regarded with great care and suspicion, if the child happens to inherit a tuberculous constitution, because tubercular meningitis is very easily provoked in such a child; that all head injuries, which are at all severe, are well treated by the old antiphlogistic method, aided by antisepsis (by this I mean reducing and quieting treatment, in various forms); that antiseptics have given us greatly increased advantages in treating scalp wounds, fractures of the skull, inflammations of the brain, extravasations into the brain, and tumors in the brain, from whatever cause; that there are certain very simple rules to be followed with regard to trephining — a few cases which are plain and apparent, such as direct, compressing fractures which are compound; fractures which are not compound, but still are compressing; and punctured fractures; that there is another class of cases where we trephine for clot, or abscess, where the diagnosis is a little more difficult, but still where there is a fair percentage of success; and, finally, there is a very large class of chronic cases, where we balance the probabilities, where we are encouraged occasionally to interfere by trephining, and encouraged especially by the fact that trephining is not the fatal operation that it used to be.

THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

BY JOHN T. G. NICHOLS, M.D., OF CAMBRIDGE.

MR. PRESIDENT AND FELLOWS OF THE MASSACHUSETTS MEDICAL SOCIETY: — The first article in the Code of Ethics adopted by this Society declares that "a physician should lend his influence to encourage sound medical education, and to uphold in the community correct views of the powers and limitations of medical science and art."

This Society has always held that education is the only source of a sound practice of the medical art. While it has fairly stated the powers of the art, it has not failed to speak of its limitations in plain and honest words.

Much as the Society has done in the past, the work is not finished. The war against ignorance and superstition is a never-ending one. This community guards its property with jealous care. The lawyer cannot practise his profession until he has passed the examination of the court. The pilot, who brings the merchandise of our citizens safely into port, must have proved his ability before the proper tribunal. Even the drain-layer must have a license, and presumably have shown his fitness for his work.

Not so does it deal with those who profess to cure the diseases of its people. The educated physician and the quack stand on equal terms before the law. Other States have passed laws which have driven out ignorant pretenders to medical skill. We have opened our doors to them. They have become so many and so strong as to prevent the enactment of a law to compel every one who claims to be a practitioner of the art of healing disease to prove his knowledge of its fundamental principles. What a comment on the good sense of our community in the closing years of the nineteenth century. The man who lays a drain must have a license; the man who deals with the health and lives of its people needs none!

[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 14, 1893.

The only explanation of such a want of common sense in a community so intelligent as ours, is that incorrect views of the powers and limitations of the medical art still prevail. Disease is still looked upon as the result of some malign force. Drugs are still thought to be the most efficient agents to cure it. The advertising pages of the newspapers are filled with promises of cure for all the "thousand natural shocks that flesh is heir to." The mails are flooded with circulars, the streets littered with hand-bills, relating wonderful cures of diseases which have baffled the skill of regular physicians. Money is freely expended in this business by men who look for a return from their investments. That it is a profitable enterprise is shown by its growth. While it is not new, it was never so extensive or so elaborate in its methods as now. Our patients, when they carry our prescriptions to the apothecary, see large stocks of these proprietary and secret remedies on his shelves. The great stores, where almost everything is sold, advertise "cut prices" on these goods. Grocers, even, display them by the side of articles much more tempting to the taste. How largely they are used this audience well knows.

The grosser forms of quackery which claim supernatural powers, finding their victims among the superstitious, who are not always ignorant people, I need not describe. This Society is not responsible for them, nor for the folly of those who resort to them. But when we consider the widespread belief in the community, that drugs are always useful, and generally necessary in the treatment of disease, we may well ask if we are not, in some degree, responsible for it.

Each generation is prone to think itself wiser than those that have gone before it. We admit the mistaken practice of our forefathers. We congratulate ourselves that the day of blood-letting, of mercurials, of disturbing medicines in general, has gone by. We see that faith in drugs, still so prevalent, was the lesson taught by the profession in those earlier days. Do the modern methods of treating disease justify the public in maintaining this belief?

I ask you to listen to some considerations upon the misuse of drugs at the present time; the limitations to their usefulness; and the powers of the medical art which have been gained from other sources than drugs.

It is often said that we do not give as much medicine as our fathers did. If this is true, it is not due to a want of material. We are told that Hippocrates mentions only two-hundred and sixty-five drugs in his writings.[2] The Pharmacopœia of this Society, published in 1808, includes the materia medica and its preparations and compositions in one hundred and seventy duodecimo pages. If we compare this book with the last revision of the United States Pharmacopœia, or with the last edition of the United States Dispensatory, we may well doubt the truth of the statement.

It is true that the Dispensatory includes many obsolete and inert drugs, but the list of medicines in daily use is many times longer than that of our early Pharmacopœia. Nor is it yet completed. The mineral, vegetable, and even the animal kingdoms are almost daily giving us new remedies. The chemist, by skilful synthesis, makes new compounds out of old ones. The pharmaceutist combines and offers in attractive and convenient forms the many drugs which the modern system of treatment demands.

[2] Encyclopœdia Britannica: Art. Medicine.

Our drugs have gained in power as well as in number. A large part of the old Pharmacopœia of our Society consisted of drugs of little power for harm. To produce any effect, the doses were so large, and so repulsive to sight, smell and taste, that the fortunate power of the stomach to reverse its muscular action often saved the patient from harm. Now the chemist has separated the active principles of drugs, giving us agents of great power for harm, as well as for good, in doses so small as to be easily taken. The art of the pharmaceutist has made them inoffensive to the taste. Copying the wisdom of the serpent, we inject them under the skin, beyond the power of a perhaps outraged nature to reject them. The minuteness of the medicinal dose of some of these active principles would have been called almost infinitesimal by the physician of fifty years ago. There can be no question that both in the number and potency of our drugs, we are far in advance of our fathers. So far, we justify the views of the community as to the importance of drugs.

In Article V of our Code of Ethics we read: "But a physician should lend his influence to establish a distinct line between the regular practice of medicine and the practice of quackery, and should avoid any act which might tend to weaken such a distinction either in the professional or in the public mind."

Do we observe this rule, or do we tolerate or even sanction methods of using drugs which violate it?

Until within a few years, new drugs were brought to our notice through regular channels. We read of them in reputable journals. Men, whose names gave weight to their opinions, recorded their experience of them. They were discussed in medical societies, and their power for harm as well as for good was fully and fairly stated. Pharmaceutists of good repute prepared them, and briefly advertised their readiness to supply them. The advancement of medical science, the improvement of the medical art, were paramount considerations. The distinction between the ways of regular medicine and quackery was so sharply defined that no one could mistake them.

In these days, new customs have arisen. The pharmaceutist no longer contents himself with providing the profession with the drugs which its experience approves. He aims to direct the medical art. He proclaims the virtues of new drugs, ignoring their dangers. He vaunts the superior qualities of his own wares. Imitating the business methods of his quack rivals, he scatters his circulars broadcast among the profession, containing promises of cure and certificates of results which would do credit to the advertising agents of the rival Sarsaparillas. Let me read a specimen of the therapeutic literature which they so freely bestow upon us:

"When Papoid is applied to the diphtheritic membrane, four distinct though allied effects are observed. That it seems to have a penetrating property which is exerted with such rapidity that when once really applied no amount of washing of the parts will remove it.

"That in a few hours the membranes are dissolved or detached, and do not re-form, because

"The bacteria of the disease are also destroyed.

"The formation of the specific poison or 'toxalbumen' of diphtheria is arrested, and abnormal bodily temperature falls.

"The removal of the morbid growths from the throat relieves at once the embarrassment of respiration, and in a large majority of cases a complete cure is effected."

Many other useful properties of this medicine are set forth. The inferiority of pepsin is asserted. Not to be outdone by the quack, the case of a "blind ischio-rectal fistula of twenty years' standing" is related:

"This case had been operated upon repeatedly, and treated by some of the best men in the country. All treatment had failed. I had operated upon and treated the case for about a year, and had given it up as one beyond my ability to manage. What I am about to state may seem somewhat startling, but it is none the less true. After proper preparation of the fistulous tract, one injection of Papoid effected a cure."

Here the writer's conscience seems to have pricked him, for he adds, "At least it has been well for about two months."[3]

Having, by such means, brought us into a state of "expectant attention," he follows up his communications by a personal interview. His agents, men who have some knowledge of medicine if he can get them, enter our offices with the assurance of "drummers" in a country grocery. We are treated to long lectures on therapeutics if we will listen to them. Samples are spread upon our tables until our rooms look like the commercial travellers' apartment in a hotel. We are told of the good results their remedies will secure; that we cannot afford to be without them; that our neighbors have ordered a supply; and that, if we do not wish to be behind the times, we must also give them an order.

Leaving a sample for trial, a two-ounce bottle of cod-liver-oil emulsion, perhaps, they depart, to be followed in quick succession by their rivals, who extol the virtues of their own preparations, and point out the defects of those of their predecessors.

There is one striking feature both of their literature and their lectures. Their medicines are always successful. A few days ago, I called the attention of the agent of one of the oldest firms in the country to this fact. "We have no use for unsuccessful cases," was his frank reply.

Not satisfied with copying the methods of the quack, they imitate those of the educated physician. So-called medical journals, marked sample copies, come to us with the regularity of those we pay for. They contain a few articles of merit, copied from some regular journal, but consist almost entirely of advertisements and testimonials recommending the medicines of some manufacturing firm, "A splendid remedy," "A grand combination," "I would not be without it for any consideration," "Send me a dozen bottles." Who does not know this yellow-covered literature of modern medicine?

But these enterprising business men do not stop here. Their money buys the advertising pages of some of our best journals. Let me read some specimens of their art:

"PONCA COMPOUND. Uterine alterative. Exercises a specific alterative action on the uterine tissues, a general tonic influence on the pelvic organs; has a tendency to absorb plastic deposits, to regulate the vascular supply, to relieve congestion, to tone up the nerve forces, to encourage persistalsis of the bowels, and to remove spasmodic conditions. 100 tablets mailed on receipt of $1.00."

"FEBRICIDE, the only complete antipyretic of the materia medica. It sustains the patient, it reduces the temperature, it kills the fever. A restorative of the highest order. A powerful anodyne. Invaluable in malarial dis-

[3] Papoid Digestion, etc. Johnson & Johnson, manufacturing chemists, 92 William Street, New York.

eases. A positive remedy for rheumatism and neuralgia. A specific for *la grippe* and pneumonia. The national antipyretic."

"Dr. Borst's PYROLIGNINE, the new 'wood tar' product. Antipyretic, anodyne, nervine. Reduces temperature. Subdues pain. Restores nerve power. No secondary effects. A remedy of pronounced value in acute inflammatory fevers . . . and all affections in which fever, pain and restlessness, alone or combined, are to be governed."

"LIQUEUR DE LAVILLE. A prompt, tried and infallible specific for gout in all periods of the attack. Dose, one to three teaspoonfuls daily. Professor Brown-Séquard, at a meeting of the Paris Society of Biology, October 15, 1887, said: 'Laville's well-known remedy acts marvellously well in gout, in witness of which I cite the following circumstance which occurred under my own observation. Dr. Fleury, of the French Faculty, and also author of several works on hydrotherapy, had an attack of complete paralysis of the right side, with anæsthesia and aphasia. Precursory symptoms having appeared on the night before, he directed that in case he would be unable to read or write, a large dose of Liqueur de Laville should be given to him, provided I saw no objection to it. I assented. Two hours afterward, all symptoms of paralysis had disappeared."

Thinking it worth while to investigate this remarkable preparation, I wrote to the firm advertising it, for its formula. The answer was as follows: "We are sorry to say we cannot give you the formula of 'Laville's Liquor' exactly; have been informed that it contains colchicum and colocynth; from practical experience we know it to be a very useful remedy for Gout and Rheumatism."

"WHEELER'S TISSUE PHOSPHATES. . . . As reliable in dyspepsia as Quinine in ague. . . . It renders success possible in treating chronic diseases of women and children, who take it with pleasure for prolonged periods, — a factor essential to maintain the goodwill of the patient. Being a tissue constructive, it is the best general utility compound for tonic restorative purposes we have; no mischievous effects resulting from exhibiting it in any possible morbid condition of the system."

"'To lessen the fever and strengthen the heart is the first duty.' — *Fothergill.* FEBRINA TABLETS lessen the fever gradually with absolute safety. CACTINA PELLETS strengthen the heart safely with absolute certainty."

These quotations are not taken from the Sunday newspapers, as you might infer, for nothing in those papers exceeds them in impudent claims to marvellous powers. They are copied from the advertising pages of a single issue of the *Boston Medical and Surgical Journal.*[4]

Made bold by success in this field, one firm has thrown off the mask, and asserts its claim to lead in the art of medicine. In an advertisement in the same journal, we read:

"In medical practice there are many 'hard questions' arising daily. The busy practitioner is settled in his own mind. Frequently, however, he has not analyzed the reasons leading to his conclusions. *Merck's Bulletin* does the thinking, the analyzing, the proving. It gives him a reason for the faith that is in him. It covers the entire field. . . ."[5]

It is not so strange as it appears that our community does not discriminate more carefully between the educated physician and the charlatan. Such material as I have brought to your notice may be, and doubtless is, used with good effect by the quack. Laid before a committee of our legislature, when a bill to regulate the practice of medicine is before it, I cannot wonder that the report is, "inexpedient to legislate." By tolerating such methods we endorse them, and thus violate both articles of our Code of Ethics, from which I have quoted.

As to the conduct of our medical journals we have the remedy in our own hands. It may be that the editors cannot control the advertising pages. It may be that the publishers would lose money, if such advertisements should be excluded. The subscribers can make an effective protest, if they choose to do so.

Let me not be understood as condemning all advertisements of drugs, or all communications of the pharmaceutist to the physician. There are some firms whose publications are always welcome, because they are not inspired solely by the desire for gain. But there can be no question as to the evil effects of such methods as I have named.

According to Hippocrates, the medical art began with the discovery that food which is good in health is hurtful in disease: "For the art of medicine would not have been invented at first, nor would it have been made a subject of investigation (for there would have been no need of it), if, when men are indisposed, the same food and articles of regimen which they eat and drink when in good health, were proper for them, and if no others were preferable to them."[6]

Observation and experience soon led to the use of drugs. But then, as in the day of Hippocrates, and at the present time, "experience is fallacious, and judgment difficult." The great master dispelled the clouds of ignorance and superstition which had so long hindered its progress, and placed the art of medicine on the secure foundation of accurate observation and sound deduction. He recognized the healing power of nature as the corner-stone of our art. He taught the self-limited nature of many diseases. The crude humor became concocted in due season, and at fixed periods was expelled by various channels. While drugs were of use at certain stages, the critical discharge could not be interfered with safely. To remove the cause of the ailment, to put the sick man under the most favoring conditions for recovery, were the essentials of his practice of the medical art. Drugs held a subordinate place. In his reports of cases, which would serve as models for the medical writer of to-day, hardly any mention is made of treatment. Had the successors of this great man followed in his footsteps, the art of medicine would be as near perfection as our knowledge would allow.

But the inductive method was too slow in its movements. Theory soon gave birth to systems of medicine, which, ignoring or undervaluing the power of nature to heal disease, asserted the curative action of drugs. One theory flourished, soon to be overthrown by another, differing from it only in the kind of drugs, or the mode of using them. At intervals a man appeared who tried to lead his fellows into the ways of rational medicine. Sydenham revived the inductive methods of Hippocrates, and impressed upon his age the doctrine of the vis medicatrix naturæ, and the duty of the physician to follow its teachings. Again, systems, the offspring of theory, pass in quick succession across the stage of history. One of these, fantastic in its conception, exceeding all others in its reliance upon drugs, survives and flourishes at the present day. Always having its strongest supporters among the educated

[4] August 11, 1892.
[5] September 1, 1892.

[6] The Genuine Works of Hippocrates (Sydenham Society), vol. i, p. 162.

classes, its success was, and is, a protest against the use of powerful drugs in effective doses, in the present state of medical science. However strongly its patrons may declare their belief in the efficacy of its infinitesimal doses, their common-sense teaches them that the tenth attenuation of nux is safer than the thirtieth of a grain of strychnia.

The discourse of Jacob Bigelow, read to this Society nearly sixty years ago, and the work of Sir John Forbes on "Nature and Art in Disease," marked a fresh revival of rational medicine. This Society took a prominent part in this movement. From this platform have come protests against the abuse of drugs which have an application to the present day.

For many years after this revival, the rational method of treating disease was the prevailing one in this community. As defined by Bigelow, whose discourse above mentioned did so much to establish it, it "recognizes nature as the great agent in the cure of diseases, and employs art as an auxiliary, to be resorted to when useful or necessary, and avoided when prejudicial." [7] Once more more our art was brought back to the path marked out by its founder.

(To be continued.)

Original Articles.

FORCIBLE CORRECTION OF ANGULAR DEFORMITIES OF THE KNEE, WITH A REPORT OF CASES.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

In any inflammation about the knee-joint, in which there is muscular irritation, the leg flexes; and if this condition be kept up for any length of time, the head of the tibia is drawn backwards, so that the normal relations of the articular surfaces are lost. The knee is flexed and the tibia subluxated backwards.

The cause of this double deformity lies in the direct insertion of the posterior thigh muscles, and in the method of application of the power of the Quadriceps group.

At times rotation of the foot and leg outwards is seen in connection with these other deformities. This is probably due to the fact that the Biceps tendon is inserted far out upon the head of the fibula, and consequently has a longer lever upon which to act than the inner Ham-string group, which antagonizes the Biceps in rotating the leg.

The treatment of these deformities by means of force suddenly applied is not new; nevertheless, from a limited experience, I am confident that the method has received too little attention, and that patients are allowed to go without operation and to remain cripples, or else more serious operations are performed than is necessary. This lethargy undoubtedly is due partly to an incomplete understanding of the operation, but still more because of the faulty apparatus for such use which we have had at our command.

It is with the hope that by a free discussion here tonight we may arrive at a better understanding of the subject, that I present this paper, and offer the deductions which I have made.

[1] Read before the Orthopœdic Section of the New York Academy of Medicine in New York, May 19, 1893.

[7] Brief Expositions of Rational Medicine, by Jacob Bigelow, M.D., Boston, 1858, p. 27.

Clinically, as these cases are seen, they group themselves pretty definitely into three classes:

(*a*) Those that are seen during the acute or subacute stages of the disease, in which the deformity is maintained entirely by muscular spasm.

(*b*) Those in which there is complete bony anchylosis, as the result of extensive osteo-arthritis.

(*c*) Those in which the malposition is maintained by adhesions in or about the joint, as the result of old arthritic or peri-arthritic disease.

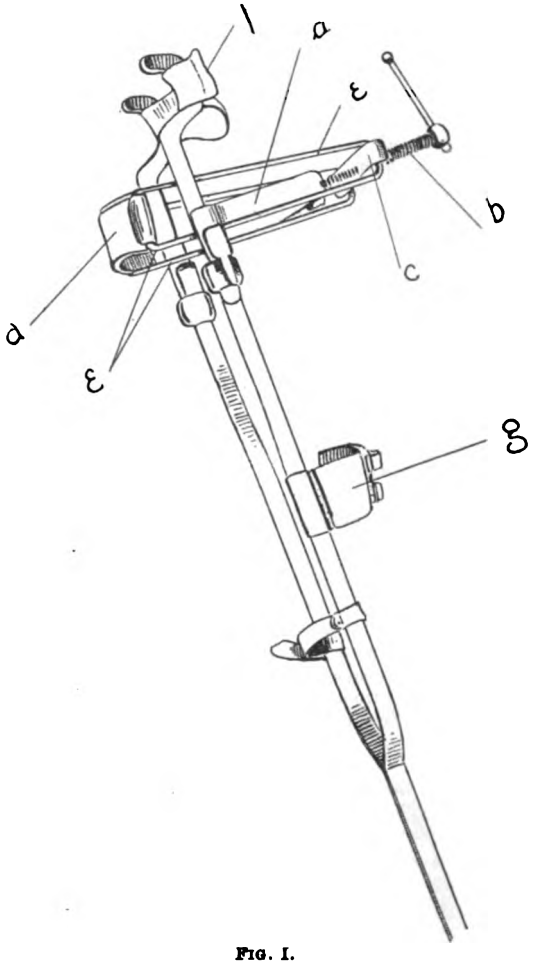

FIG. I.

The first two classes are dismissed entirely, as forcible straightening should not be considered in their treatment. In the first class simple continued extension, with complete immobilization of the joint, will be found to be all that is necessary; while, in the second class, some bone operation, such as excision or osteotomy, will be required. Forcible correction of the deformity in either of these groups would do harm. In the first, the acute trouble would be increased, while in the latter, fracture of the bones, with laceration of some of the soft structures would result.

The third class, which really represents the intermediate position between the other two, includes all of those cases in which the malposition is maintained by fibrous adhesions, without regard to the original disease, whether tubercular or otherwise. If the adhesions be slight, they can be broken up with the hands, and the deformity corrected; but if, as is usually the case, the adhesions be firm, the correction is a

Lecture.

THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

BY JOHN T. G. NICHOLS, M.D., OF CAMBRIDGE.

(Continued from No. 10, page 242.)

OF late years, the value of drugs in the treatment of disease has been asserted with increasing vigor. I have already spoken of the number of new remedies which have been brought to our notice of late years. I quote from an article on "Progress in Pharmacy," by John Aulde, M.D.:

"Alkaloids and synthetic remedies practically rule the field, and the pharmacist finds his sphere limited principally to preparing these powerful concentrated remedies into convenient forms for administration. It has been a decade of enormous progress, and the resulting disquietude of the transition period is not yet allayed. New remedies are introduced day by day, without a sign of abatement in the inventive and creative art of the chemist. . . . It is a safe estimate to claim that one hundred new remedies of synthetic origin, which were not known ten years ago, are now in general use, and the number is daily increasing."[8]

But it is not necessary to multiply authorities. One has only to turn over the pages of our medical journals to be convinced of the truth of this statement. New remedies are announced almost daily. We read of new uses for the same remedy, new remedies for the same uses, until we wonder, as the layman must, as he reads the medical advertisements in the daily papers, that our bills of mortality are still so high.

Have we reason to believe that we have made substantial gain in our power to control disease by this great addition to our list of remedies?

It was held by Bigelow and his supporters that most acute diseases were self-limited, and could be influenced only slightly, if at all, by drugs. "By a self-limited disease," he says, "I would be understood to express one which receives limits from its own nature, and not from foreign influences; one which, after it has obtained foothold in the system, cannot, in the present state of our knowledge, be eradicated or abridged by art; but to which there is due a certain succession of processes, to be completed in a certain time; which time and processes may vary with the constitution and condition of the patient, and may tend to death, or to recovery, but are not known to be shortened or greatly changed by medical treatment."[9]

Nearly sixty years have passed since these words were written. With all the activity in the study of therapeutics, with all the new medicines which have been added to our list, can this definition be disputed or materially changed? Certainly not, as far as the epidemic diseases are concerned which from time to time make their appearance with such fatal results. The fatality of the recent epidemic of cholera in Europe, amounting to about fifty per cent., shows no gain in our power to control it. The same thing may be said of yellow fever. If we have made any progress in our treatment of small-pox, it has been by following the methods of rational medicine, and trying to support the patient while the disease goes through its regular succession of processes.

Diphtheria is a disease which many of us still in active practice have seen in its commencement and spread. Its average death-rate of about one-third shows that no medicine has yet been found which can materially influence its course. On the other hand, when we examine the properties of many of the drugs which have had a wide use, we cannot escape the conclusion that the patient has often had to contend with the remedy, as well as with the disease. In a recent discussion in the New York Academy of Medicine, Dr. E. H. Janeway said "he had no doubt that a certain number of people, said to die of diphtheria, in reality died of the remedies given against the disease."[10]

Epidemic influenza tends strongly to recovery. Its results, immediate and remote, are determined by the constitution and condition of the patient. Various as are the drugs which have been given in this disease, good as are the results which have been claimed for them, there is no drug treatment upon which the profession is agreed as materially influencing it.

The result of the tabulation of one thousand cases of acute lobar pneumonia, treated in the Massachusetts General Hospital from 1822 to 1889, is thus stated by Townsend and Coolidge: Twenty-five per cent. of the cases were fatal. Treatment was heroic before 1850, transitional between 1850 and 1860, expectant and supporting since 1860. There is no evidence that the duration, length of convalescence or the fatality have been modified by treatment.[11]

Acute rheumatism is a disease, which if our art has not subdued, it is not for want of effort. To enumerate the drugs which have been used in this ailment would far exceed the limits of this address. More than once have sanguine hopes of a remedy been raised, soon to fade before experience. Of late years, salicylic acid and allied drugs have held the first place. It may be questioned if we have gained as much from them as many believe. These medicines relieve the pain, and lessen the fever more rapidly than any others of which we have knowledge. But relapses are more frequent than under other modes of treatment. The cardiac complications are quite as common as under any other treatment. They have no power either to prevent or to overcome the most dangerous symptom of this disease, hyperpyrexia. The duration as shown by length of stay in hospital is not materially lessened. The untoward effects of these drugs are common, often serious, sometimes fatal.[12] When we remember that these results are mainly drawn from experience in hospitals where patients are usually taken from bad, and put under good conditions, we must admit that the modern drug treatment is, at best, one of alleviation, and that this result is not gained without a considerable risk.

No drug has been found, even in the long list of synthetic medicines, which materially modifies the course or changes the result of typhoid fever. If figures are to be trusted, the only agent which may do this is cold water. If it be said that this is a drug, considering the use to which it is put, it is one which has no hurtful properties in itself, which can be safely, if judiciously, used, and which the pharmaceutist cannot utilize for purposes of gain.

The most trivial of acute diseases is coryza, com-

[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 14, 1893.

[8] Internat. Medical Annual, 1893, New York and Chicago, p. 565.

[9] Address on Self-Limited Diseases (Medical Communications of the Massachusetts Medical Society), vol. v, Boston, 1836.

[10] Archives of Pediatrics, March, 1893, p. 252.

[11] Boston Medical and Surgical Journal, January 27, 1889.

[12] A System of Practical Therapeutics, Philadelphia, Lea Brothers & Co., 1891, vol. i, pp. 968 et seq. A System of Medicine, Pepper, Philadelphia, Lea Brothers & Co., 1885, vol. ii, pp. 51 et seq.

monly known as "a cold in the head." Its diagnosis is easy, its natural history well known. Its local manifestations are within sight. If drugs have power to abort or shorten disease, we should find proof of it here. Belief in their power is abundant, evidence of it is wanting. The harm that has been done by attempts to influence this disease will not be questioned by any one who has seen cocaine poisoning, or has had to treat the cocaine habit. Aurists tell us that the massive doses of quinine often used, may set in motion a train of pathological processes which have fatal possibilities. If we cannot do a little thing with drugs, we may well doubt our power to do a great thing. If we cannot cure a cold in the head, let us be modest in claiming the power to cure diphtheria.

Turning to the subject of chronic diseases, the name itself implies the inadequacy of our art to shorten them. Cures for consumption have abounded in the history of medicine. Our own time has given birth to many, yet it is generally fatal. Cures for cancer, even, have not been unheard of, yet its prognosis remains unchanged.

Dyspepsia, which has been called our national disease, still maintains its foremost position, in spite of the use of pepsin (so large that some of the great meat-packing houses have found profit in putting it on the market), and the multitude of digestive ferments with which the enterprise of our pharmaceutists has furnished us. The pithy prescription of a member of this Society, long since gathered to his fathers, "drink the hundredth stroke of the pump before breakfast," and the still more comprehensive one of Abernethy, "live upon sixpence a day, and earn it," [13] have cured more cases of dyspepsia than all the pepsins and triferments of the druggists' circulars.

As we turn the pages of the mass of literature on nervous diseases, a sentence from the first aphorism of Hippocrates occurs to us: "Life is short and the art long." Studying the drug treatment of these disorders, we find little to convince us that the good it may do is not counterbalanced by its possible influence for harm.

Among the new drugs which have been brought into use of late years, those supposed to have a tonic or stimulant effect upon the heart hold an important place. In acute disease, as the heart shows supposed weakness, one, often several, of these powerful medicines are advised, while in diseases of the heart itself they find their greatest field of action. That they may often be of service no one will deny. That they may do harm, no one who studies their toxic properties can doubt. That their power for good is limited is at least suggested by the fact that, since their multiplication, "heart-failure" appears with increasing frequency in our certificates of the cause of death.

The numerous synthetic drugs, of which the most largely used are antipyrin, antifebrin and phenacetin, have wide applications in disease, if one may believe all he reads about them. Prof. H. A. Hare says of these three drugs:

"They have relieved an amount of human misery, resulting from painful manifestations of functional or organic nervous disease, which it is not in the power of the human mind to estimate, and this, too, in most cases, without any ill effects such as follow the opiates. . . . Nor have these products proved themselves limited to any one class of cases. They have proved a perfect wonderland of useful application, and there is certainly no drug ever discovered which is so universally applicable as antipyrin, the powers of which are almost as diverse as disease itself." [14]

[13] Physic and Physicians, Philadelphia, 1845, Part 1, p. 96.

The young practitioner, reading this statement by a teacher of therapeutics in a leading school, must feel that a panacea is almost found. Filling his pocket-case with these drugs, he goes on his way rejoicing in his power to relieve and cure. If he gives them to every patient who complains of pain, and attributes the relief to the drug, he will, for a time, be a happy man. It will not be long, however, before he meets with cases where the expected relief does not come. If he observes carefully and honestly, he will see harmful results in not a few cases. He is fortunate if he does not get thoroughly frightened by the effects of his remedies before long.

Let us examine the power of these drugs for harm. I take the facts which prove it from an essay by the same man who praises their power and safety so highly, to which was awarded the Boylston prize of Harvard University in 1890. I can give only a brief statement of the subject, referring those to the essay who prescribe these drugs without fear of consequences.

Antipyrin. 127 cases of untoward effects; 8 deaths; result not stated in 14 cases.

Antifebrin. 38 cases of untoward effects; 3 deaths; result not stated in 1 case.

Phenacetin. Three cases of untoward effects; no death.

Summing up these figures, there are one hundred and fifty-three cases in which the result is stated. Eleven were fatal, or about seven per cent. It is true that in most of the fatal cases the result was largely due to the disease for which the drug was given. It may be fairly said, however, that the chance of recovery was lessened by the disturbance caused by the drugs.

The serious character of the untoward symptoms recorded in these tables is shown by the fact that collapse, often described as "severe," "alarming," "profound," occurred in fifty cases; cyanosis in thirty-one; disturbance of the heart's action in eighteen; dyspnœa in nine; a purpuric state in seven. [15]

To determine correctly the effect of drugs in disease is one of the most difficult questions which the practitioner of our art has to meet. Experience is the source of nearly all the knowledge we have to aid us in answering it. Science has told us how some drugs, which experience has approved, produce their favorable effects; but the day of a scientific system of administering drugs has not yet arrived.

An accurate diagnosis is essential to trustworthy experience. Errors upon this point are the cause of many of the uncertain and contradictory conclusions which have been drawn from experience. Diagnosis is seldom easy, often doubtful, sometimes impossible. Having made a correct diagnosis, we must know the natural history of the disease. We cannot know the effect of a medicine in a disease unless we also know what will be its duration, the order of succession of its symptoms, and the probable result, uninfluenced by drugs. We must know the probable cause of the disease, for we cannot draw a fair inference as to the usefulness of a drug if the cause is still in operation. We must also know the action of drugs upon the system in health, and how to apply them correctly in

[14] International Medical Annual, 1893, New York and Chicago, p. 4.

[15] Fever: its Pathology and Treatment by Antipyretics, by Hobart Amory Hare, M.D., etc., Philadelphia and London, 1891.

disease. We have all these facts in very few cases; in many cases we have certain knowledge of none of them. Ignorance of any one of the factors of the problem gives a wrong answer. To assert the value of a drug in phthisis, where it has been given in a case of catarrhal inflammation of the lungs, to ascribe the improvement which nature effects at the crisis of pneumonia to the medicine given at the time, to proclaim the efficiency of drugs of which we know so little as we do of many of the new ones which are daily brought into use, are examples of the errors which make experience so fallacious. To give drug after drug, perhaps the very one which has caused the disorder, to a patient suffering from chronic poisoning by arsenical wall-paper, is mortifying to the doctor, and calculated to bring the art into contempt with the patient.

The constitution and condition of the patient must also be taken into account. The tendency to disease, hereditary or acquired, the power of resisting its causes, the influence of surroundings, must be known before we can judge correctly as to the influence of drugs.

Even if the mass of recorded experience was that of competent observers, the question is so beset with difficulties that the answer must be a doubtful one. But, especially of late years, those men whose opinions are most to be valued have not much to say about the use of drugs. As I meet such men in consultation, I find that while they are careful in diagnosis, painstaking in investigating causes, attentive to the surroundings of the patient, they are cautious about advising powerful medicines. I think most thoughtful men will say that, as they grow older, they put less trust in drugs.

But much of the so-called evidence in favor of the usefulness of drugs is drawn from the reports of men whose argument is *post hoc, ergo propter hoc*. Not careful in diagnosis, undervaluing the power of nature, influenced by authority or the fashion of the day, they are always ready to try new remedies, and quick to report their supposed successes. They do not apply this argument to their failures. Often they do not report them, in which case their testimony is worse than worthless; it is misleading and dangerous. Some, too honest to conceal the truth, report their unfortunate results, but ignore the possible effect of drugs in determining them, offering some plausible explanation of them. We often read something like this: Dr. —— has treated twenty-two cases of typhoid fever by a certain drug, with twenty recoveries. Of the fatal cases, one was moribund when the treatment was begun, the other died of perforation of the intestine. "There are some people," says Paget "who seem to have a happy art of forgetting all their failures and remembering nothing but their successes, and as I have watched such men in professional life, years have always made them worse instead of better surgeons. They seem to have a faculty of reckoning all failures as little and all successes as big; they make their brains like sieves, and they run all the little things through, and retain all the big ones which they suppose to be their successes; and a very miserable heap of rubbish it is that they retain." [16]

The average patient listens with much more interest to the prescription of his physician than to his directions about his hygiene. Expecting good results from the drug, he often imagines that he feels them. So great is the power of hope that, even in incurable diseases, a temporary improvement often follows each new prescription. This power of hope is one of the chief articles of the materia medica of the quack. It is sometimes used by the educated physician, who calls it "expectant attention." From a recent system of therapeutics I quote extracts from an article written by a professor of therapeutics in one of the leading schools of the country:

"The physician who fails to avail himself in disease of the 'expectant attention,' drops one of the most important articles out of his list of medicinal agencies. . . . When a resident physician in the Philadelphia Hospital years ago, in charge of a large ward of women, I habitually used a solution labelled 'morphine,' which contained none of that alkaloid, but just enough quinine to make it conform in taste to the knowledge of the habitués of the institution, and in three cases out of five it aided in bringing comfort and rest, as well as did the genuine morphine solution. Some time ago, I gave a patient, with very minute and emphatic instructions as to the method of use, a prescription for pills of bread. Several months after, she came back to me and said, 'Doctor, why did you not give me that prescription sooner? It is the only thing that has reached my case, and I have had that prescription filled at the apothecary's for a number of my friends, with extraordinary results.'" [17]

The pharmaceutists give us a hint as to how far this sort of teaching has influenced our art, when they offer us the means to carry out such treatment. Within six months, the agent of a large manufacturer of "tablet triturates" offered me "blank tablets." The name he gave them will interest many of this audience. It was "Harvard Experimental Diagnosis Tablets." Setting forth their value to me from a business point of view, he told me, untruthfully I hope, that he had just sold five thousand to a physician in my own town. There can be but one opinion among honest men about this practice. It not merely weakens the distinction between the regular practice of medicine and the practice of quackery; it destroys it; it *is* quackery.

The germ theory of disease is passing beyond its first stage, and is taking its place as a real addition to the science of medicine. It has rendered great service to the art by adding to the power of preventive medicine. It has not done much for the drug treatment of disease. If it is believed that infectious diseases are caused by germs, introduced from without, the inference that drugs which kill them outside the body may destroy them after they have got in, is so attractive that it has led to many experiments in this direction. Drugs of highly poisonous properties have been largely used with this end in view. That harm has resulted from these experiments there can be no doubt. There is good reason to believe that in the hands of men who make facts suit their theories, life has been endangered, and even destroyed, by the reckless use of these drugs. No efficient and at the same time safe drug is now known which can destroy the germ within the system. The efficient germicides are dangerous, the safe ones are uncertain. It is too soon to say what advances in the use of drugs may result from the germ theory in the future. It may be that disease will yet be prevented, or even cured, by injecting substances into the system which may kill germs, directly or indirectly. It may be, to use the words of a believer in this hopeful prospect, that "the future of scientific medicine is in this direction, and that we have entered upon a field

[16] Clinical Lectures and Essays, London, 1875, p. 74.

[17] A System of Practical Therapeutics. Philadelphia, 1891, vol. i, pp. 41, 42.

that is to be cultivated vigorously, and which will give you results that will knock the conservatism from under your feet before many years."[18] Conservatism always will be a solid foundation for the practice of medicine. The memory of tuberculin is too recent to allow us to forget that a great man may reduce his theories to practice prematurely, and so shake the confidence of the public in our art.

It is my belief that nothing has done more to encourage reliance on drugs than the narrow definition which is given to materia medica and therapeutics. How restricted this definition is, is well shown by a study of the examination papers in these branches, as printed in the catalogues of Harvard University, since the graded course in medicine was established. Of the 291 questions in materia medica, 288 relate solely to drugs. The exceptions deal with articles of food. There are 164 questions in therapeutics; 152 deal with drugs only. Of the twelve exceptions to the rule, six are on the use of cold, one includes cold baths among antipyretic drugs, four refer to diet, while one is hardly an exception, "Course of acute rheumatism if left to itself; how can you improve upon this?"

Thus the narrow definition is perpetuated, and the student is led to look upon drugs as the most important part of these branches of the art.

In its broad sense the materia medica includes everything which can cure or mitigate disease. The Greek word from which therapeutics is derived signifies to wait on, to heal. Treated in this larger way, materia medica would no longer be, what the instructor in this department in the Harvard Medical School says it now is, "a most dry and uninteresting subject, which offers almost no attractions, and is, for the most part, a mere matter of memory."[19] Giving its wider meaning to therapeutics, it would include private hygiene, as it ought to do. Hygiene is the mother of our art. Medicine, surgery, obstetrics, all the specialties into which these subjects have been subdivided, depend for their successful practice upon an observance of its laws. Why should it not be given the place it ought to hold, as the source of the most certain and most effective powers we have over disease?

In a recent publication, the instructor in materia medica and hygiene in the Harvard Medical School says: "The old-fashioned method of teaching materia medica and therapeutics is, or ought to be, a thing of the past. In the best Continental schools these subjects are taught in a manner quite unlike that to which we in this country have been accustomed. Their teachers are not necessarily men of large medical practice. Indeed, the best of them are not practitioners at all. Their time is engaged in the study of the action of drugs and other remedial agents, and this, with necessarily more or less of their application to disease, they teach to their students, leaving by far the greater part of the practical side to the different clinical teachers."[20]

There can be no question that the subjects of materia medica and therapeutics, even with their present limitations, have outgrown the capacity of any one teacher. So far as the physiological action of drugs is concerned, it is true that it is better taught by a man whose time is devoted to scientific work. It is a branch of physiology, and its results are as certain as those of any other branch of that science. But when the application of these laws is considered, we pass from the field of truth into the tangled paths of experience. It may be clearly proved that a drug will contract the blood-vessels of a frog; it is not so certain that it will have the same effect upon a sick man, or that, if it does, it may not hinder rather than help his recovery. It may be taught by the man of no practical experience that, in the forming stage of sthenic pneumonia, large doses of veratrum viride will remove the excess of blood in the diseased part, and by paralyzing the general vaso-motor system, bleed the patient into his own blood-vessels. He may add that when consolidation has taken place, "one grave danger is failure of power in the right side of the heart," and that "under these circumstances a cardiac depressant would immensely increase the danger."[21]

It requires the practical knowledge which comes from experience to teach that the first stage of pneumonia has generally passed before the patient is seen; that, even if the crepitant râle is heard, the deep parts of the lung may be solid; or that, if the case is seen in its forming period, and directions are given in accordance with this theory of treatment, consolidation may occur in a few hours, and the danger of the drug be "immensely increased."[22]

The clinical teacher deals with the question of drugs as applied to the cases that come under observation at the moment. He may not touch upon drugs which are fresh in the student's mind. His instruction must reflect his own opinions, which may differ from those of his colleagues. Great as is the advance which the art of medicine has made since clinical teaching has become so important a part of the course of study, high as is the character of this teaching in the Harvard Medical School, there is need, I think, in all schools, of a wise and experienced man to give instruction in therapeutics, and especially in the uses and limitations of drugs. He should be competent to weigh evidence, to sift the trustworthy from the unreliable, the safe from the dangerous. He should have attained the ability which Hippocrates commends when he says, "I look upon it as being a great part of the art to be able to judge properly of that which has been written."[23]

(To be continued.)

[18] Sternberg: Transactions of the Association of American Physicians, vol. vii, p. 86.
[19] Bulletin No. 4 of the Harvard Medical School Association, p. 62.
[20] Loc. cit., pp. 63, 64.
[21] System of Practical Therapeutics, Philadelphia, 1891, vol. i, p. 23
[22] Flint: Practice of Medicine, Philadelphia, 1886, p. 156.
[23] The Genuine Works of Hippocrates, Sydenham Society, vol. i, p. 407.

Original Articles.

A CONSIDERATION OF THE PARÆSTHETIC NEUROSIS.[1]

BY JOSEPH COLLINS, M.D., NEW YORK,
Instructor of Nervous Diseases in the New York Post-Graduate Medical School; Neurologist to the Demilt Dispensary, etc.

SOME two years ago, while attending the meeting of the Southwest German Neurological Society at Baden-Baden, my attention was attracted to a paper read by Dr. Leopold Laquer, entitled, "A Special Form of Paræsthesia of the Extremities." I remembered that we had seen a number of such cases in the clinic at the Post-Graduate School, and determined on my return to make a study of them with a view to their classification.

[1] Read before the New York Neurological Society, June 6, 1893.

cal departments of State Universities also received State aid in 1892 amounting to $40,500, which, if capitalized at 5 per cent., would be equal to an endowment of $810,000; making a total endowment of $1,421,214. There were 16,731 medical students in attendance.

"The theological schools report productive funds amounting to $17,599,979, and stated, at the same time, the value of their buildings and grounds was $10,720,860. They had 7,672 students in attendance.

"Technological schools report productive funds amounting to $13,229,940. These institutions received from State appropriations or municipal aid in 1891–92, $747,504, which, if capitalized at 5 per cent., would be equivalent to an endowment of $14,950,080; making a total endowment for schools of technology of $28,180,020. There were enrolled in the schools of technology 10,921 students, about one-third of whom were in preparatory courses. It will thus be seen that the endowment of theology is increasing at the rate of about two million dollars a year. The technological schools are well provided for, but medicine has scarcely raised its endowment, even at the most liberal estimate, to a million and a half."

Probably the available funds possessed by our medical schools are somewhat larger than these statistics show, but they give the proportions which are needed to impress upon us how little financial encouragment medicine receives. When we realize what a valuable factor the medical man is in the rapidly increasing development of the territory of a vast and prosperous country like ours, it seems as if his claims to receive encouragement should be listened to. He does not build railroads or organize society in new lands, but he is in the foremost rank of pioneers, with the complete equipment which our teachers can give him to-day, and he becomes a most valuable member of society. He protects the young colony from epidemics; without him State medicine could not exist, and States could not be provided on a basis which would ensure prosperity.

These ideas should be impressed upon our men of wealth and upon the State governments as well. In the meantime it is important that we should adopt as a principle in our new departure in education that the medical faculty should have personal control of hospital wards and management. Let this work begin in a small way at first, but with a view to future development. Such a change can only be brought about by a slow process of evolution. The sooner, therefore, the principle is recognized and adopted, the better. It is difficult for a prosperous school which has abundant opportunities for bedside teaching to realize this, but it cannot develop beyond a certain point until it has established its own independence.

I cannot help believing that in this direction lies one of the greatest avenues of development of our system of medical education in the future.

THE MISUSE OF DRUGS IN MODERN PRACTICE.[1]

BY JOHN T. G. NICHOLS, M.D., OF CAMBRIDGE.

(Concluded from No. 11, p. 264.)

LET us now turn to the brighter side of our subject, and consider some of the great advances in the art of healing in which drugs have had no part. The work which State medicine has done was ably presented to this Society four years ago, by one who has won an enviable distinction in this department. I shall draw my illustrations from those things that come home to us in our daily work.

The advance in knowledge that has come from modern discoveries in Biology has revolutionized the art of medicine in many of its aspects. The antiseptic method has so changed the practice of surgery and of midwifery, that some most fatal diseases, which to those of us now only in middle life, were frequent reminders of the limitations of our art, are almost unknown to the younger members of this Society.

Let us carry ourselves back in memory to the operating-room of the Massachusetts General Hospital thirty years ago. It was, I suppose, as complete in its appointments as that of any hospital of the time. Its surgeons were certainly the equals in knowledge and skill of those of any institution of its kind. Taking off their coats, from motives of economy, certainly not of cleanliness, the surgeons put on the garments reserved for their work, which had hung in a dark closet since they were last used. Stained and stiff with the blood of scores of patients, they were worn, perhaps, with something of the pride which a veteran soldier feels in the uniform that bears the marks of many a hard fought field. Instruments were taken from the cases, and used without further preparation. Sponges were washed in plain water, and used from case to case. Hands were washed in soap and water only. The patients were removed to the wards, to be a source of anxiety to their attendants until their wounds were healed. That this anxiety was justified the records of the hospital will amply prove. One of those surgeons in the annual address to this Society twenty-nine years ago, thus describes what happened after operations: "I remember the time, when after an amputation, or the excision of the breast, or a large tumor, it was the universal rule to bring the edges of the cut integuments together nicely with straps, compresses, and a bandage, with the full assurance of finding the wound nearly healed on the removal of the dressings. At the present day, however, such a result is rarely attained in city practice; union by first intention being, for the past twenty years, the rare exception."[24]

I need not draw the picture of the operating-room in the same hospital to-day. You are all familiar with it. The son of the man who wrote the words I have just quoted would tell you that the exception in 1864 has become the rule in 1893.

The use of dangerous drugs as disinfectants, and in protective dressings, was considered a necessary part of antiseptic treatment in its early days. Great harm, and even death resulted from their use in no inconsiderable number of cases. Now antisepsis has given place to asepsis. Heat has largely supplanted poisonous drugs, and the treatment of wounds has become much simpler and safer, and has lost nothing in efficiency. I will not weary you with illustrations of cases to which the surgeon of to day brings healing, where the physician of thirty years ago stood helpless, happy if he could give his patient an easy death.

The statistics of lying-in hospitals since the importance of cleanliness in midwifery practice was accepted by the profession, show how great a saving of life has resulted from the discovery of this truth, which was made and announced by Semmelweis, in 1846.[25] In the wards of the Vienna hospital in which students

[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 14, 1893.

[24] Recent Progress in Surgery, by J. Mason Warren, M.D., Medical Communications of the Massachusetts Medical Society, vol. x, No. iv, Boston, 1864.

[25] London Lancet, October 29, 1892.

had their clinical teaching in midwifery, the mortality averaged nearly ten per cent., while in those to which only midwives had access, it was less than four per cent. Semmelweis connected this difference in mortality with the fact that the students handled dead bodies, while the midwives did not. The discovery was made, the remedy was applied. The students were directed to wash their hands in chlorinated water before entering the lying-in wards. The mortality fell from over twelve per cent. to less than four per cent. in six months, and later, to less than two per cent. The principle of aseptic midwifery was found out. Its only advance has been in its details. Chlorine still maintains a high rank in the list of modern germicides. The profession was so blinded by theory that these facts, so plain that we wonder they were not at once accepted, were lost sight of. The literature of puerperal fever grew. The treatment by drugs was always ineffective, while the real cause was lost sight of in the many theories of its nature with which the books abounded. Semmelweis died before the truth of his discovery was recognized. Now it is proposed to build a monument to his memory as the founder of aseptic midwifery.

While we accord all honor to the man who found out the cause of puerperal septicæmia, and told us how to prevent it, we should not forget that an honored member of this Society first brought before the profession facts which should have opened its eyes to the truth. More fortunate than Semmelweis, he lives to see the correctness of his views acknowledged by all. In 1843, Oliver Wendell Holmes published his essay entitled "Puerperal Fever a Private Pestilence," in which he cited many cases showing that this disease had often followed the path of individuals, while their neighbors did not meet with it. He stated its infectious nature. He declared that a physician should cease to attend cases of labor if puerperal fever occurred in his practice; that he should not go from an autopsy to the lying-in chamber; and that he should keep himself scrupulously clean in his dress and person. These views were violently opposed by some, doubted by most, acted upon by a few. To show how theory sometimes treats facts when they happen to oppose it, I quote from the essay the words of Professor Hodge of Philadelphia: "The result of the whole discussion, will, I trust, serve not only to exalt your views of the value and dignity of our profession, but to divest your minds of the overpowering dread that you can ever become, especially to women under the extremely interesting circumstances of gestation and parturition, the minister of evil; that you can ever convey, in any possible manner, a horrible virus, so destructive in its effects, and so mysterious in its operations, as that attributed to puerperal fever." [26]

Let us narrow the illustration to a single disease. Not many in this audience can go back in memory to the time when croup was supposed to be a single disease. The sudden and noisy attack which strikes terror to the mother's heart, and summons the tired doctor from his first sleep, was looked upon as the early stage of what we know as membranous croup. All cases were subjected to the same treatment. Bleeding, mercury, antimony, were freely used. Hive syrup was a domestic remedy, which still survives in the Pharmacopœia under the name of Compound Syrup of Squill. If the patient lived, drugs got the credit. If he died, friends were comforted by the assurance that nothing had been left undone. That it would have been well if much had been left undone, no one who has seen a child in the collapse of antimonial poisoning will question.

More than fifty years ago, John Ware published his investigations on the natural history of croup. He showed that at least four diseases had been included under this name. One was so insidious in its onset that it seldom came under the notice of the physician until it was well advanced. Its diagnosis was not difficult. In almost all cases it could be determined by the presence of exudation in the throat. It was very fatal, and the treatment then in vogue certainly did no good, and probably did harm. A second form resembled the first in the character of the voice and respiration, but was distinguished from it by the absence of false membrane, and its almost certain recovery. The other forms, alarming in their early symptoms, had no exudation in the throat, and got well under simple treatment.[27] Time has confirmed these results, and bleeding, mercury, and antimony are things of the past in the treatment of croup.

Time will not allow me to pursue this subject further. The gain which our art has made from increased knowledge of the natural history of disease, cannot be overestimated. It has overthrown false and harmful methods of treatment, not by substituting others equally erroneous, but by leading us on to the solid ground of truth.

I have brought to your attention some of the ways in which, as I believe, we fail to uphold in the community correct ideas of the powers and limitations of the medical art. I have tried to set forth some of the limitations to the usefulness of drugs, and to point out the great advances which have followed a better knowledge of the natural history of disease. Let me not be understood as denying the good which drugs may do as aids to nature. The practice of our art would be dreary indeed were we wholly deprived of them. But that the great activity of the chemist and the pharmaceutist in these days is leading us away from the right path, I am convinced. The history of medicine is full of illustrations to confirm me in this belief.

It needs no argument to prove that the public does not judge our art correctly. Nor is it true to say that ignorance is the only cause of this false judgment. The public is neither ignorant nor unintelligent in most matters affecting its welfare. It is well to ask if we are not responsible, in some degree, for a state of things which we cannot fail to recognize. These words of John Bell may have an application to the present day: "I have also observed, that where there exist any very singular prejudices connected with our profession, they have first arisen among the profession, though now, perhaps, they are to be found only among the vulgar; and when there have been ill-reports among the vulgar concerning the practices of medical men, they are seldom entirely void of truth." [28]

What, then, can we do to correct the false views of the powers and limitations of the medical art which still prevail?

We should teach that disease is not caused by the laws of nature, any more than the injury that the

[26] Puerperal Fever as a Private Pestilence, by Oliver Wendell Holmes, M.D., Boston, 1855.

[27] Contributions to the History, Diagnosis, and Treatment of Croup, by John Ware, M.D., Boston, 1850.

[28] The Principles of Surgery, by John Bell, London, 1826, vol. I, p. 16.

artisan sustains from the breaking of a scaffold is caused by the law of gravitation. The law is beneficent; the harm comes from violating it. If we could live in perfect harmony with the laws of nature, it is not unreasonable to say that disease would be unknown, and the end of life as natural and as painless as its beginning. This ideal condition can never, perhaps, be reached, but just as far as we have made progress towards it, has disease grown less. We have not, and never shall have the power to change the laws of health, but we can increase our knowledge of them, and declare the absolute dependence of our art upon them.

Sure as is the penalty of the violation of nature's laws, there is one upon which our art securely stands. It is well stated by one of our great surgeons in these words: "After a part has been changed by disease, it tends naturally to regain a perfect state." [29] Certain in its action as is this law, plainly as its working may be seen in disease, it is not fully appreciated, even in the profession. It is not strange that the public should have incorrect views of it. Recounting the advances of modern surgery, a recent writer [30] speaks of the old practice of leaving ruptures of the abdominal viscera to the unaided efforts of nature, and contrasts it with the resources of modern surgery, quoting Billroth as saying that the *vis medicatrix naturæ* is a better physician than surgeon. With equal reason might we blame nature if she failed to cure a case of pneumonia left uncared for in the street. Nature, not the surgeon, heals the wound. The old surgeon could cut as skilfully and sew as deftly as the surgeon of to-day. Ignorance of nature's laws tied the hands of the older man; a better knowledge of them enables the modern surgeon to remove the obstacles from her path.

From the standpoint of the physician, the argument still holds good. Experience proves how little we can control disease by drugs. The results of modern study point out clearly the way by which we may hope to prevent it, or to aid nature in her attempts to cure it.

We believe we have discovered in a bacillus the cause of consumption. If the seed falls into good ground it brings forth fruit. If it falls upon stony ground it withers away. How hopeless a task it is to utterly destroy the seed, a glance at a microscopic slide of tubercular sputum will convince us. How to make the soil infertile is the problem we have to solve.

If the seed falls into good ground, and brings forth an hundred fold, we still can see the working of the healing power of nature. She tries to wall off the diseased from the healthy parts. She throws off the tissues which the disease has killed. She closes the vessels which the process of destruction threatens to lay open. She tries to close the gap which is left, and she does not cease her efforts while life remains. Sometimes she succeeds in arresting the disease, and a study of these fortunate cases indicates the way our attempts to aid her should follow. The most sanguine believer in drugs will find little in this study to strengthen his faith. Pure air, good food, all things included under the name of hygiene, are the only agents in which we can put our trust.

The Cambridge Hospital has wisely chosen for the motto on its seal, these words, — "Man tends, God mends." The truth they express will only be made clearer as science advances towards perfect knowledge.

The wise general never fights on the ground his enemy has chosen, if he can avoid it. The quack takes his stand on the power of drugs to cure disease. Here he is strong. He can use the argument of *post hoc, ergo propter hoc*, more effectively than the educated physician. Restrained by no considerations of truth or humanity, his promises of cure are marred by no ifs and buts. We cannot wonder that the public, comparing his ways with ours, and finding the points of likeness I have described, should so often choose the broad way he offers, rather than the narrow way which rational medicine indicates as the only path to health.

Every man, says Bacon, owes a debt to his profession. It is given to few to be the discoverers of great truths, but the humblest of us may do his part to raise our art to a higher level. Let us give to drugs their proper subordinate place, using only those which experience has proved to be safe. Let us do all that in us lies to aid nature in her work. Slow to accept praise for our successes, let us study our failures with candid minds, and report them honestly, that others may learn from them. So shall we lend our influence to uphold in the community correct views of the powers and limitations of medical science and art, and to make clear the distinction between the regular practice of medicine, and the practice of quackery.

In thus discharging the debt due our profession, we shall best fulfil the duty we owe our patients. The relation of the physician to his patient is a sacred one. The sick man puts his life in our hands. He follows our directions without question. We have no more right to experiment upon him with a doubtful drug, without his knowledge, than the surgeon has to perform an operation without his consent. The law protects him from the operation he does not consent to; the moral law alone guards him from the drug which may be more dangerous than the surgeon's knife. "The first great law in therapeutics is to do no hurt."

And, finally, to use the words of Jacob Bigelow, "the importance and usefulness of the medical profession, instead of being diminished, will always be elevated, exactly in proportion as it understands itself, weighs justly its own powers, and professes simply what it can accomplish. It is no derogation from the importance of our art that we cannot always control the events of life and death, or even of health and sickness. The incompetency which we feel in this respect, is shared by almost every man upon whom the great responsibilities of society are devolved. The statesman cannot control the destinies of nations, nor the military commander the event of battles. The most eloquent pleader may fail to convince the judgment of his hearers, and the most skilful pilot may not be able to weather the storm. Yet it is not the less necessary that responsible men should study, deeply and understandingly, the science of their respective vocations. It is not the less important for the sake of those whose safety is, and always will be, committed to their charge, that they should look with unbiassed judgment upon the necessary result of inevitable causes. And while an earnest and inquiring solicitude should always be kept alive in regard to the improvement of professional knowledge, it should never be forgotten that knowledge has for its only just and lasting foundation, a rigid, impartial and inflexible requisition of the truth." [31]

[29] Paget: Surgical Pathology.
[30] Rivington: London Lancet, April 1, 1893, p. 713.
[31] Medical Communications of the Massachusetts Medical Society, vol. v, Boston, 1836.