

The Diagnosis and Treatment of the Common Forms of Arthritis*

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THE latest statistics in England and Wales, including only those unable to work, show one million sufferers from rheumatic disease. The economic loss in sick time, lost wages and cost of treatment amounts to twenty-five million pounds yearly. In Scotland over three hundred thousand persons, i.e. six per cent of the total population of five million, require care for rheumatic diseases yearly and more than fifty thousand insured persons are totally incapacitated for an average of sixty days yearly. In Ireland rheumatism is responsible for the greatest number of insurance claims, the largest amount of money paid in claims and the greatest amount of incapacity of all the diseases, 295,000 weeks in the year.

In 1951 a survey by the Division of Public Health of the United States showed that probably 10,104,000 persons fourteen years of age and over believed that they had arthritis or rheumatism: 6,414,000 of these had been told by a doctor that they had arthritis or rheumatism. One quarter of the ten million persons had made significant changes in the amount or the type of work they were accustomed to do because of their rheumatic disease.

In Canada 65,000 persons were surveyed by the Dominion Bureau of Statistics in October 1947. It was calculated that rheumatic diseases accounted for 22.6 per cent of the total time lost by Canadian adults during that month. In a year Canadian workers lost 9,500,000 working days and \$54,000,000 in wages as a result of rheumatic diseases. Many more millions are spent on medical care and for the maintenance of invalids. The number of days lost from work because of the rheumatic diseases in Canada equals that of an army of 30,000 people all of them continuously unemployed. However, these figures include a great many of the benign types of rheumatism such as fibrositis, lumbago and "muscular rheumatism" which are not as significant as the crippling varieties.

When can one diagnose arthritis? In and about a joint there are extra-articular structures and intra-articular structures. The structures inside a joint are bone, cartilage and synovial membrane or capsule. A patient has arthritis when you have clinical or X-ray evidence that the internal structures of the joint are involved.

In traumatic arthritis the cause is found in the history, the disease is usually monoarticular, and the treatment is usually obvious; rest, often heat and the aspiration of fluid.

The term "infectious arthritis" is now limited to that type in which an organism can be demonstrated in fluid from the joint. This diagnosis should

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be kept in mind and if we suspect a very acute joint of harbouring infection, the organism should be isolated and appropriate chemotherapy promptly given.

Twenty-five years ago nearly all the forms of arthritis were spoken of as chronic infections but as the years went by and no organisms were demonstrated, the name was changed to rheumatoid arthritis. This is the greatestcrippler of the rheumatic diseases and is our major problem. Rheumatoid arthritis is three times as common in women as in men, it tends to start in the smaller joints such as those of the fingers, wrists, elbows and toes, usually in a symmetrical manner. However, it is often atypical and I believe that the commonest cause of swelling in a single knee joint, formerly said to be tuberculosis, is rheumatoid arthritis. It is an articular disease; that is, it involves the true joint. It is also an extra-articular disease, as shown by muscle atrophy; and it is a systemic disease, as we see by the loss of weight, tiredness, malaise, secondary anaemia and neurovascular changes such as cold wet hands and feet. Increased sedimentation rate and sometimes generalized glandular enlargement also indicate the systemic nature of this disorder.

As the cause is unknown we are forced to treat people on the basis of experience. There is no single cure. The first thing in the treatment of rheumatoid arthritis is the education of the patient. We, as physicians, have to tell patients what they are to expect, namely that this disease has remissions and exacerbations, that there are mild cases, moderate cases and severe cases, and that not all cases go on to a stage of invalidism; in fact, we can tell them that if they will follow a recognized programme of treatment they have a better than eighty-per-cent chance of maintaining their independence as individuals. We must also point out to them that they are not suffering from a disease of joints alone, but a systemic disease that has manifestations in joints. There are two main factors in treatment; the treatment of the systemic disease and the local treatment of the joint such as heat, exercise to prevent deformity, to keep the joint moving and to maintain the muscle bulk. The treatment of the systemic disease is rest. How much rest a patient will require will naturally depend upon the degree of activity of the disease. If it is very acute they should be in bed twenty-four hours out of twenty-four, if less so then eighteen or even twelve may suffice. When you tell a patient he has tuberculosis he will accept sanatorium treatment without any difficulty but when you diagnose rheumatoid arthritis he has not been educated about the rest programme, so it helps to explain in terms of tuberculosis and to point out the favourable results of treatment in that disease. When a patient with rheumatoid arthritis walks about with swollen inflamed joints he is unquestionably causing more destruction of cartilage in those joints. I will admit that rest can have harmful components. Nothing could be more disastrous than absolute rest in a position where most joints are flexed. It is much better to lie with joints extended in a position where one can move about. There is no conflict whatever between rest and exercise in the treatment of rheumatoid arthritis, but the exercise must be non-weight-bearing and non-aggravating in character when the joint is actively inflamed. What about the problem of local heat? Most of the beneficial effects of heat to a joint can be obtained at home with a hotwater bottle, with wax baths or with an ordinary infra-red bulb

Patients will ask you "What about my diet?" It is simply appalling what

rheumatoid arthritics have been told to do in the matter of diet; they have been fed the most amazing foodstuffs, their colons have been washed out with the most amazing fluids and these forms of treatment are fads. There is no anti-arthritis diet; there is no foodstuff that we know of that causes rheumatoid arthritis and there is no foodstuff that cures rheumatoid arthritis. It is, I think, bad public relations that we have not made it known that these fads are not helpful. There is no vitamin that cures rheumatoid arthritis; there is in fact no anti-arthritis vitamin, but if, after enquiry into the patient's diet, one finds the likelihood of a deficiency, obviously one is justified in supplementing the diet with the substance that is lacking. As a rule the diet for the rheumatoid arthritic is a high-caloric diet. Should he be overweight then the diet is a reducing one to relieve stress on his joints.

If the patient with rheumatoid arthritis has infection in his throat or has an abscess or an ulcer or any other type of infection, I feel it should be treated, but on its own merits, not as a cure for rheumatoid arthritis. This disease has not been shown to be an infectious disease, it has failed to respond to all antibiotics, and it has failed to respond to vaccines and other immunity measures. It is by no means proven an infectious condition.

Orthopaedic measures are essential in the team work of rheumatoid arthritis therapy, splinting of acute joints, straightening of flexion deformities, etc.

There are those pro and those contra on the question of gold therapy. The literature at the moment would tend to show that gold definitely has a beneficial effect on rheumatoid arthritis in a certain percentage of cases and that percentage is somewhere between fifty and sixty. However, gold is a toxic drug and, I think, should not be used unless the physician is prepared to take the necessary precautions, such as a white blood count occasionally and a urinalysis once a week. One sometimes sees dramatic improvement in cases of rheumatoid arthritis from gold salt therapy.

For twenty years Doctor Phillip Hench stuck tenaciously to the viewpoint that this is a reversible disease as shown by the fact that it gets better in pregnancy and it gets better in the presence of obstructive jaundice. It was not until 1949 that he obtained compound "E", cortisone, for trial. To me the year 1949 was the year of great enthusiasm. 1950, however, was a year of intensive investigation and we almost have to say that 1951 and 1952 have been years of disappointment. That is not a critical statement about cortisone and ACTH but stresses the fact that cortisone and ACTH do not cure. Cortisone will to some extent control rheumatoid arthritis; the pain goes and the swelling goes and the stiffness goes to some degree, but I think we must keep in mind that fact that no one yet has been cured and that symptoms will always come back. As a rule I would rather see a patient spend her money on a good housekeeper, go to bed on almost complete rest and get better on her own because when she stops cortisone she is likely to have multiple joint swellings, pain, and a rebound phenomenon that may be a little bit worse than what she started with. I do not want to criticize the use of cortisone. If one can get by with one or two tablets a day or even perhaps three a day it is often helpful, but if you give over 75 mgs. a day you are heading toward trouble. Cortisone is wonderful for reducing a deformity when one can maintain the improvement by physiotherapy afterwards. The treatment of rheumatoid

arthritis is by a team which consists of the internist, the family doctor, the orthopaedic surgeon, and such other people as the physiotherapist, the occupational therapist, and the nurse. I must say, that to me, in this field, the mobile units of the Canadian Arthritis and Rheumatism Society have been the greatest help that I have ever experienced. These units go to the housebound patients, teaching them how to maintain movement in damaged joints, how to maintain muscle power and prevent deformity. They keep patients walking or teach them crutch-walking.

Although rheumatoid arthritis is more common with patients with psoriasis than in the general population, typical psoriatic arthritis is a rather uncommon clinical entity. In this condition one sees inflammation of the terminal joints of the fingers and toes, associated with psoriasis of the nails of the involved digits. This type of arthritis may or may not co-exist with rheumatoid arthritis.

Rieter's syndrome is the triad of arthritis, conjunctivitis and urethritis, and there is sometimes associated with it dermatitis and enteritis. The prognosis is much better than that of typical rheumatoid arthritis.

The treatment of osteo-arthritis is fraught with considerable difficulty as far as cure is concerned. It is a degenerative type of arthritis which occurs in older people and in the larger joints namely the knees, the hips and the spine. All of us have some osteo-arthritis after we are forty or forty-five, but only about seven per cent have symptoms. The clinical picture is not that of a systematic disease but of a localized process in a joint. The changes are not atrophic as seen in rheumatoid but hypertrophic. The bone is more dense about the joint surfaces, there is loss of joint space, wearing of the cartilage and lipping, with the production of osteophytes at the margin of the joint. It is, I think, unfortunate that the term arthritis has been applied to minor lippings that occur in the dorsal spine, which actually are of very little if any significance. Patients with degenerative joint diseases do very well if they reduce in weight. Intermittent rest through the day, the use of a high stool in the kitchen for doing household tasks, etc., will take the stress off their joints. Exercise and local heat are also useful. If patients will carry out those simple measures of treatment they can protect their joints as long as they will need them, in most cases. When it comes to a severe lesion of the hip, we are rapidly changing to the Judet operation in which the head of the femur is removed and replaced by a metal head with a pin into the femur.

Ankylosing spondylitis or Marie Strumpell arthritis of the spine is a form of arthritis which has not been given the attention or prominence it deserves. Twenty per cent of young men suffering from low-back pain and stiffness will be found to have Marie Strumpell spondylitis. Ninety-five per cent of the patients are young men, they complain of low back ache and stiffness on rising from a chair or getting up in the morning, some vague aching in their thighs, not with a segmental or anatomical distribution, but just a vague aching in the muscles; then, as time goes on, a stiffness in the lumbar area, pain in the chest and perhaps limitation of a movement of the neck appear. Flattening of the lumbar area is an early sign. We do not know why this process starts in the sacroiliac joints, and it does not always do so. It attacks only the joints of the spine that have synovial membranes and there are only three types of true joints in the entire spine, the sacro-iliac joints, the posterior apophyseal joints and the costo-vertebral joints. In the more advanced case there is in

addition a forward protusion of the neck and dorsal kyphosis. Twenty-five per cent of cases of Marie Strumpell arthritis have involvement of peripheral joints as well as the spine. The final, though not invariable, picture includes calcification of the paravertebral ligaments, the so-called poker back or bamboo spine which occurs only in some cases. When we see a patient with Marie Strumpell arthritis it is worthwhile to tell him that very, very few patients go on to this stage of severe deformity with immobility of the whole spine and neck. Marie Strumpell spondylitis is usually a rather benign disease and most patients are greatly benefited by four or six weeks of rest on a flat bed with exercises aimed at maintaining and improving posture and chest expansion. In cases with persistent severe pain, X-ray therapy appears to give relief of this symptom in about seventy per cent of cases.

Now to consider another entirely different type of arthritis, namely gout. Gout constitutes the most commonly misdiagnosed rheumatic or arthritic problem. The reason it is not more often diagnosed is that we have not got the diagnosis of gout in the backs of our minds and I think another reason is that we have been taught to believe in the classical case like the one in the text book or cartoon, the old man sitting in the big armchair with his foot swathed in bandages and a very irascible look on his face. That is not early gout, that is late classical gout. Another reason we have missed the diagnosis is that we have been looking for gout in the great toe and the first attack of gouty arthritis occurs in the great toe in only sixty per cent of cases; forty per cent of the first attacks occur in a finger, a wrist, an elbow or a knee. One further thing is that we have been looking for tophi as a point of diagnosis and these deposits of uric acid are actually uncommon in early gout and only occur in about fifty per cent of cases even after twenty-five or thirty years of attacks of gouty arthritis. X-ray changes, so called punched out areas, appear only in twenty or twenty-five per cent of cases even after thirty or thirty-five years of attacks. Uric acid is often normal in the first few attacks of gout.

Early diagnosis is based entirely on history and I defy you to tell me anything else that behaves like it. The individual is feeling perfectly well when, suddenly, often in the middle of the night, he is hit by an excruciating pain in a joint, which wakes him up and by next morning he is unable to put his foot on the floor or unable to move the joint. The speed of onset in the major consideration whether the attack occurs in the afternoon, morning or night, though most of the attacks do occur during the night. The pain in gouty arthritis is, they tell me, beyond the bounds of the English vocabulary. Many people have attempted to describe it and Sydenham wrote perhaps the best classical description, "As if a dog were gnawing at his great toe". Wood Jones, the London anatomist, a great sufferer from gout, said: "After all, how does anybody know what it feels like to have a dog gnawing at his great toe?" He pictured the pain in this way, "As I lie in bed suffering from this intense agony of gout I look up and see a fly crawling on the ceiling and there I lie in the greatest apprehension lest that fly lose its hold on the ceiling and drop on my foot". A second point in the history is that the first attack lasts only three to seven days and disappears rapidly leaving the patient perfectly well until a year or eighteen months later when it strikes again. If we see anyone with an acute attack of arthritis of any kind we should think of gout and ask him if he ever had a similar attack before. Now here are the clinical findings: the colour, a purplish

red, and the oedema is greater than that seen in other forms of arthritis, and extends farther from the joint. The veins about the joint are engorged and the appearance is like that of cellulitis. The remaining point is that this is the only arthritis I know of where there is desquamation of the skin of the joint as it subsides. Usually, in about an average of around fifteen years, gouty arthritis tends to become chronic and then the pain is constant, and the deformities are persistent. Swelling in chronic gout tends to be nodular in character. It is not fusiform and smooth, as in rheumatoid arthritis, and the swelling consists of deposits of uric acid crystals. Gout constitutes between four and five per cent of all cases of true arthritis that we see in the clinics at Sunnybrook and the Toronto General Hospital. Helpful in diagnosis in addition to the clinical history and the physical findings in gout are the inciting factors—alcohol in various forms, trauma, surgery and infection most notably.

The treatment of the acute attack is colchicine; it has been used now for fourteen hundred years. It was first used by Alexander of Tralles in Italy in the year A.D. 600, and we still do not know how it works. It comes from the leaf, the stamen or the bulb of the ordinary autumn crocus and it is certainly specific for acute gouty arthritis, orally, or occasionally, if one wants very rapid action, intravenously.

A second class of gouty patients includes those who are beginning to have attacks more frequently and lasting longer, after perhaps seven to eight years of occasional acute gouty arthritis, often an attack every two to three weeks. These people are usually maintained on colchicine daily, in doses of one mgm. or even two mgms. a day for months at a time. Many of them will never have an attack on that regime. I have not said much about diet. The obese should certainly be reduced because obesity seems to play a part. Of course rest is important and the avoidance of precipitating events such as trauma and alcohol, particularly beer and wine. Then there is a third group who are sufferers from chronic tophaceous gout with destructive changes in the joints. For these cases we now have something which will help which came along only about a year ago, the best discovery as far as gout is concerned in fourteen hundred years. This is Benemid, a drug recently brought out by Sharp and Dohme. It is non-toxic and gives rise to an increased excretion of uric acid via the kidneys. Talbott and others have found that the gouty patient has a pool of uric acid of about 3,000 mgms. Normals have a pool of about 1,200 mgms. By increasing the excretion of uric acid in the urine with Benemid, it has been shown by radio-active isotopes, that the major pool can be reduced over a period of months and years to a normal level and I think one can safely say that the size of tophaceous deposits has sometimes been shown to have been reduced. I certainly have one patient in whom tophi have reduced in size. ACTH will help acute attacks, but is no better than colchicine.

The commonest form of acute or chronic rheumatism seen by a doctor in his office is probably muscular rheumatism or so-called fibrositis. The symptoms of this are aching and stiffness of the neck and around the trapezius area and the shoulders, or aching or stiffness in the lumbar area or in the gluteal area or in the chest wall. The patients are worse in the morning, but as they get moving they, as it were, work it off. They are worse in damp weather, they are worse in cold weather, they are worse in drafts or if they are chilled, they are worse when they have an emotional upset, and they are relieved

to some extent by heat, aspirin or by alcohol. This symptom complex has been called by Sir William Gowers in the year 1904, fibrositis, during a discussion of a problem of what he thought was lumbago. He considered it an inflammation of the lumbar muscles. Stockman in 1920 felt that it was infectious. He took biopsies and thought he saw round-celled infiltration, but this has not been substantiated and there is no evidence that the aching and pain that these patients have is inflammatory in origin. Then Sir Thomas Lewis said that the pain was the same as the pain of intermittent claudication, that is, chemico-physico-vascular, as seen in a muscle that is not getting enough blood supply. Elliott in England says it has nothing to do with that but is a nerve root irritation. Copeman feels that it is due to the filling of fat with fluid in indistensible fibrous tissue, and that distension of fat is giving rise to this pain. And lastly, Halladay feels that the whole thing is psychogenic, that the pain in the arm that some people suffer is their frustrated desire to sock somebody, that the pain in the leg is frustrated desire to kick somebody and that the pain of coccydynia is very simple of explanation because the tail is an organ of emotional expression in the dog. We have studied fibrositis for the last three years intensively and are quite willing to admit that in the largest group of people suffering from muscular rheumatism the basis is a psychogenic fault. In such cases we try to find out how the patient feels inside. I believe strongly that people can become sore and stiff from mental as well as from physical trouble. I will admit that it takes a little bit of time, but while you are taking a history from these people you will see that they are sitting on the edge of their chairs, wiping their hands, tense, unable to relax, tied in knots. Basically they just cannot relax. For years we have accepted in cardiology, gastroenterology, etc., the idea of functional disorders. The time has come when we must accept it as well in the field of rheumatic diseases, for, without any doubt, one of the commonest causes of stiffness and soreness that we see is mental conflict. This pain is not in the patient's mind, it is not imaginary and it is not hysterical. If you will dorsiflex your wrist for three or four minutes you will get such a pain in the extensor muscles that you cannot stand it. You relax your wrist and the pain goes away. The treatment is not physiotherapy but psychotherapy. One cannot change the personality of the individual nor usually their environment, but one can try to get them to change their philosophy.

Medical Education

AN INFORMAL STUDY

by

Arthur L. Murphy

MODERN medical education took form in the late nineteenth century. Since then there has been no other of the arts or professions in which discovery and development have piled so rapidly and solidly one upon the other. As a result, the healing cult while in true Hippocratic tradition teaching their children, have, through necessity as well as natural interest, remained students themselves. Only thus could they keep atune with current thought.

It would be reasonable to expect that, guided by such a group who are at once teachers and students, medical education would be the best organized in the land. This might be so were it not for the very fact which makes imperative this keen professional interest—the kaleidoscopically changing picture of medical knowledge. Law builds unflinchingly on the solid past: engineering progresses rapidly but, with a few exceptions, in orderly fashion. Medicine, like one of the primitive embryos it studies, is constantly dividing by fission, shooting out new buds here and limb anlagen there, so that in a short generation it metamorphoses.

The curriculum of the undergraduate medical school must be an orderly, standardized structure to permit the granting of a qualifying degree. It is small wonder that the change and variation it has been subject to plague the teacher and distress the student.

The prime function of education is to teach the individual how to learn. Complete realization of this ideal is possible only when the two main components, teacher and pupil, are also idealized. The teacher must be able to stimulate in his pupil the desire for knowledge and guide him in the means of obtaining it. The pupil must possess the desire to learn and the will to try.

This perfect combination is realized only in individual instances, even in the democratic world where free will is accepted as the basis of all teaching. Hence idealism must be tempered with dogmatism to fit the demands. Carried to extreme, dogmatism becomes indoctrination, a method of the communistic or, in other days, the Nazi propagandist whose desire was not to stimulate and promulgate learning but to command servile obedience to a creed. However, even in a free-thinking democracy an essential minimum of dogmatism must be taught to the student as a basis for his own thinking and practice. The shorter his available time for learning, the greater must be the proportion of dogmatism.

Education grows by increasing knowledge. Our primary school education in the early twentieth century was based on the three R's. History and geography were taught as well, but the stress was on reading, writing, and arithmetic. Through these last decades it has been considered wise to add new subjects to the curriculum, widening the field of the student. He is taught elementary civics, physiology, health, music appreciation, industrial art, gymnastics, and almost any subject which will give him a broader understanding of the world in which he lives. More learned in these diverse fields,

he may not know his three R's as well as his father did, although comparisons of present-day tests with old records suggest that he does. If there be a lack it is slight, and probably justified in his ability to think better as a result of his freer education.

As he progresses through junior and into senior high school the student's difficulty in learning all that is presented to him is becoming greater. In Nova Scotia, a few years ago, the grade nine course was lightened to reduce the shocking number of failures in the provincial examinations (the first standardized, province-wide test the student meets); and the grade ten course was then made lighter to overcome the same problem which soon developed at the end of that year. At present, the average student progresses uneventfully to the end of grade ten. But, as a result of the lowered requirements in nine and ten, the failure list in grade eleven is overwhelming. Even the grade eleven students who do successfully pass this unlightened year and go on to our local universities are met there, early in their first term, by the common professorial complaint that they are intellectually immature.

Nova Scotia, since before Confederation, has been renowned for her common school education. It would seem that before long she will be forced to follow the lead of other Canadian provinces in modifying her methods of teaching. Grade eleven will have to be lightened to make a normal step-up from grade ten, so that the average student can get his certificate and be encouraged to proceed to higher education. Grade twelve will fall from its present status of a junior college year to a preparatory period between high school and university.

Why, it may be asked, is the high school graduate of today considered immature as compared with his ancestors of two generations ago, who received the stamp of a moderately well-educated gentleman along with his B certificate?

There are several reasons, the first being no reason at all. It is a specific application of the age-old prerogative of elders to decry the work of their offspring. Other reasons are more real. The great increase in the proportion of our people seeking higher education is in itself worthy; but it means that the relative number of clever students is less, the percentage of mediocrity higher. The high school student of today, having begun his education at age five, instead of six or seven as was the custom two generations ago, is, in years, actually less mature at graduation. No doubt we have also raised our standards in the half century. No doubt, too, the myriad interests of a new way of life have distracted the would-be student from more worthy pursuits and left him fewer thinking moments in which to mould his own philosophy.

In the fourth century before Christ, Plato successfully repudiated the doctrine of totalitarian education taught by Nietzsche twenty-two hundred years later. To educate its free man ancient Greece offered the works of Homer, mathematics, music, and gymnastics—a course in format not unlike our Arts curriculum of today. Those seeking higher education went on to study the Sophists and philosophies. With the decline of Greece the Church became the repository of learning. It was not until the Renaissance and the Reformation that the common people again turned toward higher education, going back to the scheme of the Greeks, and adding to their basic group, science and experiment. Socrates had taught that the rightly trained mind

would inevitably turn toward virtue. Plato taught that the virtuous man, even if his worth went unrecognized in this world and the next, was still the happiest.

This philosophy could well have been adopted by Christianity, offering education as the means to happiness for everyone. Thus, it might have been embraced by the common man. But, in the centuries following the Renaissance, learning was presented as its own reward, unnecessary either for happiness or material gain. In the seventeenth century the responsibilities of the individual toward society were first stressed. In the nineteenth century these grew to a fruition which was expressed dually, both as an individualism and a socialism, with, unhappily, a dusting of materialism over all. Inevitably, the dogmatic method grew more prominent as the citizen was taught his obligations to society.

In the twentieth century has come a partial return to idealism with John Dewey preaching the value of experiment in teaching the young to think. This carries us back to our original definition of idealism in learning, manifested in the diversification of the primary school course. But it carries us too, even further away from the Utopia of Socrates. This trend is growing in our grammar schools today.

Obviously there must be a continuous process of change, modification, and hoped-for development in our educational system, from kindergarten through college. It would seem that this state of flux is unusually active in Nova Scotia today. It is natural that it will affect the advanced professional student to some degree. Thus, when the cyclic currents of unrest appear in medical school, indicating the need for change, the upheavals of medicine itself may not alone be responsible. If the student going into Arts school is immature, so is the student entering his pre-medical years. The question then arises: Are these two pre-medical years long enough and properly designed to prepare him for the most demanding of professions?

This question was presented to the Dalhousie Faculty of Medicine some months ago. It was not voiced in exactly those words. Rather, the problem concerned the medical graduate whom it was felt, had not been given sufficient education in the humanities on his way through medical school. Since it was accepted that the five years of the strict medical course, including the interne year, were devoted solely to the study of the "pre-clinical" and clinical sciences, discussion as to how to improve his lot centred on the two pre-medical years.

It is easy to trace the development of medical education through source history and personal experience. The study of medicine fifty years ago was simply that—the study of medicine, with its allied surgery and obstetrics. The basic subjects were relatively simple; organic chemistry, physics in elementary form, anatomy, physiology, materia medica, histology, and pathology. Anatomy was taught with perhaps a greater detail than today, but physiology was relatively superficial, and pathology (embracing bacteriology) was a preparatory subject for medicine and surgery, rather than a complete system in its own right. As the "pre-clinical" sciences grew, they took a greater place in the curriculum and none would deny their right. Histology and embryology became established as separate subjects. Physiology grew to rival anatomy in its detail. The science of pharmacology was born and engulfed the simpler materia medica. Organic chemistry merged into biochem-

istry, eventually presenting almost a whole system of medicine within itself.

All were important: all had to be taught. The clinical subjects, which were more elastic in their concepts, were crowded into the later years, their hours reduced to make way for the growing sciences. In the mid-nineteen-twenties sincere and able professors protested against the inclusion of even the most elementary clinical work in the second year of medicine, claiming that it distracted the student from his more important scientific studies. Those of us who did our undergraduate medicine in those years suffered under a Fundian ebb and flow of educational tide water. Though we labored faithfully at what was prescribed and progressed from year to year in the approved fashion, we had the disconcerting experience of completing the second year of medicine three successive times. In the late twenties the medical course stabilized somewhat, but it had gone to a "pre-clinical" extreme, and in the middle thirties the pendulum began to swing back again. Clinical teaching, bit by bit, reclaimed its rightful place, seizing hours from the earlier years. But meanwhile it, too, had undergone vast development and diversification.

Beginning with urology and gynaecology, surgery gave off half a dozen sub-specialities. In medicine, where the anemias had been dealt with in a lecture, being divided comfortably into primary and secondary, a whole new specialty of haematology had appeared. Cardiology and geriatrics became specialties. Biochemistry grew more clinical and, with its offshoot metabolism, so important to medicine that it has been said, with a godly bit of truth, the American internist puts his laboratory findings first, and carries out his clinical examination of the patient only when they are complete. Once the prerogative of every practitioner to study, interpret, and use as he chose, psychiatry laid claim to a place beside the basic arts of medicine and surgery.

If, then, the clinical subjects have regained their rightful place in the curriculum, they are now the multitudinous progeny of their century old ancestors and have come to resemble somewhat alarmingly, though legitimately enough, their "pre-clinical" brethren.

It is the graduate of this system who is thought to be lacking in the humanities. The Dalhousie Medicine Faculty, stimulated only by their own interests and observations, found themselves to be not alone in their thinking when they came to investigate the problem. Over the whole continent, and particularly in the United States, where scientific medicine has been taught more dogmatically than at Dalhousie, the alarm had already been sounded.

Sensing a lack of fundamentals in our present day medical teaching, but uncertain as to what that lack is, let us look at the ideal we wish to produce. Let us consider the ideal medical man in a normal Canadian community. To find him we shall best seek among the general practitioners (although there are exceptions). He is a man who practices medicine capably scientifically, and conscientiously. He knows his patients, not as case numbers, but by personalities and often by their antecedents. He is a practical psychiatrist as well as internist. Over and beyond his professional job, he is a good citizen, active in every worthy effort of the community in which he holds an honored place. Many of his outstanding qualities he has not learned in medical school, nor has he been given there the means of learning them. Either he brought them into school with him or, more often in the case of

latter day graduates, he has acquired them instead of specialty fellowships, after his qualifying degree.

Medicine, in its prime conception, is an art. Undergraduate teaching, through the necessity of squeezing so vast an amount of knowledge into so short a time, presents it as an almost pure science. The student is taught facts. He is taught to accept nothing without tangible proof. He deals only with structures he can see or feel, or prove the existence of with the exactitude of a mathematical formula. There is little time or place in his scheme of thinking for faith or for fairies. Through five of his formative years, and if he proceeds with the study of a specialty it may be ten, his free will is indoctrinated with a thoroughness suggestive of the Soviet method. There seems no time for broader methods.

It is small wonder then, that entering medical school with what has already been claimed to be an inadequate humanitarian background, and perhaps with an immature judgment, he is so molded in the cold scientific habit, that only by a great conscious effort of the highest cells of his cerebral cortex can he rise to idealism in medicine.

Let it not be understood from this that we think of science as all cold and factual. Claude Bernard, one of the greatest proponents of the scientific method who ever lived, said, "Put off your imagination as you take off your overcoat, when you enter the laboratory; put it on again, as you do your overcoat, when you leave the laboratory. Before the experiment and between whiles, let your imagination wrap you round; put it right away from you during the experiment itself lest it hinder your observing power".

There is is nothing more warming and stimulating to imagination and thought than scientific research. It is the basis for the doctrine of John Dewey even in teaching of the lowest common school. But there is little time for this kind of learning in the curriculum of today. The student lives too much in his laboratory, his overcoat moth eaten.

Viewing the whole problem of medical education, if somewhat sketchily and hazily, in this way, a practical solution becomes apparent. First, the student, on entering medicine, must have a broader knowledge of the humanities to which he can cling throughout his whole course. This is partly the obligation of his elementary schools, but it is also the responsibility of the medical faculty. Hence, it has been proposed to demand a third year of pre-medicine before the strict course is begun. This added year is to be of Arts, not laden with preparatory sciences as are the present two pre-medical years.

This is not in itself a solution. It is simply one step. In the present second year class at Dalhousie Medical School more than seventy percent of the students have had this third year. Peak of an increase which has shown itself for five or more years back, it suggests that the student has been quicker to realize his deficiency than have his professors. This problem of the extra year for Nova Scotia students may well be taken out of the hands of the Medical School when the talked about high school changes come to be.

It is at the bedside that today's wise practitioner, brushing shoulders with sickness, human emotions, and death, has learned much of the humanities he possesses. It is here, alone with his patient, that the medical student will learn much of his. Reduced to a lamentable minimum twenty years ago, these hours have been increased and at Dalhousie the clinical clerkship forms

a major part of the fourth year course. It is essential that it be encouraged, maintained and, if possible, developed. It must not be interfered with again.

The use of research projects for undergraduate students in a simple form through their academic years and if possible for some, at least, through the summer months, would teach them freer and broader thinking. This method has been in operation, on a very small scale, at Dalhousie. It needs development. Research study should be obligatory for the student who is going on after graduation to advanced study in the specialities. It should come early after his degree, to form a break in his thinking processes before he settles down to the grind of building toward academic, fellowship examinations.

The extra pre-medical year and, for some, the many extra postgraduate years create a biological anachronism. The graduate specialist of today, on the threshold of his productive life's work, has already passed his physical prime. This, of course, is wrong. But there is a remedy for it. While the interne or resident is learning his art, he is also contributing to his hospital and his community a unique service. He is an integral part without which the complex mechanism of the modern hospital could not function. His essential labor here must be recognized as such, and for it he must be paid a living wage. With medical knowledge ever increasing, the time to master it, in coming decades, is likely to increase as well. There is only one alternative to this system of acknowledging in dollars the productivity of the medical student, the moment he becomes productive. That is socialism, with the state taking over medical education, as well as medicine itself.

It is accepted that the medical graduate, no matter how fine his course, is not a finished product. It is understood that he will continue to study, and to learn, throughout his life. Here, on his own, if he knows the desire, he will acquire much of his humanities.

Lastly, medical teachers must play a greater role, not in imparting dogmatism but, from the wisdom of their own experience, in stimulating their students to think beyond the textbook limitations of their trade. It would be well for them, now and again, to dip deep into the wells of ancient Greece, remembering the teachings of Socrates and Plato, that knowledge is virtue, and virtue is happiness.

Dr. Alexander G. McHattie

by

R. M. Hattie, Halifax

ALEXANDER Hattie, who came to this country in 1786 and settled in Pictou County, came with the name McHattie, but dropped the Mc at or shortly after the time of his arrival. For a long time afterwards his descendants bore the name of Hattie, until about the close of the nineteenth century one of his grandsons, Dr. Alexander George Hattie, born at East River St. Mary's, Sept. 5, 1829, restored the Mc, since which time a few others in the connection have followed suit and bear the name McHattie.

Dr. Alexander George McHattie, son of John Hattie and grandson of the emigre Alexander McHattie, entered upon the study of Medicine at the University of Pennsylvania. After graduation he spent some years in Syria as a medical missionary under the Board of Missions of the Presbyterian Church of the United States.

During his missionary service he had some exciting experiences. Damascus was the headquarters of the mission and, during his years of service, there was a great deal of unrest among the native people. The tense situation had an adverse effect upon his health and on June 18, 1860, he wrote to Mr. Thomas Bayne, of Halifax, that they were having distressing times in Syria, with the scenes of India being enacted over again in Lebanon, except that Europeans had not been molested up to that time. The outbreak was between Druses and native Christians. In one town near Mount Hermon the Turkish authorities had taken the Christians of the place in charge "for safety" and after disarming them had let the Druses in upon them, who slaughtered over one thousand, while the soldiers and their officers stood by with folded arms. Similar occurrences took place in two other places in the same neighborhood and the staff of the Presbyterian mission were in daily expectation of a massacre in Damascus. "God alone can avert it," he wrote, "and in Him is our hope".

Before this uprising of the Druses, Dr. McHattie had had an experience similar to that described by our Lord in the parable of the good Samaritan. While journeying from Jericho to Jerusalem he fell among thieves and was treated in fashion somewhat like that of the certain man who went from Jerusalem down to Jericho.

After the uprising of the Druses, his health not being good, and suffering from the tension of the experiences through which he had passed, he returned to Nova Scotia and entered upon the practice of Medicine in Halifax. Later he formed a copartnership with the eminent Dr. W. B. Slayter.

At this time he married Harriette Tupper (b. 1847), daughter of Eddy Tupper, who lived but a very short time after the marriage; she died Aug. 8, 1867, leaving no issue. He lived in the house in Argyle Street opposite St. Paul's Church, now owned by the Ives Printing Company.

Four years later Dr. McHattie moved to the West Indies, the climate of which seemed better suited to the state of his health, and settled at St. John's in the island of Antigua, Dec. 2, 1871. Before he could practice there, however, it was necessary to have an English diploma. He accordingly crossed

over to the Old Country and after post-graduate work in Edinburgh and London obtained the necessary degrees, returning then to the West Indies.

In Antigua he married Mary Nicholson, whose father was a physician practicing in that island. Of three children who were born to them, two sons, Thomas Tyndale and Alexander Campbell Nicholson, followed him in the medical profession. After a short visit to his old Nova Scotia home he died in Antigua, Sept. 5, 1895—the 66th anniversary of his birth. After his death, his widow went to the Old Country with the children to have them educated and the family continued to reside there.

While a resident of Halifax Dr. Alexander George McHattie was a member of the faculty of the Halifax Medical College (now the Dalhousie Medical School) and served while he remained in the city as Professor of Obstetrics. A very fine portrait, etched by his son, Dr. Thomas John Tyndale McHattie, hangs in the portrait gallery of the medical school in the Dalhousie Public Health Clinic.

Dr. Thomas John Tyndale McHattie, first of Dr. Alexander George McHattie's family, was born in 1874 at St. John's, Antigua. He received his medical education at Edinburgh University, from which he obtained the degree of M.B., Ch.B., in 1897, and of M.D., in 1909. He practised his profession in London from 1900 until 1912, when he became Assistant Medical Officer of the London County Health Department, which office he held until he retired, about 1935. During World War I he served in the Royal Army Medical Corps with the rank of Major. He is a gifted artist, and his work as an etcher is especially worthy of note. Mention might be made here of a book of pen drawings of St. Albans in Hertfordshire, in which the quaint features of that ancient town are set forth vividly and faithfully. Many have enjoyed two books which he made of the picturesque areas of Hampshire and Cornwall.

When Dr. Thomas J. T. McHattie was a student in Edinburgh, one of the professors asked him if he had relatives in Australia, and remarked, when told about the family connection there: "Well, if you are half so good a man, you'll be all right."

Dr. McHattie made his home for some years at Mascotte, in Harpenden, Herts, but resides, now that he is retired at Woodsmoke, Curdridge, near Southampton. He was married, July 10, 1900, to Gertrude Emma Harding, daughter of Rev. W. Harding, of Essex.

Alexander Campbell Nicholson McHattie, second son of Dr. Alexander George McHattie, was born in Antigua, B.W.I., in 1878. He studied at Edinburgh Medical College, graduating in 1900, with the degree of M.B., Ch.B. He practiced his profession in Lincolnshire from 1904 to 1911. He was appointed to the Colonial service in 1923 and served as Medical Officer in the Bahamas, Nigeria and Zanzibar. He died in the last named country in 1918. He married Alice Beazor, youngest daughter of Canon Beazor, Portland, Dorset, in Jan. 1905.

John McHattie (a brother of Alexander McHattie, the pioneer of the Scottish Hatties and McHatties, in this province) married Grace Innes, of Logiebuchan, Aberdeenshire. He had a son Richard, born in 1813, who became a physician, and was house surgeon of the Elgin Hospital for a time, but went to Australia and practised medicine in Bathurst, N.S.W. He had a large

family, one of whom, Thomas Alfred, followed him in the medical profession and became a very influential and much honoured citizen of Bathurst. His influence extended far beyond the section of the country in which he lived. When Australian federation was under discussion in the nineties of the last century Dr. T. A. Machattie was instrumental in having the Convention meet at Bathurst to consider the question. When the Boer war broke out in 1899 he raised a company of Light Horse and went to the war as Captain, on which occasion the citizens presented him with two splendid horses and joined in a wonderful farewell. After his return from the War, a fine public memorial was erected in the centre of the city bearing the names of all the local men who served in that war. This memorial was unveiled by Lord Kitchener in 1910 on the occasion of his visit to Australia. Bathurst was the only country centre in Australia which Lord Kitchener honoured with a visit, and it was through Dr. Machattie's instrumentality that this was brought about. On retiring from practice Dr. Machattie and his wife went to England to live and on their departure received a warm manifestation of public regard. There is a park in Bathurst named Machattie Park in recognition of the part this family has played in the life of that city.

A matter of interest in relation to these Australian medical men is the fact of their family connection with Dr. W. H. Hattie, who served so many years on the Academic Staff of the Dalhousie Medical College. Another is the fact that there is in the far interior of Queensland a lake called Lake Machattie that was discovered by James Machattie (son of Dr. Richard Machattie), who was an explorer and the first white man to penetrate that part of Queensland. He named the lake in honour of his father.

The Bulletin regrets to announce the death, on April 6th, of Mr. R. M. Hattie, the author of this article. Mr. Hattie was a brother of the late Dr. W. H. Hattie, former Dean of Medicine of Dalhousie University. He was keenly interested in history, and recently prepared this article on the medical members of his family at the suggestion of Dr. K. A. MacKenzie.

Why A Nutrition Division?*

by

Juanita H. Archibald, B.Sc., M.A., Ed.D.

THE question "Why a Nutrition Division?" could be answered simply by saying that we can and should add both life to our years and years to our lives. No other single factor is so important to the achievement and maintenance of health as is nutrition. The purpose of this paper, however, is to consider Why a Nutrition Division within the framework of the Nova Scotia Department of Public Health.

Nutrition is a recent science. Before the 1890's the word "nutrition" was not used in the literature; the term "metabolism" was common. By the turn of the century a machine-like concept of energy needs had developed. Since that time emphasis has been placed in turn on various food nutrients; promotional programmes have resulted in the development of nutrition fads. It is important at this time that there be an application of present knowledge by all segments of the population.

Physicians, and nurses interested in public health are in an advantageous position to bring about this application of knowledge. They have contacts with many individuals and groups; they have prestige in the community.

Many aspects of public health are related to nutrition. In the prevention of disease, the deficiency diseases should be considered as important. There have been four hundred forty-five deaths in Canada during a ten-year period due to rickets although it has been known for over twenty years how to prevent the disease; and fifty-six deaths in Canada during the same period due to scurvy although it has been known for over two hundred years how to prevent this disease.

Maternal and child health are of concern to public health workers. Studies have shown that the chance of an infant being a perfect specimen and showing robust health is four times greater when the mother's diet is superior; that the risk that the infant will have a low health rating is twenty times greater when the mother's diet is inferior. It has been established that the health of the older child can be influenced by his diet.

In a country with an aging population, public health has special problems. Advancing age should not be synonymous with obesity and later with degeneration.

Workers in public health cannot be content to deal with national averages of food consumption and with textbook reasons for the poor choice of foods. They need to find the nutritional status of the people with which they work and, if it is not satisfactory to find what they can do to make the people care enough about the situation so that they will want to do something about it.

*Presented at the Second Annual Meeting of the Atlantic Branch, Canadian Public Health Association in Yarmouth, Nova Scotia, September 3, 1952.

To find the situation existing in Nova Scotia two nutrition surveys have been carried out independently, one in the western end of the Province with English-speaking families and one in the eastern end with French-speaking families. The surveys included dietary studies, physical examinations, and biochemical analyses.

A summary of the findings in both surveys will show striking similarities. In each case no marked deficiency diseases in acute form were encountered except one case of rickets. Moderate degrees of malnutrition were found, the incidence varying with the type of malnutrition. Dental decay and gingivitis, which it is recognized are not exclusively related to food intake, were top problems. Dental decay was found in 84.3 per cent of one group investigated and 53.1 per cent of the other. Low haemoglobin was found in 36.5 per cent and 6.4 per cent of the groups respectively. Thinness was evident in 6.6 per cent and 4.1 per cent of the two groups, being found especially in children where it is more serious. Both underweight and overweight were investigated in the first mentioned survey. Women and girls showed a higher incidence of this type of malnutrition than men and boys, 24.3 per cent of the females being overweight and 23.4 per cent underweight. Vitamin deficiency diseases were not common although evidences of vitamin A deficiency were found in 0.5 per cent and 2.5 per cent respectively, of riboflavin deficiency in 7.4 per cent and 8.2 per cent, and of ascorbic acid deficiency in 0.5 per cent and 5.1 per cent of the two groups.

Dietary inadequacies were evident in approximately 18 per cent of each group, with two-thirds to three-quarters consuming a borderline diet, one-fifth to one-fourth a poor diet, and the remaining small fraction a good diet. A source of vitamin D was not taken in approximately 75 per cent of the children in each group. Foods needing emphasis in each case were milk, whole grain cereals, bread, citrus fruits and tomatoes, other fruits, vegetables besides potatoes, eggs, cheese. The food intake consisted chiefly of meat or fish and potatoes along with sweet foods.

Conditions found in the nutrition surveys showed no significant relationship with size of family or income. Signs of malnutrition were most evident in pre-school and school children and in housewives. Although it is believed that 41.6 per cent of one group and 25 per cent of the other would benefit from therapy, conditions found were most important in their implication for the future. There is need for nutrition education in the home, the school, and the community. This education can be carried out with the family most effectively by the physician. It can also be carried out in the home through visits by other professional workers; in the school through contacts with pupils, parents, and teachers; in the community through meetings and study with organized groups. True education which recognizes the value and ability of the individual is needed.

To answer then the question "Why a Nutrition Division?" it might be said that such a division is important to focus attention on local nutrition problems, the causes of these problems, their correction and treatment, and the prevention of their future occurrence through nutrition education. Nutrition education which is simple, is based on facts, has popular appeal, and allows for

sufficient time for the group concerned to make its own decisions will be effective. All public health workers have an important part to play in this nutrition education. They should remember, however, Chaucer's admonition as stated in *The Canterbury Tales*:

“If a man knew how many maladyes
Follow excess and wyn and glotonyes,
He wolde be the more mesurable
Of his diete, sitting at his table.
Allas! the shorte throte, the tendre mouth,
Maketh the Est and West, and North and South,
In erthe, in watir, in ayer, man to sweat,
To get a sely gloroun drynke and mete”.

ANNUAL MEETING, ATLANTIC BRANCH

CANADIAN PUBLIC HEALTH ASSOCIATION

The annual meeting of the Atlantic Branch of the Canadian Public Health Association will be held at the Auditorium of the Victoria General Hospital, on June 15th and 16th.

Practitioners who are Medical Officers of Health are reminded that an amendment to the Public Health Act allows them to have expenses paid to this annual meeting. The program will be of general interest to medical practitioners as well as Public Health Officers. Panel discussions will be included on chronic diseases, maternal and infant care, and other subjects of current interest. The program will be printed in the May issue of the Bulletin. All members of the medical profession are cordially invited to attend.

Diagnosis Of Tuberculosis

THE diagnosis of tuberculosis should include not only a determination of the presence and location of a tuberculous lesion, but also an evaluation of its pathological characteristics and its danger or potential danger to the patient and his associates.

Active pulmonary tuberculosis often exists without symptoms or abnormal findings. Therefore, in the following discussion, pulmonary tuberculosis with symptoms and pulmonary tuberculosis without symptoms will be considered.

Pulmonary Tuberculosis with Symptoms

Since tuberculosis in its early stages seldom produces symptoms pronounced enough to cause the patient to consult a physician, it is almost a certainty that, if it is tuberculosis which has induced the patient to see a doctor, the disease has already progressed beyond such stages. It is highly probable that the patient will be an adolescent or adult. In an overwhelming majority of instances it is the pulmonary form of tuberculosis with which the clinician has to deal, hence the present discussion will dwell chiefly upon this and only incidentally upon extrapulmonary types. First to be considered is the group in which the patient is unwell and consults a physician. In this group the need of treatment is obvious.

Clinical Procedure. The order of procedure followed by clinicians will vary, but a logical method is first to record the history carefully. This establishes important facts concerning not only symptoms but also exposure and family, educational, social, and economic background; at the same time, it gives the physician an opportunity to study his patient's temperament and character. A history of pleurisy, particularly with effusion, is most important. Symptoms indicating investigation are, first, those which may be due to mild toxemia, such as lassitude, loss of appetite, loss of weight, and slight elevation of temperature. Night sweats may occur but are usually more typical of severe toxemia. Second are indications which are more specifically suggestive, such as poor recovery from respiratory diseases, chest pain, dyspnoea, hoarseness, cough, and hemoptysis of any degree. While tuberculosis occurs at any age, the fact that a large proportion of cases are still found in young adults should be kept in mind.

Thorough physical examination of the bared chest may reveal moist rales over a limited area of the upper third of one side of the chest; such a finding would be highly suggestive of pulmonary tuberculosis. Occasionally the abnormal signs are elicited over only a lower lobe.

Space does not permit a description of the technique of physical examination. This is available in detail in standard texts. The tendency of some physicians to depend solely upon roentgenologic and laboratory findings for diagnosis undoubtedly interferes with their power of observation and diagnostic acumen in the management of their cases and in their practice of medicine. For various reasons, facilities for roentgenologic examination and laboratory tests are not always available in spite of their importance.

Whenever possible, however, every patient should have a roentgenologic examination regardless of the suspected diagnosis. Certainly, should symptoms or signs warrant even slight suspicion of a pulmonary lesion, it is man-

datory that the physician have a roentgenogram made of the patient's chest, and, if there is sputum, it should be examined for acid-fast bacilli. If negative on direct smear, specimens should be concentrated and, if necessary, culture or guinea pig inoculation should be made. If there is no sputum, fasting gastric contents should be cultured or inoculated into guinea pigs. If a sputum examination is indicated, it should be done adequately. As morbidity rates decrease, the importance of tuberculin testing increases as a diagnostic factor.

A negative tuberculin test is strong evidence that the patient's complaint is not due to tuberculosis. A tuberculin reaction in itself should not be regarded as an indication of dangerous tuberculous infection, except in infants. In some urban populations the majority of healthy adolescents and adults are reactors to the tuberculin test, but in many rural and semi-rural areas in the United States there are now large numbers of adults, who do not react to tuberculin and who presumably have never, or at least not in recent years, been infected with the tubercle bacillus. An advantage of giving the tuberculin test at the time of the first visit is that reading of the result may be made when the patient is seen again two or three days later.

Obviously, both the tuberculin test and the roentgenogram are of value in differential diagnosis of pulmonary disease. Occasionally repeated stereoscopic films and examinations in the lateral, oblique, and lordotic positions may be of definite value.

These are the steps ordinarily taken in the physician's office or at the bedside to establish the presence or absence of pulmonary tuberculosis. It cannot be emphasized too strongly that, in the presence of suggestive symptoms or of a tuberculin reaction, the physician should insist upon a roentgenologic examination of the chest. To detect the average minimal pulmonary lesion of tuberculosis, roentgenograms, are indispensable since there may be no abnormal physical signs. Fluoroscopy as a part of routine examinations is important, but the results will depend largely upon the experience of the operator. There are strong differences of opinion on the efficiency of the method, as with fluroscopy approximately 10 per cent to 15 per cent of the clinically significant minimal lesions will be missed. While a positive sputum makes the diagnosis certain, it is greatly to the patient's advantage if a diagnosis can be made and treatment instituted before a productive cough develops or tubercle bacilli are found. A positive diagnosis of tuberculosis without demonstrating tubercle bacilli may be justified in an early phase of the disease and in other instances in which bacilli are not being discharged.

Tuberculous tracheobronchitis will be discussed under complications. This condition may occasionally exist without roentgenographic evidence of parenchymal disease, and any persistent wheeze, particularly if unilateral and/or coupled with an intractable cough or unexplained dyspnoea, should be thoroughly investigated.

Pulmonary Tuberculosis without Symptoms

Since pulmonary tuberculosis in its early stages is unlikely to cause significant symptoms, its diagnosis is difficult. The repeated roentgenologic examinations of apparently healthy "contacts" of known cases of tuberculosis will disclose many asymptomatic but potentially dangerous lesions, particularly in adolescents. The mass roentgenologic examinations of apparently healthy groups in occupations or at ages in which tuberculosis mortality rates

are relatively high have proved to be a rapid and useful method for discovering significant disease. They reveal lesions which cannot be found by any other known method and which are usually minimal and amenable to treatment.

In addition to mass surveys, if every physician would request a roentgenologic examination of every patient with whom he comes in contact, and hospitals, radiologists, and clinics would do the same, with either miniature or large films, as indicated, most asymptomatic cases would be discovered. Proper follow-up of these cases is extremely important. Serial roentgenograms over a period of weeks to determine the degree of instability of lesions, adequate sputum study, and careful temperature records all have value in determining whether a lesion is active and in need of treatment. Differential leukocyte counts, with special reference to the number of monocytes, and serial erythrocyte sedimentation tests to determine change of sedimentation rates may be helpful, but their importance is questioned in such early cases.

When applied to adolescents and adults, mass roentgenologic examination of the lungs has as its primary object the detection of active or potentially active tuberculosis. Mass tuberculin testing is commonly restricted to those of elementary school age or below, although in rural communities and other low-incidence areas it may be used to advantage among older age groups as a preliminary screening method. It is, of course, valuable in individual examinations and should be a part of every physical examination if a diagnosis of tuberculosis has not been made.

Too much significance should not be attached to a single roentgenologic examination. Existing lesions are not always apparent, or may develop subsequently. Reactors to tuberculin should be examined roentgenologically at appropriate intervals.

Tuberculous Complications

Involvement of the pleura is extremely common. It is practically a constant finding in well-developed pulmonary tuberculosis although it is commonly not diagnosed unless effusion develops or adhesions are found in connection with pneumothorax treatments. Often at the time a patient complains of pain in the chest, immediate fluoroscopic or roentgenologic examination may not reveal evidence of effusion. Repeating the examination a few days later or after the pain has subsided will frequently result in the discovery of a pleural effusion. Pleural effusions, especially in young patients, should be considered as of tuberculous origin unless proved otherwise. A diagnostic tap for laboratory studies of the fluid is usually indicated.

Three major complications of pulmonary tuberculosis are those in the larynx, the trachea, and the bronchi. The larynx can be viewed readily. The trachea and bronchi require bronchoscopic examination, and sometimes even this will not lead to the diagnosis if the lesions are beyond the bronchoscopist's limited scope of vision. Tracheal or bronchial lesions may give no symptoms and yet produce positive sputum. Lesions of the trachea rarely cause wheezing. The main clinical symptoms of bronchial disease are wheezing, severe coughing, and otherwise unexplained dyspnoea; these are a direct result of reduction of the lumen of the bronchus. Massive collapse of a segment of a lobe, of a lobe, or an entire lung sometimes results from this interference with aeration and drainage. The progress of this complication may seriously affect the management of a parenchymal pulmonary lesion.

Intestinal tuberculosis, except in far advanced and terminal cases, is much less common than formerly, as modern methods of treatment tend to control the spread of the disease before intestinal infection takes place. The intestines can be outlined with barium for fluoroscopic and roentgenographic studies when symptoms suggesting intestinal tuberculosis indicate the need for such studies.

Nonpulmonary Tuberculosis

The lymph nodes around the hilum are involved as part of the primary complex but may not be demonstrable by roentgenologic examination until calcification ensues. Other lymph node tuberculosis, particularly cervical and mesenteric, has become relatively rare, in part because of the elimination of bovine infection. Here the tuberculin test and a biopsy or a study of discharges from a sinus may establish the diagnosis.

Bone and joint tuberculosis with or without pulmonary disease is usually diagnosed from symptoms and roentgenologic examinations. Tuberculosis of the genitourinary tract, sometimes associated with active pulmonary tuberculosis, may be diagnosed by studies of the urine, cystoscopy, ureteral catheterization, and pyelograms. The finding of tuberculosis in any part of the body outside the thorax, as well as the presence of unexplained pleural effusion, erythema nodosum, phlyctenular conjunctivitis, perianal abscess or fistula, makes roentgenologic examination of the lungs imperative.

Other Conditions Simulating Tuberculosis

When faced with a difficult diagnosis, the clinician does well to keep tuberculosis in mind, for its mode of onset and course are protean. This needs to be urged all the more now that tuberculosis is becoming relatively less frequent.

The more common conditions to be differentiated from pulmonary tuberculosis are the pneumonias, pulmonary abscess, low-grade bronchiolitis secondary to chronic sinusitis, bronchiectasis, neoplasms (especially bronchogenic carcinoma), various pulmonary fibroses (especially silicosis), sarcoidosis, and fungus infections.

Among the more common of the fungus infections are actinomycosis, blastomycosis, coccidioidomycosis, and histoplasmosis. Coccidioidomycosis is most often seen in the Southwest and strongly resembles tuberculosis in that it often gives rise to thin-walled cavities and exudative lesions. The symptoms are those of a prolonged influenza, and the diagnosis rests on the recovery of *coccidioides immitis* from the sputum or pleural fluid. Histoplasmosis is found chiefly in the middlewestern and southeastern states, and it is not uncommon in these areas to see in roentgenograms a number of small calcifications in patients who have negative tuberculin and positive histoplasmin tests.

In sarcoidosis, patients often fail to react to the tuberculin test and have few if any symptoms in spite of roentgenograms showing hilar adenopathy and pulmonary lesions like those of far advanced tuberculosis, miliary tuberculosis, or silicosis.

Roentgenologic shadows are never pathognomonic, and when a person is in the age period in which cancer is most frequent, and specific evidence of tuberculosis or other disease has not been obtained, examination for malignant tumor should always be made.

Correspondence

"THE CHIROPRACTIC BILL"

The Editor,
The N. S. Medical Bulletin,
Halifax, N. S.

Dear Sir:

I think some explanation is forthcoming from the Officers of the Nova Scotia Medical Society regarding the steps taken to combat a recent introduction of a Bill relating to Chiropractors, at the present session of the House.

Secondly, why was this matter so delayed that an emergency session of the Valley Medical Society was necessary; and if necessary why should the matter have so progressed that the Bill, I understand, received second reading before this action was taken?

It would seem that the medical men of this Province, as individuals, must take far more interest in the political and economic development of our Province, which matters affect their practise and their future. I am afraid that we have been entirely too lethargic in the past, with the result that irregulars and quacks have made a great inroad into the care and treatment of the sick, and have established themselves as having a right to do the same. If this condition continues it does not augur well for the future of medicine in this Province.

I have taken the liberty to write our Member of the Legislative Assembly protesting about this matter, and would strongly urge that all practitioners do the same thing, because it is only in this way that they can be made to realize the true situation and the strange predicament that the conduct of medical care is now in.

I am enclosing a copy of my letter regarding the same.

Yours very truly,

J. P. McGRATH.

Kentville, N. S.,
Feb. 28, 1953.

February 28, 1953.

Dear Sir:

I want to write you concerning the recent bill to organize the chiropractors.

First I am in, perhaps, a better position than most persons to comment on this, because they do not in any way conflict with my work, and I, therefore, cannot be accused of attempting to cry down the competition.

Down through the ages the Medical Profession has been principally responsible for all the magnificent developments which have resulted in the eradication of many diseases such as diphtheria, small pox, typhoid fever, etc., which previously carried off many thousands of people. The improvements in operative technique, the splendid blood transfusion service, the marvellous results which have come about from the use of new drugs: in the eradication of pneumonia, spinal meningitis, etc., all the beneficial work that is being done

for polio,—the increase in the span of life,—the great improvement in maternal mortality, are all outstanding achievements, which have been brought about by constant study, post graduate work, and long, long years spent in the Universities and Clinics. Any serious illness and all maternity work, require the services of a medical practitioner. Bad accidents, sudden, very distressing emergencies, whereby surgery is resorted to, also require the service of highly qualified medical specialists.

The Government, of which you are a member, has realized this, to the point, that many welfare schemes and health insurance schemes have been developed, whereby these services may be given to the multitude at the least cost possible. Also, the Government to-day has Departments of Public Health staffed with many experts, for the control and prevention of tuberculosis and are giving large grants and endowments to our medical schools in order to develop highly trained medical personnel. Therefore, we in the Profession are at a complete loss to understand, why men like yourself who are entrusted with the laws and administration of our Province, should countenance the encroachment of quacks, irregulars, and all persons who attempt to treat the public without obtaining the medical qualifications and proficiency, which your *own* laws demand. It is a paradox, that public funds are being voted, for the control of these diseases, training centres are being set up, and medical men are taking an initial course of perhaps ten years in study, followed by a lifetime of clinics and post graduate work, and at the same time these persons are allowed, and evidently encouraged, to enter this field whereby the lives, health and happiness of the people may be permanently impaired or adversely affected.

It would seem to me that it does not add up, and that the representatives of our people are rendering a great disservice to their constituents in allowing this sort of thing to come about. Many of the patients that I treat, I find are ignorant of the qualifications of these irregulars and are ignorant of the fact that they know nothing about anatomy, physiology, pathology and all the information that is necessary to properly evaluate and treat any illness or deformity, and they often feel that the fact that these irregulars are *allowed* to practise, *by the Government*, is an *endorsement* of their qualifications.

At one time when I was on the Medical Board of the Province of Nova Scotia, it was very evident that while we had a Medical Act it was impossible to enforce some of its regulations on account of the non-cooperation of our law makers in this respect. A layman or astute business man, not being conversant with what is going on, certainly does not realize the damage that these people cause and which is ever present in our daily work. Personally, I could produce possibly twenty-five people whom I treated last year for diseased eye conditions, who had spent considerable time in the hands of the eye glass fitters, which latter have no medical education, and in many of these cases there was nothing left to do but to obtain a Blind Pension for these persons, who had been allowed to gradually lose their eyesight, due to the non-recognition of the condition which was present. I know, and am sure, that many cases of tuberculosis of the spine and many beginning cancer cases, and many other early conditions, which can be curable if recognized and properly

treated are allowed to progress to a painful and incurable condition due to the ignorance and persistence of these people.

Years ago, when I was in general practise, I had patients who came to me after they had taken a 'course' from one of these chiropractors, etc. Their condition was more aggravated and their money was gone. Now, in the name of all common sense, what are you people, that are entrusted with the laws and regulation of these things, trying to do and to permit. You cannot call for efficiency and a high degree of training, involving years of work, *on the one hand*, and on the *other hand* permit these persons to assume the diagnosis and treatment of diseases: at the same time.

With all kind regards.

Sincerely,

EDITORIAL COMMENT

The foregoing two letters have been in our possession for some time but for a number of reasons it has not been possible to include the material in earlier issues of the Bulletin. Thus it is that, printing it now, we feel moved to add a few comments on the committee hearing of the "Chiropractic Bill" from the retrospective angle of two months or more.

The bill and the hearing are no longer of immediate interest since the former, having been given a "three months' hoist" has been virtually thrown out for the present. But it is a safe prediction that the same bill or another very like it will be introduced again and again until it is either passed by the House or until any or all hope that it ever will be is abandoned. For this reason we cannot dismiss the underlying principles from our minds but may merely file them for future reference.

The hearing in committee was most interesting to this writer and it had its humorous aspects. The solid array of heavy artillery drawn up by the Medical Board and the Medical Society was most imposing, and in spite of oneself a feeling of pity for the less heavily armed opponents was awakened. The feeling disappeared, however, with the realization that the defeat came not from without but from within, and that the too-talkative young man who could not or would not answer a straight question with a straight answer contributed more to the failure of the chiropractors than all the expert witnesses or legal talent displayed against them. The gentleman who had been "cured" of appendicitis by a chiropractor entertained with his testimonials and it remained for him to provide the touch we had been waiting for all morning by referring to the medical profession as one of the tightest of trade unions. It has long been a source of wry amusement that trade unionists who accuse others of trade-unionism invariably do so as if it were an insult and the accusation is invariably received as one.

On the face of it the danger is over for the present and the matter demands no more attention. But one question has been incessantly in the mind of the editor and, at the risk of appearing to suggest uncertainty of motivation in the minds of our elected representatives or ourselves as a profession, it must be put. The question is: why did we go to so much trouble and expense to

prevent the chiropractors of this province from obtaining licenses? Dr. McGrath has his own ideas upon the subject and expresses them vigorously. One imagines that the incidents he mentions of the tragic consequences to patients of the bunglings of irregular practitioners could be duplicated over and over by other doctors. This suggests that our motive may be a sense that we are indeed "our brother's keeper" and if this be so it does us credit. The writer believes that such is the case but entertains doubts that there is conscious realization of the fact and its implications. For, if the idea that we, as a respected and trusted profession, are truly our brothers' keepers if followed to its logical conclusion, then we must be as alert to defend them from those within our ranks as from those without. To a large extent we do so defend them and the weapons are in our hands to do so always, but we are sometimes reluctant to use them.

The question of motive has been raised at this time for one good reason. Unless our purpose be firm and our minds clear repeated onslaughts may find a weakening in the defences and then it will be only a matter of time, for an enemy who can afford to wait.

M.E.B.G.

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