the community, there is, as before said, a general improvement and simplification of knowledge on those great and vital questions, upon the correct solution of which so much of the world's happiness and progress rests."

This prediction has proved true to the letter, is certain of fulfilment, and strangely influences and modifies the position of the dispensing chemist. He advances as a scientific man, but he does not advance merely as a dispenser of drugs. On the contrary, he recedes, and tells you plainly that, were he to depend on the putting up of drugs from the prescriptions of the medical fraternity, he would simply starve, which he does not do. He cannot himself legitimately prescribe even for the most trivial ailment in the ordinary way, so he will do it in the extraordinary. He will invent, advertise, and sell his own articles by becoming the proprietor of his own formulæ. Every day he deluges the breakfast-table with notices of his new foods or physic or hygienic contrivance, and if he can invent a new name for an old thing so much the better. One morning lately a most intelligent and busy member of the fraternity called upon me to show me a portmanteau full of his preparations. I told him honestly all about them, and he admitted every criticism, only responding by asking, "What

am I to do? Starve I cannot. To beg I am ashamed."

Thermometric Readings.

Quite a revolution of a striking kind has taken place in regard to the estimate of the temperature of the body. In the middle of this century we were accustomed to take into our consideration the temperatures of the bodies of our patients, and we used to feel the body in various parts to distinguish the differences of warmth; also we had become acquainted with the uses of the thermometer for many chemical and scientific experiments, and the late Dr. John Davy had unquestionably used it for taking the temperatures of different animals. As a rule, however, we had not systematically employed it in the determination of disease, and I quite well remember the application of a small curved thermometer that could be inserted under the tongue in order that, in fever especially, we might know at what temperature the body was working. Gradually our learning in the matter of temperature increased, and, as it increased, no instrument told us better the facts we wanted to know. We fixed the standard of normal temperature; we gave the standards of fevers; we learned the point at which life was threatened, the point at which it was stopped, the degree in which it sometimes rose at the time of death, and estimated the safety or the danger of the patient by the readings

we were enabled to take. We then saw the development of the thermometer called the clinical thermometer, in which the mercury not only varied according to the state of the body, but registered accurately for our information. And now we have arrived at such perfection in thermometrical readings that no sick-bed is considered complete unless it be furnished with a thermometer, and no person is considered a good nurse unless she can supply the doctor with the facts of temperature, which are just as important as those of any other kind.

In the art of taking the temperature of the body in disease I have been one of the learners; have followed the improvements step by step as they have been brought before me, and have found the study not simply advantageous, but so extremely instructive that in walking round the sick-wards under my care I have felt that the thermometric reading was almost of itself sufficient to tell me what course a patient was taking, and whether the disease were increasing, fluctuating, or declining. Indeed, I recall nothing that is so decisively an advance in the practice of medicine as the use of the thermometer. Even the people are often guided in their judgments as to the state of the sick by what they hear from the physician in regard to the thermometer, it is so decisive, and so simple.

To me the thermometer has, at the same time, not been merely an instrument for observing the

symptoms of the sick under treatment. I have used it largely in physiological research, and particularly in determining whether parts of the body, during health, carry on their work at different temperatures. It seemed important to inquire into this subject of the warmth of different organs, and I made the curious observation that the nervous centres are ordinarily under the temperature of the more vascular organs. For example, I noted that in warm-blooded animals the temperature of the brain is under that of the liver by no less than two degrees Fahrenheit, as if a modification of temperature in particular organs were necessary for the continued maintenance of perfect life.

Special Practice.

I remember that in the early days of medical life there was no decided appearance of specialisation, as there is now. A few persons did seem to be peculiarly advanced in the details of certain inquiries as in stethoscopy, in the use of instruments for crushing stone in the bladder, or in operations on the eye-ball. There were also the grand divisions of medicine, surgery, and obstetrics, which constituted a kind of speciality principle, but there were no minute specialities as there are in this day, and a remark which I remember to have once heard as from Sir Benjamin Brodie, when advising a young friend we both knew, "A specialist is half a quack,"

caused no wonder and gave no offence. Gradually, however, the practice enlarged until the patient, a man or a woman, looked upon himself, or herself, as made up like a watch, each part requiring its own doctor, and selected the man according to circumstance, as the old Egyptians are supposed to have done in their day.

There are two sides in relation to specialism. The body is made up of many organs and mechanisms; it is possible for one man to study an organ specially, and it is certainly true that one man may be better gifted than another man to perform a special operation. On the other side, specialism, too far permitted, is liable to endless confusion, charlatanism, and neglect, for, with care, all men may become just representatives of every department of our art, and unless skill is as widespread as disease, and the means are at hand for rendering aid, some must inevitably suffer who might be spared suffering. I have no doubt that, practically, all medical men can learn alike, that one man will be held as good as another, and that the idea of specialism will stand no higher than Brodie prized it. In the transition state, now manifested, the attempt that is most desirable and most worthy is to have men trained to exactitude in every step of their way, and to let medicine altogether be the one speciality, with an educated public as the patient, whatever the disease to be contended with may be, and however developed. The late Sir Thomas Watson, one

of the wisest and fairest physicians I ever knew, told me there was nothing more apparent to him than his own incompetency, except the number of occasions in which he was asked to see and rectify, if he could, the manifest errors of some specialistic devices.

Social Co-operations.

Thirty-two years ago it seemed to me desirable that we medical men should be bound together for assistance, so that in sickness we should be provided for by securing the aid of a medical club. At the meeting of the British Medical Association at Cambridge in 1864, I, therefore, started a Medical Provident Society, and a large number of medical men joined it. They agreed to pay a certain sum each year, and, when they met with disease or accident, to take relief from its funds. The late Dr. Alexander Henry was elected Secretary; I was elected President, and a considerable body of older and richer men contributed donations, so that we started on a sound basis. The late Mr. Tidd Pratt, of the Friendly Societies' Office, was much interested in our favour and gave us the most seasonable instruction. We did not, however, succeed as we expected. Members paid and kept the funds up to the mark, but it did not seem that any member was willing to apply for help when he was ill, because he did not wish the facts of his illness and distress to be made known. Years went on before we had one

application. A member had broken a limb, but when he found what the general feeling was he refused to accept the relief that was due to him. Pratt said he had never known anything so curious, and he advised me to divide the money on a plan he drew up, or suggested, and return it all to donors or subscribers, with interest to donors. We held a final and most friendly meeting, and did as he advised in due form.

After the dissolution of the Provident Society I was asked to be President of a Medical Protection Society, accepted the post, and held it for some few years. The duty was not always congenial, but I thought the intention of the members good, and therefore agreed, as their wish was very freely expressed, to act for them. We ceased at last, as if not wanted, and imperceptibly appeared to be absorbed into other organisations, so that I was relieved of my duties without any trouble or formality of resignation.

I do not think I was precisely constituted for enforcing protection against what was assumed to be wrong. He always seemed to me the best practitioner who treated the sick man in the same way as he treated himself; I acted upon this ideal from my earliest days, and taught it from the moment in which I commenced to be a teacher, while I always disliked any form of charlatanism as much as others did. To continue the two attempts, one of tolerating and the other of limiting

for the sake of medical protection, was at times typical, but the results were not so satisfactory as I could have wished. It seemed to me better for all of us to improve in knowledge, and to lead the world—which has no real wish to be deceived—to follow our standard over safe, rather than over slippery, ground. I think so still, and feel no regret at having been relieved of a task which, at the best, I could but have technically accomplished, which was not universally acceptable or unitedly supported.

Minor Revolutions.

There have occurred many other revolutions in physic which, though minor, are not without their significance. In the old days it was the invariable custom for the physician to follow the general practitioner into the sick-room and to leave it first. The physician was in this manner always in communion with the patient in sight of the general practitioner, which was a good system and prevented what Watson called “jockeying.” The rule is often broken now, or at all events, is not so scrupulously kept as it was, or held to be of the same importance.

In early days physicians used to ride in the chariot, very commonly in the chariot with the hammercloth—originally a cover of the box-seat that held the tools by which the carriage could be repaired if, on a bad road, it was damaged. The

hammercloth on the big chariot has faded away altogether—I have seen it in the square in which I reside, but there have been none this last fifteen years or more, and the last hammercloth chariot I saw, of medical type, stood for some years in a carriage store in Oxford Street; it first cost three hundred guineas, but fell to fifty that it might be sold in a revised form. I actually have seen outriders to the physician's chariot, but they ceased before the hammercloth was abolished. People now want the doctor simply to reach the patient as quickly as possible; they are content with a landau or brougham at their doors, and they do not even despise a cab if it bring the doctor.

The door of the old doctor bore his name alone, so that it was more or less conspicuous, and the inhabitant of the house was recognisable by the number. In this day you see three or four names on one door, and you cannot tell to whom the house belongs, because there may be several consulting-rooms under one roof.

The old physician and practitioner wore a special and recognisable dress: his coat was cut as a barrister's is now; he often had knee-breeches and Hessian boots; he displayed a white necktie and flowing shirtfront with frills; he wore ruffles, and occasionally carried a cane with a perforated box at the top which held camphor or some other smelling substance. He wrote a large hand on

prepared paper, and, taking him all in all, was a distinctive gentleman whom every one knew as a doctor. All this has departed, and the doctor now is clothed like other men.

The old doctor was great at giving dinners; he would often have twenty or thirty practitioners at his table, which was laid at considerable cost and decorated with handsome design. Copland told me that he sometimes gave five and twenty dinners a year, every one of them showing a good party and costing a great deal of money. Richard Bright, I understood, was also fond of dinners, and, to be short, the entertainment was a kind of institution that could never be ignored. Presidents of colleges and societies, as well as consultants, encouraged dinners, and he who omitted the ceremony was deemed not worth his salt. The practice is entirely changed in these degenerate days, and the dinner is rather the exception than the rule, a revolution that is all to the advantage of the practitioner and the benefit of the patient. There is, moreover, an improvement in the consultation itself: the wine-glasses, decanters, and wine, common to the consulting-room in a patient's house, have, as already stated, mainly disappeared.

Apart from revolutions in physic alone I must not exclude those which strongly affect it. The volunteer movement, started originally by a doctor of physic, who still lives, has taught us the value

of regular out-door exercise on the one hand, and the dangers arising from over-work and excessive exercise on the other. The ambulance movement, which has been evolved from the volunteer system, has led medical men into a new line of experience, which they have voluntarily and freely communicated to laymen and laywomen generally, to the great advantage of all who are subjected to physical injuries and require professional attention quickly. Lastly, the demands of nursing have been studied with scrupulous insight. Women have been trained to duties which once belonged to the male nurse, and which have never been so faithfully carried out as at the present day. This indicates in the most practical manner what a nurse can contribute to the art of healing under the guidance of the Esculapian brotherhood.

CHAPTER XXV.

ZYMOSIS AND THE GERM THEORY.

THE marked change that of late years has agitated us most is that in relation to germs and the development of a science called by its advocates "bacteriology." It is a theory only, or, more correctly speaking, an hypothesis, and, as I have shown from the first, rests mainly on analogy, a dangerous support. The animalcular hypothesis, to which Phillips alludes in his book *A Million of Facts*, was current until 1835, and I have heard Dr. Dwight quoted as its inventor; but the germ theory is of later date and character, and is popular at the present time.

The germ theory assumes that we live in an atmosphere of invisible bodies called germs, as if in an element we could inhale. Germs, it is imagined, sometimes produce in the body bacteria in numerous varieties, traceable by the microscope as causes of disease; that we can shut germs out from the living body; can kill them; but that while they are living in the air, disease due to their presence will never be annihilated. The theory is simple,