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THE MANAGEMENT OF HYPERTENSION

by

Edward S. Mills, M.D.

Montreal, P. Q.

THE problem of the management of hypertension is complicated by the fact that the actual cause of most cases of hypertension is unknown. It is true that as our knowledge of the disease or syndrome advances, we are able to separate certain types with a known etiology but these as yet comprise a very small group compared with the great mass of hypertensives of unknown etiology. The first group to be separated were those in which the hypertension was found to be due to renal disease. For many years it has been known that acute glomerular nephritis led eventually, in a certain number of cases, to an intractable type of hypertension. Then along came Goldblatt who showed that interference with the arterial blood supply to a kidney led to hypertension With the reestablishment of normal arterial circulation or removal of the kidney the blood pressure returned to normotensive levels. These observations led to the discovery that the ischaemic kidney excretes into the blood stream an enzyme called renin which in turn liberates in the blood stream substances which act usually on the sympathetic ganglia or the vaso constrictor nerve endings in the arterioles producing a rise in blood pressure. These substances are variously called hypertensin, angiotonin, etc. One may presume that this mechanism or one somewhat similar is responsible for the hypertension in other types of renal disease accompanied or followed by hypertension.

Another cleavage from the great mass of hypertensives occurred when Cushing showed that certain tumors of the anterior pituitary or of the adrenal cortex were associated with hypertension. Their removal led to permanent restoration of normotensive levels. Thus it became apparent that there was a humoral or enzymatic aspect to the problem. It is believed that certain tumors of the anterior pituitary secrete an adrenocorticotropic hormone which in turn stimulates increased production of an adrenal cortical hormone having vasoconstrictive properties as well as minimal effects on salt metabolism. Whatever the mechanism by which the hypertension is produced, the fact remains that successful removal of the tumor will restore the blood pressure to normal levels.

The third group of hypertensives to be split off were those in which the hypertension is due to a tumor of the adrenal medulla, the pheochromocytoma. Increasing knowledge of adrenal medullary tumors has revealed the fact that the hypertension in these cases is not always of the paroxysmal type with intervening periods of normotension. The hypertension may be continuous simulating essential or malignant hypertension. The diagnosis will depend upon:

1. Paroxysmal rises above the basal level often precipitated by bending or massage of adrenal area.
2. A significant reduction in pressure after an epinephrine antagonist such as benzodioxane or dibenamine.
3. Precipitation of a pressure peak by means of an epinephrine provocative agent such as mecholyl or histamine (this is not without danger).

4. Demonstration of tumor by renal displacement with O_2 insufflation.

Removal of the tumor may be attended by dangerously low blood pressure which must be corrected by sodium chloride and adrenal cortical extract.

It is not my intention to discuss the management of these three groups but rather to review present methods of managing the essential hypertensives—those in which no fundamental cause for the abnormally high pressure can be found. Although there may still be those who believe that arteriolar changes precede hypertension, the bulk of evidence indicates that in the early case of essential hypertension the cardiac output, the blood volume, the blood viscosity and the elasticity of the arterial wall are all normal for the particular age group. The increased arterial pressure is due primarily to augmented peripheral resistance as a result of narrowing of the lumina of arterioles which are in a state of spasm. Wakerlin[1] states that the relation between blood pressure and the calibre of arterioles is such that a reduction by one fifth in the lumen of these vessels will necessitate a doubling of the blood pressure for the maintenance of adequate circulation.

Eventually this increased arteriolar tone is followed by a progressive type of arteriolosclerosis particularly noticeable in kidneys, spleen, pancreas, liver and brain.

It is obvious that treatment to be successful must be directed towards those cases and to those arterioles which are still in a state of spasm and have not yet undergone irreversible sclerotic changes.

The present management of essential hypertension may be divided into three compartments which are not entirely separate one from the other. It may be necessary to employ all three in the treatment of any given case. They are in a sense complimentary to each other. One may refer to them as the three "D's"—diets, drugs and denervations.

DIETS

For many years radical restriction of protein and socium has been practiced in the management of hypertension but with mediocre results. A reduction in sodium chloride to 700 mg. or less per day will produce a significant drop in pressure in from 10 to 20 percent of hypertensives but will not affect the course of the disease in four out of five. Within recent years Kempner's rice diet has undergone widespread clinical trial. It is essentially a low protein, low sodium, low calorie diet consisting mainly of rice and fruit. It still has adherents among the profession and a few patients have had the courage to follow it for prolonged periods with indifferent success. It has its greatest effect in the plethoric obese hypertensive who obviously requires a lesson in moderation. Its effect on other hypertensives has been well summed up by one authority who said—"For the essential hypertensive of normal weight, a protracted adherence to the low calorie, low vegetable protein content of the rice diet must inevitably lead to undernutrition and indeed to malnutrition."[1]

There is, in my opinion, no valid reason for making the hypertensive's life miserable by depriving him of moderate amounts of animal or vegetable protein or indeed by undue restriction of sodium chloride. On the contrary, the focusing of his attention three or four times daily upon his condition may lead to psychogenic effects likely to more than cancel out any beneficial re-

sults from dietary restrictions. Our aim should be moderation—reduction in calories for the obese—small meals at frequent intervals if necessary to maintain normal body weight and some reduction in salt and purines.

There are, no doubt, those who will challenge the right to include alcohol as part of any diet—who would place it under the heading "drugs," but I would remind you that it is broken down in the body into carbon dioxide and water with the liberation of many calories. That it has during this process considerable peripheral vasodilator effect must be fully acknowledged. According to Grollman,[2] its beneficial effect in hypertension depends in part upon its depressant effect on the cortex. By allaying anxiety and tension the number and intensity of stimulu reaching the vasomotor center are reduced, hence a reduction in arteriolar spasm.

DRUGS

The following is a partial list of drugs which have been reported to be of benefit in the management of hypertension:

Histamine
Mecholyl
Pancreatic Extracts
Garlic
Parsley
Liver Extracts
Nitrites
Nitrates
Xanthines

Vitamins A, B complex, C
" E, K, P (rutin)

Priscoline
Tetraethylammonium Chloride
Dibenamine
Dehydroergotamine
Dehydroergoclonine
Veratrum derivatives
Hexamethonium Chloride
1-Hydrazinophthalazine (Apresoline)
Thiocyanates

Most of the advertised cures for hypertension contain one or more of the above compounds. Certain of these drugs do produce a significant, though temporary, drop in blood pressure and I propose to discuss the effect of a number of the more important ones.

Thiocyante

In 1903 Pauli[3] discovered that sodium thiocyanate 1 gm. daily caused a marked reduction in blood pressure in patients with hypertension relieving their vertigo and other subjective symptoms. In 1925 Nichols after studying the effect of thiocyanate on hypertensives over a period of over 14 years concluded that sodium sulfocyanate was "one of the most efficacious remedies available for the treatment of hypertension." He gave 1 gm. a day for several weeks then reduced the dose to intermittent courses. This dose usually effected a drop of from 20-80 mm. systolic pressure in 36 hours—the effect on the diastolic level was less striking. The optimum blood level of the drug, according to Barker, lies between 8 and 12 mg. percent. The mode of action of thiocyanate was at first thought to be of a sedative effect or a smooth muscle depressant. More recent studies by Thomas[4] and others suggest that its action is through changes in hormonal equilibrium—notably the adrenal cortex. It has been reported that large doses of the drug cause the lipid granules of the cells of the zone granuloma of the adrenal cortex to disappear.

Drop in blood pressure is, therefore, brought about through depression of the adrenal cortex.

The drug must be continued for many months. Optimum blood levels must be obtained and maintained. Overdosage must be guarded against since the drug may be toxic. About one quarter of the patients fail to maintain the initial benefit. According to Thomas[4], there is still a place for potassium thiocyanante in the treatment of hypertension. To quote her, "while thiocyanate may not control all of the mechanisms responsible for hypertensive disease, its clinical effectiveness and the recent experimental evidence of its action on endocrine glands (adrenal cortex and thyroid) justify its continued therapeutic trial and further investigation into its mode of action."

2. Sympathetic Blocking Agents

In the group of sympathetic blocking agents are included such drugs as priscolene, dibenamine, hexamethonium, veratrum compounds and 1-Hydrazinopthalazine (Apresoline). In a general way these substances inhibit the adrenergic vasoconstrictor effect by altering the sympathetic nerve control of the arteriole at the level of the vasomotor center in the medulla, the dorsolumbar paravertebral sympathetic ganglia or act directly on the nerve endings in the arteriole.

2A. **Veratrum Viride** (Veriloid) (Anatensol) **Veratrum Alba** (Protoveratrine)

These drugs lower blood pressure by stimulating the afferent inhibitory fibers to the vasomotor center in the medulla and hence inhibit the adrenergic vasconstrictor effect. Their effect may last from 6 to 8 hours. Unfortunately, the drug level at which the therapeutic effect is obtained without the undesirable side effects of nausea and vomiting is a narrow one and difficult to control. It must never be given on an empty stomach and previous doses tend to lower the threshold of the emetic but not the hypotensive effect.[9]

2B. Hexamethonium—C6

This compound, as a chloride, bromide or bitartarate salt has been used widely in the management of hypertension. It is not only a blocking agent for sympathetic ganglia but it inhibits the adrenergic action at the arteriole level. It acts on the ganglion as well as directly on the nerve ending in the arteriole. Clinically, it does reduce temporarily the systolic blood pressure and often gives symptomatic relief but it does not cure the hypertension and time only will tell whether it can lengthen the life span of hypertensives. Tolerance to the drug develops so that increasing dosage is required. Probably the most serious objection to its use results from the side effects which are not uncommon and are difficult to control.[2] These include:

(a) Gastro-intestinal atony
(b) Paralysis visual accommodation
(c) Disabling postural hypotension
(d) Lethargy and impaired cerebration
(e) Shivering in cold due to cutaneous vasoconstriction
(f) Loss of bladder tone
(g) Impotence in the male.
(h) Cessation of salivary secretion.

These can be only partially controlled by use of parasympathomimetic agents as Arecholine. I have seen serious effects from its use—accidents due to postural hypotension while the patient was descending stairs or driving a motor car.

A physician under my care developed a cerebral thrombosis when his systolic blood pressure level was maintained at the 150 instead of the 250 level.

2C I-Hydrazinophthalazine

(Apresoline Ciba) is said to act on the hypothalamus, the peripheral arterioles and on humerol pressor substances in the blood—as hypertensin, serotonin, pherentasin and norepinephrine. Schroeder[8] used it on 37 patients with malignant hypertension in conjunction with hexamethonium. All but two had a sustained drop of pressure to the 160/100 level. The method of administration was to begin with hexamethonium chloride 125-250 mg. q.8.h. increasing to daily maximum of 500 mg. q.4.h. The companion drug was given in doses of 25-50 mg. q.8.h. increasing to 100 mg. q.4.h. until the blood pressure was normal. Schroeder[8] believes this combination reduces the antihistaminase effects of the I-Hydrazinophthalazine which include severe headaches, nausea, vomiting and prostration. Tolerance to the drug did not appear.

2D Dibenamine

Dibenamine[6] (N-N-dibenzyl-B chlorethylamine) a sympathicolytic agent has been used as a temporary agent to reduce pressure in cases of hypertensive encephalopathy. It was administered orally to 17 patients with severe "benign" hypertension in doses of 0.25 to 0.5 gm. one to three times daily by Wunsch[6] and his co-workers without any significant change in supine blood pressure. All patients experienced unpleasant side effects such as nausea and vomiting. Like priscoline, it has as yet no other practical value in the management of hypertension. This also applies to priscoline and benzodioxane.

DENERVATIONS.

The control of essential hypertension by means of removal of most of the dorsolumbar ganglia is by no means new. Poppen of the Lahey Clinic begins at the fourth thoracic ganglion and through three approaches on each side removes all the ganglia from that level down to the Lumbar IV including section of the celiac and aorticorenal ganglia. It has been carried out on thousands of hypertensives with varying success.[7] If done carefully by an experienced surgeon, it does permanently remove the sympathetic constrictor effect on a large proportion of the arterioles of the body. It fails when the disease is far advanced because arteriolar sclerosis has replaced arteriolar spasm. For this reason it is customary to test the degree and extent of arteriolar spasm by giving the patient a blocking agent such as priscoline or dibenamine to determine whether the sympathectomy is likely to produce the desired hypotensive effect. In order to test fairly the value of dorsolumbar sympathectomy, it is customary to exclude all those patients likely to do well on expectant treatment and those whose arterioles are mainly beyond the stage of spasm and in a state of advanced sclerosis.

Evans and Bartels[7] select cases for dorsolumbar sympathectomy by excluding the following groups:

(a) All hypertensives whose pressure fell to normal on rest.
(b) Persons over 50 years of age.
(c) Long standing hypertensives showing no tendency to progress.
(d) Those who have had cerebrovascular accidents.
(e) Those with severe left sided congestive failure.
(f) Those with severe degree of coronary insufficiency.
(g) Those with poor renal function.
(h) Those with grade IV fundi.

The results in 173 cases were:

1. Angina relieved in 60% of 15 patients.
2. Reduction in heart size in 90%.
3. Improvement in E. C. G. in 42% of 50 patients.
4. Nocturia relieved in 75% of 45 patients.
5. Improvement in retinal vascular changes in 66% of 117 patients.
6. Excellent fall in blood pressure in approximately 50%

Wright and Marple[10] believe that sympathectomy should not be performed for the relief of symptoms unless these are unendurable and cannot be relieved by other less heroic measures. They conclude further that there is no convincing evidence that the life expectancy of hypertensive patients is improved by this procedure.

From a personal point of view, I can recall five patients who underwent dorsolumbar sympathectomy for hypertension—three women and two men. In none has the diastolic pressure shown a permanent reduction to near normotensive levels. However, all appear to be symptomatically better. Headache, the presenting symptom in all four, has been almost completely relieved —and this alone has convinced each of them that the operation was worth while despite the liklihood that their expectancy of life has not been affected by it.

Adrenalectomy

The most heroic treatment of essential hypertension yet proposed is a combination of sympathectomy and adrenalectomy. Lukens[5] and his coworkers have done a unilateral adrenalectomy in conjunction with the second stage of the Smithwick type of thoraco-lumbar sympathectomy on 16 patients suffering from intractable hypertension without any indication that the operation was superior to the sympathectomy alone. In the next 23 cases they removed also the majority of the remaining adrenal gland (90-100%)—8 with and the remaining 16 without sympathectomy. In many of these cases the blood pressure fell from the extremely high pre-operative levels to a normal range with marked symptomatic improvement, relief from heart failure or paroxysmal dyspnea and improvement in kidney function. However, to obtain uniformly good results it was necessary to remove sufficient adrenal tissue to produce adrenal cortical insufficiency requiring replacement therapy by cortisone and desoxy corticosterone acetate—at least 90% of the total cortical tissue. The authors feel that the procedure is a heroic one and should not be undertaken except by groups highly skilled in the management of adrenal cortical insufficiency and with adequate biochemical facilities at their disposal. They conclude that the operation of choice is sympathectomy from T12-L2 combined with the removal of 95% of the total adrenal cortical tissue,

but suggest the widespread use of this means of controlling hypertension must await some nonsurgical method which will produce a comparable effect.

SUMMARY AND CONCLUSION

I have tried to summarize the methods presently in use for the management of hypertension. Some of these have been more successful than others —most do not attempt to cure the disease—they bring about an amelioration of symptoms by producing a degree of vasodilatation through temporary or permanent interruption of the sympathetic fibers to arterioles in the hope of producing temporary or permanent vasodilatation. Unfortunately, arteriolar spasm soon gives place to arteriolar sclerosis which gradually reduces the effectiveness of sympathetic blocking agents and denervation to a point where treatment is unavailing. From what I have said, it will be obvious to you that present methods of treating hypertension—especially essentially hypertension, are far from satisfactory. Medical management should include—(a) methods for maintaining normal weight and fluid balance; (b) Lessons in equanimity and relaxation early in the course of the disease aided by the judicious use of mild sedatives such as the barbiturates; (c) Encouragement by the occasional visit to a wise and experienced physician. Weekly visits to the physician for blood pressure determinations and so-called hypertensive drugs should be discouraged because the patient soon takes too great an interest in his condition. He begins to talk about it to his friends and keep case records of hypertension among his friends.

Extensive denervation operations, while admittedly not curative, deserve consideration in those cases where more conservative measures *for the relief of symptoms* have failed. The operation in selected cases does give relief from headache which may be a crippling symptom. However, the wholesale recommendation of this procedure for most hypertensive patients likely to survive the immediate effects of the operation, is to be deprecated.

A word of caution as to abuses of food, alcohol and tobacco; a little barbiturate; an occasional word of advice and encouragement; an assurance of the benign nature of many cases will do much to protect the hypertensive against its complications—perhaps more than will most of the drugs and operations which have thus far been devised for the same purpose.

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HAROLD ORR, M. D.

1889-1952

PRESIDENT CANADIAN MEDICAL ASSOCIATION

EARLY on Friday morning, December 26th, Dr. Harold Orr received his last call—the call to higher service.

He was on duty in Athens attending the meeting of the World Medical Association when the first mild warning came. There was nothing more until he arrived back in London. Then came a sterner one which kept him in hospital there for several weeks. In New York on the way home a further attack kept him there for several more weeks. He was anxious to get back into Canada and on Sunday night, December 21st, negotiated the trip apparently without ill effect. He was resting up in Toronto for a few days before proceeding to his home when the call became insistent and early the Friday morning Harold Orr as we had known him was no more and the Canadian Medical Association, for the first time in its long history, had lost a President through death during his term of office.

Dr. Orr, after a very busy life, had come to the place where he was about to ease off a bit—had sold his Edmonton home and had acquired one in Victoria to which he was about to move. For many years he had given service to his profession and for several of them had been an active member of the Executive of the Canadian Medical Association. When last year he was elected to the Presidency he threw himself into its demands with the seriousness, ability, and industry, so characteristic of him.

Why did he do this? At a time when it would be so easy to say "I've done my bit—let someone else take on." Why was it not said? Among the answers to that there will be found, as an important one, a conviction on his part as to the place of the Canadian Medical Association in Canadian Medicine and a sense of obligation to advance that place with any given opportunity.

The Bulletin of the Vancouver Medical Association, speaking a couple of months ago in another connection summed up what were also his views:

> "Can anyone of us doubt that it would be a terrific blow to Canadian Medicine, and to each one of us, if the C. M. A. were to go out of existence? It is probably our greatest safeguard against the dangers that threaten Canadian medicine. It is our recognized mouthpiece when we come to deal with governments in Canada and abroad—it represents us, and represents us well, in the United Nations Organization. Through the years of its existence, it has steadily grown in influence and power —and stands ready to fight for our rights and privileges as a profession. It has been responsible for the Royal College of Physicians and Surgeons of Canada—it has fought our battle (and this battle is by no means yet won) against ill-advised legislation, against uncontrolled immigration by unqualified medical graduates from other lands—it is organizing the Trans-Canada-Medical Organization—it has assisted the general practitioner in organizing—and more and more—year by year—its work has become an absolute necessity to every medical man in Canada. Its Journal is one of the best in the world, and has steadily grown in value. Everyone of us benefits by all this .... Not only can we easily afford membership in the C. M. A. —but we cannot afford not to belong to this organization."

That was his faith, those the objectives for which he worked.

It was not only this practical worth to the doctors of Canada however which made him so apply himself but also because he believed that his Associ-

ation expressed the conscience of Canadian Medicine, representing that responsibility and obligation to Society which is the measure of our greatness as a profession.

Yet he would be the first to say that he was but one individual—whether among Executive, or Council, or the general membership of our Divisions—who shared and exchanged such views or who strove for the realization of such ideals. Now he has gone, leaving to other hands the continuation of the tasks inherited by us all.

"So on the ocean of life we pass and speak one another,
"Only a look and a voice;then darkness again and a silence."

Yet who wants to read finality into the silence in such case as his? Do we not rather feel that for every such "fragile form from which he lets the panting spirit free, a hundred virtues rise in shapes of mercy, charity, and love, to walk the world and bless it?"

And now, while the organization which was his concern will, because of the effect of his and other contributions, continue to prosper in its work, it is natural that we should want to think of Dr. Orr in a more personal way, and to lift a little the veil through which he has passed. We who write this know nothing of his formal religious affiliations, and are not concerned, seeing "no best in kind, but in degree"; But we believe, if we believe at all in eternal justice, that when the papers are finally checked and the marks assigned we shall find that for his service to mankind his name will be high on the scroll of those "whom love of God has blessed." Until then:

May he rest in peace and Let
Light Eternal shine upon him!

THE JOHN STEWART MEMORIAL LECTURE*

"The Changing Surgical Pattern"

by

W. Wayne Babcock, M.D.†
Philadelphia

TO address you in honor of Dr. John Stewart, the talented and very industrious first Professor of Surgery in Dalhousie University, and a close associate of Lord Lister in the development of the revolutionary antiseptic practice in surgery, is a distinguished privilege. Full tribute is due to one who had such an important part in "erasing from the calendar of human afflictions one of its greatest," for Doctor Stewart was of great aid in bestowing on surgery a safety and security never before possible. From the beginning he saw successive expansions continue to occur, with developments in this most benevolent field that previously were inconceivable.

Dr. John Stewart, the son of a Scotch clergyman, was born in Cape Breton, Canada, in 1843. He was educated at home, at the local school and the Tours Normal. He taught for a year, and then, to help an aunt, spent three years farming in Scotland. After one year at Edinburgh University he returned to Nova Scotia, entered the Medical School in Halifax, but completed his medical course in Edinburgh University in 1877, with honors. The first six men to hold Professorships in the Medical Department of our University of Pennsylvania were also Edinburgh graduates. During three years of his medical course Doctor Stewart served as Lister's dresser or clinical clerk. He was one of the four young surgeons taken to London when Lister became Professor of Surgery at Kings College Hospital.

In his close association with Lister, young Doctor Stewart saw bursting into bloom the great measures essential for the saving of life and limb, and he lived to see Lister's antiseptic principles adopted as essential in every form of surgical practice throughout the civilized world. He saw the Master's high ideals, his indifference to financial return, and his devotion through long days and many nights to what was then the greatest problem in surgery. Despite Lister's urge that he remain in London, after three years he returned to Canada, and engaged in general practice in Pictou for fifteen years. Removing to Halifax in 1895, he was appointed lecturer and demonstrator of Pathological Histology in the Halifax Medical College.

In 1911 this college was taken over by Dalhousie University, and Doctor Stewart became its first Professor of Surgery, in 1912. In 1916, World War One, at age 67, he enlisted for overseas service, as Commandent of No. 7 Stationary Hospital. He was seventy when his service terminated and he received the C.B.E.

Doctor Stewart was selected as the first Lister orator, and received two honorary degrees from Edinburgh, a degree from McGill and from Dalhousie Universities. He was deeply religious and was much interested in natural history, the classics and photography. He enjoyed walking and early traveled on foot from London to Edinburgh. While at Edinburgh Doctor Stewart was in contact with James Syme, who had been Lister's Chief, and was considered the greatest surgeon of his time in the British Isles, if not in the world. John Stewart crossed the ocean twenty-two times. He remained single, and died at the age of 85 years.

† Emeritus Professor of Surgery, Temple University.

* Read before the Dalhousie University Faculty of Medicine Annual Refresher Course,. Oct. 22, 1952

One cannot well consider Doctor Stewart without referring to the work of his chief, Lord Lister, with whom he played such a helpful part in the development of antiseptic and aseptic surgery; and, in turn one can gain a better appreciation of Lister by some consideration not only of his contemporaries, but of the historical backgrounds of British and Continental surgery. Here during the middle ages the nobility were usually at war, while the clergy were in charge of education, even of physicians. In fact it was said, in 1491, that only 9 physicians were not ecclesiastics. The very large religious group required special attention from barbers for the prescribed tonsures of the head and the shaving of the face. Many of the clergy, living more or less sedentary lives, also felt that they should be bled at regular intervals. But by Papal decree of Boniface VIII, the letting of blood by clerics had been strictly prohibited under penalty of excommunication. As a result the barber attendants became more or less adept in blood-letting, the opening of abscesses and other minor surgical procedures. At this time doctors became known as those of the long robe. Conversing in Latin they would have no part in surgical procedures which actually were left to barbers, surgeons of the short robe, to itinerants or quacks. Occasionally, serving with the armies were well-trained barber surgeons like Ambroise Pare, Father of French surgery, who through lack of a classical education lamented that he could not speak in Latin. However, he had had three years of hospital training in the Hotel Dieu of Paris.

In 1547, by decree of King Henry VIII, an association or guild of surgeons and barbers was formed in England, in which young men were given an apprenticeship training of seven years. Bodies of executed criminals were assigned to the guild for dissection. As the guild amassed wealth, elaborate quarters were acquired and great banquets held, and examinations were given for graduation. Eventually, the Association proved unsatisfactory, and at the end of two centuries the surgeons withdrew and developed separate schools for surgical training. There was then a great advance in the art of surgery, but high mortality and morbidity from infection of wounds continued, for which Lister was to revolutionize surgical technique.

On April 5, 1827, Joseph Lister, the second son and fourth child was born to well-to-do Quaker parents, at Upton, in Essex, England. His father, John Jackson Lister, was a prosperous wine merchant who became distinguished by his original work in mathematics, by his studies of red blood corpuscles, and particularly by devising, about 1824, the aplanatic lenses essential for fine microscopic work. This led to a Fellowship in the Royal Society. The interests and investigative tendencies of both father and son Joseph made for a very close relationship. When separated there was a constant interchange of letters, the son telling of his latest research work, the father critically helpful, and suggestive. Young Lister received an excellent preliminary education, first at the school in Hitchen, then at Grove House, Tottenham. He was greatly interested in natural history and early decided to be a surgeon. He dissected lower animals and prepared school essays on human osteology, on the similarity of structure of monkey and man, and on other subjects, some which he illustrated with excellent drawings. When 17 years old he entered University College, London. Being a Quaker he could not enter Oxford or Cambridge, as in the 18th Century the Test Act required an oath of allegiance to the Crown and Church of England. After receiving a B.A. degree he began his medical course at University College. This was interrupted by an

attack of smallpox, and a prolonged convalescent period in Ireland. He graduated M.B., and became a Fellow of the Royal College of Surgeons in 1852, at the age of 25. During student holidays abroad he had acquired a knowledge of French and German. As a hospital resident he became separated from the strict Quakers with whom he had previously lived. Interested in the Debating Society he prepared two original Papers, with the aid of his father's improved microscope. One proved for the *first* time that the iris had both dilating and contracting involuntary muscles while the other described the presence of involuntary muscles in the scalp.

His Scotch Professor of Physiology, impressed by Lister's unusual ability, gave him a letter of introduction to James Syme, before mentioned as the leading surgeon of his time. Lister arrived in Edinburgh to see Syme in 1853. The visit was interesting and became prolonged. Syme at first advised Lister against entering surgery, but Lister persisted and became Syme's house surgeon, and later a lecturer on surgery. He married Syme's daughter in April 1856, became an Episcopalian, and three of their four months honeymoon were spent on the continent, visiting medical schools. While the Listers had no children, the association was a most congenial and very fortunate one. Mrs. Lister would aid in scientific investigations or by taking dictation even up to nine hours during the day, and until two or three o'clock at night. After four years Syme turned over the surgical practice of his wards to Lister. Despite early rising, the long days were so occupied by writing, teaching, practice and scientific investigations, that Lister was usually late for appointments. From his investigations he published accurate papers on the minute structure of involuntary muscle fibres, on injuries and repair, the effect of irritants on blood vessels, the coagulation of the blood, and on spontaneous gangrene.

Seven very busy and congenial years in Edinburgh resulted from that first meeting with Syme, then Lister—in 1860—was appointed Regius Professor of Surgery in the University of Glasgow. Here instead of the neatness and precision found under Syme were maladorous overcrowded hospital wards of disorder and filth. Single beds were filled with two or more patients. Recurrent epidemics had swept the institution with high mortality. About 75% of the patients with compound fractures died of infection. Many felt that the only adequate treatment of such a pest house was to burn the building. Here was a challenge to Lister. If he could keep the foul air of the hospital out of the wounds, as occurred with closed fractures, would the open fracture become contaminated? The experiment seemed worthy of trial. How could it be done, and what were the best antiseptics to use? It seemed evident that wound infection came from exposure to the air or by other contamination. As sepsis usually meant suppuration, efforts were made to prevent infection. As crude carbolic acid was used to disinfect sewage he first tried it on the compound fractures of James Greenless, in 1865, using lint soaked with the acid, with a covering metal plate to keep out the air. There was some sloughing from the acid but little pus formed, and Lister was impressed that the result resembled that of a simple fracture. This same year Dr. Thomas Anderson, the Professor of Chemistry at Glasgow, told Lister of Pasteur's discovery of putrefactive bacteria in the air. Lister replaced crude carbolic acid with purified carbolic acid which was more soluble in water. The wounds were covered with an occlusive putty made of whitening (cal-

cium carbonate) mixed with the purified acid in olive oil, to keep out the air. As the antiseptic putty crumbled the wounds were then covered with lint impregnated with the disinfectant and an outer impervious layer to exclude the air. Lister's early papers published in the Lancet in 1867, reported 11 cases with only one death, while the mortality of compound fractures in Glasgow had been as stated about 75%. Much experimentation was continued, using a 25% aqueous solution of Phenol. In 1871 eight layers of carbolized gauze was used over the wound with oiled silk or Mackintosh between the outer layers. Directly over the wound "green protective", a sterile oiled silk, was applied,to prevent irritation from the carbolic acid. Many experiments were made to discover an effective non-irritating antiseptic. Bichloride of mercury, chloride of ammonium, boracic acid, and in 1889 gauze impregnated with a double cyanide of mercury and zinc were tried, and carbolized catgut as a soluble ligature was introduced.

Lister's lectures attracted many students and he was intensely busy writing and devising new methods and new instruments:—a tourniquet for the abdominal aorta, bloodless operations, anesthetics with preference for chloroform as well as operations for strictures of the urethra.

Syme resigned as Professor of Clinical Surgery in Edinburgh in 1869, and Lister accepted the Chair. He was appointed Surgeon in ordinary to Queen Victoria, for whom he drained a deep axillary abscess. He now visited the wards in mid-day instead of early in the morning as formerly, and gave only two lectures a week on clinical surgery, for the preparation of which he meditated in an armchair for one-half hour before the lecture. The number of medical students in his class reached 180. He continued the habit of experimenting, often until early morning and of keeping his wife up most of the night to take down notes.

In 1875, during a visit with his wife to Germany, where he championed the use of humane vivisection, he was highly honored. The following year he attended the International Medical Congress in Philadelphia, where he was made President of the surgical section, and at dinner he was placed next to the President of the United States.

With the death of Sir William Ferguson, in 1877, Lister was tendered the Professorship of Clinical Surgery at Kings College, London, the very College which 33 years before would not accept him because of his religious affiliations. He accepted, taking with him your Dr. John Stewart as senior assistant, and Watson Cheyne as house surgeon, although over 900 of his past and present students at Edimburgh begged him not to go. From Doctor Stewart we learn of the unhappy change to the small hospital with few beds and few students, in London, and of an active opposition from uncooperative hospital authorities, as well as of students more interested in passing examinations than in surgical progress. However, in time conditions improved, and when he reached the retiring age of 65, he was persuaded to continue in charge of the wards for another year, when he retired from all surgical practice. In London Lister's private practice was not large; his age, his limited connections, his unpunctuality, his dependence upon his own trained assistant, and the continued criticism militated against a large consulting practice. Nevertheless he had many professional appointments and often was asked to address a medical society.

Early in Lister's work the bacteriologic studies of Pasteur had demon-

strated large numbers of bacteria floating in the air. Lister, therefore, tried to sterilize the air surrounding the wound with a 1 to 40 carbolized steam or spray, but this clouded the surgeon's vision, was toxic, and finally it was found that the free bacteria floating in the air of the operating room was rarely very pathogenic. So the spray was discarded in 1890. Unfortunately many surgeons overlooked the underlying principles of Lister's investigations while criticising and condemning certain steps in his progressive experiments. Well known surgeons published articles that they had tried Lister's method but found it useless.

In Philadelphia, Samuel D. Gross, Professor of Surgery, was asked by the trustees of Jefferson Medical College to investigate the Listerian treatment of wounds. After some weeks of investigation, he sent in a report that he had found the method valueless. Many others never acquired an antiseptic technique.

In 1890, when I entered the study of medicine, antiseptic methods were in use, but infections from surgical procedures were common, except in the hands of a minority of operators. A large proportion of operations were performed in patients homes, which were freer from contagion than many of the hospitals. Doctor Harris, of Philadelphia, about this time collected a series of caesarean sections performed by well known obstetricians and contrasted their mortality with that resulting from caesarean deliveries resulting from the horns of enraged bulls. He found that statistically it was safer to be operated upon by the bull.

But cleanliness in operative procedure was not really new. Even in the thirteenth century Henri de Mondeville, the first French author of a text on surgery, had pleaded for clean hands and clean needles "for then", he wrote, "every simple wound will heal without pus." Back in 1843, the year John Stewart was born, Dr. Oliver Wendell Holmes called attention to the contagiousness of puerperal fever, and cited instances of its spread from patient to patient by individual doctors who personally carried an infection as from an ozaena. This also was independently demonstrated in 1847 by Ignez Phillip Semmelweis, who reported the high incidence of puerperal infection following deliveries by medical students in Vienna whose hands had not been cleaned after dissection. Semmelweis was able to largely eliminate the contagion by having the students wash their hands in chlorinated water before a delivery. But when Semmelweis tried to make his colleagues and other doctors follow his life-saving methods he was bullied, criticized and antagonized until he became insane.

But these and other significant facts did not change established surgical practice. It required Lister's persistent and repeated demonstrations, lectures, published articles and his unending experiments, to find the best method to obtain asepsis; and finally to change ridicule into interest and antagonism into adoption of the principles. He never showed anger, and always remained a gentleman with a deep interest in humanity. It had been easy for surgeons to say with Ambroise Pare, "I dressed him and the Lord healed him", but quite different to confess, "I infected him and the Lord received him". To accept Lister was for the surgeons to confess responsibility for innumerable deaths. Thus Lister's efforts were ignored, attacked or ridiculed, particularly in England.

Some like Lawson Tait of Birmingham violently attacked Lister's anti-

septic methods, while in practice using its basic principles. Tait thoroughly scrubbed his hands before operating, not realizing that the very soap he used was an antiseptic. I did not consider this a property of soap either until about 1898, when an English firm introducing a new soap with a strong cresol odor, brought a sample to the laboratory of bacteriology and pathology, where I was teaching. I found the antiseptic coefficient of this soap so much higher than would be expected from the small percent of cresole it contained that I made corresponding tests with a common commercial white soap, and found it equally antiseptic. Tait not only used soap, but he boiled or scalded his instruments and basins, and used freshly washed and ironed linen, while denouncing the value of antiseptic methods in surgery.

The years required for antiseptic surgical practice to come into general use is surprising, and indicates that this great blessing to humanity might have been abandoned save for Lister's indomitable perseverance. His first papers, showing the value of antisepsis, were published in 1867. Twenty-six years later, while a surgical resident, I saw older visiting doctors place ligatures in the buttonholes of their coats, to be conveniently offered to the operator. Particularly abroad, but also in the States, it had been considered essential for surgeons to maintain the dignity of their predecessors of the long robe. Therefore, the top hat, the frock coat, were emblems of professional dignity. Before Lister, hardly any well trained surgeons when operating in a private home would have been so undignified as to remove his coat or roll up his shirt sleeves. I recall the demonstrator of anatomy, of our oldest medical school in the States, in his begrimed frock coat, always worn as he dissected and lectured on anatomy.

In 1896, while serving an Eastern postgraduate hospital, infections were found to be common, after the so-called antiseptic practice of many of the surgeons. It is evident that only after years of careful training has the safety of Lister's surgery been attained. With what wisdom and care and persistence did Lister insist on meticulous detail and accept and train only very dependable associates like Doctor Stewart, in whom antiseptic principles could be ingrained.

Lister had been fortunate in his father-in-law, for Mr. Syme was noted for his spotless attire and neatness. No doubt he had impressed his young assistant by the then unusual habit of washing his hands after every examination of a patient. His wards were noted for their order and cleanliness, quite in contrast to the disorder and odors of adjacent wards under the care of other surgeons.

History records that when 28 years of age, Syme had excised the lower jaw for an osteosarcoma 15 inches in circumference in less than 25 minutes, with operative recovery. Other examples of his daring and skill are shown by his operations for aneurysm. For one large abdominal aneurysm he exposed the sac, and thinking the feeding artery entered posteriorly, he plunged his index finger through a short incision into the sac in an effort to plug the artery, and thus stop the torrent of blood pouring into the aneurysm. Unable to reach the opening Syme instantly enlarged the incision, thrust his entire hand into the aneyrysm enabling his index finger to cork the arterial opening. This was found on the anterior wall of the sac, and proved to be the iliac artery. Simultaneously his assistant, Liston, succeeded in quickly compressing the aorta by a tourniquet in the narrow space between the large aneurysm and the ribs.

This cut off the flow of blood to the aneurysm and enabled the large contributing vessels to be tied, with recovery of the patient. Obviously the bleeding from the open sac would have caused death in a few more seconds.

Rapidity in operating was important in the pre-anesthetic days, to save the patient from any prolongation of the operative agony; but even after the introduction of ether and chloroform anesthesia, in 1846 and 1847, many oprators continued to demonstrate their dexterity and to thrill their audiences by their speed in operating. It is said that Doyen of Paris was first, Tait of Birmingham second in speed and dexterity, as indicated by Doyen's vaginal hysterectomy in two minutes and Tait's perineorrhaphy in five minutes, while Martin removed a double pyosalpinx in eight minutes and Ferguson cut for stone in eight seconds. But Robert Liston did an upper thigh amputation in 20 seconds. He was a powerful man, six feet one inch tall, whose large left hand partly surrounded the limb, compressed the main artery, and then held back the flaps as they were formed. Sir Cecil Wakeley of England at a surgical meeting in New York last month, in referring to this operation, thought it may have taken forty seconds, but added that the patient lost not only his leg, but also all his external genitals, while the assistant lost three fingers. Really, seven things were cut off by the single sweep of the knife. My Liston long knife has been moved to a higher shelf and is now regarded with awe.

In contrast, by 1890, certain surgeons began to devote much more time to their operations and greater attention to detail. Joseph Price of Philadelphia, watching Halsted using four hours or more for the removal of a cancerous breast, asked 'if the operator had ever had a recurrence of the malignancy while he was operating.' And then, observing the four hundred hemostatic forceps that had been applied, he murmured, 'well, if the patient dies, I know it will be because she has been bitten to death by all of those forceps.'

Josep Price performed over 3000 operations in private homes. For example, from a farm five to ten miles away, a doctor would telephone "Dr. Price, Mrs. Jones, the 35 year old farmer's wife, who missed her period three weeks ago, just fell down on the kitchen floor and is in awful abdominal pain and collapse." Doctor Price would reply, "Cover her with a blanket, put the tea kettle on to boil, and I will be down to take care of the ectopic pregnancy." Arriving, Doctor Price would remove the lid from the tea kettle, and insert his small roll of instruments wrapped in a towel, while ether was being given on the padded kitchen table by an assistant. Well within an hour of the time of his arrival with equipment packed he would be on the way back to his office.

The Changing Surgical Pattern is well shown in the treatment of wounded Presidents of the United States, at different periods, after Lister's introduction of antiseptic methods. President Lincoln's wound was inflicted in 1865 at the beginning of Lister's work with antiseptics, and involved such serious injury to the brain that it is doubtful if any surgical treatment would have availed.

President Garfield was shot in the back while awaiting a train, at the Baltimore and Potomac depot, in Washington, at 9.20 A.M., July 2, 1881. The bullet was fired from a two barrel Derringer, 41 calibre pistol, from a distance of about six feet, and entered the tenth right intercostal space, four inches from the mid-line. The President was carried to the second floor of the

depot and placed on a mattress. Seven doctors soon congregated and administered stimulants and offered their services. The Secretary of War suggested Dr. D. W. Bliss, who promptly responded and explored the wound by finger and probe. The patient in marked shock repeatedly asked to be transferred to the White House, which was accomplished. At five-thirty the next afternoon the clothing was cut from the President's body. The following morning the moderate hemorrhage from the wound had ceased, the pain in the legs was less, the nausea, frequent vomiting and symptoms of shock had abated, and there was no evidence of peritonitis. Four doctors were called in consultation, one of whom, Surgeon General Wales, also probed the wound with his finger. Early the following morning, Dr. D. Hayes Agnew of Philadelphia and Dr. Frank H. Hamilton of New York arrived, having been called as special consultants.

The new consultants did not probe with "undue force," but also could not determine the direction or location of the missile. The president's condition, except for slight fluctuations, was considered satisfactory until the nineteenth day, when a subcutaneous abscess was evacuated by pressure, after which abscesses about the wound, and later of the parotid, mouth and skin, were drained. The patient finally was transferred by the aid of rapidly constructed railroad tracks to a cooler private mansion at the seashore. After eighty days the illness terminated with rupture of an abscess, and of a traumatic aneurysm of the splenic artery, into the peritoneal cavity.

The question as to whether the wound was necessarily fatal aroused considerable discussion and was considered by four leading medical authorities in the North American Review for December 1881. Three, Drs. Ashhurst, Marion Sims and Hodgen agreed that death was inevitable. Dr. William A. Hamilton disagreed and was severely criticized. Probably present day surgeons would agree with Doctor Hamilton that recovery was a possibility, had even early trict Listerian practice been followed. With present knowledge it seems regrettable that Lister's occlusion antiseptic dressing was not immediately applied and any exploration deferred until indicated by symptoms of infection. Thus, if the wound had been primarily antiseptically sealed and not explored by fingers and probes, and particularly in a Railroad Station, primary union without the infection and the necrosis which led to the terminal rupture of the traumatic aneurysm of the splenic artery may not have resulted.

The reward of the Government for the surgical services rendered in this case may be of interest. Doctor Bliss, who gave up a large and lucrative practice to give his entire time to the President, for eighty days, rendered a bill for $25,000, and received $6,500. Unnerved by criticism, and with practice scattered, he soon died. Doctor Agnew refused to make any charge for the many trips from Philadelphia, but was given $5,000., as was Doctor Hamilton, who had asked $15,000. One nurse received $4,000., and the other $3,000.

President McKinley's wound occurred in September 1901, and was a much more dangerous one, as the bullet penetrated the peritoneum and stomach. The leading surgeon being absent from Buffalo the necessary operation of closing the gastric wounds was performed in a private home by an experienced gynecologist. About two days after the operation a trained nurse arrived in Washington. It is difficult to turn a home into a hospital in one day, and she found the house nearly barren of necessary equipment for approved surgical

treatment. Groups of doctors collected in the patient's bedroom, discussing phases of the case, while the patient begged for relief from the pain. The newspapers reported a progressive rise in the patient's temperature and pulse rate, and apparently to avert a threatened collapse of the stockmarket, a noted New York surgeon was dispatched to the bedside. He arrived, took an ordinary tumbler, filled it with tap water and added some tincture of iodine—and syringed the President's wound. His report as published was quite favorable. A few days later the President died.

Theodore Roosevelt was shot in Milwaukee as he entered an automobile to drive to the auditorium for an address. The bullet entered the fourth rib on the right side, 4″ from the sternum, but fortunately after it had perforated his eyeglass case and manuscript. Mr. Roosevelt insisted on giving his address although blood soaked through his clothing. A temporary occlusive dressing was applied, and he proceeded by train to Chicago, where a group of surgeons, with their hospital ambulances, were each eagerly waiting to receive and attend him—at the main station. However, as previously arranged, Dr. John B. Murphy was waiting with his hospital ambulance at a suburban station. Roosevelt insisted that he did not wish to be treated by a number of surgeons as were Garfield and McKinley. At the Hospital he was treated in true Listerian fashion, by disinfection of the skin about the wound and an occlusive dressing. The wound or bullet was not probed or disturbed, two other surgeons saw the patient but were not permited to meddle in the case. The patient left the hospital in 21 days without complications.

Lister's unending experiments have been continued by many others and we can imagine with what interest he and Doctor Stewart would hear of the new antibiotics, and antiseptics that now arrest infections, both locally and throughout the body. May we never forget the great debt that we owe to these courageous pioneers.

We picture Lister, on December 27, 1892. It is the great Hall of the Sorbonne, in Paris, packed with delegates, Ministers, ambassadors and notables from many foreign lands. Probably no greater assembly of the world's scientists and benefactors of mankind has ever occurred. These were moved to tears by the embrace of the two great and aging benefactors of the century, Lord Lister and Louis Pasteur. There is one thing we would have wished. John Stewart should have been present to receive the tribute for his important share in the introduction of aseptic surgery.

Society Meetings

THE NOVA SCOTIA SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

A joint meeting of the New Brunswick and Nova Scotia Eye, Ear, Nose and Throat Specialists was held on Wednesday, November 19th, at Halifax, N. S.

The clinical portion of the meeting was held at the out-patient department and the fourth floor west of the Victoria General Hospital.

The following clinical cases were presented by the Halifax members of the Nova Scotia Society.

—1. Perichondritis of Auricle.
—2. Contraction of the Color Fields.
—1. Retinitis Pigmentosa treated with Cortone.
—2. Post-operative Strabismus (Mycotomy of the Inferior Oblique).
—1. Thrombosis of Central Retinal Vein.
—2. Retinopathy-discovered after cataract extraction.
—1. Retinoblastoma.
—1. Buphthalmos—accidental perforation.
—2. Retinopathy—for diagnosis.
—1. Ulcerative Pharingitis.

Following the clinical presentations, a business meeting was held in the Auditorium of the Victoria General Hospital.

Dr. H. W. Kirkpatrick presided and there was a general discussion of mutual problems of both Societies concerning the Canadian National Institute For The Blind and the Federal Department of Indian Affairs.

The next joint meeting of the two Associations will be held at Moncton, N. B. April 27th, 1953. The New Brunswick Society to arrange details of the meeting.

Several of the members expressed regrets at hearing of Dr. H. W. Schwartz's illness and inability to attend the meeting: a suitable letter was sent to Dr. Schwartz expressing these sentiments and the hope that he would be soon improved in health and able to be present at our further meetings.

The session then adjourned for Luncheon at the Lord Nelson Hotel.

Dr. Ross Wright of Fredericton, N. B. presided at the afternoon meeting and the following papers were presented: Dr. J. Land, Glace Bay, N. S., "The Appositional Suture". Dr. Land was unable to be present owing to transportation difficulties, his paper was read by the Secretary and the discussion was opened by Dr. Hayes of Saint John, N. B., Drs. Desmond, Glenister, Doull and Fuller also took part in the discussion.

Dr. F. J. Desmond, Moncton, N. B. presented a paper "Conductive Deafness."

The paper was based on his personal experience and from the literature of the past ten years.

Discussion was opened by Dr. H. W. Kirkpatrick, Halifax, N. S., Drs. Stoddard, McGrath and MacRae also took part in the discussion.

Dr. E. I. Glenister, Halifax, N. S. then gave a brief report on some of the interesting features of the recent meeting of the American Academy of Ophthalmology and Otolaryngology held recently at Chicago.

On motion of Drs. Keays and Cormier the meeting adjourned.

E. I. GLENISTER,
Secretary-Treasurer.

Preventive Medicine in Obstetrics*

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Obstetrics is a field which is particularly fertile in opportunities for Preventive Medicine because one is dealing with two very important and essentially *healthy* individuals, viz: the mothers-to-be of our nation and the unborn generation. It is the responsibility of the medical profession as a whole to institute and foster those measures of Preventive Medicine which have a direct bearing on keeping the mothers healthy during their pregnancies. In this way the new born babies are given a strong and healthy start in life and the general health of the nation is thereby improved and kept at a high standard.

Pre Natal Care

Fifty two years ago Ballantyne made a plea for a "Pro-Maternity hospital" in Edinburgh for the admission of women who were pregnant but not in labour. As a result, in the same year (1901), one bed was set aside for the admission of cases of abnormal pregnancies. It wasn't until twelve years later that an antenatal clinic was established for the care of pregnant patients. From this small beginning such a few years ago the practice of pre-natal care has developed into a universal habit with a tremendous saving in maternal and neo-natal lives through the prevention of disease.

What are some of these Preventable Diseases?

(1). Tuberculosis

It would be impertinent on my part to speak at any length to you who are specialists in this subject. However, insofar as this subject is connected with Obstetrics may I stress the importance of propaganda amongst the lay public concerning the absolute necessity for routine X Ray examinations of the chest—particularly during pregnancy. Unfortunately it is not only the lay public but also the medical profession who need to be awakened to this fact. In the city of Halifax largely through the efforts of Dr. Charles Beckwith, the situation is good and I believe the majority of women do have a chest X Ray during pregnancy. The husbands should also have this X Ray examination of course but this is sometimes more difficult to arrange.

(2.) Toxaemia of Pregnancy

Until this condition becomes a notifiable disease in this country we will not have a yardstick whereby we may compare our results and improve the overall picture. Why couldn't this condition be made notifiable? All that is needed is to incorporate the question "Did this patient have Toxaemia during this pregnancy"? on the existing Birth Notification card. No practitioner is so busy that he can't find time to answer "yes" or "no" while he signs his name. Perhaps some of you will set the wheels in motion and this Public Health problem will be dealt with as it should be. The aetiology of this disease still eludes us and the various theories as to its causation guide us no nearer the truth. The most recent theory comes from Boston within the past year

* Lecture given under the auspices of the Post Graduate Committee of Dalhousie University, at Refresher Course on "A Day of Preventive Medicine", January 12, 1953.

from the Smiths who suggest that there is a toxin in the blood stream in this condition which would seem to be sensitive to large doses of the antibiotics especially penicillin. Their results are in the process of being proved or disproved. Meanwhile rest and sedation and restriction of salt intake are the essentials of treatment in the pre-eclamptic state.

(3). **Cardiac Disease in Pregnancy**

This condition remains a killer in the list of maternal mortality figures. In one of the leading American Obstetrical Hospitals last year it wasn't haemorrhage or sepsis which led the list, it was cardiac disease which killed more mothers than any other factor. The reasons for the cardiac breakdown in pregnancy are:—

(a) Increase in body weight.
(b) Increase in blood volume, therefore a greater output by the heart is necessary.
(c) Upward pressure on the diaphragm and the bases of the lungs are not ventilated.
(d) Interposition of baby's circulation (utero-placental).

All these factors cause extra work for the already weakened heart. Compensation of the heart is least likely to break down in the early months but in the later months and during labour and in the early days of the puerperium extra precautions must be taken. Therefore deaths in this group can be prevented by:

(I) All cardiac cases being carefully followed throughout pregnancy by an obstetrician or family doctor in constant cooperation with a cardiologist.
(II) Facilities for hospitalization and rest at the first clinical signs of decompensation.
(III) Particular care during labour, viz. no prolonged labour; application of forceps as soon as the second stage of labour is reached; local anesthetic or spinal anesthetic; caesarean section in certain selected primiparae.
(IV) Antibiotics as routine in the puerperium as a prophylaxis against sub-acute bacterial endocarditis.

(4). **Pyelitis in Pregnancy**

This condition has not been emphasized enough in the past. It is so easy to prescribe antibiotics and sulphonamides for the condition and once the symptoms subside the condition tends to be forgotten by both physician and patient. All these patients should have an intravenous pyelogram six weeks post partum to exclude an early chronic infection of one or both kidneys. Failure to carry out this procedure will result in many nephrectomies twenty years later which could have been prevented.

(5). **General Condition of the Patient and Diet**

So far I have been stressing the **Pathological** and this has been the tendency in Pre Natal care until the past few years. Recently the **Physiological** has been taking a more and more important place in the treatment of pregnant women. In other words "pregnancy health" should be the objective. This depends on *nutrition*, exercise and most important the quiet, confident, untroubled mind.

Diet:—

The Effects on the Mother of Malnutrition in Pregnancy

In their "Toronto Report" Ebbs, Tisdall et al gave results of high grade feeding on the health of pregnancy, type of labour, complications and condition of the child.

The most striking differences were:—

Bleeding during pregnancy	12.4%	in poor diet group.
	4.7%	in good diet group.
Toxaemia reduced by	30%	in good diet group.
Good Labour in	58%	of *poor* diet group.
" " "	85%	of *good* diet group.
Poor Labour in	24%	of poor diet group.
" " "	2%	of good diet group.
Uterine Inertia	9 times as common in poor diet group.	
Still Birth and Abortions	8 times greater in poor diet group.	

In addition to the adequate diet it may be nesessary to supplement with vitamins, although I believe this is a bit of a racket because if the woman is having a good mixed diet (including 1 quart of milk per day) the addition of vitamin pills will be redundant and expensive. Iron, however, should be prescribed because pregnant women, especially those who have their pregnancies in quick succession, tend to be anaemic.

The quiet, confident, untroubled mind on the part of the patient can be attained through instruction by the physician during pregnancy. Greater attention to this very important aspect of prenatal care is resulting in healthier and happier pregnant women and with a consequent increase in the number of *normal* deliveries and fewer obstetrical abnormalties. The preventive aspect of this phase of the work is enormous both in the maternal sphere and infant well being. After all, patients with tuberculosis know a great deal about their X Ray pictures, lobectomies, pneumothorax, etc. The diabetic becomes diet conscious and has a fair knowledge of sugar metabolism. How much more important it is for a pregnant woman to learn something about the physiology of pregnancy and labour, so that she can enjoy the most important function in life–To have a baby!

The Prevention of Stillbirths and Neonatal deaths

Nearly four times as many babies die each year before reaching a month old as there are people killed on the roads. About one third of these infant deaths occur within the first 24 hours. Therefore, the realm of Obstetrics must answer some searching questions.

Causes of Stillbirth and Neonatal Deaths

(a) *Maternal ill health* and a poort diet in pregnancy and even before conception seem to contribute directly to complications during the prenatal period and labour with resultant dead births.

(b) *Congenital malformations*—Until recently these deaths were accepted as inevitable and unavoidable but certain developments and observations in the past 10 years have thrown new light on this problem. Swan et al of Australia first drew attention to the high incidence of congenital cataract and congenital nerve deafness following an attack of Rubella by pregnant women

at about the 10th or 12th week of pregnancy. Also certain types of congenital heart disease may arise in the same way.

In fact the evidence is accumulating that so called virus infections of any sort in a pregnant woman may cause a congenital defect in her baby. Therefore congenital abnormalities may, through public health measures, become avoidable in the near future.

(c) *Prematurity*—Causes of premature labour are:—Poor Nutrition, Toxaemia Ante Partum Haemorrhage, etc. Obstetricians don't cause this complication as frequently as they used to when for the slightest indication they would rush at the woman in the 34th to 36th week of pregnancy and rupture the membranes.

Therefore:

(I) Induce labour only in certain severe toxaemias.

(II) Adopt a conservative and expectant attitude in cases of Ante Partum Haemorrhage to prolong the pregnancy as long as possible.

(III) If a premature labour does take place then there are a few precautions which should be taken to safeguard the baby. Continuous oxygen should be administered to the mother in the second stage of labour to prevent anoxia of the premature child. At the completion of the second stage of labour a wide and deep episiotomy must be performed. *The smaller the baby* the *wider* the *episiotomy*. This maxim should be printed in large letters and placed in all case rooms. It may seem paradoxical at first glance but when one considers that a baby's head undergoes slow compression in the birth canal, followed by sudden expansion as soon as the head is born, the rationale of the maxim is apparent. In a premature baby's head this compression and sudden expansion often causes oedema of the brain which impedes the venous return with consequent anoxia of the cells and intra cranial haemorrhage results. The deep episiotomy safeguards the small head from this danger.

Forceps Delivery

(d) *Complications of Labour*—Poor cephalic applications and excessive force used in the forceps extraction can, as you all know, cause permanent damage to the baby. The most severe damage is of course an intracranial haemorrhage, but lesser damage, which may not become apparent until later in life, may also be the result of a poor forceps delivery.

Breech Delivery

Preparations for this type of birth such as making arrangements for extra help beforehand and remembering that teamwork in these cases is all important will reduce the stillbirth rate which still remains too high in this condition.

(e) *Age of the Mother*—The risk to the baby is five times greater in the elderly primipara than in young women under the age of twenty. Therefore propaganda for women to have their babies earlier in life should be emphasized.

(f) *Asphyxia*—This is usually due to injury, erythroblastosis, anaesthesia, sedative drugs.

Therefore:—*Gentle* forceps deliveries.

Pre natal determination of the Rh factor with all preparations made for a replacement transfusion by an expert if the need arises.

Local anaesthesia should be used far more often because general anaesthesia (no matter by what method or whatever agent) is harmful to a greater or lesser extent to the baby. The sedation dose may be greatly reduced by preparing the patient for labour through instruction and explanation during the pre natal period.

(g) *Toxaemia of Pregnancy*—Placental insufficiency due to old infarcts is commoner in this condition and may cause intrauterine death.

Early induction of labour may be necessary because of the severity of the disease.

Therefore; Prenatal care with careful attention being paid to the earliest signs of impending toxaemia such as an abnormal increase in body weight and a slight constant elevation of blood pressure will allow of early preventive therapy measures being taken.

(h) *Ante Partum Haemorrhage*—During the past ten years the treatment of this condition has undergone a complete change. This is largely the result of two very important papers by MacAfee of Belfast, Northern Ireland and Johnson of Houston, Texas. Working quite independently these men came to the same conclusions at the same time, viz. that by adopting an attitude of conservative expectancy in cases of Ante Partum Haemorrhage the foetal death rate could be reduced from 55% to 22%. The treatment of these cases now consists of hospitalization with the first episode of bleeding and with all precautions taken such as available blood and careful observation the pregnancy is allowed to continue until the 37th week. Soft tissue X Rays of the pelvic organs are taken on admission to hospital and it is possible to diagnose placenta praevia in just about one hundred per cent of cases. The patients are examined vaginally in the Operating Room at the 37th week and the decision is then made whether a Caesarean Section is indicated. At the Grace Maternity Hospital, Halifax, the figures over the past five years show a stillbirth and neonatal death rate of only 14.7% in these cases. This is a striking difference from the 50-60% Foetal mortality in years gone by.

(i) *Infection*—If a baby has to be resuscitated at birth with clearing of the airways and possibly intubation then antibiotics must be given prophylactically to guard against bronchopneumonia developing.

(j) *Syphilis*—Routine Kahn tests prenatally has diminished the incidence of syphilis in the new born almost to vanishing point. This is an excellent example of good Preventive Medicine and shows what can be done in this all important field of medical science.

The maternal mortality rate has, through Preventive Medical measures, been lowered almost to the irreducible minimum. Our aim at present and in the future is to reduce the stillbirth and neonatal death rate. It is only by attention to detail in management of prenatal care and delivery with emphasis on the *Preventive* aspect that this can be accomplished.

Diagnostic Standards and Classification of Tuberculosis National Tuberculosis Association.

The medical advisory board of the Nova Scotia Tuberculosis Association, on considering the present favorable trend toward Tuberculosis control, believe that a review of the problem of pulmonary tuberculosis would be of value and interest to the members of the profession. Through the co-operation of the bulletin of the Nova Scotia Medical Society it is the plan to publish a series of pertinent excerpts from the Diagnostic Standards of the National Tuberculosis Association.

The Diagnostic Standards are reviewed by a committee of the National Tuberculosis Association and a revised copy is published every 10 years, the last being in 1950. The articles therefore represent a summary of the most recent thought in practice in the field of pulmonary tuberculosis.

Contribution on the part of the physician toward tuberculosis control is continuing to assume an ever increasing importance, particularly through case finding and the proper management of the patient before entering and after leaving the Tuberculosis Hospital.

Any physician may obtain a copy of the Diagnostic Standards by writing to the Nova Scotia Tuberculosis Association, 134 Spring Garden Road, Halifax, N. S.

Pathogenetic Development of Pulmonary Tuberculosis

THE term "pulmonary tuberculosis" includes all tuberculous lesions in the lungs from primary focus to fatal disease. By "primary tuberculosis" is meant morbid processes which follow directly and uninterruptedly the first implantation of tubercle bacilli. To say that the appearance of allergy marks the end of primary tuberculosis, as is sometimes suggested, would mean that no clinically recognizable and diagnosable phase of tuberculosis could be so designated. "Reinfection tuberculosis" is a new infection in a person in whom a primary infection has been healed. It is obvious that in many instances no sharp line of demarcation can be drawn between primary and reinfection tuberculosis. Indeed, even at necropsy, a clear and incontestable explanation of the mode of origin of a tuberculous lesion cannot always be determined.

Tuberculous Infection

The first infection of tuberculosis, in the majority of cases, at least in this country, is caused by inhalation of tubercle bacilli. The source of infection in practically all cases is a person with pulmonary tuberculosis who has a cough and positive sputum. Other routes of infection and other sources are so uncommon in the United States that they are a minor problem. Infection may occur at any age. In recent years, as a result of increasing limitation of spread of tuberculosis from recognized cases, primary tuberculosis has become less frequent in childhood and more frequent in adults.

Experimental studies have shown that air-borne particles, whether droplets or dust, must be extremely small in diameter to reach the pulmonary parenchyma. The structure of the bronchial system is such that tubercle bacilli must reach a respiratory alveolus for infection to occur. The primary

infection focus may be situated in any area of lung parenchyma, either central or peripheral, but is usually not far from the pleura. This primary lesion consists of a small tuberculous pneumonia which commonly undergoes necrosis. It is in most instances a single focus although multiple foci do occur. During the early stage, bacilli are carried through the lymph channels to the regional bronchopulmonary lymph nodes, causing necrosing lesions in them. The direct anatomical result of a primary infection, commonly called a "primary complex", consists, then, of a pneumonic nor ecrotic pneumonic focus in the pulmonary tissue (parenchymal focus) and one or more foci in the tributary lymph nodes (regional lymph node focus). The lymph node component is often larger than the pulmonary focus when infection occurs in childhood, at which time the tendency to react with lymph node enlargement is generally more pronounced than in adult life. In adolescents and adults the lymph node enlargement is usually so slight that in the majority of instances the typical primary complex is not roentgenographically demonstrable. Often, too, it cannot be visualized roentgenographically because of unsuitable location.

The most frequent course of the primary complex is encapsulation by fibrous tissue and calcification. Occasionally ossification takes place in pulmonary and regional lymph node foci.

When healing of the primary complex occurs, as a rule, two changes persist: (1) calcified parenchymal and regional lymph node foci remain, and (2) the body had become allergic, which means that its reaction to tubercle bacilli or their metabolic products has been altered, a fact that can be demonstrated by the tuberculin reaction.

Progressive Pulmonary Tuberculosis

Of all persons who acquire primary infection at some time, only a minority develop clinical disease. In some cases, however, the primary infection may be progressive from the beginning (progressive primary) or it may not heal completely and may lie dormant for a time, only to progress later (exacerbation of primary tuberculosis). In the latter instance, reactivation may be brought about by bacilli derived from five potential sources:

(1) The primary pulmonary focus may break down and discharge bacilli directly into other parts of the lungs (endobronchial dissemination).

(2) A necrotic primary regional lymph node focus may rupture into a bronchus, causing a tuberculous aspiration bronchopneumonia of various extent and severity (endobronchial dissemination).

(3) Bacilli from an active pulmonary focus may, through necrotic blood vessel walls, invade the blood stream, giving rise to single or multiple foci in distant organs, including generalized miliary tuberculosis (hematogenous dissemination).

(4) Bacilli from an active primary regional lymph node focus may reach the lung and other parts of the body by way of the lymphatics and the blood stream (lympho-hematogenous tuberculosis); this may result in single or multiple foci or generalized miliary tuberculosis

(5) Small apical foci developing as a result of "early dissemination" may, after having been stationary or undetected for a prolonged period of time, become progressive, ulcerate, and discharge bacilli into the bronchial tree (endobronchial dissemination).

Inasmuch as a healed primary infection does not confer complete protection against subsequent infection, a person with a healed primary lesion may contract a new exogenous or air-borne infection (reinfection). In the young child the progressive disease begins with primary infection, but in adults it may be either a primary infection or a reinfection. Thus progressive pulmonary tuberculosis may have its origin in a single focus at any age.

In the child the progressive disease may be located in any portion of the lung parenchyma, but in adults it is usually situated in the upper portion of the pulmonary lobes, most often in the dorsal area. In adults a clinical diagnosis of primary tuberculosis is permissible only if the disease is of recent origin in a person known to have been a nonreactor to tuberculin at a recent date.

There are valid anatomical (Parrot's law) for the differentiation between primary and reinfection tuberculosis; however, these criteria cannot be used clinically to distinguish between primary and reinfection disease in adults.

Regardless of whether the progressive focus is a primary infection or reinfection, the lesion which is first produced is an exudative process, an area of lobular pneumonia. Of particular importance is the process of necrosis with the formation of caseous material. The lesion is always an unstable one and soon retrogresses or progresses.

Progression takes place by contiguous spread, necrosis, softening, and excavation, with dissemination by way of the bronchi, blood or lymph. Excavation may occur rapidly and is present in the majority of cases when they are first diagnosed. Usually the endobronchial dissemination is to adjacent small branch bronchi in the same lobule or segment, bringing about enlargement of the lesion; however, scattered foci may be established at more distant points. These endobronchial disseminations, through aspiration, commonly infect larger areas of lung parenchyma with more bacilli than were present in the initiation of the original focus. Under these circumstances the inflammatory response is greater and more rapid; otherwise the process that occurred in the original focus is repeated, and more widespread endobronchial dissemination occurs, leading to more and more extensive involvements, to large necrotic lesions, and to multiple cavities. This process of necrosis, liquefaction, sloughing, cavity formation, and endobronchial dissemination is the essential factor in progressive pulmonary tuberculosis.

Lymphogenous Dissemination. This type of dissemination may occur at any stage of the disease but is more frequent in progressive primary disease and occurs more commonly in infants and in children than in adults, and more often in Negro than in white children. Tubercle bacilli may be carried from the parenchymal pulmonary lesion through the lymph channels to set up new foci of disease in the lymph nodes. Necrotic lymph node foci at the hilum may ulcertate into an adjacent bronchus, causing a tuberculous bronchopneumonia of various extent and severity by aspiration of the discharge into the lung. While this is not a frequent occurrence, it is the cause of death in a certain proportion of infants and children who die as a direct consequence of their primary lesions. Bacilli may be carried from the lymph nodes into efferent lymph vessels, infecting other lymph nodes in the mediastinum and finally invading the circulatory system. The rupture of a necrotic focus directly into a vein or large lymph vessel, such as the thoracic duct, may result in generalized hematogenous miliary tuberculosis.

Hematogenous Dissemination This process may occur at any stage of the disease. Necrotic vascular walls may become liquefied and the blood channels thus opened up to the infection. Transported by the blood, the bacilli may cause a varying number of lesions in the lungs, meninges, bones, kidneys, and other organs.

Lymphogenous and hematogenous disseminations are more frequent in progressive primary disease than in reinfection, in which there is a tendency to localization of the disease. Terminal miliary dissemination is reported with greatly varying frequency. The distribution of hematogenous lesions over various or all the organs of the body is primarily dependent upon the topographical location of the disseminating focus within the body and especially its topographical relationship to the circulatory system; their size, morphology, and number are primarily dependent upon the dosage of the seeding and upon its frequency.

Bacilli from a diseased organ may be implanted directly in the bronchi, trachea, larynx, urinary bladder, genital organs, and intestines through natural ducts and open passageways. Serous membranes, such as the peritoneum and pleura, may be involved by direct contact with tuberculous organs. By direct extension to adjacent tissue, sinus tracts may be formed by the discharging of necrotic debris through the skin, as in psoas abscess and pleurocutaneous and rectal fistulae.

Healing or Repair Processes. Retrogression may take place by resorption of the inflammatory exudate and by fibrotic organization. However, residual necrotic foci can be absorbed only with difficulty, and it is exceptional that they are completely replaced by connective tissue. These residual necrotic foci are largely responsible for the chronic relapsing nature of the disease. Nature's attempt to cope with the necrotic tuberculous focus leads to the production of many of the pathologic lesions commonly observed. In time the necrotic area may be segregated from adjoining healthy tissue by production of a fibrous capsule and salts may be deposited in it (calcification). Such healed lesions (fibrocalcific or fibrotic) are commonly observed in the lung. The healing or repair processes (resorption, fibrosis, and calcification) may occur at any stage of progressive pulmonary tuberculosis. They are frequently interrupted, however, by endobronchial disseminations from the softening and excavation of necrotic lesions, leading to more extensive disease.

Minutes of the Semi-Annual Executive of The Medical Society of Nova Scotia, 1952

THE Semi-Annual Meeting of the Executive of The Medical Society of Nova Scotia was held in the Board Room of the Dalhousie Public Health Clinic, Halifax, N. S., on Tuesday, December 9th, 1952, at 2.40 p.m.

Doctor J. W. Reid presided and those attending were Doctors M. G. Tompkins, H. F. McKay, H. G. Grant, S. Marcus, A. E. Murray, L. C. Steeves, J. S. Munro, D. F. Macdonald, and J. A. MacCormick. There were also present by invitation Doctors F. J. Barton, Chairman of the Public Relations Committee, C. L. Gosse, Chairman of the Centennial Entertainment Committee, A. R. Morton, Chairman of the Centennial Hotel Arrangements Committee, and W. G. Colwell, Chairman of the Centennial Finance Committee.

Doctor Reid called the meeting to order. He told the meeting it had been decided to hold our Centennial the week of October 5th, 1953, in conjunction with the Refresher Course of Dalhousie Medical School. He then asked Doctor Morton for his report on hotel arrangements.

Doctor Morton stated that he had been in touch with both hotels and they were willing to set aside sufficient rooms for the meeting. Also he had secured quotations for the ballroom, space for exhibitors, etc. He also mentioned a room in the new Arts and Administration Building at Dalhousie University which he thought would be available.

After considerable discussion Doctor H. F. McKay moved that the centenary meeting of the Nova Scotia Division of the Canadian Medical Association be held in the Nova Scotian Hotel, Halifax, the week of October 5th, 1953. This was seconded and passed.

Doctor C. L. Gosse stated he had nothing to report yet. The Secretary suggested that on this special occasion we should look for natural talent for our entertainment. Doctor McKay asked if it would be convenient to have Smith and Kline put on television. Doctor Gosse asked how the members felt about a dance, and it was suggested that a bridge party should be held at the same time. Doctor Colwell thought there should be a buffet supper and dance one night. Doctor Morton stated there should be a strong ladies committee. Doctor Reid stated there would be a ladies meeting which Mrs. Reid would chair. It was suggested that possibly there will be an opera or theatre show on, which could be followed by a supper. Doctor Gosse stated that the entertainment should begin Tuesday at the latest. The suggestion was made that possibly the F. W. Horner Company might send down the art exhibit which they had each year.

Doctor W. G. Colwell asked whether the medical levy could be added to the bill for medical dues. Doctor Reid thought that many of the men would accept the levy on their bills if it were explained in a covering letter, and that a complete explanatory letter would have to be sent out. Doctor Colwell asked if the levy of $10.00 would cover all registration fees; the answer was yes. It was moved that, in addition to the annual dues of the Society, an extra $10.00 fee be levied in view of the centennial celebration being held in October 1953; and further that a covering letter be sent to each member explaining this. This was seconded by Doctor D. F. Macdonald and carried unanimously. As each member will be levied $10.00 toward the expenses of

the centennial it was decided the usual $5.00 registration fee be omitted for this year to those who had paid their dues and levy.

Doctor R. M. Macdonald stated that his committee had made suggestions of names of speakers, but no information was yet available, except that Doctor Penfield had accepted the invitation to give the John Stewart Memorial Lecture.

Doctor Reid suggested that someone should be brought over from England and mentioned that the Secretary had written to the Canadian Medical Association about this matter.

Doctor M. G. Tompkins said there was nothing definite done at the Canadian Medical Association Executive meeting, but they hoped they would be able to secure a man to speak for this centennial. He had extended the invitation to them for the Executive to meet here during the week of October fifth, and they accepted, and also voted to give us $1,000.00 towards expenses.

Doctor H. F. McKay thought that invitations should be sent to all the medical societies on the continent.

Doctor Reid approved of this suggestion and asked the Executive whether we should appoint a Publicity Committee or whether the Public Relations Committee would consider the matter. He asked whether the meeting approved of bringing over an Englishman and this was agreed. He also told that Sir Rudolf Peter was expected in Nova Scotia about the time of our meeting and that perhaps we could get him to talk to us.

Doctor H. F. McKay, Chairman of the Economics Committee then read a letter from the Cape Breton Medical Society, dated August 24th.

D . H. G. Grant, Secretary,
Nova Scotia Medical Society,
Halifax, N. S.

Dear Dr. Grant:

At the last meeting of the Cape Breton County Medical Society held in Sydney, considerable discussion took place concerning payment of medical accounts by the Children's Aid Society.

This matter has been under deliberation over the past year, and at one of our meetings the local representative was in attendance.

A motion was made that the fees had been on the basis of a schedule of standardized fees laid down by the Nova Scotia Medical Society and a proration will be made of accounts when submitted.

This resolution is being forwarded to the Secretary of the Nova Scotia Medical Society to be dealt with at the Executive meeting in September.

The representatives of the Society attending the Executive meeting will elaborate on this matter and will furnish all details.

Yours very truly,
(Sgd.) H. R. CORBETT, Secretary.

Doctor McKay stated that he was not too familiar with the setup of Children's Aid. He said there was no one central organization, but that there were twelve county organizations, but that Antigonish, Guysborough and Digby had no local organization. He spoke of having discussed the question of medical care for welfare wards with the Secretary of the Pictou Society and that they, that is the Pictou Society, were much concerned about medical care. He thought that perhaps Family Allowance money could be used to put these wards under Maritime Medical Care or Blue Cross,

although the usual schedule of fees could not apply. The Secretary of the Pictou Children's Aid Society said that he would be very glad to meet with any of our group to talk matters over, Doctor McKay told the meeting that the matter had been discussed at the meeting of the Committee on Economics and they felt that the first step in putting this matter before the Welfare Committee was that some uniform Province-wide plan should be worked out. He said that at present there were certain municipalities who will not accept medical bills for wards of the Children's Aid. Doctor McKay then moved that representation be made to the Children's Aid Association for the adoption of a policy for medical care of their wards uniformly, throughout all the various Societies, and that medical services rendered be paid for on a *pro-rated* basis—the particulars to be determined by future deliberations. This was seconded by Doctor A. E. Murray and passed.

The next matter taken up was a letter from Doctor G. R. Forbes of Kentville in which he protested the action of Maritime Medical Care in making a drastic reduction of his account. It appeared that the protest chiefly concerned the refusal on the part of Maritime Medical Care to pay for fluoroscopy as part of a routine medical examination. Also there was a letter from Doctor John C. Wickwire to Doctor Grant, the Secretary of the Society, pointing out that although he and several other of the doctors in the Province had taken extensive post-graduate training in cardiology, since no one of them at present had been certified by the Royal College of Surgeons they had to accept general practitioners' fees for their work. Doctor Wickwire asked whether the Medical Society could not make a ruling that doctors with such training be recognized as specialists. Doctor Wickwire also enclosed a copy of a letter which he had sent to Mr. Macneill, Business Manager of Maritime Medical Care, protesting the fees allowed by Maritime Medical Care for complete cardiological examinations.

Doctor H. F. McKay pointed out that as far as specialists were concerned Maritime Medical Care had to accept the ruling of the Royal College of Physicians and Surgeons. It was then suggested that the Medical Society might request Maritime Medical Care to open up this question, but this was considered unwise. The Executive finally decided to advise both Doctor Wickwire and Doctor Forbes to apply to The Royal College of Physicians and Surgeons of Canada for certification in Internal Medicine, and that the Executive endorse said application. This was moved by Doctor McKay and seconded by Doctor Tompkins.

Doctor D. F. Macdonald moved as an amendment that the Executive advise Doctors Wickwire and Forbes of their sympathy in their difficulties, and suggest to them that they apply for Certification in Internal Medicine, and that their application be endorsed by the Executive. Further, that the Executive recommend that the E.C.G. fee of $10.00 as laid down in our schedule of fees be not reduced by Maritime Medical Care. This amendment was seconded.

Doctor L. C. Steeves felt that the purpose was better served by the original resolution. He moved an amendment to the amendment that the resolution of the Economics Committee be accepted, and that an accompanying letter be sent expressing the sympathy of the Executive and their action in the case. This was seconded by Doctor MacCormick and passed.

The report of the Committee on Economics was then interrupted so that

Doctor Morton could present his interim report on Legislation. Doctor Morton reported that the Legislative Committee had Mr. Frank Smith, Q.C., working on the reconsolidation of the Medical Act. He has supplied copies to the Legislative Committee which have been gone over and the Committee is taking up some alterations in the proposed first draft. Doctor Morton moved the adoption of the interim report. Dr. Morton was then authorized by the Executive to employ legal advice in connection with the study of the Medical Act.

Doctor H. F. McKay then continued with the report of the Economics Committee. He spoke of having attended the Committee of Economics meeting in October and said that one of the most important matters that came out of that meeting was the employment of Doctor William Taylor of the University of Toronto to help in the study of socialized medicine. The Provincial Health Survey reports were fully discussed and the Nova Scotia Division of the Canadian Medical Association was asked to make a special study of our own health survey. The President, Doctor Reid, felt that this study should be made by a special committee, and Doctor McKay agreed that this Committee should be appointed. The Secretary suggested that considerable care be taken in the appointment of this Committee.

The statement of Policy adopted by the General Council of the Canadian Medical Association, June 14, 1949, was read by Doctor McKay.

1. The Canadian Medical Association, recognizing that health is an important element in human happiness, reaffirms its willingness in the public interest to consider any proposals, official or unofficial, which are genuinely aimed at the improvement of the health of the people.

2. Among the factors essential to the people's health are adequate nutrition, good housing and environmental conditions generally, facilities for education, exercise and leisure; and not least, wise and sensible conduct of the individual and his acceptance of personal responsibility.

3. It is recognized and accepted that the community's responsibility in the field of health includes responsibility not only for a high level of environmental conditions and an efficient preventive service, but a responsibility for ensuring that adequate medical facilities are available to every member of the community, whether or not he can afford the full cost.

4. Accordingly, the Canadian Medical Association will gladly co-operate in the preparation of detailed schemes which have as their object the removal of any barrier which exist between the people and the medical services they need and which respect the essential principles of the profession.

5. The Canadian Medical Association hopes that the provincial surveys now being conducted will provide information likely to be of value in the elaboration of detailed schemes.

6. The Canadian Medical Association, having approved the adoption of the principles of health insurance, and having been demonstrated the practical application of this principle in the establishment of voluntary prepaid medical care plans, now proposes:

(a) The establishment and/or extension of these plans to cover Canada.

(b) The right of every Canadian citizen to insure under these plans.

(c) The provision by the State of the Health Insurance premium, in whole or in part, for those persons who are adjudged to be unable to provide these premiums for themselves.

7. Additional services should come into existence by stages, the first and most urgent stage being the meeting of the costs of hospitalization for every citizen of Canada. The basic part of the cost should be met by individual contribution, the responsible governmental body bearing, in whole or in part, the cost for those persons who are unable to provide the contribution for themselves.

There was considerable discussion as to whether we should approve of item 5, sub-section "c". Doctor Reid expressed the opinion that in the approval of this clause, as it stands, we are subscribing to state medicine. Doctor McKay said that the Economics Committee was asked to go back in February, and to take with it some expression of opinion from the Nova Scotia members. He said this clause had been studied by his own Committee, and so far they did not feel like expressing an opinion on it.

Doctor McKay moved that the Executive send copies of this Statement of Policy to the various Branch Societies scoring the part that requires consideration and asking them to write back. This was seconded and passed.

Doctor McKay told the meeting that our Division had been asked whether or not there were any complaints regarding the Sick Mariners' Fund. He said that at the meeting of the Committee on Economics at Toronto the British Columbia Division made representations that a review be made of the operation of the Sick Mariners' Fund, with a view to bringing it more into line with present-day thinking and to remove the apparent conflict it has with care given to other sailors and workmen on the coasts through the Compensation Board.

We have been asked to canvass bodies of salaried contract doctors, and to assess these bodies. Following this the discussion came up as to the treatment of doctors' families, and it was suggested that doctors' families perhaps should come under Maritime Medical Care, and the Secretary was instructed to write and find out just how this might be brought about.

Doctor Reid thanked Doctor McKay for his comprehensive report.

Doctor F. J. Barton then gave the report of the Public Relations Committee. He said to begin with he had written to Doctor Kelly to find out just what the parent committee was doing, and certain matters had been pointed out. First, the importance of always having a doctor on call. In speaking to this Doctor McKay said that they had a system in the summer months at New Glasgow of always having a doctor on call, and Doctor Marcus said the same system was in effect in Bridgewater. The second point brought out by Doctor Barton was the improvement of press relations and he referred to what the Western Counties Division had been doing about this in Yarmouth. The Secretary pointed out the difficulty of getting proper articles into the press, and moved that the Public Relations Committee be given authority to spend up to $300.00 to employ someone to help them in their publication. However, the Committee requested the President, Secretary and Doctor L. C. Steeves to read these articles before they were released. This was seconded and passed.

Also it was suggested that the Committee on Public Relations get in touch with Mr. Graham Allan of Dalhousie University as it was felt he would be interested in connection with the publicity for the Medical School.

It was suggested by Doctor Barton that we have a revision of the Code of Medical Ethics with particular reference to speaking over the radio, public addresses, etc. The Public Relations Committee were requested to bring in a revision of the Code of Medical Ethics for the consideration of the next Executive meeting.

It was moved that the meeting adjourn at 6.00 p.m. to reconvene at 7.30 p.m.

The Executive reconvened the same evening, December 9th, 1952, in the Board Room of the Dalhousie Public Health Clinic, Halifax, N. S.

There were present Doctor J. W. Reid, President; Doctors H. F. McKay, M. G. Tompkins, D. F. Macdonald, H. G. Grant, A. E. Murray, J. A. MacCormick and S. Marcus.

The President called the meeting to order at 7.35 p.m.

President Reid stated there was one part in Doctor McKay's report that had to be cleared up, that is that he was requested to go back to the meeting of the Committee on Economics of the Canadian Medical Association with an opinion on Section 6 on the Statement of Policy. Doctor Reid thought that these matters should perhaps be sent to our Branch Societies, and that another meeting of the Executive be called before Doctor McKay attended his meeting at Toronto. Doctor McKay felt that the matter was very important and that every member of our Society should be made aware of this Policy. He also suggested that he perhaps would have another meeting of his Committee on Economics and that we should have another meeting of the Executive before he went back to Toronto, Doctor Reid promised the Executive that he would see to it that the Presidents of the Branch Societies would get this information, that they would be asked to consider it and send their opinions back to the Secretary. Doctor D. F. Macdonald felt that the Executive was sent here to deal with these matters and that the matter should be settled without any further reference to the Branch Societies.

There followed then quite a discussion regarding Clause 6 of the Statement of Policy. It was pointed out by Doctor McKay that at the Toronto meeting examples were given by representatives from British Columbia of people who were in receipt of social assistance, and who had passed a means test, but who had placed their money outside of the Province and whose relatives had assumed responsibility.

Doctor D. F. Macdonald moved that the President, the Secretary and Doctor H. F. McKay would rewrite Clause 6 of the Statement of Policy and present it to the Branch Societies for their consideration. Doctor M. G. Tompkins suggested that (with reference to Clause 6) we omit the last clause, sub-section "c" and leave "a" and "b". Doctor Tompkins objected to the matter going back to the Branch Societies and he moved that sub-section "c" of Clause 6 be deleted. This was seconded by Doctor H. G. Grant and passed. Dr. Tompkins' motion as finally passed was that clause "6" be changed to read "the opportunity for" instead of "the right of" and that clause "c" be deleted.

Doctor McKay still expressed the opinion that the Branch Societies should be consulted and that the Secretary should send the information to the Branch Societies asking them to call special meetings.

Doctor M. G. Tompkins, the representatives of the Nova Scotia Division of the Executive of the Canadian Medical Association, then gave a brief report. He said that one thing they were very much concerned about was the additional fee of $10.00 which was going into effect in 1953. The paid-up membership for 1952 was 9,713, and they budgeted for $150,000.00. There was considerable interest in the membership in the Canadian Medical Association of the French-speaking doctors in the Province of Quebec; of these, there were some 4,000 of which 400 are members of the Canadian Medical Association. This was explained as many of them belong to their own organization, and do not take the same interest as the English speaking doctors. He said that every member in the Province would get another letter with regard to this increase in fees. He said that for next year there would be quite a number of additional expenses, and that we should do everything we could to retain our high membership with the additional fee. He referred to a letter from Doctor George White of New Brunswick with reference to the next meeting of the Canadian Medical Association to be held in the Atlantic Provinces, the idea being that when this comes about the meeting should be held under the auspices of the four Provinces, rather than Nova Scotia.

Doctor Tompkins then went on with the listing of future meetings of the Canadian Medical Association for the next twelve years.

Doctor Reid referred to the resolution passed at the second business session on September 5th requesting him to set up a permanent Tariff Committee with wide powers to adjust present fees and to set new ones where applicable, said committee to be representative of the Society as a whole. Doctor McKay moved that the Executive confer upon this Committee the power of an Appeal Committee. The following were then nominated as representatives of this Tariff Committee: Doctor M. G. Tompkins, Doctor J. V. Graham, Doctor A. E. Blackett, Doctor V. Burton and Doctor R. A. Moreash. The Executive voted that Doctor Tompkins be Chairman of this Committee.

The Secretary then read a letter from Doctor Joseph A. McMillan, dated November 25th, dealing with the matter of payment by Blue Cross for radiological services rendered outside of hospital.

The Executive,
Nova Scotia Division,
Canadian Medical Association,
Dalhousie Public Health Clinic,
Halifax, Nova Scotia.

ATTENTION—DR. H. G. GRANT, SECRETARY.

Dear Dr. Grant:

Your letter which was addressed to my brother, Dr. Francis A. McMillan, as Executive Director, Maritime Blue Cross Association, was passed on to me, as I presume it was for my information.

In this letter you state—"At the last meeting of our Executive we received a letter from Dr. Wallace M. Roy, Radiologist of Halifax, in which he complained that several of his accounts to Blue Cross members had not been paid because the X-ray had not been

made in a hospital X-ray Department. Our Executive felt that this was a discrimination against radiologists in private practice and I was instructed to so notify you."

Whatever information Dr. Roy may have sent to you certainly must have been misleading, inasmuch as there is no way in the world in which our organization can show discrimination against radiologists in private practice, as you say in your letter we have done.

The only allowances made by Maritime Hospital Service Association in either its hospital or medical contract is a $10.00 indemnity toward the cost of X-ray examinations in conjunction with treatment given in hospital.You can understand that the only money paid for X-ray is a $10.00 allowance toward the X-ray bill incurred while a patient is under necessary treatment in hospital. In other words, the $10.00 allowance is part of the hospital contract. Our Plan does not pay for ordinary home and office calls for any type of practitioner unless some surgical procedure is carried out elsewhere than in the hospital. Under this latter, for example, we would pay for suturing, as we also pay for maternity care outside of the hospital. Otherwise, home and office calls are not covered.

I do hope you will bring this matter up again before your Executive and indicate to them that our medical plan is primarily an in-hospital care Plan. I feel quite sure that you will agree that Dr. Roy has no reason to feel that we are discrimininating against his particular type of private practice.

Very truly yours,

(Sgd.) Joseph A. McMillan, M.D.,

Medical Director.

No action was taken on this.

The Secretary read a letter from Doctor F. R. Townsend, Secretary-Treasurer of the Nova Scotia Division of the Canadian Psychiatric Association, asking for affiliation with The Medical Society of Nova Scotia. The Secretary was instructed to write Doctor Townsend outlining our By-laws applying to affiliation and to tell him that if the Psychiatric Association can meet our requirements their case will be considered. The Secretary was also instructed to write to the Canadan Medical Association and to secure from them the differences of the terms Division, Branch and Affilitate in connection with the Canadian Medical Association.

Doctor M. G. Tompkins moved that all members of the Nova Scotia Division of the Canadian Psychiatric Association must be members of The Medical Society of Nova Scotia before their Society can be recognized. This was seconded by Doctor Marcus.

Doctor S. Marcus read the following resolution from the Lunenburg-Queens Medical Society.

WHEREAS, As part of the Civil Defence preparedness campaign, the members of the Lunenburg-Queens Medical Society—along with members of other local medical societies in the Province—have been asked to help organize communities in their locality for the possible reception of a large number of casualties from the Halifax area, and to have a medical team in readiness to be sent to the Halifax area, in the event of disaster, and

WHEREAS, It is the desire of the members of the Lunenburg-Queens Medical Society to assist and co-operate in every way possible, and

WHEREAS, It is the opinion of the members of the Lunenburg-Queens Medical Society that no adequate provision has been made to improve the transportation facilities to and from the city of Halifax, and

WHEREAS, The members of the Lunenburg-Queens Medical Society view with alarm the continued concentration of medical supplies and technical facilities—such as laboratories and blood banks—in the Halifax area,

Therefore, be it RESOLVED, that we, the members of the Lunenburg-Queens Medical Society, while expressing our readiness and willingness to render any assistance of which we are capable, nevertheless must point out the total inadequacy of such assistance unless the approaches to Halifax by road are improved, and a suitable dispersal of certain familities and supplies throughout the Province are made, and

Be it further RESOLVED, That a copy of this Resolution be presented to the members of the Executive of the Medical Society of Nova Scotia for their consideration at the semi-annual meeting on December 9, 1952.

Doctor Marcus moved the adoption of this resolution.

It was decided to send this resolution on to Doctor G. G. G. Simms, Chairman of the Health Committee, Provincial Civil Defence Organization,

The Secretary then read the report from Doctor C. H. Reardon on the question of a Tax-Free Retirement Plan.

December 9, 1952.

Dr. J. W. Reid,
President,
The Canadian Medical Association,
Nova Scotia,
Halifax, Nova Scotia.

Dear Dr. Reid:

I would like to report my committee has correspondence on file from Dr. A. D. Kelly, Deputy General Secretary of the Canadian Association, to the effect that the Income Tax Committee of the Canadian Association is co-operating with the Law Society of Upper Canada and the Institute of Chartered Accountants on specific recommendations to the Tax Department for amending legislation which might provide for retirement plans for these groups.

Dr. Kelly while appearing optimistic about this matter warns against optimism.

Dr. Kelly states—"that such a well informed body as the Canadian Tax Foundation. is by no means certain that an individual's advantage is promoted by accepting tax relief on annual contributions toward the purchase of an annuity and paying tax on the annunity when it is received. Apparently one can't have it both ways, but as we interpret the feelings of most of our members they seem to prefer to get some abatement on the way in and take their chance on being able to pay the tax on annunity payments after they retire".

To date this is as far as we have gone in this matter and shall report any further advances at future meetings.

Yours truly,

(Sgd.) C. Henry Reardon, M.D.
Chairman of Tax Retirement Committee.

There was no action taken on this matter.

The Secretary also reported that in a letter he had received from Doctor A. D. Kelly, he stated that two Associations are trying for the same thing, and so far have not got it,

The Secretary read a letter from Stevenson and Scott, Limited, Advertising, asking if we would sell an advertisement on the lower part of the front cover. It was decided that the Secretary should confer with the printer as to what this was worth, and also with the Editorial Board as to what they felt about it before any action was taken.

Doctor Reid brought up the matter of a schedule of fees, and Doctor H. F. McKay told us that at the meeting of the Economics Committee it was

suggested that a uniform schedule of fees should be adopted by every Division. The President, Doctor Reid, thought it was advisable to have a committee appointed to look into the question of fees, and Doctor McKay moved that the Chairman be empowered, if the need arises, to designate a nucleus committee in Halifax to study the schedule of fees, and that the nucleus be empowered to act. This was seconded by Doctor D. F. Macdonald.

The Secretary referred to members in bad standing. It was suggested that before any names be struck off, that the names be sent to the Branch Societies to see if some effort could not be made to have them retain their membership.

The meeting adjourned at 10.15 p. m.

Medical Abstracts

Davies, D. H., Acute Benign Pericarditis of Unknown Origin— British Heart Journal 14: 309-316 July, 1952

A replrt of five cases occuring in young adults presenting with precordial pain, slight fever and short lived malaise with a rapid return of well being but persistence of an audible pericardial rub and of clinically or radiologically demonstrable pericardial and pleural fluid persisting for two to three weeks. A review of the literature revealed the original description by Hodges in 1854 with modern interest dating from the reports of Brynes and Burchell in 1942. Chief differential diagnosis was from influenza or pleurisy when mild and coronary occlusion when severe. Serial electrocardiograms and chest x-rays are of assistance in this matter. Etiology is unknown and prognosis excellent.

Lea C. Steeves.

Supradiaphragmatic reference of pain from the colon. Dworkin, H. J., Beil, F. J. and Machella, T. E.: Gastroenterology 22: 222, 1952

The authors describe what they call "Splenic Flexure Syndrome" in which patients have chest pain and other symptoms thought to be due to coronary artery disease. They noted that gas was observed fluoroscopically in the splenic flexure area during symptoms and relief obtained by the passage of flatus. In 11 such patients they were able to reproduce the symptoms by air inflation in a balloon in the splenic flexure but not in other parts of the colon. In 7 control cases a similar experiment was unsuccessful in 6 subjects. The authors contend that in some patients distension of the splenic flexure gives rise to pain in areas above the diaphragm. They are unable to explain the reason for the difference in reference sites from adjoining segments of the colon or the variation in response in different individuals.

R. M. MacDonald

The Management of Coeliac Disease Sheldon, W., and Lawson, D. Lancet 907, 19.2, 1952

A resumé of the controversy regarding the relative importance of carbohydrate and fat in the production of coeliac disease is given along with an historical sketching of diets used in its management. The work of Anderson, Dickie, Weijers and Van DeKamer on the specific effect of gluten and fat absorption in coeliacs (analagous to gluten poisoning) was confirmed by these authors. Consequently they feel that the conception of this disease as a specific poisoning with certain cereal proteins and its complications, allows therapeutic success with diet. This consists of a normal fat, high caloric, rye and wheat excluded diet, to which vitamins and iron have been added. It also opens a rich field for precise metabolic investigation. Their measurement of effect or results were determined by frequent height and weight measurements, the former being more reliable and shown to be alterable within measureable limits by variations in diet (presence or absence of gluten).

Arthur H. Shears

Milontin, A new Drug in Treatment of Petit Mal.
Millichap, J. G. Lancet 19.2.907, 1952

Milontin, or n-methyl a phenyl succinimide, a compound related to other such drugs as barbiturates, hydantoins, oxozolidinediones was studied on 20 cases, ten of which were pure petit mal; five akinetic petit mal, five combined with grand mal and one with psychomotor epilepsy. The study was well controlled and results assessed by comparing average weekly number of seizures with number per week in control period. Five patients, or 26%, were completely controlled while on therapy. Seven patients, or 37%, had a reduction in seizures of 80%. In four cases reduction of seizures was 21%. Average reduction in number of seizures was 42%. One patient was unaffected and two were worse later. Relative high frequency of side effects as nausea, drowsiness, transient glomerulonephritis and one case of slight myeloid blood depression, indicated the necessity for further controlled study but the efficacy of the drug has been established in petit mal.

Arthur H. Shears

POSITION WANTED

Young doctor graduating from Dalhousie in May requires locums for three summer months. For further information apply to the Secretary.

Obituary

DR. GEORGE HASTINGS COX

DR. George H. Cox, one of the oldest practitioners in Nova Scotia died at New Glasgow on Jan. 6th at the age of eighty-two. He was born at Shelburne Jan. 1, 1871, son of Hon. George A. Cox, a prominent merchant, shipbuilder and politician of Shelburne.

Dr. Cox received his B. A. degree from Dalhousie University in 1891 and his medical degree from the University of New York in 1895. Apart from a few months in general practice in Sheburne, Freeport and Bear River he devoted his energies to a study of his specialty, eye, ear, nose and throat. He did post-graduate work in his specialty at the New York Eye and Ear Infirmary and at the New York Post-Graduate School. He took the New York State Medical Board examination and was licensed to practise in the State of New York. He had an opportunity to progress in his speciality in the U. S. A. but preferred to return to his native Nova Scotia. He settled in New Glasgow in 1897. At this time there were no specialists in the Province except in Halifax and Dr. Cox is therefore the first specialist outside of Halifax. The Aberdeen hospital opened about this time but much of Dr. Cox's early work was done in the homes. It came under the category of "Kitchen Surgery", the only lights being the tallow candle and the kerosene lamp. He became widely known as a skillful surgeon in his specialty and the services were sought by people of not only the county of Pictou but of Antigonish, Guysborough, Cape Breton and other fields.

In 1919, Dr. Cox made his first trip to Florida. He was licensed to practise in Florida and for many years practised there during the winter and New Glasgow during the summer.

While in New Glasgow he took an active part in public health matters and was particularly interested in the control of tuberculosis. In collaboration with Rev. Hugh MacPherson and Dr. John W. MacLeod, teachers at St. F. X. University he published a book on Tuberculosis which was distributed to the public freely.

Apart from medicine Dr. Cox was interested in several hobbies which stamped him as a very unusual man and a charming conversationalist. His knowledge of many things was encyclopedic. He was a good amateur botanist, zoologist and geologist. A special hobby was conchology, the science which deals with shell fish. He carried on a correspondence with foreign countries on this subject and discovered a new species of oyster, which is known to naturalists as "Ostra Coxae" in honor of the discoverer. He had many other interests, history and folk lore of his native province. He was an authority on the Micmac Indians. It is said that he had interesting manuscripts in his library and it is hoped that some of them may find their way into our Archives.

Dr. Cox was preparing for his annual trip to Florida when he developed a serious cerebral attack from which he did not recover. His surviving relatives are three daughters, Mrs. Murray Baker, Mrs. R. W. Wright and Miss Edith at home. Also five grandchildren, a brother John Cox and sister Mrs. Harry Muir living at Shelburne.

Dr. Cox in recent years did not attend medical meetings and was a stranger to the younger generation of physicians, but his brilliant intellectual attainments won for him a host of friends.

Post-Graduate Courses

WEEK IN MEDICINE—March 9th-14th, 1953.

The Post-Graduate Committee with the co-operation of the Department of Medicine will again present a Week in Medicine, March 9th-14th. This year the programme will be devoted to Dermatology and Allergy. It is felt that these two related fields of medicine presented together during a week-long course will attract a large number of practising physicians.

The guest lecturer in Allergy will be Dr. Bram Rose of Montreal and Dr. George S. Williamson of Ottawa will participate in the discussions of Dermatology. Both visitors are authorities in their respective fields and will lend the benefit of their experience.

Allergy has become more important of late because of the application of the concept of hypersensitivity in the pathogenesis of many diseases. The course will cover immunology, pathology and bacteriology along with the technical details of diagnosis and treatment of allergy.

In Dermatology, those skin conditions commonly encountered in general practice will be stressed and most of the presentations will be of a clinical nature. The choice of drugs for the treatment of dermatoses and the vehicle in which they should be prescribed will be thoroughly covered.

The Departments of Internal Medicine, Paediatrics, Psychiatry, Gynaecology, Pharmacology, Physiology, Pathology and Bacteriology of the Dalhousie Medical School will be taking part in the presentations of both sections of the course.

SEPTEMBER COURSE IN SURGERY

The Department of Surgery of the Victoria General Hospital announces a September Course in General Surgery to be held September 9th-30th inclusive at the Victoria General Hospital, Halifax. This course has, as in the past, been designed to assist those writing Fellowship or Certification Examinations and to provide a means whereby practising surgeons, not intending to write the examinations, may learn of recent advances in surgery. The course consists of lectures in anatomy, pathology, basic sciences, clinical medicine and general surgery and may be expanded to include practical demonstrations in operative techniques, if so desired.

The fee for this course is $50.00 and the minimum registration required is six. Applications should be addressed to Dr. E. F. Ross, Chairman, Post-Graduate Committee, Victoria General Hospital, Halifax, N.S.

Dr. H. G. Grant,
Dean, Faculty of Medicine,
Dalhousie University,
Halifax, N. S.

Dear Sir:

This coming Spring I shall be leaving Deer Island to accept another appointment. This will leave this practice vacant. This may be of interest to your graduating internes.

Deer Island has a population of approximately 1,500. There is only the one doctor here. It is above average in living standards. The chief industry revolves about fishing and its related products. The people are friendly and very health conscious, and are eager to help maintain an established practice. Fee collections are very satisfactory, very low outstanding accounts. In my estimation it is a very satisfactory location for a physician starting out. I, in no way regret having started here in 1949.

I shall be glad to answer any further questions an interested party may care to know.

Sincerely,

(Sgd.) John E. Rigby, M. D.,
Lord's Cove, Deer Island,
New Brunswick.