

their physicians to go to the mountains, and to live on a farm, and to lead a healthy open-air life with plenty of exercise.

There is probably no factor which is so important in the successful treatment of a case of tuberculosis as rest. One great difficulty in this matter, however, is that the majority of patients and their friends, and indeed many physicians, have little idea as to what "absolute rest" really means. I have seen patients who told me that they were absolutely at rest, while the same patient was getting out of bed, walking to and from the bath-room, sitting upright in a chair, and in other ways using up strength and energy which he might have saved. I have seen physicians allow a patient to cough ceaselessly night and day, instead of giving him a sedative of some kind to check this cough, or trying to concentrate the coughing spells and the raising of sputum into a few definite periods.

Absolute rest, in my opinion, means that the patient is not allowed to feed himself, that all unnecessary movements are forbidden, and that codeia, or some other drug, is used to prevent coughing and to promote sleep, and finally that visitors are rarely allowed. Physical and mental rest are both essentials in the treatment of tuberculosis.

The Value of X-ray in Diagnosis.—I am glad to note that the physicians in Boston specializing in the x-ray have a very conservative attitude in regard to its value in the early diagnosis of tuberculosis. In other cities, x-ray evidence is far too often rated higher than that obtained from a careful clinical examination of the patient.

I believe that x-ray evidence is of great value but that it should always be subsidiary to a careful and painstaking examination of the patient, his lungs, his history, and particularly the constitutional signs and symptoms.

MEDICAL COMPETENCE AND HOSPITAL EFFICIENCY.*

BY FRANCIS D. DONOGHUE, M.D., BOSTON,

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COMPETENT medical services must be the main-spring of proper compensation.

* Read at the Fourth Annual Meeting of the International Association of Industrial Accident Boards and Commissions, at Boston, August 22, 1917.

At the risk of repeating, perhaps, some things that I have said before, I will endeavor to speak on hospital efficiency and medical competence. Many people might suggest that it would be better to speak of medical incompetence and hospital inefficiency, but we should take the bright side of the shield and as much efficiency as we have on the side of the shield toward us, and not look for gloom. Perhaps in the beginning, a consideration of the medical aspects of workmen's compensation law from the standpoint of a medical adviser may be timely.

In the first place, it is inconceivable to my mind how a Board administering an accident or injury law can get along without medical advice. I know that men can acquire wisdom. I know that men have acquired great wisdom, but to know medicine and its application to the things of industry without a technical training is absolutely impossible.

In the beginning of the law, we had as little medicine in our law as most states. The Board, in case of a dispute, could pick its impartial examiners. It could pass upon the reasonableness of physicians' fees; it could pass upon the adequacy of hospital treatment—all after the results were attained. The time the Board should have control—should have its finger in the pie—is before the results are attained, especially the bad results.

Not having any provision in the law, it is advisable to take the advice of a very distinguished (one of the few distinguished) Republican of the State of Texas, who once said, "What are we here for?" We are here to get out of the law all that is in it for the *injured workman*, and in getting out all that is in it for the workman, we get out all that is in it for the employer of labor and the best for the community. If it be a poor law, a good commission ought to stretch it to the cracking point. If it be a good law with a poor commission, it will have a poor result just the same. The application of common sense to the law is a necessary and desirable thing, and the commissioners and laws, which are burdened with legal precedents and the decisions of the House of Lords, will not accomplish nearly as much for the rehabilitation of the injured worker as the commission which has in mind that merely paying the man money is never adequate compensation, and that he is only properly compensated when he is restored to his proper place in the community.

In the absence of any direct prohibition in

the law, we should go the limit in cure and rehabilitation. In Massachusetts, in the absence of such a law, giving the Accident Board power, we have endeavored to build up, through a system of impartial examinations and by a study of hospital results in cases which come before the Board, a procedure which led first to examinations of cases by experts in the particular thing which the man claimed as his disability, and secondarily to treatment. It would manifestly be a joke to refer an arthritic spine or an obscure back injury to a general practitioner whose treatment consists of sympathy and liniments. Our impartial examiners examined on the basis of not only was the man still disabled when the case arrived, but had the case been properly treated before it arrived, had it been properly diagnosed before it arrived, and if still disabled, could it be cured. The proof of the pudding was the eating, and our men, our impartial examiners, began to make good on what they said could and should be done, and the insurance companies gladly stood for it.

With the increasing payments for medical and hospital expenses and compensation, the agents of some insurance companies are prone to seize upon some helpful point in diagnosis or treatment to "blackhand" an injured employee with a legitimate claim. Because a man is suffering from an ununited fracture received in his employment, and a Wassermann is suggested, which may even be positive, that should not be a reason for intimidation, or worse—misrepresentation as to his rights.

The objection to impartialists being paid by the insurance companies for the treatment of cases, under an agreement between all parties at a conference, is to my mind overbalanced by the positive good that comes from the rehabilitation of the man and his restoration to his place as a productive member of the community.

The various forms under which the Compensation Act is administered make it necessary for you to take the principles and apply them as best you can in the various places. The medical profession as a whole did not in the beginning grasp the importance of the movement which was instituted. Men here and there picked out the essence of the law and endeavored to put it into effect.

Medical competence:—can it be obtained through a free choice of physicians or can it be obtained under competent specialists' work?

In accident work you heard the results of

Dr. Clark this afternoon. If we had enough Dr. Clarks to go around, the problem would be solved, but we must take and we must utilize the instruments and institutions we have in hand because there is not enough money or enough time to furnish immediately what we actually need. The older men do not make the effort to grasp the salient points that are necessary in the treatment and rehabilitation of the workman or in the settlement of his claim. The work of the middle group—the family doctor, so called—who meet their patients face to face, is limited, but they can do most of the ordinary accident work if you consider that of the number of cases with which we have to deal, the trivial are the great percentage of cases. There should be some direct method by which the general man, who is a good, honest, conscientious man, could be supplied with the things he needs to remedy his deficiency. In other words, there should be trained consultants available under some form of administration, and there should be institutions for diagnosis and for checking up results. Those are essential with that type of man, and perhaps, with all men.

Shall we duplicate hospitals by having the insurance company or employers of labor again taxed for other institutions?

As has been pointed out by Dr. Codman, there is already in Massachusetts two hundred million dollars invested in plants for the purpose of cure. In addition to this investment, there is thirty odd millions a year appropriated or given for the treatment of the sick. Is that two hundred million properly handled? Is that thirty or thirty-six millions properly expended? Who knows; and is there any way to check it up before we duplicate these institutions, and spend another twenty or thirty million in trying to arrive at perfection?

Again this leads to the interesting question, should charitable funds be used for industrial workers, who carry insurance supposed to pay for medical treatment and care?

The small hospital, of course, has lack of equipment. It has a narrow staff, as a rule. They don't let anybody in and they resist anybody with an idea.

We had a case in the Accident Board, in which a man had been treated in a hospital and, in general, the diagnosis was made that he had an operative condition in connection with a Charcot joint. I sent an impartial examiner

to Fall River to see the man, and our impartial examiner said that the man could be remedied by a brace of a simple character applied to the leg, and that it was not a "Charcot." The impartial examiner was called upon to make good; he made a brace, and the man was relieved largely of his symptoms and got about on his feet, but the day after the hearing at which that was determined, the social service worker of that hospital went to the man and said that he must come in for an operation or he could not come to the hospital at all for any purpose; and that was a hospital that was supplied by the insurance company. Here was a case in which competent medical authority decided he could be cured, the Board said he could be cured, and the hospital said, "You must be operated or you don't get any treatment of any kind."

Small hospitals and general hospitals also have a disadvantage in that the men who have been treated by private practitioners, who are obliged to go into the hospital, are given not only the once over, but the once, twice and three times over. Whatever has been done for them, to the mind of the interne, has been wrong, and between what the man was told by his attending physician and by what is known as the "pup" in the hospital, his mind is somewhat upset, and he doesn't know whether he is going or coming for treatment.

Shall we permit, or have we got to permit that, and for how long? Injured workmen do fall down between the general practitioner and the hospital which will not give us adequate treatment.

Then there are a few large hospitals, and in this State they are good. They will be better and will do better work as times goes on—when the workman is taken into confidence more, and explanations made to him of the whys and wherefores of the treatment; and when he is urged to go back to work he will feel that he is not being urged to go back to work from a selfish standpoint, without regard to his own physical welfare. Dr. Clark has suggested that men go back to work, but under medical supervision; that a man should be provided to whom the injured man may turn with his trials and tribulations, who will explain to him the meaning of the things that may happen to him after he returns; display a little human interest, and if the company hospitals do that, as they do in Worcester and in Lynn, and as they do in some

measure in Boston, the old feeling that the employer is an enemy of the workman, will disappear, and coöperation will result.

A study of hospital results showed that hospitals are distinctly undermanned in practically every instance. In one of the largest hospitals in the Commonwealth, through the action of the Board by pressure, but without law, that hospital reduced the number of beds to each visiting surgeon from ninety-two to fifty, and fifty beds to a man giving part time is altogether too many, in my opinion, even today. The people who know most about hospitals have very little to say about them. The person who should know most about hospital needs and the efficiency of the hospital is the doctor, and the doctor is seldom a member of the trustees, and if he is a member, he is very often more concerned with other things than hospital efficiency.

In the program today, you were given a visit to the Massachusetts General Hospital, one of our largest and oldest institutions. You saw many things there. You saw a great plant. There is little in that famous Zander room, so impressive to you and me, which cannot be duplicated for small cost. The principle involved in every one of those motions can be made with a discarded bicycle, an old ladder, a few strips of plaster, a wheel tied onto the wall, an old rocking horse, etc., if you have somebody to put brains into it. The finest institution is not a substitute for medical competence, and you people who come from places where it is difficult to get these expensive equipments need not be discouraged, because these can be duplicated at very small cost,—almost no cost. The blacksmith shop, which you seldom think of in connection with a hospital, is a rare thing in a hospital, and most doctors who prescribe braces and mechanical things seldom take the trouble to go into the blacksmith shop, and very often they do not know if these appliances are properly made, but kick if a brace is inefficient. You further saw the place where the orthopedic men went into the blacksmith shop brace-making department and learned how to fit braces.

The low-back question is one which everybody has difficulty with, and the question arose this afternoon about a heart case. The question often arises about a back case, and sometimes it is difficult to decide whether a condition is an accident or an injury. Massachusetts has a personal injury law, and that personal injury law

means any injury which arises out of the employment. It has been construed liberally, and an "old back," especially when an employee has arthritis or old-fashioned rheumatism, that back when it is strained—and it may be strained by a very trivial happening—is an extremely difficult thing to cure unless adequate medical attention is given. Most of these cases, in my experience, except with some people from warm climates, during cold months, can be cured at a very much less cost than the cost of a hearing before the Accident Board, by braces and supportive measures, bearing in mind the patient's food, régime, and method of living. Here must be taught the need for selecting the kinds of foods and the elimination of food in addition to local measures. The time may come when in industrial centers hospitals will be provided for technical industrial cases. I do not believe that this is necessary today. I believe that the thing that is more necessary, as indicated this afternoon, and which I indicated last year at Columbus, is that it would be a time and money-saving thing if a man with a low compensation rate, with a family depending upon him, should be taken out and put on an industrial farm and allowed to work out his troubles to a greater degree of comfort, rather than to have the insurance company pay him money indefinitely, surrounded by conditions that obtain in certain parts of our great cities.

The next thing that I have in mind on the question of hospital efficiency is the rehabilitation of workmen, which has taken on a new significance. If we had a proper system in this country of workmen's compensation administration in all the States there would not now be the feverish effort to provide reconstruction hospitals for the wounded that are to come. Dr. Patterson this afternoon told that we had just as many wounded every day in the United States as will probably be in Europe, and we have no adequate centralized system of taking care of these men. The Massachusetts Legislature authorized investigation of how to rehabilitate the injured workmen, and it was turned over to the State Board of Education. They reported a bill to the Legislature calling for \$15,000 for social service workers, but no doctor and no nurse. I think that speaks for itself.

I was in California last week and I called on Mr. Pillsbury the chairman of the California Commission, who started right by being born in New Hampshire, and he told me that in Cali-

fornia they found there were hospitals and hospitals, and he at the last Legislature indicated a few of his ideas along this line, working for a change in the law. "There have been hospitals that were hospitals in name only, but in fact were mere bunk houses, rough and insanitary and inconvenient, and with a medical staff that consisted either of some youth who had just got his 'shingle' or some old broken-down practitioner who had not gotten anywhere. With the hope of putting an end to this condition, the Legislature, in Section 10 of the new Act, gave the Commission power to inspect and determine the adequacy of hospitals and hospital facilities supplied by employers, or by mutual associations of employees for the treatment of injuries coming within the provisions of the Act. Every hospital supplied by employers or mutual associations of employees must make reports from time to time to the Commission, on demand, giving account of their receipts and disbursements and services rendered to or for employees, and if, in the judgment of the Commission, the service or equipment of any such hospital is inadequate to meet the reasonable requirements of medical treatment contemplated by the Act, the Commission may, after notice and an opportunity to be heard, declare such facilities to be inadequate, and thereafter injured employees of such employer may procure treatment elsewhere, and the reasonable cost thereof shall be a charge against such employer; but if, after finding by the Commission of a condition of inadequacy, the institution shall be put in adequate condition with an adequate medical staff, the former finding may be modified or rescinded and the hospital be reinstated in good standing.

"It is worthy of noting that no part of any contribution paid by the employees or deducted from their wages for the maintenance of such hospital facilities shall be devoted to the payment of any portion of the cost of providing compensation prescribed by the Act. It will be lawful to assess employees for sick benefits, but the employer must himself contribute enough to the fund, at least, to pay for the care of all those who are injured in his service."

That is the law of California. That ought to be the law in every State; and if, as Dr. Brickley indicated in caisson workers, we struck before the effect, everywhere the number and causes of accidents would have to be reduced.

I want to say just one word before I point out

a few concrete cases. I think we should not encourage the establishment of reconstruction hospitals except in connection with some already organized institution. We have poor hospitals enough. We have undermanned hospitals enough. We have hospitals with inadequate facilities for treatment. The money that is expended for war work, if expended judiciously, and if the ground has been properly broken by the accident boards, can be expended to greater advantage along the line of perfecting the institutions we already have by providing them with proper equipment under conditions of war or peace. We have power plants, administrative buildings, wards, out-patient departments. Have you an orthopedic department in your hospital? Have you a blacksmith shop? Isn't it cheaper to pay for the establishment of an orthopedic department and a blacksmith shop than it is to go out and build a new building with underground connections?

The freedom of choice should not take in all the paths that were indicated today by Dr. Patterson. It should indicate only the path of righteousness, and accident work must be carried out by men who have something else in mind than what is in it financially. The men in Massachusetts appreciate that they owe a duty greater than the money. They have accepted reductions in fees and the hospitals have contributed their services at less than cost, to the end that the whole community might benefit from their result, because the lesson of medical efficiency that can be carried out under the Act with the opportunity to measure the time that it takes to cure will have a determining influence upon any form of social and health legislation that is to come. Until the compensation law is properly oriented, until the hospital units are properly systematized and organized, it is folly to think of the duplication of effort and utilization of millions of dollars more in health insurance without standardization. We have the way now, we have the machinery, and we know what ought to be done. The advocates of health insurance, which is bound to come in time, and ought to come in time, at this stage should work for standardizing of hospitals, the measuring of their output—not in the cost per day of milk, vegetables, and dressings, but on how many days it takes to put a man back to work.

(Dr. Donoghue then showed some slides.)

Original Articles.

RADIUM IN THE TREATMENT OF CARCINOMA OF THE BUCCAL CAVITY.*

BY ROBERT B. GREENOUGH, M.D., BOSTON.

[From the Cancer Commission of Harvard University.]

THE employment of radium in the treatment of cancer followed shortly after the discovery and description of the element by the Curies. The x-rays had already been used with more or less success in the treatment of disease of various kinds, including malignant disease, and the world was quick to appreciate the advantages of a source of radioactivity so compact and so continuous in its action as the radium salts. For weak superficial application the radium salts themselves are used, spread thin on a piece of metal and fixed with varnish. Applicators of this character, valued at from \$500 to \$2500, are in use in many clinics for treatment of superficial skin lesions, but are of little value in cases of carcinoma of the deeper tissues. For more powerful dosage the gaseous emanation which is constantly given off from the radium salts is used in preference to the salt itself.

Radium element is constantly undergoing disintegration, or decay, at a rate such that in seventeen hundred years a given amount of radium will be reduced one-half in quantity. This disintegration is accompanied by a discharge of particles from the atoms of radium which change their character in such a way that several different disintegration products can be recognized. Thus the first change is from radium element to radium emanation—a gaseous product which again changes rapidly to radium A, radium A to radium B, etc. The penetrating rays which are given off come from the disintegration products radium A, B and C, rather than from the radium itself or from its emanation, but as radium A, B and C are being constantly produced by the radium and are being deposited upon the tube or vessel containing the element, the radioactivity of a given quantity of radium remains almost, but not quite, a constant amount, the newly-formed deposited disintegration products nearly replacing the ones which are destroyed. The gaseous emanation, however, when removed from its source of supply, undergoes very rapid decay into radium A, B and C, and in four days is reduced about one-half in substance and in

* Read at a meeting of the Harriet Newell Lowell Society for Dental Research, November, 1917.