

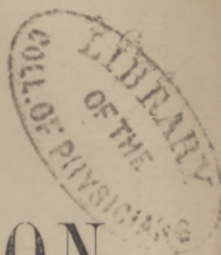
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WITH THE AUTHOR'S COMPLIMENTS.

1877

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THE
ANNUAL ORATION

BEFORE THE

Medical and Chirurgical Faculty of Maryland,

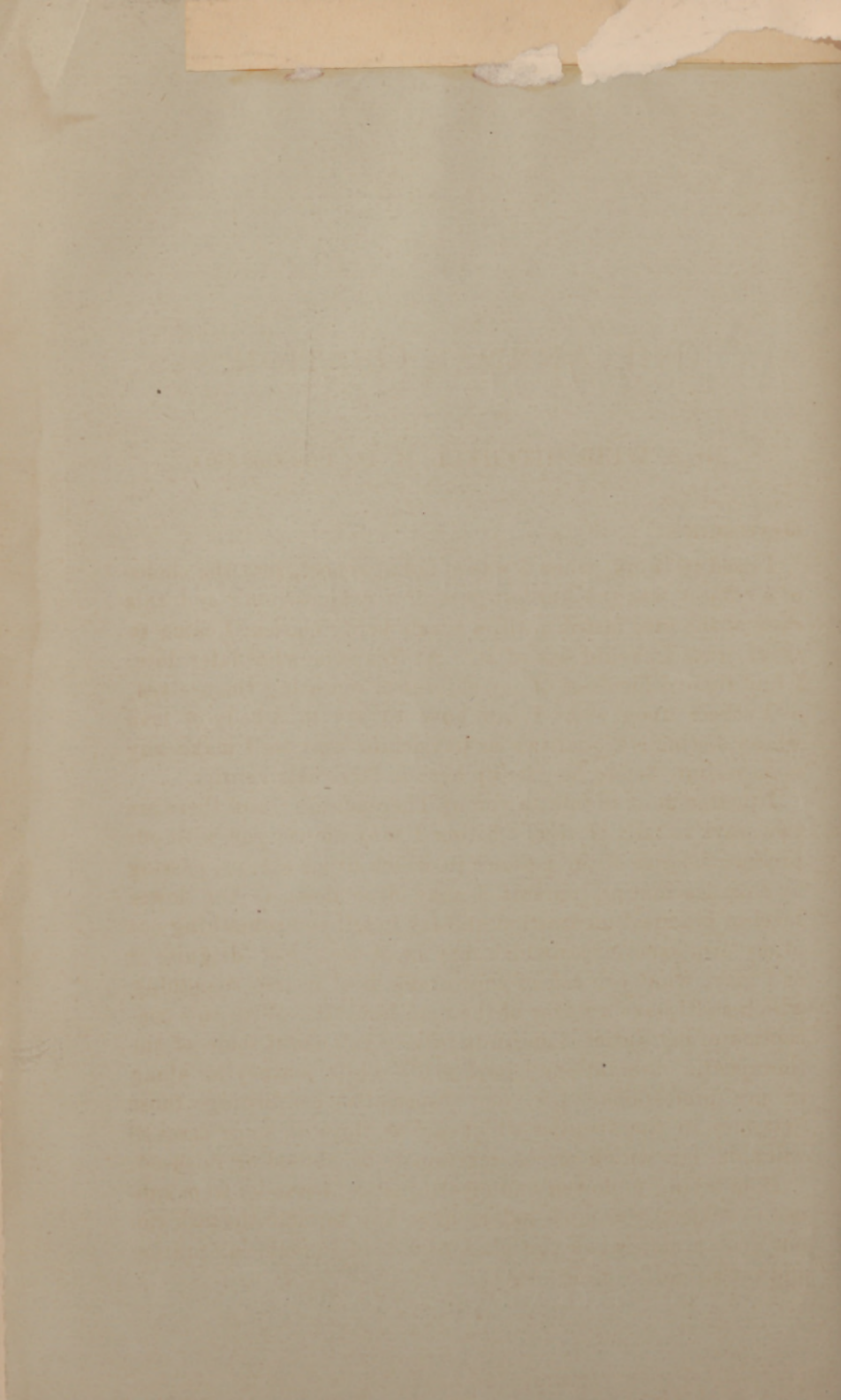
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By S. WEIR MITCHELL, M. D., PHILADELPHIA.



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THE ANNUAL ORATION.

By S. WEIR MITCHELL, M. D., PHILADELPHIA.



GENTLEMEN :

I used to think, when I was a lad at school, that the choice of a subject was the hardest part of a composition ; and this view of the case lasted until, a theme being chosen, I came to think what I should say of it. At this somewhat later date, I find these difficulties of my childhood repeating themselves, as I reflect upon what I can have to say to a body of men whose distinctive qualities as physicians may well make any man hesitate before he gets up here to face their verdict.

I incline most to talk to you of Therapeutics ; and there are two ways to talk of this. Either I may amuse you with our present theories of the manner in which drugs act, or, passing by this fascinating pursuit, I may drop down to the lower level of practical medication and try to tell you something out of my own experiences which may be of use. For, disguise it as I may, what you ask of your orator is of course something which shall have a flavor of the man himself. With this conception of my duties, I mean to talk to you about some of the therapeutic observations I have made while journeying along in my professional life, and especially concerning those extremes in therapeutics which are at times in some cases so valuable, but which are so very apt to be abused or misused.

If, in trying to do you and myself justice, I wander from subject to subject, you must reflect, alas, how terrible the task you put upon a man when you place him here to make an oration and rashly call him an orator,

I doubt not that many of you, going back in memory to the days when you were turned out of the lecture-room to practise medicine, recall with amusement the experiences which taught you how little of a homœopath is nature, and how hard it proved to fit each symptom or each disease with a drug. The relations of science to therapeutics were just then beginning to be drawn closer, and chemical explanations were coming into fashion. I have lived, as yet, no very long life, but I have lived to see the actions of many drugs submitted to divers explanations, which have had in turn their day and then dropped into the populous limbo of therapeutic theories. And yet, through all, I have observed that the drug, if useful, continued to be used. The later explanations of the mode of action of drugs seem to me to be more thoughtfully grounded than those which they supplanted; and the reason for this is to be found in the fact that they have become the subjects of cautious laboratory investigations as exact as those used for physiological inquiry, and as likely to be still more fruitful in the future, unless broken up by the war which hysterically acute consciences are making against vivisection. But while, as Dr. Bartholow ably taught you last year, science is rapidly adding to her store of clearly-explained therapeutic activities, there yet remain a number of useful drugs as to which our whole knowledge consists in the fact that, given a certain complexus of symptoms, experience has shown them to be in this of value.

Medicine to-day consists in these two forms of therapeutic work: the practical clinical determination of the uses of therapeutic means in the presence of disease, and those difficult investigations which profess to explain more or less clearly the manner in which medicinal agents act. The latter mode of study has found, like experimental physiology, few, alas, very few exponents in America,—a fact which seems hard to explain when we reflect how ably the natural sciences and physics have been pursued by numbers of our countrymen. On the other hand, the clinical study of drugs has found many competent investigators, and we have less reason to be ashamed of what we have done in this direction. But they who dream that it is easy to excel in this study of the direct application of new

drugs to disease have only to turn over the pages of any journal ten years old, to see how pitilessly the experience of one decennial has consigned to forgetfulness a host of drugs, or applications of drugs, which the writers once dreamed would be valuable.

In fact, the capacity to judge of the true value of a therapeutic method is one so rare that its history is full of humiliating lessons, and points us to the curious fact of the difference between the scientific, and still more the mathematical, mind, and that which I may call the medical mind. The mathematician reasons from certain premises to conclusions as certain. If the mental machine be good, he is sure of his results. The doctor, owing to the obscurity of his subject, reasons from doubtful premises to dubious conclusions.

I do not know any more amusing lesson in this direction than the history of the therapeutics of serpent-poisoning. When first I studied this matter, I found in our journals and elsewhere the opinion that the bite of the rattlesnake is deadly. Then also I found reports of eighty cases of success in the treatment. This brilliant result was attained by the use of thirty different remedies. I had then to conclude either that almost anything would cure snake-bite, or else that it was far less fatal than had been believed; and so at last I came to the conclusion that it was not as grave a disease as had been supposed, and also that there was for it no specific,— a result borne out by every later research.

This is only too sad an illustration of the ancient moral contained in the *post hoc* and *propter hoc*,— a lesson we are being every day, every one of us, bribed to forget by our seeming triumphs at the bedside.

Believe me, then, few men are really competent to decide on the true value of drugs. And if it becomes *us* to be humble in this matter, how sad is it that we stand or fall by the judgment of our patients, to the most of whom drugs are a kind of fetich possessed of mysterious values!

And do you fail to go with me thus far? Recall, if it be so, the treatments of rheumatism which the elder of us can remember to have seen. Once it was bled and blistered; now it is

blistered again. At one time it was treated with floods of alkalies; then opium was the fashion; and some one said it must have blankets and six weeks; and propylamin had its day; and once cold applied to the joints would have been thought to be death, and is, I can assure you, comfort, if it be not cure. An able name can be quoted for each of these plans of treatment, and of course some were right more or less, and some wrong; but am I not correct when I said that if this be the record in such a malady, few men are competent therapeutic investigators? Or is Flint right, and are mint-water and time as good as all the rest of the apothecary shop? Or are there more forms of rheumatism than one, and should we recommence our study from this fresh point of view?

There are, of course, agents like chloral as to which it is safe to take the popular medical judgment; but when it is needful to decide as to drugs of less definite power, the opinions of men in private practice only are nearly valueless, and it is to the hospital physician and surgeon that we have a right to look for thoughtful and well-weighed verdicts. These men alone have the apparatus for observation,—trained nurses, watchful assistants, chemical and microscopical aids, and such accumulated chances for investigation as should make it a reproach and a scandal to any great hospital that year after year it adds nothing to the sum of accurate therapeutic knowledge.

The last treatment for rheumatism, for the classic malady, acute rheumatism of the joints with high fever, is salicylic acid. So far it is standing the trial well; and if it prove to be of decisive use it will possibly enable us to decide by a therapeutic test whether muscular rheumatism, certain neuro-arthritic states, rheumatic gout, and local rheumatisms, are of the same parentage, just as a vermifuge is our sole diagnostic test for the existence of intestinal worms, and as iodide of potassium is often capable of deciding if an obscure nerve-lesion be or be not of syphilitic birth.

I might go on to make you smile sadly over a therapeutic history of pneumonia and typhoid fever; but time fails me, and the desire also, for out of all these dismal stories of endless therapeutic success contradicted flatly by the later research, we

are by degrees coming to see light and to have rational hopes, as you all very well know. And let us not believe all this contradictory medication useless. There is no other way to a true therapeutics except by experiments on patients; and there never will be any other until the laboratory is able to teach us how and when to use drugs; and that is a far-away hope as yet.

But out of these bewildering clinical failures, and out of the false pride of the laboratory and the scorn with which the accurate man of science looks down upon medical indefiniteness, has arisen the worse evil of medical nihilism, the utter disbelief in the value of therapeutic means. Unhappily, this reigns most remarkably in the centres where the more exact branches of medicine, such as diagnosis, are most successfully taught and cultivated, and perhaps in no country so much as in Germany, and nowhere so notably as in Vienna. The evil is less in France, and is hardly to be complained of in England, nor as yet in this country are we in danger of altogether forgetting the art of curing, in the pride of successful diagnosis. It is a little curious that while European physicians have become unreasonably sceptical as to the value of drugs, they have gradually taken refuge in an extreme of what I must call credulity as to the influence of mineral springs. In this country a like belief has been fostered by a variety of causes, and waters as valueless as those of Gettysburg and some others as inert have won a wide-spread celebrity. In most cases these springs are to be found in healthy mountain regions, and it is the change of air, of diet, and of habits of life which deserves to be considered as curative, rather than the waters. So vast is the use of such total change that patients who go for treatment from the country to the cities are often the better merely for the change, and too often the city physician, as I well know, gets credit for that relief which was in large part owing to the vast alterative of change of air and of all the ordinary habits of life.

And, lest I should be thought to make a charge against European physicians without some grounds for my belief, let me state in the words of a shrewd observer, a patient of mine, what befell him abroad. Of course I suppress the names.

“I went,” he says, “by your advice, to Dr. Blank in Paris.

After an examination which lasted twelve minutes, he advised me to go at once to Vichy. Accordingly to Vichy I went, with a note to Dr. C. He thought that I had '*congestion bulbaire*,' and, after three weeks, was persuaded that St. Moritz would aid me. I spent a month in the Engadine, and was then told that the waters of Schwalbach were now more suitable, and that I would do well to recreate my lazy spleen with their blood-making help. As my faith was still lively and in better order than my blood globules, to Schwalbach I went, and took iron waters anew. I hope my spleen liked them; I did not; but by this time the autumn had come, and Dr. D. convinced me that all I wanted was a course of Carlsbad to make things straight, because my kidneys were inactive. Carlsbad finished my remnant of belief in spas and spa doctors. After I had taken warm Carlsbad water endlessly and adhered for a month to a very rigorous diet list, I met one day three people with whom I began to chat about our several organic griefs. Count L. had gall-stones, and was of a handsome mahogany tint; Mr. C. was the victim of Bright's disease; Mr. J. had enlarged heart and dyspepsia; and I, as you know, have had cardiac trouble and emboli, which seem to be to the body what comets are to the solar system, — eccentric mischiefs going where they have no business to be, and disturbing sober planets in their daily work. On comparing notes, we found that the liver man and the kidney man and the man with a big heart and the one with a weak heart were all alike taking Carlsbad water and precisely the same accurate diet. We looked at one another and smiled a sickly smile each, and I lit my first cigar for two months, and ate a huge dinner, and paid a doctor's bill as large, and so left Carlsbad. I was also said to have an enlarged liver: I can only say that if my liver was reduced by Carlsbad water as much as was my faith in spa doctors, there can be little left of that unhappy organ."

But humbug is not all transatlantic. I have been told gravely, by a patient with partial palsy of the legs, that at a certain spring she could walk easily in the bath which was up to her neck, and that the doctor told her this would be the case. "But," she said, "I could not walk much better after

it, and I quite relapsed when I got home ;" which I did not doubt, for water makes a very nice substitute for crutches.

I have heard the nihilism of Europe variously defended or denied, but I think any one who has been much thrown into contact with European physicians must have been struck, in watching their treatment of ordinary illnesses, with a want of resources and a lack of those minuter attentions to the inter-current aches and ailments of patients, which both in England and with us would be thought remarkable. I think Anglo-Saxons and men of the later French school better therapeutists than the Germans ; and nothing seems to me more dangerous to the good of our profession than the tendency prevalent in some places to give up the use of drugs the action of which we cannot explain in such a fashion as to satisfy the exacting conscience of the laboratory.

The old extremes in the use of drugs were possibly worse than the utter scepticism which thinks nothing of value, and which makes men proud to say that they never give calomel or never use the lancet ; but surely there is place for that instructed confidence which has the intellectual courage to deprive itself of no resources, and to feel willing to treat one case with bread pills and to bleed another to faintness.

There are yet triumphs to be won in medicine by therapeutic boldness, and by the use at times of enormous doses and of therapeutic extremes in diet, and even in blood-letting, which will never be won by the timid doctor who swings with the pendulum of medical fashions.

I was taught that five grains was the dose of iodide of potassium ; but, in common with some others, I have learned that in certain syphilitic neural troubles you cannot tell that you are going to fail in treatment until you have given steadily for a time one or two hundred grains a day. When once sufferance of the drug has been established, and the early catarrhs and face-aches it causes have passed away, it is a tonic of strange potency ; and of its mode of action the laboratory has given us as yet no hint of explanation.

I may surprise some of you when I state that just what I have said of syphilis applies also to certain asthmas, and that

very large amounts of the iodide sometimes give not only temporary but also permanent relief in this distressing malady, as well as in chronic bronchitis.

In like unexplained usefulness the laboratory has left, as yet, arsenic, another of the powerful drugs which has value from minute doses up to those which hold the patient on the limit of poisoning. I may perhaps be relating to some of you an every-day experience when I speak of this active agent, but I was taught by a happy accident that in obstinate cases of chorea not caused by organic disease, if we wish to cure with arsenic we must push it far enough to cause the face to swell and to stay swollen for a time. It is here not a question of so many drops, but of constitutional impression. There are parts of our country where it is used with equal boldness for malarial fevers and in the same heroic doses which Fowler himself employed, and which we had forgotten. We may speak in the same way of digitalis, and Harley has taught us a similar lesson as to conium; while you will find also that in using gelsemium for neuralgia or local spasms, success is to be won by doses which give rise to strabismus and vertigo. In Paris two years ago I saw Prof. Charcot relieving the vertigo of Ménière's disease by doses of quinine which would appall a Western swamp doctor. Nor is it to-day useless to read books like Hamilton on purgatives because they teach us that the extreme and continuous use of purgatives, a practice now and for the most part wisely abandoned, may yet have its value, a value we still recognize in a somewhat oblique fashion when we send people to Saratoga.

Some among my hearers are old enough to remember the days when to let blood was as common as it is now to give tonics. They must smile a little to see that what was then daily in practice is now looked upon as a therapeutic measure of heroic character,—as a thing really dangerous. So far, indeed, has this feeling been carried that precautions almost absurd are now taken to avoid loss of blood, even in operations on healthy, florid people. Perhaps some of you have seen, as I have, a surgeon squeeze all the blood of a leg into the well-filled vessels of the rest of the body with an Esmarch's band-

age, and then cut off the depleted limb, without thinking that he has done something which lacks common sense. I believe with Paget and Richardson that there are still uses for the lancet, and I believe, personally, that the idea of a change of type in disease or in mankind of such a nature as to be a positive bar in the way of bleeding is totally unproven. It is an old story, and you may find it in Cheyne, and in that curious old book, Hakewill's *Apology*, 1635, where he quotes a remarkable case of one Tristram who was bled very largely, and adds, "This is a most eminent instance against those who endeavor to prove the decay of the world because men cannot spare so much by blood-letting as in former ages."

As a question of practice, we bleed people nowadays by dietaries when we need to lessen the amount of blood, and there are occasions when the need must be suddenly met, and then we want, even if rarely, the lancet.

It is curious that an abrupt supply of new blood is so much more dangerous than the heaviest loss of blood. I have seen two sudden deaths from the transfusion of a small amount of blood; and, as far as the risk goes, I would rather lose a pound of blood than gain an ounce by injection.

As illustrations of what I have said, and as examples of what are now and perhaps ever ought to be the curiosities of this subject, allow me to relate briefly two amazing cases which I take from the note-books of my father, the late John K. Mitchell. You all know well that there are rare cases of psoriasis inveterata which yield permanently to no method of treatment as yet known.

One of these occurred in the person of a gentleman who had spent some years patiently in Europe and America, vainly seeking relief. He came to Philadelphia, where I saw him when I was a student. He was then an object of such loathing to himself and to others that he had set a time when, all else failing, he considered that he would be justified in ending his life by his own hand.

He had used every possible means of cure, and been again and again pronounced incurable. Arsenic, which aided him, did no more; and its permanent use in doses large enough caused violent emesis.

I bled this man, under my father's instructions, two hundred ounces in three weeks, and when he was so feeble as to be hardly able to turn in bed we saw his scales fall off and his skin become as that of a child. After this he took arsenic with good effect in small doses, and the malady was cured, and remained cured. He became after the bleeding a stout and healthy man.

A second case, precisely similar, with the same happy result, occurred in the person of a New Jersey physician.

I find also in the same note-books the record of a case of syphilis in which there was extensive disease of both tibiæ and enormous and horrible disease of many bones of the head. After long and vain treatment by several able surgeons, this man, in despair, resorted to a mulatto doctor who lived in the country. This person put him on his back in bed, and bled him freely, while also he dieted him closely. When the patient had become very feeble, he fed him at brief intervals with wild game and soups, and then bled him anew. This was repeated over and over; but the result was a cure.

This man also I saw, and, having seen him before when he had been called incurable, I was struck with the reality and completeness of his recovery.

I am not advising any one to bleed in syphilis. I wish only to point the moral that even in such a malady bleeding may not be quite the utterly mischievous measure we have supposed it to be.

I turn with pleasure to speak of the subject of extremes in the use of rest and that of absolute diets,—a matter to which I have given of late years increasing attention.

We are apt, I think, to consider dietetics as almost entirely of modern birth.

The practical use of precise dietaries is, however, not exclusively ours, as may be seen by the study of such authors as Celsus, Galen, Sydenham, and Cheyne. In this matter, as in others, certain of the elder physicians showed extreme sagacity, of which there is no better example than the advice given by Jerome Cardan to the Archbishop Hamilton in 1553, where we may observe, as our great-grandchildren will observe

concerning us, that a man may be correct and successful in practice and perfectly absurd in theory. It is curious to find how often these Middle-Age physicians resorted to milk diet; and those of you who like old books may still read in Cheyne on the English Malady how much he effected by the use of exclusive diets of milk, or milk and vegetables. I am satisfied that, despite all that has been written of late on this subject, the exclusive diets for various purposes are too little made use of.

In diabetes, in Bright's disease, in many cases of obstinate irritative dyspepsia, in chronic diarrhœas with ulceration of the bowels, in asthma, in hypertrophy of the heart, an absolute diet of skimmed milk is, as I have many times seen, of value when every other method fails. But success in this mode of treatment depends on attention to a number of minute details as to which Carell, in his article on milk cure, has given valuable information. It is less well known that in cases where milk disagrees, buttermilk may be used as an exclusive diet, and that a man may live and fatten while using no other diet than this, as I saw notably in the case of a physician who had chronic inflammation of the kidneys. This gentleman says, "I had albuminuria fifty months, and lived for eleven months on four hundred gallons of buttermilk, and six or seven lemons daily. I lived out of doors all the summer days, and had a pail of buttermilk and a dipper, and took no solid food. I lived on this diet alone, and I got well on this, and fat on this, after a host of remedies had failed."

There are other uses of skimmed milk which you will not find in the books. The most remarkable is in cystitis and in all forms of irritable bladder. There is something in its exclusive use inexplicably soothing to the genito-urinary organs. So true is this that again and again I have seen persons with stones in the bladder lose all pain, and for a week or two urinate easily only three or four times a day.

You have all used the Banting treatment at times, and like myself, no doubt, have found that while in many cases it answers well, in others it gives rise to sudden and unpleasant failures in the general health. In England, where you see

every day women so obese that here they would excite attention and remark, this plan of thinning has met with the embarrassment I mention. Of later years, when I have met with this difficulty in reducing the flesh of any one, I have found that it could always be done with safety by keeping the person at rest and on a somewhat insufficient milk diet, devoid of cream. After a time a modified Banting diet may be reached; but this plan of denutrition under milk is of most value in fat, anæmic people, who, when allowed the Banting diet afoot, lose health no matter with what caution it be employed.*

In this country and in many others we are, however, far more concerned with the question of how to make people fat than how to make them lean.

Of course there are plenty of healthy people who are thin; but even for them there is a standard of fatness, and we feel anxious at once, and with reason, when any one is losing fat at all rapidly; while, on the other hand, when a man previously thin and weak begins to fatten we look on it as a valuable gain and an indication of returning health. In women, however, loss and gain of fat mean less pathologically than in men. The laws of functional activity in the female are in this respect different from those of the male, as we see illustrated in the way in which pregnant women take on flesh, and in the variations in weight which even healthy women undergo without apparent loss of vigor.

I may add that probably our whole active population loses weight in summer. Many years ago I had occasion to weigh every individual of our Philadelphia police force in May and again in September. The sum total of loss was found to be enormous: so that in this country at least our fat varies with the seasons.

*Milk is, as some of you well know, a perfectly competent diet for the adult, but even with all that has been said of it I have failed to find anywhere all that is needful to know in order to use milk properly. For example, I have looked in vain for statements of how much skimmed milk is required to sustain life when at rest in bed and when afoot.

I have now a patient, a lady, who has lived two years a reasonably active life on two quarts of milk a day. She weighs ninety-eight pounds, and is five feet high. Two women weighing respectively eighty-eight and ninety-six pounds, kept their weight precisely when at rest in bed by taking three pints of milk daily, and fatten slowly on five pints.

To be making fat is, as I have said, a welcome sign of convalescence; but mere gain in flesh is not an evidence of nutritive prosperity, and the true reason why this change is desirable lies in the remarkable fact that with increase of fat come almost surely increase in the coloring-matters of the blood, gain in amount of pigment in each corpuscle, and gain in number of corpuscles; for anæmia with increase of fat is rare.

But if it be easy to fatten and redden some people, we know, alas, that it is hard to compass this in others. In our great cities there exist a host of influences for evil which result in all classes, and especially in women, in the gradual creation of patients who, having lost weight and become anæmic, find it hard to regain that competency of capital in fat and blood without which the business of life is carried on at dangerous cost. We search in vain in these cases for organic changes which may explain their condition. No function is well performed; but it is useless to correct digestion or treat an ulcerated womb or order exercise. The blood is lacking to aid in the little gains we win, and exercise is valueless or worse when it exhausts tissues which lack the means of being rebuilt.

I need not dwell on points so obvious to educated physicians. For many years past I have had my thoughts directed to this subject, and, like every one here, I have gone on month after month treating such cases with no better and, I hope, no worse fortune than has fallen to others. A moment of happy thought, and much reflection since, led me to a method of treatment which has rewarded me over and over with successes so brilliant that, as the plan of cure involves the use of some of those extreme measures of which I have been speaking, I may be pardoned for calling them to your attention.

And perhaps also the path by which I reached my conclusions may not lack interest.

Some years ago I saw a woman who was like half a dozen any of you can now recall,—a pallid, feeble creature, who had menstruated irregularly until two years before, and then stopped at the age of thirty. She was the type of a class. Everything wearied her,—to walk, to read, to drive, to sew. She was the

woman with a back, and a shawl on her shoulders, and a sofa for a home, and hysterics for a diversion. She had tired out the doctors, and exhausted drug-shops and spas and travel, and outlived a nurse or two. The deformity man had found a spinal curvature and put on a brace; the gynæcologist had had his turn; the quacks had had their share; and she wore blue glasses to keep out the blessing of daylight. She was five feet four, and weighed ninety-four pounds, and had as much figure as a hat-rack, and had no more bosom than the average chicken of a boarding-house table. Nature had wisely prohibited this being from increasing her breed. How many of you have stood helpless before this woman! Like you, I had had my failures with such cases, and I was driven to reflect as to what new device I could try. Because everything tired her, I put her at rest in bed. I made rest despotic, absolute. Then I fed her with milk at brief intervals. But in a few days my plan failed. Rest she took to well enough, but attempts to feed resulted in sick stomach and diarrhœa and new loathing of food. Then I said, I must find some way to give exercise without exertion. I had seen in Europe how much use was made of systematic massage or kneading of the muscles. I knew that under its use the feeble limbs of ataxics strengthen for a time, so that hopeful friends even dream of a cure, and I was aware that it improved the local blood-circulation in a remarkable way and gave to feeble and flabby tissues increase of tone and firm plumpness. It seemed to me that it could take the place of exercise for persons at rest.

I had also in electricity another means of causing muscles to contract without the action of will or the exhausting use of nerve-force.

For the first time, then, I used on a woman at rest, thorough massage and the abrupt muscle-stirring of an induction current.

To my great pleasure, I found in a few days a return of appetite and digestion. But is kneading of muscles a mere fetich also? What scientific test have we of its activity? One, and a sure one, which I have lately found. In weakly people, despite the exposure to the air it involves, this process raises the

general temperature $\frac{1}{2}^{\circ}$ to $1\frac{1}{2}^{\circ}$ F. And as I discovered this winter, to my surprise and pleasure, an induction current, either localized or merely allowed to pass to and fro from neck to feet, does precisely the same. They effect tissue metamorphosis for the patient in tissues little used in bed.

I have employed every degree of rest; but in this woman's case, as usually, I permitted no exertion which could be avoided, and I carried it to such an extreme as to have the patient fed by hand, because it is tiresome while recumbent to use the arms, and because I have found that human beings, like turkeys, can be made to eat more when fed by another agent.

To this treatment in a few days may be added raw soup, and butter, and malt extracts, and iron in large doses.

I fed this woman, with growing surprise at her power to digest as she reddened and fattened. And how did she fatten and redden? The nails became pink; the veins began to show in the limbs. At first, as always, the extremities became cold under massage, then they grew warm, and at last, when she was well, the massage no longer elevated her temperature. And this is the rule. And as to fat, it comes first on the face and neck, and then on the back and belly, and last on the limbs.

By absolute rest, with massage and induction currents, you acquire power to over-feed, and the tissues are enabled to reclothe themselves with fat, and, what is better, you can thus refill the blood-vessels. This woman came to me, thin, sallow, ugly, and feeble. I sent her home fat and well and vigorous and handsome, and menstruating steadily; and then nature relented and gave her a baby.

This treatment has been to me new light. I use it now without fear or hesitation, and think that I have learned at last how to re-create the blood and how to fatten. I have quoted one real case,—my first. But this is no place or occasion to relate cases, or to enter into details, as I shall elsewhere; but I may venture again to say a word as to two facts, even at the risk of being minute. During the treatment slight hemorrhages from the nose are not uncommon,

but the return of regular menstruation is a better test of the rapid gain in blood. It nearly always becomes regular, and in three cases has returned during the first month of treatment, after absence respectively, of three, five, and eight years.

The gain of fat is sometimes at the rate of one-half pound a day. I have seen it reach three-fourths of a pound a day; but these rates are rare.

The applications of this treatment are many. I have used it in numbers of cases, selecting at first such as had no hopeless organic disease. I have also used it to prepare feeble people for surgical operations, and within a year I have ventured to treat in this peculiar way people in the early stages of pulmonary phthisis. I have seen as to these some notable facts, and have learned that in some such cases rest and over-feeding are of true curative value; for this is one of the doctor's best lessons that there may be one way or several to a cure. In the early stages of phthisis we have all come to think air and exercise and out-door life the one thing needful or hopeful, and I may be thought insane to propose to treat such cases by rest and excessive feeding; but I promised at the outset to give you personal and practical experiences, and this is one; and now and then I have seen it do good service.

I have said so much as to there being in the medicine of today a chemical aspect and a scientific aspect, that I would not end without a word or two to guard my previous statements from misapprehension.

The doctor's qualities of diagnostician and therapist are those which concern most his own prosperity and the welfare of his patients; but unless the profession can also show its capacity for accurate scientific pursuits, for chemical and physiological and toxicological investigation, it will not hold before the general public the lofty place which belongs to it. It must furnish the every-day, ready, acute practitioner; it must supply the hospital surgeon and physician with capacities for large investigation of disease and remedies; and it must also afford a limited number devoted to the arduous work of laboratory research.

The latter is the true test by which we stand or fall in the eyes of the vast jury of other workers in science. The public also are beginning to comprehend this, and to feel that a doctor who has signalized himself by physiological and chemical studies is a man who has a double claim to respect. It is, besides, by our activity in such matters that we stand apart from the organized quackeries; for who to-day can put his finger on one important step in physiology or the chemistry of disease made by a homœopath? The test is a good one. You ask me where among medical men we are to find those who have leisure for the work of the laboratory and for its side of scientific therapeutics. And to this I answer that there are long years of but partial occupation in the early life of every physician in which he can find ample time for such employment. Will it help or hurt him in his after-life? The day has gone when a man may not dare to be just only a prescribing doctor. It has gone, I trust, forever. Many years ago the late Prof. Samuel Jackson said to me most earnestly, "If you want to practise medicine, do not venture to be an experimental physiologist. It will ruin you." I did not take his advice; and I dare now to counsel any young and able man among you, that to spend a few years in such work is not only to give himself the best of intellectual training, but is also one of the best means of advancing himself and fortifying his position when by degrees he becomes absorbed in clinical pursuits and daily practice. I could point out in this country a few cases of brilliant success in practice, built upon reputations won by scientific labors, and I could call off for you dozens of names of physicians abroad whose splendid careers illustrate my meaning, and show that the most perfect practical skill is compatible with that form of mental discipline which is won best in the laboratory.

In thanking you, gentlemen, for the distinguished honor you have conferred upon me, I ought to add that since my stay in Baltimore I have seen the noble laboratories to which the wise generosity of Johns Hopkins's trustees invites the profession. I congratulate you warmly, I congratulate you honestly, on this opportunity put at the disposal of the young profession. When I wrote that the laboratory was and is one

of the best roads to preferment, I might have said that it is also one of the happiest, and I should have added, alas, that its pursuits involve the expenditure of more money than young doctors find it convenient to spend. I did not then imagine that I was to see among you this path to fame and honor opened so nobly wide that the poorest can enter in. I assure you that as I walked through these laboratories and saw with what splendid hospitality and to what opportunities you invite the young and eager investigator, I had but two regrets,—that I am not twenty-one, and that I was not born in Baltimore.

