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# Health Insurance - How Soon?

T. C. ROUTLEY, M.D., LL.D., F.R.C.P.(C).

General Secretary—Canadian Medical Association

TO a considerable degree, the future of medical practice in Canada may have been placed in the hands of 41 members of Parliament who constitute the Select Committee to whom has been entrusted the responsibility of examining and reporting upon Social Security proposals including health insurance.

The Committee just met on Tuesday, March 16th, on which occasion it was addressed by the Honourable Ian Mackenzie, Minister of Pensions and National Health and Chairman of the Cabinet Committee on reconstruction. After dealing briefly with a number of general proposals, Mr. Mackenzie plunged into the subject of health insurance. He had much to say on the measure, reference to which will be made in this communication; but, before dealing with his comments it would be well to have a look at the proposals.

More than eighteen months ago, there was established within the Department of Pensions and National Health an Advisory Committee on Health Insurance with Dr. J. J. Heagerty as Chairman. Associated with him was a group of civil servants interested in the legal, actuarial and statistical aspects of the subject. The Heagerty Committee has worked hard for a year and a half, has taken counsel and advice from many people and has tabled draft proposals which will now become the subject of careful study at the hands of the Select Committee.

Briefly stated the proposals are as follows:

(1) There shall be an enabling federal act relating to health insurance, public health, the conservation of health and the prevention of disease.

(2) There shall be a model provincial act of health insurance which in substance shall be accepted and adopted by any Provincial Government desiring to obtain federal subsidies for health insurance.

The enabling act is brief. It permits the Minister of Pensions and National Health to set up within his department a Health Insurance Branch which shall have the power to carry on negotiations with any province which may be agreeable to introducing health insurance legislation which guarantees benefits of the standards, under conditions and for the classes of persons as set forth in the enabling act. A province entering into negotiations with the federal authority with respect to health insurance must also guarantee to carry on simultaneously a public health program of a character, scope and extent which will be satisfactory to the federal authority. The federal authority in turn undertakes to provide financial aid to the provinces both for the actual carrying out of health insurance and for public health benefits. The federal authority also has the right to appoint inspectors to visit the provinces to see that the money which has been voted to the provinces is being properly and adequately expended.

The model provincial health insurance act sets forth the following:

The provisions shall be applicable to all persons in the province coming under an economic level to be set by the province.

Funds shall be provided by the federal and provincial governments, insured persons and employers.

Children under 16 years of age will be included without the payment of premiums.

The financial arrangements suggest that the sum of \$26.00 per insured person per year be set up to cover all benefits, including administration.

Administration shall be under a Commission, the Chairman of which shall be a medical practitioner who has had at least ten year's experience in practice.

The benefits shall include the following:

Medical, surgical and obstetrical benefits;

Dental benefit;

Pharmaceutical benefit;

Hospital benefit;

Nursing benefit.

There shall be free choice of doctors by patient, and vice versa.

There shall be no exclusions; i.e. the act will cover all persons within the economic level, including indigents; and it shall also provide all necessary services, including general practitioners, specialists and consultants.

The insured shall be obliged to name a family doctor or general practitioner.

Specialist services may be secured ordinarily through the family doctor.

The medical profession shall be paid on a tariff and by a method agreed upon between the medical profession and the provincial commission. This may be by capitation, fee for service, salary or a combination of any two or more methods.

There shall be set up in each province administrative regions in each of which there shall be a regional medical officer who must have had years of experience in private practice.

Provision has been made for the establishment of Medical Advisory Committees, both regional and provincial.

The act also provides for representation on the commission of those receiving the benefits as well as those providing them.

Safeguards are being introduced to guarantee that ample clinical material will be available in teaching hospitals associated with medical schools.

Hospital benefits include general ward service and laboratory facilities. Pharmaceutical benefits will probably be assisted by a formulary. Dental benefits will apply particularly to children and some remedial services.

In presenting the proposals to the special committee, the Honourable Mr. Mackenzie said that he considered the plans and the report associated with them the most comprehensive that had ever been compiled. He advised the Committee that in his opinion they would have an opportunity to consider, clause by clause, suggestions which were calculated to make possible a health insurance measure for Canada on a sounder and broader basis than is to be found in any other part of the world. Mr. Mackenzie's presentation to the committee was marked by its clarity and forcefulness. Here are some extracts from his address:

Health insurance is unquestionably the greatest present lack in Canada's system of social security.

If we are to do something practical and useful for the people of Canada, quickly and effectively, it may be more to the point if, for the time being, we concentrate our efforts on filling out the gaps in our existing social security system . . . The most conspicuous gap is in the field of health.

Forty-one countries have adopted health insurance. Thirty-three of these are compulsory schemes.

There is no doubt that public opinion in the New World with regard to social legislation has changed and progressed rapidly in recent years.

Here in Canada, with a simple stroke of the knife, we cut through one of our constitutional difficulties and inaugurated Unemployment Insurance.

The British Columbia Government completed a draft Bill of Health Insurance in 1934 and enacted a provincial statute of health insurance in 1936. This Act has never been put into operation chiefly due to the fact that the medical profession objected to certain features of the Act and declined to cooperate.

Referring to House of Commons debates on Unemployment Insurance, Mr. Mackenzie said:

It is fairly clear from the debates on this Bill that it was the Government's intention that, if Unemployment Insurance stood up to the constitutional test in the courts and its operation proved a success, the Dominion would in due course move on to the field of health insurance.

Referring to his early interest in Health Insurance, the Minister said:

When in 1939, I found myself responsible for the administration of a department in which active planning for health insurance was being carried on, I gave my strongest support and encouragement to those efforts.

Speaking of the Health Insurance Committee which for a year and one-half under Dr. Heagerty's Chairmanship, had developed the present report on Health Insurance, Mr. Mackenzie said:

The Committee did not work in a back room. It reached out into the country and it sought the advice of a great variety of organizations and institutions considered likely to have a direct interest in this important subject.

Referring to the C.M.A. Mr. Mackenzie had the following to say:

Perhaps the culminating achievement of the Committee, aside from the draft proposal which constitutes its report, was the unprecedented assembling between annual conventions for the first time in 75 years of the General Council of the Canadian Medical Association in Ottawa, January last, when this great and influential body formally went on record in favour of the principle of health insurance. That decision was not reached until after members had familiarized themselves quite thoroughly with the general principles of the committee's report. The resolution is not to be interpreted as an endorsement of this or any other specific plan. The Medical Association reserved its right to comment on any particular provisions, but it was nevertheless a great milestone in the path of progress in Canada when the medical profession of Canada, through its General Council, formally pledged itself to the principle of health insurance.

Proceeding to elucidate considerations leading to the form in which the

Advisory Committee's proposals were couched, Mr. Mackenzie said the following six principles might be stated as concisely underlying the plan:

- (1) That no scheme of health insurance can be successful without a comprehensive public health program of a preventive nature.
- (2) That a real health program as distinguished from a policy of cash benefits can be effective only if it embraces the entire population.
- (3) That the principle of compulsory contributions should be embodied in any plan of health insurance to the greatest possible extent.
- (4) That public opinion and efficiency demand to the greatest possible extent a national plan.
- (5) That the constitution, as at present understood and interpreted, prevents the dominion parliament from adopting a single comprehensive national Health Insurance Act.
- (6) That, for practical reasons, a constitutional amendment is not desirable.

The draft proposals place particular emphasis upon Public Health and preventive medicine. Mr. Mackenzie added that it is proposed that there should be attached to the Dominion Act, as a list of types of health measures with respect to which the Dominion is prepared to enter into agreement with the provinces for the purpose of instituting a health program, the following:

- 1—The provision of free treatment for all persons suffering from tuberculosis, including the construction of additional buildings and bed accommodation.
- 2—The provision of free treatment for persons suffering from mental illness and the care of mental defectives, including buildings and accommodation.
- 3—The provision of preventive and free treatment for persons suffering from venereal disease.
- 4—The provision of training facilities in public health work for physicians, engineers, nurses and sanitary inspectors.
- 5—The undertaking of special investigations concerning public health or public health measures.
- 6—The establishment and undertaking of a program of physical fitness development for youth.

Speaking of coverage—the people to whom health insurance should apply—the Minister said this:

The plan is founded upon the principle that it must cover the entire population. Since our fundamental purpose is the improvement of the health of the people, we feel that this proposed legislation must apply to everybody.

But realizing that certain autonomy and flexibility must be left to the provinces, the Minister continued:

Since there can be no standard and uniform limitation, it is better that the Dominion should adopt the basic assumption that all may benefit, leaving it to the individual

provinces to determine whether or not certain classes could or should be excluded. In any event, the health ideal calls for total coverage.

Proceeding to the question of costs, the Minister said:

The basic policy embodied in this proposal is the contributory principle. The modern trend throughout the world with regard to all forms of social insurance is that they be contributory. Under a contributory system the benefit becomes a right and not a concession. It is the very essence of insurance that the person who hopes to benefit shall pay a premium supporting a financial plan which provides the benefits.

Industry also has a definite stake in the health of our working population. It has been estimated that every day fifty thousand workers are absent from work through illness.

Thinking in terms of optimum health, Mr. Mackenzie said:

The Advisory Committee recommends not merely a health insurance bill—it is a health bill—a bill that is designed to do constructive work in raising the positive health standard of the people of Canada.

The health of Canada is one single problem and we cannot break it up into geographical segments.

The Minister then spoke of constitutional difficulties and the advisability of provincial administration. He said:

The provinces control the regulation of the medical profession. Each province has its statute setting up a medical council or medical college with the right to license practitioners and to discipline and regulate their activities.

The Advisory Committee contemplates a federal statute as the foundation stone of the structure. Health insurance must go hand in hand with a broad program of preventive health measures. The primary consideration is the health of the people.

The Dominion Government will assist the provinces, both with respect to a public health program and with respect to health insurance, but will not help a province with regard to either one of these projects unless both are put into effect.

Thus it will be seen how emphatically the Minister links preventive and curative medicine in an all-out health insurance program.

Dealing with the time involved in bringing this measure into operation, the Minister had the following to say:

Due to the fact that health insurance will require legislation by both the dominion and provincial parliaments, and the fact that the provincial legislation is exceedingly complex and will require a great deal of study, it is considered that all this proposed legislation could not be brought into operation within at least two years.

In summing up his presentation to the Select Committee and making reference to the fact that health insurance in Canada along with other social security measures will cost money, Mr. Mackenzie said:

If we can pay for victory over the curse of Hitlerism, can we not also pay for victory over the scourge of disease, insecurity and poverty?

On Friday, March 19, the Select Committee began its considerations of the draft Bills which were outlined in detail by Dr. Heagerty, the Chairman of the Advisory Committee. The Committee proposes to meet twice a week.

Witnesses and experts who have anything to say on the subject will be heard. The Canadian Medical Association is preparing a brief to present to the Committee and representatives of the Association will be in attendance upon the Committee more or less constantly. The medical profession of Canada may rest assured that its interests will not be lost sight of by those who represent the profession before the Committee. The proposed legislation may, and likely will change the practice of medicine for generations to come. It is axiomatic to say that, if the Canadian public is to receive adequate medical care, using that term in its broadest sense, then those providing that care must receive adequate pay and recognition for their services.

How soon will health insurance become effective in any province?

Who can tell? Mr. Mackenzie says it will take two years to grind out the necessary legislation. But we have a war to win and pay for—factors which may play very important roles in "dating" health insurance.

Be that as it may. Health insurance is around the corner—in people's minds. They want it. Inevitably, it will come. We as a medical profession, more perhaps than any other group, are vitally concerned, and we must do our best to see to it that the legislation, when it is placed on the statute books, guarantees progressively better medical services to the people and conditions of work and remuneration which are eminently satisfactory to those who provide the service.



# Manifestations of Chest Pain

"WITH AN ANALYSIS OF 100 Cases"

E. DAVID SHERMAN, M.D.

Sydney, N.S.

IN private or clinical practice, the majority of patients seeking consultation for pain in the chest are greatly apprehensive over the condition of their heart or cardiovascular system. This is not only true of middle aged and elderly patients but of younger people as well. This statement may be principally attributed to the accelerated tempo of modern living with the imposition of great stress and strain upon the individual, and is also due to the fact that heart disease within the last few decades has rapidly risen to the position of public enemy number one on the mortality lists of the human organism, cutting off suddenly and without warning apparently healthy individuals in the prime or flower of life.

Harrison<sup>1</sup> recently pointed out that our present knowledge of causes of pain in the chest is rather meager. This is in contrast to the situation as regards abdominal pain and the explanation for the difference is probably to be found in the frequency with which patients presenting obscure abdominal pain are subjected to surgical exploration. Thus the cause of the pain is determined and the disease process is correlated with the patient's symptoms. When there is an obscure pain in the chest the diagnosis can frequently be arrived at only by autopsy, which is carried out in a relatively small percentage of cases. Nevertheless it is to be stressed that thorough clinical study is essential in these cases and is not altogether fruitless in arriving at a correct diagnosis.

The purpose of the present communication is to present an analysis of one hundred case reports of patients examined in the writer's private practice whose principal complaints were pain in the chest, and to formulate any conclusions that might be derived from this study.

In the diagnostic approach to the patient complaining of chronic pain in the chest one should bear in mind that there is only one common and serious cause, i.e., disturbance of the coronary circulation. Thus in most instances the responsibility evolves upon the physician for making a diagnosis as to whether the patient has an inconsequential condition or a mortal disease. It is recognized that most of the other common causes are of trifling significance, particularly as far as the life of the patient is concerned.

The classical contributions of James B. Herrick<sup>2</sup> on coronary thrombosis and the studies of Keefer and Resnik<sup>3</sup> on angina pectoris tended to clarify the confusion surrounding these subjects, and it is now possible to recognize and diagnose both of these conditions with a rather high degree of accuracy through clinical and laboratory studies. According to some writers, one gains the impression that both of these conditions are now diagnosed more frequently than they exist, a state of affairs contrary to that prevailing a generation ago.

Once the all important decision has been reached that the pain of a given patient is not due to coronary disease, for practical purposes the most important factor has definitely been eliminated from the diagnostic arena. The next

problem confronting the physician is to discover what is causing it. There are certain conditions simulating coronary disease, and some of the points which have seemed to be of value in differential diagnosis will be mentioned under the various captions.

### Heart Disease

Fourteen cases or 14 per cent presented definite evidence of heart disease through detailed studies including electrocardiographic examination. This group was comprised of seven men and seven women. Fifty per cent of the cases were over the age of sixty; the remainder ranged between 32 and 51. Four cases were definitely due to rheumatic heart disease. The remaining ten cases were diagnosed as arteriosclerotic heart disease with evidence of coronary sclerosis in six; two of the cases were complicated by hypertension and one case showed evidence of a left bundle branch lesion by electrocardiographic study.

The pain in half of the cases was substernal in character with and without radiation to the left arm. In the remainder, the pain was praecordial and localized to the left antrolateral chest. The character of the pain was not unusual and was sharp or dull and of varying duration. The most important feature of the history, especially in cases of coronary insufficiency, was the relationship of the pain to the various body functions, and especially to muscular activity. Exercise or exertion usually provoked an attack. If there is no relationship of the pain to exertion, it is highly improbable that the patient has angina pectoris, but even so the number of errors in diagnosis will be reduced if the physician will, when in doubt, note whether muscular exercise undertaken under observation induces the discomfort. (Exercise tolerance test). Conceivably, exertion may be hazardous to a person with angina pectoris. However, with a careful history and if the exercise is adjusted so as to be minimal for this particular patient and is stopped the moment the discomfort appears, the risk is probably very small and, in any event, it is less than the risk involved to the patient in not having a correct diagnosis made.

Too much emphasis cannot be placed on the location or radiation of the pain or discomfort, as other conditions may give pain with and without radiation simulating coronary insufficiency. The severity of the pain likewise is of relatively little value in diagnosis because the discomfort may be rather severe when its cause is inconsequential and may be mild in fatal cases of angina pectoris. Even the character of the pain is not a reliable guide. Some patients without angina complain of their pain as consisting of a feeling of heaviness, tightness or fullness. The duration of the pain is of considerable importance in the exclusion of angina pectoris. A pain lasting only a few seconds or a pain lasting more than an hour is rarely due to uncomplicated angina pectoris, although the pain of acute coronary thrombosis frequently lasts for many hours.

### Gastro-Intestinal Causes

It is known that abdominal disorders may simulate coronary disease. Fourteen cases are included in this category, and are comprised of eight patients with gall bladder disease, five cases of functional dyspepsia, and one case of peptic ulcer. They gave histories of praecordial pain and substernal pain with and without radiation to the left arm. Most of these patients were frankly worried that they had heart disease. The histories definitely revealed that the

praecordial pain or substernal pain was in most instances accompanied by indigestion, which consisted of belching, heartburn or abdominal fullness. There was a definite relationship of the pain to meals, usually occurring within one-half to two hours afterwards. At times belching appeared to relieve the pain. There was no relationship of the pain or discomfort to exertion. Roentgenographic studies of the gastro-intestinal tract and gall bladder revealed evidence of gall bladder disease, pylorospasm, aerophagia, and peptic ulcer.

The following case is of interest because it may serve as a classical illustration:—

*Case W. G.* A white man aged 55 complained of praecordial pain radiating to the left arm for several months. The pain was dull in character and would last for varying intervals from 15 minutes to several hours. The pain was not related to exertion or effort, but frequently would come on one to two hours after eating. At times the pain might be accompanied by gas. He admitted that a friend of his had just died suddenly with similar symptoms, and this was a great source of worry to him now. Prior to the onset of this pain the patient stated that he had had a gastro-intestinal series for indigestion, and the report indicated evidence of a gastric ulcer with pylorospasm. Physical examination and examination of the cardiovascular system was essentially negative. Electrocardiographic examination with the standard and praecordial leads also showed no evidence of myocardial damage. He was informed that he had no heart condition and was advised to resume his ulcer diet with the prescribed medications. Follow-up several months later under treatment indicated that he was free from this praecordial pain.

The pylorospasm appeared to be probably the chief factor in this case, and as occasionally happens, the pains produced by it was felt in the chest rather than in the abdomen. The symptoms observed in this case are frequently seen in cases of pylorospasm, whether of functional origin, or accompanying organic disease such as peptic ulcer or cholelithiasis. Such symptoms frequently result in the erroneous diagnosis of angina pectoris. This error is unavoidable if too much stress is laid on the location, radiation and character of the pain than on the history of the pain. The discomfort due to pylorospasm can often be reproduced by artificial distension of the stomach either with air or water.

### Respiratory Disease

Seventeen cases were diagnosed under this condition. These seventeen patients comprised ten cases of chronic bronchitis, one case of pulmonary tuberculosis, one case of bronchiectasis, and five cases of pleurisy. The pains were on the left side in six cases, on the right side in three cases, bilaterally in five cases, and substernally in three cases. The history in the cases of chronic bronchitis indicated severe and recurrent attacks in the winter time, accompanied by severe pains in the chest and expectoration of phlegm. The chest pains were definitely related to breathing and coughing. Physical examination and roentgen plates definitely established the diagnosis in these cases.

In the cases diagnosed as pleurisy, one case was found to be active, and detailed examinations disclosed evidence of fluid at the base of the right lung. Two cases showed evidence of pleural adhesions by X-Ray examination of the chest, and the remaining two cases gave an old history of pleurisy, although the physical and roentgen findings were negative. In these cases the pain appeared

to be related to deep and quiet breathing and coughing, and corresponded to the same side on which there had been pleurisy.

Chronic pleurisy may cause pain in the praecordium or chest which may be confusing, because there are often no physical signs of the pleurisy and the X-Ray evidence may be dubious.

Heaton<sup>4</sup> recently stated that pleural adhesions are often blamed for pain. He does not think that the pain in cases in which pleural adhesions may be suspected can be differentiated from neuralgic chest pains. It is true that where pleural adhesions are known to be present they are usually painless.

Pottenger<sup>5</sup> has drawn attention to the recurrent pain over the lower portion of the chest of patients who previously have had pleurisy. Chronic inflammation of the pleura, as well as of other viscera, produces degenerative changes in the muscles skin and subcutaneous tissue which are reflexly connected with the inflamed area. This type of pain varies. Sometimes it is severe; at other times it is only an ache. It is particularly necessary to recognize it when it involves the lower portion of the chest, because it often extends down over the abdomen, and the pain is sometimes mistaken for evidence of acute disease of the abdominal viscera. He has seen gastric ulcer, gall bladder disease and appendicitis not only suspected but operations performed to remedy the supposed conditions when no active disease was present, the cause being the permanent injury to the nerves caused by the previous pleurisy. The degeneration which follows a chronic pleurisy is often seen as a distinct furrow following the nerve or nerves involved. The subcutaneous tissue not only loses its tone but actually atrophies and lessens. These same nerves that are involved in the degeneration often show pain. The pain is recurrent, the same as recurrent pain in arthritis. It comes with changes in weather, with menstruation, and when the patient is subjected to emotional and nervous stress. This should be always kept in mind when attempting to determine the origin of recurrent pain over the lower chest and upper abdominal areas. If degeneration with lessening of the thickness of the subcutaneous fat is found, one should suspect previous pleurisy even if no signs are found on auscultation. Sometimes lagging of the side, weakness of the auscultatory note and stretching sounds or fine rales will be detected on deep breathing to help in the diagnosis. This has been seen years after the acute attack of pleurisy subsided.

Pottenger<sup>6</sup> has explained that recurrent pain may occur in the neurons associated with any viscus that has been the seat of prolonged inflammation or possibly prolonged irritation without inflammation. It has the same segmental characteristics as the more acute pain and is sometimes difficult to differentiate from the referred pain of visceral disease. It seems that there is an inability on the part of these injured neurons to adapt themselves to unusual requirements of physiological adjustment, whether originating in the external or internal environment. The change in sensibility is manifested under many conditions, such as changes in weather, tiring, seasonal changes, during menstruation, and with depressive emotions. This type of pain is inadequately appreciated. It causes both physicians and patients much needless anxiety and as mentioned results in operation when no serious danger exists. No evidence of degenerative changes in the muscles, skin and subcutaneous tissue were noted in the aforementioned four cases of chronic pleurisy.

### **Psychoneurosis and Intercostal Neuralgia**

It is interesting to note that thus far 45 cases have been categorized under Heart Disease, Gastrointestinal Diseases, and Respiratory Diseases. The re-

maining 55 cases have been classified under Intercostal Neuralgia (18 cases) and Psychoneurosis (37 cases). In view of the fact that these cases represent 55 percent of the series or the majority of the cases, in which no definite pathological changes could be established but only functional disturbances, the writer has deemed this group of such importance as to warrant devoting particular attention to this type.

The "psychoneurosis category" refers specifically to cases in which organic disease could not be demonstrated, and in which the complaints were functional, as in cases of nervousness, chronic exhaustion, anxiety neuroses and hysteria. Any psychoneurotic state may have cardiovascular symptoms associated with it or be in part or completely based on a fear or delusion of heart disease, even with no symptoms whatever. This is different from neurocirculatory asthenia (effort syndrome) where symptoms may be marked but where there is no fear or delusion at all. In some cases the two conditions may be combined.

Welchsler<sup>7</sup> writes that in intercostal neuralgia the pain generally follows the course of the nerve from the side to the front of the chest, between the ribs, along the anterior branches. There may be tender points at the vertebral exits and in the axillary and midsternal lines. In neuralgia of the second and third dorsal roots the pain is along the inner side of the arm. It is important to rule out fracture of the ribs, diseases of the lungs and pleura, aneurysm of the aorta, diseases of the heart, stomach, and liver, and tumours of the cord. Mastodynia is a special type of intercostal neuralgia (D3 to D6). There is pain and tenderness of the breast, frequently hyperesthesia of the nipples. The breast may be red and even lactation may occasionally occur. The neuralgia may occur in connection with menstruation, pregnancy, and lactation. The occasional swelling, together with the pain, in middle-aged women may simulate malignancy. The neuralgia is frequently psychogenic. It is generally resistive to treatment.

From the reports in the literature and the number of cases of intercostal neuralgia in this series (18 per cent), it is important to emphasize the frequency of intercostal neuralgia as a cause of chest pain, which is more common than is generally supposed.

White<sup>8</sup> has stated that symptoms are dependent on two primary factors: (1) stimulation of sensory nerves, and (2) sensitiveness of the nervous system. The percentage of responsibility of each factor must be judged in every case; it is constantly varying, even in the same case at different times. Thus a relatively insensitive nervous system may give rise to no symptoms even where there is apparently considerable cause for stimulation, while a sensitive nervous system may produce symptoms with very little stimulation. If fatigue lowers the threshold of the relatively insensitive nervous system, symptoms may be produced by stimulation which before was ineffective; if rest raises the threshold of the sensitive nervous system, symptoms may no longer be caused by the stimulation heretofore effective. Symptoms do not mean disease; they indicate temporary disturbance of function, whether or not dependent on structural pathological changes.

It is realized that pain in the chest may or may not be caused by trouble with the heart or great vessels, and that heart trouble may be responsible directly for pain that is outside the chest (referred pain), even where there may be no simultaneous chest pain. There are still obscurities about the transmission and interpretation of sensory nerve impulses from the heart but an increasing interest in the autonomic nervous system in the last decade gives promise of clearing

away many of the problems. It has been demonstrated in recent years that cardiac pain is carried to the central nervous system by the first four or five dorsal rami communicantes on each side by way of the corresponding ganglia from the first (stellate) down, and not by way of the cervical sympathetic chains and stellate ganglia alone.

The most important type of pain is praecordial aching or heartache, maximal as a rule in the centre of the left breast, which is the commonest kind of "heart pain". It may be very mild, moderate or very severe, and wax and wane for hours to years; rarely does it last as short a time as a few minutes on any one occasion. When severe it may radiate all over the anterior thorax and even into the arms, especially down the left arm; in such cases it is easily mistaken for angina pectoris. Also when it is severe it is often accompanied by praecordial tenderness, which is a vitally important clue to the proper interpretation of the heartache itself. The essential cause of this kind of pain is over sensitiveness of the nervous system from fatigue or other factor; it is characteristic of the majority of cases of neurocirculatory asthenia. If it is found in the presence of heart disease itself, it is to be interpreted only as a complication and not as a direct result of the heart disease; it is, however, true that the larger the heart and the more forceful its action, the more likely are heartache and praecordial tenderness to be present. The pathogenesis is probably that of the thumping of the heart, whether normal or diseased, against an over sensitive thoracic wall.

Short sharp stabs of pain in the praecordium are to be fundamentally explained in the same way as is praecordial aching; the immediate cause of such a stab as if from a pin, a needle, or a knife is in most instances a premature beat or extrasystole. Thus heartache and praecordial stabbing sensations are unimportant and in fact often reassuring so far as serious disease is concerned; the majority of such patient showing such symptoms have no heart disease at all.

The cause of neurocirculatory asthenia (effort syndrome) is not known. The fundamental origin of the irritability and fatigability of the nervous system in so-called neurasthenia is still obscure; these have usually been called functional disorders but the mechanism of such disorders is as yet to be explained. Abnormalities of the central nerve cells induced by fatigue in experimental animals have been noted and may be possible factors. Moreover, why gastrointestinal symptoms are most prominent in some neurasthenic patients, cerebral symptoms in others, and cardiovascular in others has not been explained; variations in innervation or early accidental association with other troubles (indigestion, etc.) may be the answer. It can only be said now that in some patients neurasthenia manifests itself preponderantly by circulatory symptoms, and that neurasthenia itself is a disorder commonly found in certain individuals, usually under a special strain, who are equipped with an especially nervous system.

Heaton<sup>9</sup> recently in an excellent article on "A Conception of Neuralgic Chest Pain" based on the study of 100 cases, described a common type of chest pain which he termed "neuralgic". According to Heaton, neuralgic pain is the commonest chest pain.

In Heaton's series of cases, psychoneurosis and intercostal neuralgia constituted 74 per cent of the series, the remainder being due to lower respiratory tract disease and organic heart disease. There seemed to be no difference in the pain between the various groups. The pain was with great regularity described as being short in duration, sharp in character, and occasionally of great severity. There was often a prolonged dull ache in the same area, either alone or between

sharp stabs. It was usually provoked by such movements as reaching up, stooping over, rolling over in bed, but with no constancy. It might be relieved by a change in position. It was often aggravated by deep breathing but never by quiet breathing; often also provoked by a cough. Patients often said it was provoked by effort, but it often seemed that it was really the movement incidental to effort which provoked the pain. It was sometimes provoked by excitement alone.

The pain was nearly always located in the anterolateral chest wall, and usually below the third rib. It was never substernal. It was much more often on the left than on the right side, and might be bilateral. Intercostal tenderness was fairly often present in all groups, but seemed inconstant even in the individual case, and appeared to lack any diagnostic significance. The pain might be persistently recurrent for many years, and, this was so in the cases of severe chronic psychoneurosis. Or, it might be quite brief and transient. Pain of the above character was termed as "neuralgic".

In attempting an explanation of this chest pain, it must explain (a) its increased frequency in emotionally unstable persons in whom it may be provoked by excitement alone; (b) its association with organic thoracic disease; (c) its occurrence without evident emotional instability and without evident thoracic disease (intercostal neuralgia); (d) the effect of movement in provoking pain.

Heaton states it is possible that the pain may be produced by a summation of factors, which may vary in relative importance in different cases, and yet produce the same pain. Such factors may be: (1) the appreciation of stimuli as painful (central); (2) the excitability of the peripheral nerve endings; (3) the action of reflex mechanisms for the production of referred pain; (4) direct action of toxic or mechanical factors upon the pathways of pain. Doubtless all these factors interact upon each other.

In the chest pain of psychoneurotics and cases of effort syndrome, Heaton admits the existence of a "functional" pain, based chiefly on over-appreciation of an over-excitabile pain mechanism and with the site of the pain determined by the "conditioning" of a spinal segment by old or recent visceral disease or even visceral dysfunction in the absence of organic disease. The effect of movement in provoking the pain may be thought of as a purely mechanical effect upon an over-excitabile pathway.

The conception that Heaton holds of these pains is that they are pains of essentially similar nature, sharing a common mechanism of production, though this mechanism may be operated by different factors in different cases. He feels that pain of similar nature and mechanism occurs in the abdomen and limbs, and that there is no clear division between this pain and limb causalgias.

He feels that one should speak of "psychoneurosis with neuralgic pain", or "organic heart disease with neuralgic pain", or "chronic pleurisy with neuralgic pain", or "intercostal neuralgia", where the underlying factor is not known. Effort syndrome, he thinks, should be termed "psychoneurosis with neuralgic pain."

Libman<sup>9</sup> in his studies on the individual sensitiveness to pain has stressed the importance of gauging the patient's sensitivity to pain in order to properly evaluate the symptoms with a view to formulating a correct diagnosis. The appraisal of the patient's tolerance to pain is also an important adjunct in the treatment and prognosis. The variation in symptoms of disease of the same nature in different individuals has principally been responsible for focusing attention on this subject.

Individuals have been classified as: (a) hyposensitive and (b) hypersensitive. According to Libman, while it may happen that a sensitive patient may show the same clinical picture as a hyposensitive one, and vice versa, there is a great tendency for the latter (hyposensitive) to feel less or none of the pain of a given disease and to present unusual and irregular radiations of pain. The hyposensitive patient is also apt in the case of visceral disease, to suffer more in the way of symptoms, due to a disturbance of the autonomic nervous system, a number of which symptoms are initiated by reflex mechanisms.

Instead of pain the hyposensitive patient may have what is called substitution symptoms. Substitution symptoms include burning, numbness, pressure, tingling, prickling and other forms of paresthesia that may be considered as representative of pain. These reflex disturbances may cause symptoms due to spasm of the cardia, the pylorus, ileosecal junction, sigmoid flexure and the like (e.g. in disorders of the heart and abdominal organs). Thus there may be prominent or predominant such manifestations as eructation, aerophagia, yawning, coughing, choking, hiccups and sneezing.

Libman's hypothesis after an analysis of his observations is that the great difference between the hyposensitive and sensitive patient is that in the latter the pain impulses travel more directly into the central nervous system. In hyposensitive individuals, they seem to be delayed in the autonomic nervous system or linger there. Various methods have been devised in an attempt to measure the threshold of pain. Because of their simplicity, the following tests described by Libman and Hollander respectively lend themselves best to routine use in clinical practice.

Libman's<sup>9</sup> test for sensitivity to pain is carried out by first pressing the thumb against the tip of the mastoid bone and then slipping the finger forward and pushing against the styloid process. The mastoid pressure serves as a control. Pressure on the styloid process is painful to some individuals and not to others. The sensitive point is presumed to be not the styloid process but a branch of the auricularis magnus nerve.

Recently, Hollander<sup>10</sup> suggested another method for quantitative evaluation of the patient's threshold to pain. The instrument consists of a piece of elliptical metal grater, three inches by four inches in size which is sewed to the contact surface of a blood pressure cuff. The cuff is applied on the patient's arm in the usual way, with the metal grater placed on the medial surface of the arm just above the elbow. The cuff is inflated slowly at the rate of about ten mm. of mercury pressure per second. The pressure on the grater prongs that causes the patient to wince, change expression or cry out is recorded as the sensitivity level to pain. The individual is not informed of what is being done, so that a spontaneous reaction to the examination is obtained. In hyposensitive individuals, no wincing or objection to the test occurs, even when the limit of the mercury column is reached. In the hypersensitive group, the sensitivity level was below 110 mm. pressure. In the normal group, the sensitivity level ranged between 110 and 260 mm. pressure.

The writer<sup>11</sup> has shown in an article on "Sensitivity to Pain" based on an analysis of 450 cases which will be published shortly, that patients with organic disease have usually a higher threshold to pain than patients with functional complaints. The functional type, contained many cases in which organic disease could not be demonstrated, and in which the complaints were functional, as in cases of anxiety neuroses, chronic exhaustion, nervousness, and vague and ill-



defined pains. In the organic disease group the percentage of hypersensitive cases was six; in the group with functional disturbance the percentage of hypersensitive cases was thirty, nearly five times as much. Of the cases of hypersensitivity, approximately 75 per cent were women. It was also demonstrated that women have a lower threshold to pain than men.

In a study of the sensitivity levels in the cases of psychoneurosis and intercostal neuralgia in this series, it was found that their threshold to pain was definitely decreased according to the Hollander and Libman tests, as compared with those cases in whom organic disease was demonstrated. About thirty per cent of the cases showed evidence of hypersensitivity. The majority of the patients were women.

In these cases of psychoneurosis and intercostal neuralgia the character of the pain corresponded in all details to the neuralgic chest pain described by Heaton, which has been given fully in this paper so that repetition will thus be avoided.

It would therefore appear that a lower threshold level to pain is undoubtedly a common factor in the causation of the pain, that is, appreciation of stimuli as painful. As Libman has pointed out, it is also possible that the pain impulses travel more directly into the central nervous system which is probably due to the same influences that were responsible for the decreased sensitivity level to pain.

There were six cases of neurocirculatory asthenia or effort syndrome that were included in the cases of psychoneurosis. In several other cases, it was felt that a diagnosis of effort syndrome might have been combined with the diagnosis of psychoneurosis. But for practical reasons, the cases of effort syndrome were included in the general group.

It is impossible to state accurately the frequency of effort syndrome for several reasons. The border line is very wide and indistinct, and where the normal response ends and the abnormal response begins, especially with such variable factors as human individuals, it is impossible to say. Moreover, a normal person may have the condition for a short time during or after an acute illness or especial fatigue, without its being particularly noted by patient or doctor. And finally, it has been included by most physicians as a part of the more general terms "neurasthenis", "nervous prostration", and "neurosis."

Very recently, Dunn<sup>12</sup> after an extensive review of the literature in the field of medicine and psychiatry with reference to the problem of neurocirculatory asthenia draws the following conclusions: The majority of patients with neurocirculatory asthenia show a psychological disturbance. The condition should be classified with the psychosomatic neuroses. Neurotic traits are commonly found. The family setting and early life experience of the individual seem of more significance than the constitutional and hereditary factors. Precipitating factors may be emotional strain, physical strain, or infection, but the important etiological factor seems to be anxiety, anger, or guilt actuated particularly by military experience. Treatment has been relatively ineffective in the past due to a failure to reach the underlying emotional tension which keeps the symptoms in force in spite of persuasion, reassurance and re-education. Treatment may be most effectively conducted by team-work of the cardiologist and psychiatrist.

In the psychoneurosis category were two cases of women, who in addition to the chest pain complained of severe pains in the breast with marked tender-

ness on palpation. These pains are probably due to a neuralgia of the third to the sixth thoracic trunks.

Carnett<sup>13</sup> in writing on abdominal pain, says that neuralgic pain is very frequent, and that a large proportion of these cases are neurotic.

### Summary and Conclusions

1. One hundred cases of patients whose principal complaint was chest pain are reported.
2. In the diagnostic approach to patients with chest pain, the first responsibility evolving upon the physician is to determine whether the patient has heart disease or not.
3. In this series 14 per cent of the patients had heart disease, 14 per cent had gastrointestinal disorders, and 17 per cent had respiratory diseases, which apparently had accounted for the chest pain in these cases. Some points of importance in the differential diagnosis are stressed.
4. In fifty-five cases (55 per cent) there could not be demonstrated any evidence of organic disease, but only functional disturbances. These cases were categorized as psychoneurosis, neurocirculatory asthenia (effort syndrome) and intercostal neuralgia.
5. The pain in these fifty-five cases were of a "neuralgic character" and corresponded in all respects to the neuralgic pain as recently described by Heaton.
6. Neuralgic pain is therefore the most common type of chest pain, and is found not only in patients with functional disorders but may also be associated with organic disease of the heart and lungs.
7. In detailed studies of the threshold level to pain by the Hollander and Libman tests, it was found that these fifty-five cases had a decreased threshold level to pain in comparison to the cases with organic disease.
8. The lowered threshold to pain is therefore a common factor in the causation of this neuralgic pain, i.e., over appreciation of stimuli as painful. Another important factor may be that the pain impulses travel more directly into the central nervous system in these cases, which is probably brought about by the same influences or factors responsible for the decreased sensitivity level to pain.
9. These neuralgic pains may radiate and occur in the abdomen and may be misdiagnosed as an acute disease of the abdominal viscera.

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## Case Reports

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The following two cases were seen in connection with the Sick Mariners' Service at this Port.

A. B., age 21, male, occupation—laboratory technician, took sick with chills and slight sore throat while on a ship at sea. Twelve hours later the ship's Doctor was called and found his temperature was 104°; during the next thirty-six hours, temperature varied from 102° to 104° and he felt really sick. A diagnosis of pneumonia was made and Sulphothiazole administered. Thirty-six hours after onset of illness, he was given morphine grs.  $\frac{1}{4}$  hypo and half an hour later the ship was struck by a torpedo. He jumped out of bed, clad only in pajamas, grabbed his life belt and made for his life boat which he was able to get in without getting into the ocean. The boat was half full of water and the spray from each wave helped keep him wet. One hour later he procured a short jacket from one of his companions. He then spent five hours in the life boat before being picked up by a naval boat and about thirty hours later was transferred by ambulance to hospital.

On admission, temperature was 99°, pulse 88 and respirations 20. The patient appeared happy and cheerful and was not complaining. Sulphodiazine was then given. During the first forty-eight hours in hospital he perspired profusely on two occasions; his temperature varied from 99° to 101°—physical examination of the chest was negative. The throat appeared slightly inflamed and a few very small palpable glands were noted in axilla and groin. Temperature during the first two days in hospital was 99° in a.m. and 101° in p.m. During the third, fourth and fifth days, temperature recorded 98.6° a.m. and 102° p.m. with pulse remaining about 80—respirations 20. An X-ray of the chest did not reveal anything abnormal. Although he ran an evening temperature of 99° from the fifth to the eighth day, he had no complaints. The glands in the axillae and groin were still present but were not changing. On the ninth day I noted the tonsils became very red and swollen but without exudation, uvula oedematous, cervical glands palpable, axillary and inguinal glands increased in size and slightly tender, spleen not palpable. The following day the throat presented almost a typical diphtheritic appearance, the membrane appeared very typical and extended along the gums, and glands were more swollen and tender. A fine rubilliform rash appeared all over the body, at first faintly then gradually increased in redness with some areas suggestive of urticaria. This began to fade in a few hours and had completely disappeared at the end of twenty-four hours. At this time the glands were not undergoing any change and the spleen was still not palpable.

Blood was sent for culture, agglutination, etc. I suspected mononucleosis and had Captain George Murphy see the man. He reported on the blood picture as follows:

*Red Cells*—Slight acromia only. No punctate basophilia or nucleated cells seen.

*White Cells*—Schilling Differential Count

Myelocytes . . . . .	0.0%
Juveniles . . . . .	0.0%
Band Forms . . . . .	2.0%
Segmented Polymorphs . . . . .	10.5%
Lymphocytes . . . . .	83.5%
Monocytes . . . . .	3.5%
Eosinophils . . . . .	0.5%
Basophils . . . . .	0.0%

The same day the report came from the Provincial Laboratory as follows:

Negative for . . . . .	B. Typhosus
Negative for . . . . .	Paratyphosus A
Negative for . . . . .	Paratyphosus B
Negative for . . . . .	B. Abortus
Negative for . . . . .	B. Melitensis
Negative for . . . . .	B. Proteus X 19

Blood culture—gram positive diplococci, probably a contaminant. Heterophile Antibody Test—Positive Agglutination 1/896.

Since the diagnosis was confirmed, general supportive treatment and Sulphadiazine was continued. The rash as noted had disappeared and the throat returned to normal in about three days. The glands gradually diminished in size. Temperature and pulse returned to and continued normal. By much coaxing, we kept him in hospital three weeks before allowing him to return to his home in the United States.

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Sydney, N.S.

Mr. R. S., age 22, a Swede, was transferred to me from the Marine Hospital, Sydney, for investigation, with a tentative diagnosis of pleurisy with effusion. The only point in the history accompanying him was that a very short time previously, he had been in a hospital in New York for three weeks complaining of pain in the lower right chest.

Physical examination showed: Diminished movement of right half of the thoracic cage, almost flatness over lower half of the right chest, breath and voice sounds absent, temperature 103°, pulse 100, respirations 20. He looked toxic and the abdomen was somewhat tender along the right costal margin, especially in mid axillary line. I agreed with the tentative diagnosis of pleurisy with effusion.

What later turned out to be two important points, first that he has spent nine months in West Africa and second, that while there he had a very mild attack of dysentery, were obtained from his history.

The following day he was X-rayed. Dr. Corbett, the Radiologist, reported slight clouding over the entire right lung which he considered due to congestion or decreased aeration. The outstanding feature however was the definite elevation of the diaphragm amounting to approximately 5 cms. with slight obliteration of the costophrenic sinus. The left lung field and heart were normal.

Fluoroscopic examination revealed restricted movement of the diaphragm. A scout film of the abdomen showed an apparent enlargement of the liver.

His blood picture was normal and urine normal. He ran a remittent fever of  $98.6^{\circ}$  to  $102^{\circ}$ , pulse was 90 to 100, and respirations about normal. At times, sweating was profuse. He suffered great loss of weight and strength, the tongue was dry and coated and the eyes sunken. I noted that pain was more severe on attempting to move, and it appeared to be relieved by holding his arms tight against his side, "holding the pain under his arm". He developed a cachectic appearance with a yellowish tint to the conjunctiva and skin. The appendix, gall bladder, stomach, bowel and G. U. tract were ruled out as the primary cause. I realized I had a very sick man on my hands. Suddenly I remembered a remark once passed by Dr. H. G. Joyce, one of the full time men at the Marine Hospital, while speaking of his experience in India during the last war, about the prevalence of liver abscess. I felt this could be one, so prepared the patient for operation should aspiration reveal pus and the site not be suitable for cannula and rubber tube drainage.

The first puncture was successful. Much pus with a slight bile and blood staining was obtained. I then introduced the cannula and rubber tube and slowly drained the cavity. This continued to drain into a bottle for a number of days and was sterile on culture.

The patient showed marked improvement at once. His temperature did not go above  $99^{\circ}$ , the next day he began eating and pain completely disappeared. The tube was removed two weeks later as all drainage had ceased.

An X-ray plate taken at this time showed the diaphragm to be 5 cm. lower than on admission.

Three weeks after the operation he walked back to the Marine Hospital and two weeks after that insisted on rejoining a ship.

This was an interesting rarity to us here with a very gratifying result. The diagnosis established was tropical or amoebic liver abscess.

On account of its rarity and the possibility of encountering a case, I would like to add a few words regarding liver abscesses with special reference to tropical or amoebic abscess.

Abscesses of the liver are of four kinds:

1. Tropical or Amoebic abscesses,
2. Septicaemic abscesses,
3. Portal pyaemic abscesses,
4. Cholangitic abscesses.

Tropical is due to the amoeba *histolytica*, and is the final stage of a condition of amoebic hepatitis which with care, can be diagnosed before the formation of the abscess. This amoebic hepatitis manifests itself as a pyrexial illness with hepatic tenderness and enlargement occurring in a person with a dysenteric history and amoeba in the stools. (In this case we have the history of the dysentery but unfortunately did not see the patient in the early stage). The blood count also resembles that found in amoebic abscess, viz. a marked leucocytosis without the polymorphonuclear preponderance found in the usual suppurative processes.

The general symptoms are those of a continuous remittent fever with drenching night sweats, anorexia and exhaustion; emaciation and slight icterus give the patient a characteristic cachectic appearance.

The local signs are hepatic enlargement and tenderness; rarely the abscess may form a fluctuant swelling appearing below the ribs; sometimes oedema of the thoracic or abdominal wall can be seen. Tenderness on pressure over the thoracic wall may indicate the situation of the abscess, and in some cases, deep breathing and coughing may cause pain. Especially characteristic is the pain on sudden movement such as on turning in bed. Pain may also be referred to the shoulders, scapular regions, and right iliac fossa. The base of the right lung often shows changes such as impaired air entry, crepitations, even consolidation from inhibition of diaphragmatic movements, and sympathetic congestion of the lung due to the contiguous process in the liver. X-ray, particularly fluoroscopy, will reveal diminished diaphragm movements and possibly localized bulging of the diaphragm by the abscess.

The trend in the treatment of liver abscess is towards conservatism; the older methods of precipitate exploration and drainage carried a very high death rate, which is now greatly reduced by dealing with the case more gently. Repeated aspiration, using a  $3\frac{1}{2}$ " needle of wide bore, all pus should be measured and one-half of its volume of 1/1000 quinine or 1/1000 yatren is injected, allowed to stay five minutes and aspirated again. This instillation may be repeated until the fluid comes out clear. If no improvement occurs after five or six such aspirations, then drainage is decided upon. Drainage is first done, if feasible, through a tube inserted through a cannula passed along the line of the aspirating needle. If the tube is passed through the cannula on the stretch, and the cannula removed, the tube will when released, fill the cannula track tightly, stopping leakage and bleeding.

This was the treatment carried out in the case described above except that I was able to strike the pus on the first puncture and after aspirating a large amount, I introduced the cannula and rubber tube at once.

Open operation is not very often indicated nowadays, cases which resist aspiration on cannula drainage being generally very severe cases of multiple abscesses, also abscesses in the left lobe or anterior part of the right lobe. Drainage is carried out through an appropriate abdominal incision, a large tube packed round with iodoform gauze being used. Abscesses in the right lobe can be drained laterally after resection of a portion of the ninth rib and brushing back the pleura with gauze or securing adhesions between the parietal and diaphragmatic pleura by leaving an iodine pack in the wound for seven days. The posterior part of the right lobe can be drained by resecting the twelfth rib, pushing the pleura upwards and then inserting a drainage tube into the liver, giving the vena cava a wide enough berth.

The other abscesses of the liver have little surgical application because they are generally terminal complications in hopeless septic conditions. There are, however, two types of abscess in which there is some hope.

1st. The solitary staphylococcal abscess occurring in association with boils, especially in adolescents.

2nd. The solitary abscess of the right lobe, which develops with a rigor and all signs of a subphrenic abscess two months after suture of a perforated duodenal ulcer. In such a case, no X-ray signs of subphrenic abscess can be found, then the liver should be needled for the abscess.

M. J. MACAULAY, M.D.  
Sydney, N.S.

## Personal Interest Notes

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THE lure of new fields in science leads doctors along strange trails but few are as adventurous in war-time as that followed by medical officers of the paratroopers. A Halifax man, Lieutenant Robert W. Begg, who graduated from the Dalhousie Medical School in May, 1942, is one of these. The first Canadian Parachute Battalion, now finishing its training at Fort Benning, Georgia, and which soon will transfer to its own camp in Canada, has three medical officers and each now is a qualified paratrooper. The others are Captain Charles F. Hyndman of Charlottetown and Captain Colin N. Brebner of Toronto and Kirkland Lake, Ontario. The three young and husky medics have been spared nothing in their training at Fort Benning, for they have to be as tough physically as any paratrooper. They took strenuous calisthenics and all the regular jumps from towers before being allowed to start actual qualifying leaps in free 'chutes from planes.

According to Dr. F. J. Barton, Medical Health Officer of New Waterford, nutrition is not the patchwork of faddists but the unfolding by eminent nutritional authorities of orthodox material concerning what is right and wrong in diet. Many ills are derived from improper diet and some diseases are purely of nutritional origin. In many cases expensive food products are not at all necessary to a well-balanced diet. Far less expensive articles may be obtained, containing more beneficial nutrition value, and at the same time showing obvious economic gain. Surveys have shown that many Canadians have been allowing a substantial part of their diet to be made up of not only costly foods, but at the same time foods low in nutritional value.

The BULLETIN extends congratulations to Dr. and Mrs. W. W. Bennett of Bridgewater on the birth of a son, William Gary, on March 15th, and to Flying Officer and Mrs. A. A. McVicar (Gladys Hamar) of Halifax on the birth of a son, Ronald Richard (premature) on March 31st.

Dr. L. R. Meech of North Sydney was recently in Montreal on business.

Twenty persons made their first contribution of blood at the opening of the Sydney Mines and District Blood Donors Clinic held at Harbour View Hospital on February 25th. It was in charge of Dr. H. J. Martin, head of the local organization and was attended by local and out-of-town doctors and nurses. Among those taking a prominent part in the proceedings were Dr. Margaret E. B. Gosse of Halifax, who is organizer of this work in the Province; Dr. Enid MacLeod, Sydney; Miss Katherine MacLennan, Sydney, who is chairman of the Cape Breton Blood Donor Clinic and Mrs. Thomas Guy, Sydney, and a number of others.

The marriage took place in Halifax on March 9th of Miss Patricia Gordon, daughter of Mr. and Mrs. Roderick McLeod of Sydney and Lieutenant Hector Ian MacGregor, son of Mr. and Mrs. Hector MacGregor of Halifax. Lieutenant



MacGregor, who is with the R.C.A.M.C., graduated from the Dalhousie Medical College in January of this year.

Dr. R. E. Pugh of Great Village was seriously injured in a car accident early Monday morning, April 5th. Captain Richardson and Captain R. Sparling were accompanying Dr. Pugh who was visiting in Debert Camp, on a call when the accident occurred. In some manner, the car driven by Dr. Pugh, left the main highway at the intersection of the Debert beach road, and overturned, seriously injuring Captain Richardson and Dr. Pugh. Captain Sparling miraculously escaped with a severe shaking up. The two injured men were rushed to Debert Military Hospital where Captain Richardson passed away on the 7th. Dr. Pugh has since been transferred to Colchester County Hospital, where his condition is reported as serious. His injuries consist of a compound leg fracture and besides cuts and bruises, he is suffering from shock.

Something new in the Royal Canadian Navy, a "Well Baby Health Service" has been formed at an Eastern Canadian Port for children of naval personnel and to protect the health and living conditions of families of naval officers and ratings in a war-swollen city. The men in charge of the new clinic are former well-known baby specialists of McGill University—Surgeon Lieutenant-Commander C. L. Bacal and Surgeon Lieutenant Alan Ross. Surgeon Captain D. W. Johnstone, R.C.N.V.R., staff medical officer, Atlantic Coast, is responsible for the establishment of the service. The scheme was worked out in conjunction with the Halifax Branch of The Medical Society of Nova Scotia and the Dalhousie Public Health Clinic. Halifax thus becomes the first Canadian city to work out a plan of preventive medicine with one of the armed forces to the mutual benefit of citizens and service personnel. Dr. Allan Morton, Commissioner of Health, is fully behind the new venture. Nursing Sister Elaine Ambery, a specialist in public health and children's diseases, and a graduate of the University of Toronto, is in charge of the clinic. In the new clinic each child will receive careful physical examination, nutritional supervision and administration of accessory food factors. Officials stressed the point that the service was not for sick babies nor those needing medical treatment. The service is to prevent sickness in the city. The mother will be taught breast stimulation, mother's diet, making of formula, cereal or soup, etc., suitable clothing and other routine necessary for the healthy growth of her child. At the proper periods in the baby's growth he will receive immunization for diphtheria and whooping cough. He will be vaccinated against small-pox and will be tested for tuberculosis. One afternoon a week will be set aside for conference between officials of the service and the mothers on discussions of training routines, difficulties, budgets, etc.

# Obituary

**D.** R. GEORGE WILLIAM SMITH, formerly of the Provincial Department of Public Health and widely known throughout Nova Scotia, died on March 22nd, following a very brief illness, at Salt Lake City, Utah, where he had been serving with the United States Army Air Corps. Dr. Smith was the son of the late George William and Jessie Smith of Merigomish, and was born at Merigomish in 1901. He received his early education at New Glasgow High School and graduated from the Dalhousie Medical School in 1925. Following his graduation he joined the staff of the Nova Scotia Sanatorium at Kentville. In 1927 he accepted an appointment with the Department of Public Health of Nova Scotia. In 1930 he commenced post-graduate study in surgery at the Royal Victoria Hospital, Montreal, where he won a three-year fellowship to the Crile Clinic, Cleveland, Ohio. Following this Dr. Smith entered private practice at Niagara Falls, New York, where he continued until June, 1942, when he joined the medical service of the United States Army Air Corps with the rank of Captain and was stationed at Salt Lake City where his death occurred. He is survived by his widow, the former Miss Eleanor Meek, daughter of Dr. Florence A. Meek and the late Senator William H. Meek of Cleveland, Ohio; two sisters, Clara (Mrs. A. Earle Giffin) of Halifax; Laura (Mrs. O. A. Ross) of Westmount, Quebec; and one brother, James D. of Merigomish.

The death occurred suddenly in hospital, somewhere in England, of Dr. John William Acheson Greig, R.C.A.M.C., on April 6th. Dr. Greig was born in 1903, a son of Mr. John Greig of Seaforth, Ontario, and graduated from Toronto University in 1930, following which he practised his profession at Timmins, Ontario. He later spent two years in post-graduate work in England, specialising in gynaecology and surgery as well as general medical work. Returning from England, he spent a short time at Port Colborne, Ontario, going to Bridgewater in 1939, as assistant to Dr. W. N. Rehfuss. Following the death of Dr. Rehfuss, Dr. Greig carried on the practice, until joining the services in June, 1941. After military duty at Halifax, Sydney, and Upper Canada, where he specialized on tropical diseases, he was posted overseas in September, 1942. He is survived by his wife, the former Miss Margaret Dunn of Port Colborne, Ontario, a son, Teddy, and a daughter, Lillian, who reside in Bridgewater.

The BULLETIN extends sympathy to Major H. C. S. Elliot, now overseas, on the death of his mother, the former Minnie Clare Seldon, widow of the late Dr. C. S. Elliot, which occurred at Halifax on March 5th. It also extends sympathy to Dr. W. J. MacDonald of Truro on the death of his father, A. J. MacDonald, retired C.N.R. conductor, which occurred at Truro on April 6th.