Address.

THE METHODS AND AIMS OF THE PHYSICIAN.*

BY EDWARD O. OTIS, M.D., BOSTON.

THE life of the active physician deeply interested in his profession is one so strenuous and exacting, and one which makes such insistent demands upon his time and strength, that there seems to be but little leisure and energy remaining to devote to general culture or to the development and practice of any favorite pursuit or wholesome pastime — a hobby of any kind — outside of his profession. He is in danger (and a danger I think it is) of merging in one both his avocation and his vocation, the man and the profession, of becoming a physician and nothing else, or, at any rate, of reversing the order, as Emerson gives it, of “first, man; second, citizen, and then doctor”; or of eliminating altogether the first two while devoting his energies to the last — the doctor.

True, it may be, that he is a very successful physician, and one of much reputation. That is the laudable ambition of all in the profession; but the cultured man, the man of broad sympathies and interests is unduly dwarfed. “Professional work of any sort,” says Osler, “tends to narrow the mind, to limit the point of view, and to put a hall mark on a man of a most unmistakable kind. On the one hand are the intense, ardent natures absorbed in their studies and quickly losing interest in anything but their profession, while other faculties and interests ‘rust’ unused. On the other hand, are the bovine brethren who think of nothing but the treadmill and the corn. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life.”

Of course, from the very nature of a physician's work, being so constantly associated with human life in all its infinite variety, he acquires a certain broadness of view and knowledge of human life which in a sense develops the man. He can never be as narrow as the recluse or mere scholar. Nevertheless, unless some time and effort are devoted to self-culture, physical and mental, one is likely to become “a more or less well-running medical machine,” and not “rise above the common levels of professional existence.”

Furthermore, the physician, in common with all other members of the community, has a duty as citizen, the second place in Emerson's triune doctor, “First, man; second, citizen.” He owes an obligation to the community in which he resides as well as to the state and nation of which he is an integral part. He is bound to do his duty as a citizen and contribute something in influence and effort to the welfare of his community. The opportunities for doing this are manifold and always at hand. For example,

in matters of public health, the physician is peculiarly fitted by his training to be useful.

It has come to be a common observation with us how, in many cases, the practice of medicine leaves its earmarks upon the physician, and so insidiously has this taken place, that he is quite unaware of it; and, moreover, these are not altogether pleasing or attractive stigmata. Like the dry-goods clerk, whose fingers unconsciously feel for the scissors in his vest pocket when away from his counter, so the physician may exhibit the shop habits which, as I have said, are not altogether attractive, outside of his office: the anxious look, the apparent inattentive attitude, certain inarticulate expressions of approval or dissent, the uncomfortable impression of always being in a hurry, and neglect of many of the fine little courtesies in intercourse with others are some of the common shop habits into which the physician may insensibly glide. In brief, it is carrying over into the general relationships of life the professional habits, the shop; the medical machine obscures the gentleman and dislocates his manners.

Again, in professional life itself one may be content with a very narrow and inadequate conception of what the aim of the physician ought to be. The lowest aim is simply that of acquiring as much practice as possible. In addition to obtaining the practice, the next degree is to acquire as much personal skill and experience as possible; and, thirdly, and the highest aim is, while endeavoring to acquire by all legitimate means the first two, to endeavor to contribute something to the sum of medical knowledge, to strive to render some return, however small it may seem, for the immeasurable contributions of those who have preceded him in the profession, and by which he is profited. No physician ought to regard his mental capacity and his professional equipment so humbly, or his opportunities so restricted, as not to think himself capable of doing some original work or following out some line of investigation. To spend a little time each day in thinking on new lines will develop the habit of originality, the zest for creating, if I may so express it, and stimulate independent thought. “The habit of trying to take new views of things,” says Dr. Weir Mitchell, “to regard nothing stated as beyond some one's bettering — perhaps yours — is, I assure you, a good plan.”

The experience and available opportunities of every physician will afford abundant suggestive material for such work. To verify or refute certain accredited or suggested methods of treatment or procedure, for example, through one's own carefully observed and recorded experience, is a piece of work of no mean value, and adds zest and interest to practice as well as relieves it of that monotony which inevitably sooner or later overtakes the physician who only follows the routine of practice and never goes beyond it.

The allegation has sometimes been made that the physician is less religious than other men;

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that, in common with those of other scientific pursuits, he is inclined to agnosticism or skepticism; faith comes hard to him; he has so constantly to do with the seen that it is hard for him to see that which is invisible.

That such is the fact, I can hardly believe, though the exigencies of his profession may prevent him from regarding outward religious ceremonies. "Doctors, if they are men," said Dr. Gordon recently in speaking to a company of physicians, "are in the sanctuary all the time." Of all men, the physician would seem to be in constant need of a sustaining power above and outside of himself. He is so frequently confronted with situations before which he stands helpless, that he must instinctively look above and beyond himself for strength and guidance. He must so often feel his utter helplessness in the presence of disease and death, and unless he recognizes an all-wise and overruling power, life must seem to him an inscrutable enigma, and the issues of life and death the mere play of chance. The great discoverer of mediate percussion, Laennec, "affords in his life," says Flint, "an instance among many others disproving the vulgar error that the pursuits of science are unfavorable to religious faith." "Atheism in any proper sense," says Dr. Emerson, "will seldom be the goal reached by the man before whose eyes the mysterious sacraments of birth and death, and all sad and tender relations of humanity daily occur, or who, by strong lens, extends his view into the hidden region where cells wander and divide and crystals form."

In making the plea for a broad and general culture in the physician, the objection may be urged, that his energies which ought undividedly to be devoted to medicine which to-day demands so much of its votaries, are dissipated, and by becoming better all-around men, we become less skillful and learned doctors.

A moment's reflection and a reference to the careers of physicians conspicuous for their professional eminence will, I am sure, show the fallacy of this objection. Diversity of mental occupation, change in intellectual activity, is quite as necessary as variety in physical exercise. No physician can concentrate his mind upon medicine the whole time without sooner or later becoming so "stale" that his mind loses its keenness of perception and ready power of analysis and synthesis. He must needs rest the medical thought center of his brain by giving it another form of exercise. Gladstone, as we know, had an incessantly active mind, and he maintained it in healthy working condition by a diversity of mental activities. It is said that when asked how he managed to be so constantly engaged in such engrossing intellectual problems and yet retain such vigor of mind, he replied that there was one road leading out of London which was straight and perfectly level, and he had observed that more horses fell exhausted in traveling this road than by the other avenues of exit from the city which were tortuous and hilly.

Let us call to mind some of the eminent physicians who were also more or less eminent in other departments of learning; Sir Henry Thompson was a distinguished special surgeon, and he also exhibited his paintings at the Royal Academy. Dr. John Brown, of Edinburgh, besides being a faithful and beloved physician, gave us those exquisite mosaics, "Rab and His Friends," and "Marjorie Fleming." Da Costa, in this country, gave the world perhaps the best book on "Medical Diagnosis" that has ever been written, and he was also an accomplished scholar, and in his charming address on "The Scholar in Medicine," he says, "It is the scholar through whom we are linked with sympathetic interests to other pursuits." The pre-eminent scholarship and learning, *general*, as well as professional, of Osler is an inspiration and example to us all. Dr. Holmes was a professor of anatomy and an original investigator of no mean repute, and we are all familiar with his literary contributions. Of an earlier period one can mention Boerhaave, Morgagni, Harvey, Watson, Trousseau, all scholars as well as eminent physicians. Doubtless we can recall men of our own medical time, who, while devoted to the highest ideals of their profession, were learned in some other department of human knowledge, science, literature, etc.

Let us now consider a little more closely and in detail the plan of the ideal physician's life, and, first and most important, his professional methods and routine.

Of course, the daily medical work will and should occupy the greater portion of one's time. Our avocation is the discharging of our duties to our patients with the best skill we possess, ever striving for greater skill, and with the fidelity of an acute conscience. But when this is done, we have not done all that our profession demands of us. In the remnant of time which remains, something in the way of professional advancement is required of us. To-morrow and ever to-morrow must find us possessed of a little more medical skill and knowledge than to-day. Some special investigation or research in that department of medicine which, for the time, has a special interest for us may occupy this remnant of time that I have previously referred to; or the reading of the recent medical literature in the journals or reviews, or some new book upon a subject which attracts us; or the works and biographies of the past masters in our profession may bring us wisdom and broadness of thought. Though new discoveries have introduced new and what we consider modern methods of investigation and treatment (though we shall discover that some of them are not so modern after all), yet the old masters, we must remember, possessed just as acute and well-trained minds as any of the modern investigators, and we can learn much, very much, from their acute and original way of observing diseased conditions and drawing conclusions. I have only to refer to Dr. Jacob Bigelow's "Expositions of Rational Medicine," published in 1858,

and "Nature and Art in the Cure of Disease," by Sir John Forbes, published a little earlier, to illustrate what I mean.

It is not only what a writer tells about disease and its treatment which is of value to us, but often quite as much his methods of thought and analysis; it is not only the thing done, but the mechanism by which it is done; not only the completed investigation, but the method of thought by which it was developed. Ambroise Paré's luminous experiments, John Hunter's original and varied investigations, Koch's incomparable discovery of the tubercle bacillus and his simple and lucid exposition of his results, all illustrate this.

No age has a monopoly of broad minds or original thinkers, although the thought material differs from one period to another.

Besides what is at hand for us in medical literature in our own vernacular, two other languages offer us treasures of inestimable value; namely, French and German. An easy reading knowledge of these two languages is not difficult to acquire, and a half hour daily with a grammar and lexicon, even without a teacher, will soon enable us to accomplish this, so that we can read medical German or medical French. At the present day no physician can aim at a high standard of medical excellence without the ability to read authorities in these two languages. Furthermore, a new language introduces us to a new world of thought, customs and traditions, and renders accessible the great masterpieces of literature of the respective countries. To read in the original Schiller's "Song of the Bell," "William Tell," or the "Piccolomini" is worth all the labor of learning the German language.

It is a legitimate ambition of the enthusiastic young physician to write something, to report an important or exceptionally interesting case, or series of cases, or a carefully worked out investigation, and whether or not one publishes such a piece of work, it is excellent practice to write it out, for there is nothing like writing to clarify one's ideas of a subject and enable him to present them in a lucid and logical way. "The use of the pen is, for many minds," says Mitchell, "needed to give definition to thought"; and Ruskin says, "The greatest thing a human soul ever does is to *see* something, and tell what it *saw* in a plain way." To acquire what is called "style" in writing—for without this style nothing either in medicine or other writing will be widely read—is of the utmost importance if one purposes to do much writing; but with practice, clear thinking and a definite knowledge of the subject, this can be attained—indeed, it finally almost comes of itself.

The working day is inexorably limited, and how soon the night cometh when no man can or ought to work, though many of us do encroach upon the hours of the night, when we can read or write without interruption. What time, then, remains, one pertinently asks, for general culture, literary pursuits or mental diversion? If we can do no better, we can follow the sugges-

tion of Osler and start a "bedside library" and "spend the last half hour of the day," as he says, "in communion with the saints of humanity." "A liberal education," he continues, "may be had at a very slight cost of time and money, well filled though the day may be with appointed tasks; to make the best possible use of your one or of your ten talents; rest not satisfied with this professional training but try to get the education, if not of a scholar, at least of a gentleman. Before going to sleep read for half an hour, and in the morning have a book open on your dressing table. You will be surprised how much can be accomplished in the course of a year." Osler gives a list of ten books which are admirable, but which naturally will not appeal to the taste of us all.

This list of Osler's is as follows: The Old and New Testament, Shakespeare, Montaigne, "Plutarch's Lives," Marcus Aurelius, Epictetus, "Religio Medici," "Don Quixote," Emerson, Holmes's "Breakfast Table" series.

As I have said, each one would vary this list somewhat according to his individual taste and liking. My list I should arrange something as follows: First, the Old and New Testament; second, Shakespeare; third, some favorite book of poems, as Tennyson, Whittier or Longfellow; fourth, some biography or autobiography, as, for example, that of Franklin, Boswell's "Life of Johnson," Hoar's or White's "Autobiography"; fifth, some portion of history which may for the time have a special interest for us; sixth, some book of travel or adventure; seventh, some favorite book of fiction, such as Scott, Thackeray, Cooper, Hawthorne, Mark Twain, "Lorna Doone"; eighth, "Don Quixote"; ninth, Schiller; tenth, Holmes's "Breakfast Table" series.

I used to know an austere old Calvinistic clergyman who told me that his pleasure and diversion came from reading Scott's novels through once a year.

Oftimes the physician will feel so weary and so mentally exhausted that he will gain the most refreshment from a good novel of action, like "Lorna Doone," or "The Three Musketeers," or find rest in the world of adventure such as Parkman or Prescott offers, for example, and so for the moment be transported to a new and strange world. For others under like circumstances, a familiar poem will soothe the nerves and cause "the cares which infest the day" to "fold their tents like the Arabs, and as silently steal away." Wadsworth's exquisite "Daffodils," and Tennyson's "Sweet and Low" will soothe the soul of any tired mortal and cause it to re-echo with delicious harmony.

"If reading affords us no more than innocent entertainment," says Georg Brandes,¹ "it is worth while in the wearisome and monotonous exertion of daily life"; and as the same author wisely concludes, "the books that attract us and hold us fast, because they are exactly suited to us: these books are the good books for us." But

¹ International Quarterly, January, 1906.

it is well to place alongside of this advice the equally wise words of Mitchell, who says, that "it is the law of the mental life that man grows to like what he does long enough and . . . if your choice for comrades are the master books of the world, you will in time find their company wholesome and attractive." "Like the best of earthly friends these great books are hard to capture. They repay the effort." "More than all," says Dr. Emerson, "busy though we be, don't spare to medicine all our reading time. Read about the heroes—our craft has been rich in them. We find in our dull road the shining track, and forget that we are footsore."

In common with all mankind, the physician needs some form of daily physical exercise if he would postpone to the extreme limit that degenerative period of life which sooner or later awaits us all, though not for us all at the Oslerian arbitrary age of sixty, I trust. For some, physical exercise may be obtained, to a partial extent at least, in the performance of medical duties: walking on our medical rounds; driving and sundry duties about one's home, gardening, for instance, if one practices in the country. For most of us, however, and especially for the city physician, some definite form of muscular exercise, as such, must be arranged for, if we would maintain "the energy of full vigor," and the kind of exercise will largely depend upon one's taste and inclination. For one person, horseback riding will be a favorite exercise. "A good rider," as some one has said, "on a good horse, is as much above himself and others as the world can make him." For others, there is bicycling, tennis, hand-ball, golf, or various kinds of work in the gymnasium.

I know a certain professor, emeritus, of the medical school, a man now over seventy and still active in his profession, who is a daily attendant at the gymnasium.

Still others will take their exercise in connection with some manual occupation, such as carpentry, wood turning, iron working, horticulture, etc. You remember the great Laennec set up a lathe in one corner of his apartment and amused himself in turning objects, and used to make his own stethoscopes. I have a colleague, a specialist of repute, who is a skillful worker in wood and iron.

Whatever the form of exercise decided upon, it should be taken regularly and under open-air conditions, or, at least, pure air.

Whether or not the young physician's work is a remunerative practice, or whether or not he has much private practice, he will find opportunity, if he is ambitious, in some direction of medical art or science for strenuous and unceasing endeavor, for he has entered upon the long race of building up his reputation and practice. He needs, therefore, a yearly vacation, a decided change, physical, social and mental, and the nature of this change will largely and must be largely determined by his inclinations and tastes.

"Claim your right to a vacation," says Dr. Emerson, "and drop medicine like a hot iron."

Your patients may grudge it you, but will reap their gain in it." For one person the forest depths are the most seductive, where one can fish, hunt and live close to nature. I know of a hard-working city physician who every year takes his fishing rod and gun, with some light literature, and buries himself for a month in the northern Maine forests, forgetting that he is a doctor, and telling those who ask his occupation that he is in the drug business.

To another, the desire for travel is irresistible. He yearns to see new and strange places and faces, to lead for a little while an aimless life and be only a looker-on of life's activities. For him the change of travel is the most diverting and fascinating. To see new sights by land and sea is inexpressibly refreshing. For the time being the old familiar life has gone and he revels in the new and strange environment.

Still others prefer to combine with the change some form of physical activity: a canoe trip, a bicycle or horseback journey, a mountain tramping excursion, a yachting cruise, on which one performs a good share of the work; a camera or botanizing trip. In the preface to his charming book, "Animal Snapshots," Lottridge says he has spent his vacations for years in the fields and woods photographing and studying animals of "fur and feather" in their native haunts; entering into their lives as much as possible in order to know their habits and wild ways; finding in this form of vacation an endless and ever-increasing source of both knowledge and enjoyment. "My ideal vacation," he says, and it is so true, "is one that affords healthful pleasure not only for the time being but for the remainder of the year; that furnishes something to which I can turn for recreation and enjoyment after the working day is over."

In whatever form one takes his vacation, the essential thing is to take it in the way you like, and to take it thoroughly, forgetting for the time both patients and medicine.

We owe it to our patients quite as much as to ourselves to take an annual change and return to our labors with that vigor and eagerness which rest and new scenes bring, and then are we in condition to do our best for our patients.

Thus far we have been considering the physician in his development as doctor and man. "None of us liveth," however well he may live, "unto himself," but each one owes a duty to our neighborhood and country as citizens. "Second, citizen," is Dr. Emerson's order, and he adds, "The town will be the better if he [the physician] feels the responsibility of citizen he owes to it."

The citizen of this republic too often forgets that he is an integral part of it and is under solemn obligation to do his duty towards it as an intelligent citizen. I remember hearing our present eloquent governor refer rather scathingly to a physician of his acquaintance who apparently recognized no civic responsibilities even to the extent of voting.

Besides voting intelligently, the physician, as citizen, should be ready to hold office if it

appears to be his duty so to do or if he believes that by so doing he can raise the standard of civic government, or carry through some needed reform in his own community or town. It may be in the capacity of health officer, a member of the school board, or of the city council or legislature, the trustee of some institution that he is called upon to serve. I know of a professor of a medical school who has been for several years a most valuable member of the legislature, where as a member of the health committee he was enabled to use his professional experience and knowledge for the benefit of the whole state.

Furthermore, the physician, from his extensive acquaintance in his community, and the regard in which he is held, is in a position to materially influence his fellow voters in securing wise and wholesome legislation. It is not, moreover, incompatible with a high degree of medical excellence, to attain also eminence in political life, as Virchow and others have shown us.

Outside of politics, there are innumerable opportunities in every community which will readily suggest themselves to the public-spirited physician, where he can be most useful. I know, for example, the superintendent of a state hospital who is a director of a savings bank in his city. Professor Welch of Johns Hopkins University is a conspicuous example of a man eminent in professional attainments who is also ready and always doing service to the community and state, being at the present time, as we know, president of the Maryland State Board of Health.

Let us, then, not forget to be citizens while striving to achieve a high standard of professional skill and reputation. A man is a man and a citizen from his birth, and one becomes a doctor later on. Let us, then, not permit our birth-right to be absorbed by our avocation.

In conclusion, a word as to the personality or individuality of the physician, that *tout ensemble* of characteristics and peculiarities which present us to the world as this, that or the other individuality, and through which we either gain its good will or repel its good-natured advances, and by means of which very largely we succeed or fail. Although one's personality is largely a matter of inheritance, temperament and early environment, and perhaps to a very considerable degree a fixed quantity, still it is susceptible of being polished, cultivated and freed from unpleasant peculiarities so that a pleasing personality may, to a large extent, be attained which is of inestimable value to the physician who is brought in contact with such a variety of other personalities.

"Look three times at the figure of the ideal physician to once at our poor copy of him," says our Dr. Emerson whose wise words I have frequently before quoted, and what kind of a personality would we have our ideal physician to possess?

First and foremost, he should be natural, act his own original personality so far as it accords with the characteristics and conduct of a gentleman. "Every man of true genius," says

Dickens, and it is true also of us who are only of the average, "has his own peculiarity." If one possesses a keen sense of humor, it is to be cultivated as a priceless possession; there is nothing like it to relieve the heavy burden of the daily task. Of what inestimable value was it to Lincoln, staggering under his almost insupportable burden; how often his "That reminds me of a little story" illumined a dreary and oppressive situation. A cheerful disposition, if it does not naturally exist, should be assiduously cultivated. An abundant optimism, the child of cheerfulness, gains us more friends than a too serious and severe contemplation of life. Good physical condition and a well-supplied appetite contribute very materially towards a cheerful, happy view of life. It is a common observation that a man of *embonpoint* is generally a more cheerful man than a thin one.

"Let me have men about me that are fat,
Sleek-headed men, and such as sleep o' nights.
Yond Cassius has a lean and hungry look."

"I do not know the man I should avoid
So soon as that spare Cassius."

"He loves no play,
Seldom he smiles, and smiles in such a sort,
As if he mock'd himself, and scorn'd his spirit
That could be mov'd to smile at anything."

Tact is another invaluable attribute, and if not a natural possession, much, nevertheless, can be done to cultivate it. I have known a most conscientious physician, with the highest ideals of professional work, fail in obtaining merited medical preferment because he was totally lacking in tact. When we analyze it, we see that tact is largely only a thoughtful and ready consideration of the feelings of others. It is the "putting yourself in his place."

The physician must be chary of much speaking, particularly when patients or colleagues come under consideration. Any reflections upon the conduct of a colleague from a one-sided statement of the case is unfair to him and derogatory to one's self-respect. Silence is a virtue which the physician needs to cultivate liberally. "He who holds his tongue for a minute," says an Eastern proverb, "is wise with the wisdom of all time." And yet silence may be carried to an excess and lead to misunderstandings, particularly when dealing with intelligent patients, and in consequence we may be unjustly and harshly judged. The truth is to be told, but gently and with tact, accompanied with all the expressions of hope that the case will permit. It is often difficult to maintain a true balance between tenderness of heart and firmness and insistency of purpose, both of which qualities are in constant demand in dealing with patients.

Sympathy is also another essential of the many-sided personality of the doctor, but not effusive or pretended. "Make-believe sympathy," says Mitchell, "is a false coin most easy of detection." Sympathy, moreover, costs in nerve strain and exhaustion, and as in everything else we have to give, we should not permit every one who is too lazy or weak to struggle

against his own misfortunes to "tap" us for it that they may indolently enjoy its solace. Familiarity with patients, either on our part or theirs, is always dangerous and is very likely to lead to the loss of respect on the part of the patient for us and our professional skill. "As a rule," says the wise physician, whom Mitchell quotes, "you will do well to let your patients be friendly, but be yourself careful how you make friends of them."

Withal, we must have infinite patience, and be possessed of what Osler so highly extols, imperturbability. "In full development," says he, "as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to all who come in contact with it."

And so, as we have seen, the physician must be many-sided. He must be very much of a man, very much of a gentleman, a great deal of a citizen and have his chariot ever hitched to the star.

"Who comprehends his trust and to the same
Keeps faithful with a singleness of aim,
Whose high endeavors are an inward light,
That makes the path before him always bright;
Who with a natural instinct to discern
What knowledge can perform, is diligent to learn;
Abides by this resolve and stops not there,
But makes his moral being his prime care;
Who doomed to go in company with pain,
And fear, and bloodshed, miserable train,
Turns his necessity to glorious gain;
In face of these does exercise a power,
Which is our human nature's highest dower;
Controls them and subdues, transmutes, bereaves
Of their bad influence, and their good receives;
By objects which might force the soul to abate
Her feeling, rendered more compassionate;
Is placable, because occasions rise
So often that demand such sacrifice;
More skillful in self-knowledge, even more pure,
As tempted more, more able to endure,
As more exposed to suffering and distress,
Thence also more alive to tenderness."

Original Articles.

TRAUMATIC DEFECTS OF THE SKULL. THEIR RELATION TO EPILEPSY. A CLINICAL AND EXPERIMENTAL STUDY OF THEIR REPAIR.*

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THE *Saturday Evening Post* recently said, "The main trouble with the man who announces a new theology is that he forgets his quotation marks." In a similar manner the medical man who thinks he has fallen upon a new idea usually finds he has been anticipated by some one wiser than himself. Often he finds his idea is not only old but valueless.

After spending considerable labor in elaborating a method for repairing skull defects, the

writer finds that in certain details he has been anticipated by the publication of the Koenig-Müller method of bone grafting. The first operation by the writer, after the method to be described, was performed in Lakeside Hospital, Aug. 22, 1900.

Before discussing the question of the repair of defects of the skull, it may be well to consider the conditions making such repair desirable. These conditions relate chiefly to epilepsy, the result of traumatism. They should include also periodical attacks of dizziness, headache, numbness, palpitation of the heart, etc.

To determine accurately the relation borne by traumatism to the production of epilepsy is by no means easy. Many grave injuries to the skull are not followed by epilepsy or ill effects of any kind. Sometimes manifestations of the sort are so long delayed that it is difficult to show that there is any relationship between them. Doubtless there are many cases of epilepsy following trauma in which the trauma has been forgotten.

That epilepsy may, and often does result from trauma, seems to be a universal belief. As bearing upon this belief the statistics of injuries to the head during our Civil War are of interest. Of 167 skull injuries, 23 or 13.7% are on the pension list as suffering from epilepsy. In the Franco-Prussian war there were 571 cases of recovery from gunshot wounds of the skull. Of these 25 cases or 4.3% developed epilepsy. If to the cases of epilepsy are added cases suffering from periodical attacks of dizziness, numbness, trembling, etc., the number is raised to 26.7%. The fact that epilepsy of non-traumatic origin usually develops early in life makes it highly probable that in these cases there is a causal relation between the trauma and the epilepsy.

In discussing traumatic epilepsy it must be borne in mind that the symptoms may result, not from injuries to the skull alone, but to the brain as well. They may result also from the formation of new scar tissue as well as from hyperostoses. The stimulus to attacks of epilepsy may also arise from irritation to peripheral nerves.

If the commonly accepted view be correct, viz., that epilepsy often follows skull injuries, the important questions before us as surgeons are five: (1) Can they be relieved by operative interference? (2) At what period should such operations be performed? (3) What class of cases are suited to operation? (4) What are the defects of methods commonly in vogue? (5) What operative procedures are best fitted to give permanent relief?

In discussing the first question, viz., the benefits to be derived from surgical interference, one is met at once by the unreliability of the statistics. The published experience of any one surgeon is too limited to permit of positive conclusions. The collected experience of different surgeons is widely at variance. Dougalls and Walsham formerly reported from 60% to 70% of cures

*Read at a meeting of the Boston Medical Library, Dec. 6, 1905.