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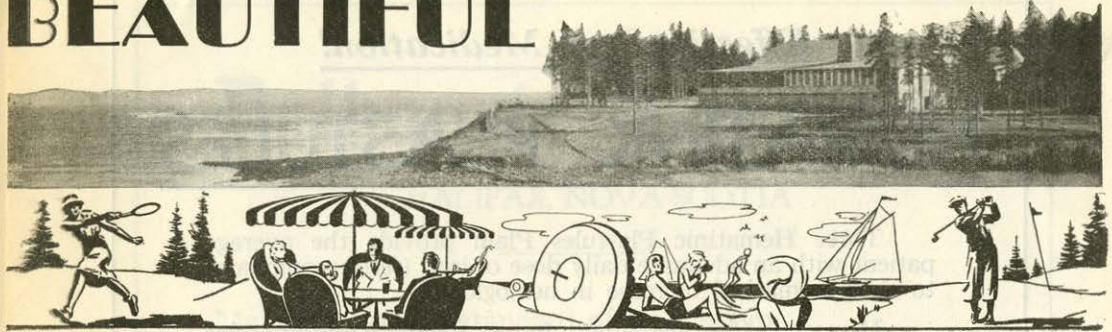
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# A Report on Tuberculosis

## In Glace Bay, Dominion, Reserve and Dominion No. 6, Cape Breton, N. S.

H. G. GRANT, M.D., A. L. McLEAN, M.D.

Department of Preventive Medicine, Dalhousie University.

**B**EGINNING in August 1935, and continuing for approximately one year, an intensive case finding survey has been conducted at Glace Bay, Dominion, Reserve, Dominion No. 6, and other communities in Cape Breton County, to locate and bring under supervision cases of tuberculosis in these districts. This report deals with the manner in which the survey was conducted, the facts revealed by the survey at Glace Bay, Dominion, Reserve, and Dominion No. 6, and offers suggestions for improving conditions found. The population of the area dealt with was 27,419 according to the census of 1931.

### The Survey

With the knowledge that the chief factor in the etiology of tuberculosis is intimate contact with open cases, the main objective of this study was to examine all contacts of known cases, so that the incidence of the disease could be determined. Observations on such general conditions as housing, overcrowding, economic status, sanitation and the milk supply were also made.

A visiting list was first prepared including all deaths in this area from tuberculosis from 1921 to 1934 inclusive, together with all known and suspected cases under supervision of the Divisional Medical Health Officer. This list, on completion, totalled 604 names (395 deaths from tuberculosis, 169 diagnosed cases, and 40 suspected cases), and was turned over to the Provincial District Nurse, who, with the assistance of three nurses, attempted to locate the families in which deaths had occurred, and also visited all homes in which the Divisional Medical Health Officer had under supervision known or suspected cases of tuberculosis. Approximately two months were spent by the Provincial District Nurse and her three assistants in this preliminary home survey. Of the 395 deaths from tuberculosis since 1921 the families of 231 or 58% were located. It was impossible to trace the remainder, some had moved away and in other instances the family identity was lost. 244 additional families were added during the survey, 146 because one or more members had had contact with a case of tuberculosis, but at the time of the survey were not living in the original household, 81 in which some member gave a positive tuberculin reaction, although no history of contact was obtained, 11 referred by physicians, and 6 because of a death from tuberculosis during 1935. The total number of homes visited was 623.

When visiting the homes the nurse recorded the number in the family, ages, sex, occupation, duration of contact with tuberculosis, housing conditions, and method of sewage disposal. Where there were active cases, additional information was recorded regarding sleeping facilities, whether the patient



would be willing to go to sanatorium, and whether the family could pay for sanatorium treatment. The nurse also explained the nature of the survey, the method and value of the tuberculin test, and the importance of x-ray examination of those having had, at any time, contact with a case of tuberculosis. From the beginning there was great interest shown in the work, in fact only six families refused to give information.

■ In the 617 homes where information was given there was a total population of 3,430, 1873 giving a history of contact with tuberculosis.

### The Tuberculin Test

■ All members of the families in which cases of tuberculosis had occurred were advised to take advantage of the tuberculin test. In this way the number who at some time had been infected with the tubercle bacillus was determined, and also a considerable saving in the cost of x-ray examination was effected. Only those reacting positively to the tuberculin test were recommended for x-ray.

Clinics for carrying out the tuberculin test were established at St. Joseph's Hospital, the Glace Bay General Hospital, the Community Hall at New Aberdeen, the Town Hall in Dominion, and The Legion Hall in Reserve. In Dominion No. 6 the tests were made in the homes. Prior to holding these clinics all families were again visited by the nurses and appointments made for members to attend in a group at a stated hour on a given day. For those not living in close proximity to the clinic centres transportation was provided by the Canadian Legion, the I. O. D. E., and interested individuals. Two visits to the clinic were necessary, one for giving the test, and a second, forty-eight hours later, for the purpose of interpreting the result.

Tuberculin Purified Protein Derivative, first strength, as sponsored by The Research Committee of the National Tuberculosis Association was used in conducting these tests.

As a result of the clinics 1332 individuals were tuberculin tested, 841 or 44.9% of the contacts, and 491 or 31.4% of non contacts.

The tuberculin test gave much interesting and valuable information. Of the whole group 630 gave positive reactions, and 652 negative. A comparison of infection in contacts with non contacts, as indicated by the tuberculin test is most instructive. Of those having had contact with tuberculosis, 62.8% gave positive reactions; those having had no contact, only 30.9%. Comparisons by age groups are even more striking. In children under five years of age the rate of infection among contacts is approximately seven times that of the rate among non contacts, in children from 5 to 14 years the infection rate of contacts is about four times that of non contacts. In the older age groups the difference is not so marked, although the contacts still show an appreciably higher infection rate than the non contacts.

### X-Rays

Following the tuberculin test, 630 persons were listed for x-ray examination of the chest. The taking of these flat plates was done by the technicians at St. Joseph's Hospital and the Glace Bay General Hospital. All families in which one or more members reacted positively to the tuberculin test were visited by a nurse and appointments made for x-ray examination. Here again it was necessary to provide transportation. On account of routine



x-ray work in each of the hospitals only a small number could be handled at a time and only on certain days. During this time there was also a breakdown in the apparatus at St. Joseph's Hospital. Four months passed before the x-ray examinations were completed.

Flat plates were taken on 647 individuals; 555 of these were positive reactors to the tuberculin test, the others, family contacts who had not been tuberculin tested.

The reading of the plates, the recording of findings, and recommendations for the form of treatment to be followed, was first done by the late Dr. C. M. Bayne, Divisional Medical Health Officer. Following Dr. Bayne's examination, the plates, accompanied by a short personal history of the individual, and the results of the tuberculin test, were then forwarded to the Nova Scotia Sanatorium where independent readings were recorded by Doctors Miller and Corbett, superintendent and roentgenologist respectively of that institution.

It had been planned that after all plates had been examined, if opinion differed as to diagnosis, Doctors Bayne, Miller and Corbett would further study these and make a final report. About this time Dr. Bayne was suddenly taken ill and died a short time later. Dr. Bayne's reports, however, were forwarded to Kentville and there checked. Where any difference of opinion was noted, the plates were very carefully rechecked and a final diagnosis established. The results here recorded, therefore, are those of Doctors Miller and Corbett.

Among the 647 persons x-rayed, 65 new cases of the adult type of tuberculosis were found, 26 arrested, 39 active. In addition, in children under 15 years of age, there were discovered 94 cases of the childhood type of tuberculosis, 9 active and 85 healed.

During the time of the survey there were reported to the Divisional Medical Health Officer 21 cases of adult tuberculosis and 2 cases of childhood tuberculosis in children; all of these manifesting active disease.

In addition to the above on August 1st, 1936, there were 159 cases under the supervision of the Divisional Medical Health Officer (10 of the 169 previously mentioned died prior to this time), 92 arrested and 67 active.

The total number of known cases of tuberculosis in the area surveyed as to August 1st, 1936, excluding childhood types, was 245, 127 active and 118 arrested. Of the 127 active cases of adult tuberculosis, 31 were classified as minimal, 52 moderately advanced, and 44 far advanced. The total number of active cases of the childhood type was 11.

### Sputum Examination

When sputum could be obtained several specimens were sent to the Provincial Public Health Laboratories for examination. Thirty-two patients presented positive sputum, 27 residing at Glace Bay, 4 in Dominion, and 1 in Reserve. Of these, 8 were in institutions and 24 living at home. In the homes of the 24 cases with positive sputum there were 119 contacts, 36 under fifteen years of age.

### Milk Supply

Before the inspection of dairy cattle and the more or less general adoption of pasteurization, milk from tubercular cows was the cause of a good number of cases of tuberculosis of the glands, bones and joints. Hence the survey of



the milk supply. The chief milk supply to this area comes from the Brookfield Dairy in Sydney and the British Canadian Cooperative Society at Sydney Mines. These two companies pasteurize the milk before delivery. There are also 27 producers who sell more than ten quarts of raw milk daily, and numerous individuals who own one or more cows and sell to their immediate neighbours.

The herds of the producers were of good stock and apparently healthy. Periodic examination of the cattle by a veterinarian was not practised, nor was tuberculin testing. In several farms, however, the cows had been tuberculin tested before they were added to the herd. The barns of the larger producers were generally clean, with sufficient light and ventilation. Among the smaller producers there were found barns which were dark, dirty and poorly ventilated. Ten of the producers had separate milk houses, the others either used a porch or a room in the home. Some of the milk houses and many of the homes where milk was handled were not screened. The cooling of the milk was accomplished in most cases by water—some used ice and one, electrical refrigeration. The methods of sterilization of milking utensils and bottles varied. Some used soda and hot water, others soap and hot water, and two dairies boiled all utensils. The water supply to most of the producers was safe. One used a spring and another a dug well, neither of which could be considered safe. The methods of sewage disposal at most of the homes were sanitary. Insanitary box privies were, however, found in a number of homes and, in one place, which had been recently visited by fire, there was no privy.

Although the town of Glace Bay requires all milk dealers to be licensed, apparently this was not enforced in 1935. Up to August no dealer had taken out a license for that year. In the area surveyed 42% of the milk is pasteurized, 51% bottled raw, and 7% loose dipped. Regular bacterial counts were not made in any instance. The food value of the milk, the butter fat, etc., was not investigated.

### Economic Status

Most of the wage earners are employed in the mining and handling of coal. The economic status as a whole is good. Information obtained from the Dominion Steel and Coal Company showed that, for 1935, the average yearly earnings of the employees were sufficient to ensure good food, proper clothing and comfortable housing. It can be appreciated that the expense incident to the hospitalization of tubercular patients is beyond the means of many of the families.

### Housing Conditions

A detailed survey of housing conditions throughout the whole district was not attempted. However, a sufficient number of homes was inspected to justify comment. Most of the homes were standardized in type, of wooden construction, detached or semidetached. The newer houses were well built, but many of the older ones were in a bad state of repair, and undoubtedly difficult to make comfortable during the winter. In general the houses were on good sized lots, but rows of attached houses were also found, in which the consequent lack of light and ventilation were serious detriments to health. The rooms on the whole were small, the window space sufficient for good light. Over-crowding was common and it was not unusual to find an active case



sleeping with another member of the family. Heating, in most cases, was by stoves and open fireplaces. All of the homes were supplied with running water. A few have water closets, but many, insanitary outside box privies. The houses were built by the Dominion Steel and Coal Company, although at present many are owned by the occupants. The rents are reasonable.

### Summary

1. Of the 623 families listed, information was received from 617, having a total population of 3,430. 1873, or 54.6% of this population had at some time been in close contact with tuberculosis.

2. 1332 individuals were tuberculin tested.

3. The incidence of tubercular infection, as determined by the tuberculin test, gave a rate among contacts double that of non contacts. In the age group under 5 years, the incidence of infection among contacts was approximately seven times that of non contacts; between 5 and 15 years, about four times; in the older group the difference was not so marked.

4. 647 individuals, the majority contacts of cases of tuberculosis, were given x-ray examination.

5. Through x-ray examination, 65 new cases of the adult type of tuberculosis were found, 39 in the active stage of the disease. In addition, 94 cases of the childhood type were discovered, 9 active.

6. 23 active cases of tuberculosis were reported by physicians during the survey, 21 adult type and 2 childhood type.

7. At the beginning of the survey 169 cases of tuberculosis were under supervision of the Divisional Medical Health Officer (10 of these died prior to August 1st, 1936).

8. On August 1st, 1936, there were in the survey area 245 cases of adult type tuberculosis, and 11 childhood type (active) in children under 15 years of age. Of the cases in adults 127 were in the active stage of the disease—31 minimal, 52 moderately advanced, and 44 advanced. (The healed childhood type is not included in this total.)

9. 32 persons had positive sputum, eight receiving treatment in sanatoria, 24 living at home.

10. The milk supply has been investigated to determine the possibility of tubercular infection through infected milk.

11. The economic status has been determined.

12. The housing conditions, under which cases of tuberculosis live, have been investigated.

### Mortality

In order to properly appreciate the mortality from tuberculosis in Glace Bay, Dominion, Reserve, and Dominion No. 6, statistical comparisons were made, for three three-year periods, of this area, the registration area of Canada as of 1926, Nova Scotia, the Peninsula of Nova Scotia and Cape Breton Island. The survey district compares favourably with the Province as a whole, the Peninsula, and Cape Breton Island, but all of these have a much higher mortality rate from tuberculosis than the registration area of Canada.



Three Year Average Annual Death Rates Per 100,000 Population,  
All Forms of Tuberculosis 1926-34, inclusive. Corrected for  
Residence.

	1926-28	1929-31	1932-34
Canada.....	83.1	77.6	64.2
Nova Scotia.....	120.8	103.6	91.0
Survey Area.....	134.8	117.4	85.9
N. S. Mainland.....	121.4	100.4	88.6
Cape Breton Island.....	119.3	112.7	98.0

### Recommendations

The recommendations here offered are:

1. Those of a specific nature dealing with conditions found.
2. Administrative measures dealing with the area surveyed as part of a unit.

#### 1. *Specific Recommendations:*

To review the situation there are in Glace Bay, Dominion, Reserve, and Dominion No. 6, 245 cases of the adult type of tuberculosis, and 11 active cases of the childhood type. Of the 245 cases of adult type tuberculosis 127 are active, and of these 32 are in the minimal stage, 52 moderately advanced and 44 advanced. On August 1st, 1936, 25 were receiving institutional care.

The ideal condition would be that all the active cases, that is, 127 adults and 11 children, have the benefit of at least a short period of institutional care, and that arrested cases (118) be under the constant supervision of a physician and nurse especially trained in tuberculosis.

A knowledge of the expense attached to the hospitalization of tubercular patients, and the realization that a few would not willingly consent to leave their homes, modifies to an appreciable extent the above consideration. It must be kept in mind, however, that to bring about a steady decline in the incidence of tuberculosis it is essential that a considerable proportion of the active cases, particularly the open cases, receive hospitalization. The recommendations for hospital accommodation are made after having reviewed the present institutions at Kentville, Antigonish, Inverness and Sydney.

To deal immediately with the situation it is recommended:

That annexes for tubercular patients, providing not less than 30 beds each, be attached to St. Joseph's Hospital and the Glace Bay General Hospital, and that provision for the treatment of children be included; the supervision and treatment of patients entering the annexes to be under the control of a physician especially trained in the diagnosis and treatment of tuberculosis.

That all cases in the homes be brought under the supervision of a public health nurse who will devote her full time to tuberculosis control.



That in addition to the chest clinics which have been conducted in this area new centres at convenient points be established and that all clinics be held at more frequent intervals.

That a milk ordinance be adopted at Glace Bay and Dominion in which definite standards be required for the production and handling of milk, and that a sanitary inspector be employed to enforce such an ordinance. (This recommendation is made to safeguard against the potential danger from tubercular cattle, although in the survey the differentiation of human and bovine types of tuberculosis was not attempted.)

That a plan of group insurance be adopted providing for hospitalization of tubercular patients, and in this plan provision for the dependents of such patients be made.

The following recommendations regarding housing are made for those homes in which cases of tuberculosis reside:

Where overcrowding, and particularly lack of adequate sleeping facilities exists, much can be done by the public health nurse. The construction of sleeping porches is recommended, thus reducing the load on the annexes. The insanitary outside privies should be replaced by inside flush toilets. Legislation has already been passed requiring this to be done. Considering the ill effects of insanitary conditions on the general health of the community it is most important that the outside toilets be got rid of as soon as possible.

## 2. *Administrative Recommendations:*

As the area studied is not an administrative unit, and on the assumption that conditions would be comparable throughout Cape Breton Island, also having in mind a permanent organization for the improvement of health and the control of tuberculosis, the following recommendations are made:

That a full time health department be established in Cape Breton Island under the direction of a physician who has had special training in Public Health, Public Welfare, and especially tuberculosis, this appointment to be made by the Provincial Department of Health. The chief duties of the health officer to be the administration of the unit for Cape Breton Island, the supervision of annexes and the conduction of clinics in Cape Breton County. Besides the director, the staff of this unit should include:

(a) One assistant health officer who will be detailed to the rest of Cape Breton Island, especially for the conducting of chest clinics, including the supervision of annexes at Inverness.

(b) Three public health nurses, devoting their whole time to tuberculosis control.

(c) Three public health nurses doing preventive work of a general nature such as communicable disease control, maternal and infant welfare, and school hygiene.

(d) A trained welfare worker whose duties in general would be the supervision of relief, the investigation of the economic status of families incidental to hospitalization, and other matters pertaining to the welfare of the county.

(e) A full time dental clinician. His work to be the dental inspection of school children up to the ninth grade, extractions, and minor operations.

(f) Two sanitation inspectors who would devote their full time to such matters as the improvement of milk production, the protection of food supplies,



the safe disposal of sewage and the protection of water supplies, especially at those homes situated in the rural areas.

(g) A full time clerk, whose duty it would be to keep records and do the clerical work necessary for such a unit.

The expense of maintaining such a department should be borne jointly by the local and provincial governments.

This recommendation for a full time health department is made with a complete knowledge of the excellent public health work at present being carried out by the part time health officers, the school nurses, the Divisional Medical Health Officer and Provincial Nurse in Cape Breton County. It is not suggested that the services of any of these be dispensed with, but that a plan be worked out so that they may fit into the organization proposed. In the case of Sydney, where a full time health officer is employed, an arrangement between the Director of the County Department and the Health Officer of Sydney concerning duties, notification of disease, etc. could be arrived at agreeable to both.

We would like to express our sincere gratitude to the following who have so willingly helped us in this survey: The late Dr. C. M. Bayne, Divisional Medical Health Officer, Miss L. M. Dillon, Provincial District Public Health nurse, and her assistants, Miss C. T. Macdonald, Miss Mary McAskill and Miss Dolena MacPherson; Dr. A. F. Miller and Dr. H. R. Corbett of the Nova Scotia Sanatorium for their painstaking work of examining and reporting on the x-ray films; the Canadian Legion, the I. O. D. E., and those interested persons who supplied transportation and help at the clinics; The Glace Bay General Hospital and St. Joseph's Hospital for their active support, and especially the excellent work of the technicians; the Clergy for their interest in urging people to take advantage of the examinations; The Dominion Steel and Coal Company for their courtesy in supplying information requested; the physicians and Health Officers, without whose interest and help the survey could not have been made; the Minister of Health and Chief Health Officer for many courtesies extended to us during the survey.



# The Tonsil Problem in Children

L. J. LEBLANC, M. D., Cheticamp N. S.

ONLY fifty years ago a child whose tonsils had been removed was a rarity. In these days when the school child receives medical supervision, every one knows that the operation for the removal of tonsils and adenoids is very common. A good many thinking parents find it difficult to believe that there is justification for such a wide spread attack on a normal structure of the body.

It may well be asked—"Of what good are the tonsils? Does their removal do any harm? Surely they have been given to us for a purpose." These are reasonable doubts and queries which merit careful consideration.

A leading article found in the British Clinical Journal of September, 1936 is worthy of note. T. B. Layton points out that tonsillectomy is still too frequently performed. He goes on to say—"The operation should be confined to cases with local evidence of sepsis. Recurrent sore throats due to follicular tonsillitis cease after removal of tonsils. Only in these cases can improvement be obtained in rheumatoid arthritis, and on the whole the results are disappointing in this disease. In the two lethal diseases of childhood, acute rheumatism and nephritis, no benefit is obtained. Indeed in all children under five and perhaps under eight, the removal of tonsils seriously impairs resistance to the general infection which produces severe sore throats, colds, and shotty glands in the neck. This particularly applies to the type of operation in which the pharynx is practically flayed of lymphoid tissue, and a thorough adenoid operation is performed. In the children of the well-to-do not much harm is done, though catarrhal deafness may result. In the children of the poor living under unhygienic conditions, the result may be serious and vary from fading away of the child for no apparent reason to chronic nasal catarrh. Removal of tonsils seldom cures colds, and may make them worse. Nor does it cure otitis media, and this is extremely difficult to cure in a tonsillectomized child, especially if a flaying operation has been done. In adults conservation of the lymph tissue is not so important, but in one condition it is necessary—in persons with a large nasal airway, a large naso-pharynx and an oro-pharynx in which the soft palate hangs down at an undue distance from the posterior pharyngeal wall. They have large red tonsils, as though Nature tried to limit the cross section of the airway. The removal of these make the symptoms much worse."

From this quoted article one can easily see that most children do not benefit greatly from the operation in the matter of colds, bronchial infection and often mouth breathing. Unless the tonsils and adenoids are large and unquestionably obstinate so that the parent is convinced that the child chokes markedly when eating or sleeping, the removal does not tend to diminish the number of head colds and bronchial infection.

Then if the operation is done it should not be done during the period of acute exacerbation. I could, if I wanted to be personal, point out what happened in a home where four members of the family were operated for tonsils at presumably the wrong time.



The practical point, however, is that the public and physicians in general are convinced that when the operation is properly performed, it is done with very great probability of benefit and with little risk. It is not, however, correct to say that the risk is slight and as for the benefit of the operation, this has caused the pendulum of general opinion to swing so far that with certain people or in certain schools or certain communities, the operation is liable to become or has become a fad. The result of this fad has been that the seriousness of the operation has been minimized so that there is bound to be instances where the operation has been done where it should not have been done, or has been done improperly, or under improper conditions, or at an unwise time. Such conditions have been known to cause disaster and certainly have caused dissatisfaction. To err, after all, is human, and the error may be ascribed to the physician stimulated by an uneducated parent.

A prominent English physician quite recently wrote—"This operation has a greater number of complications to life, to immediate illness and to post-operative impairment of functions than any other operation of the same magnitude. So long is the list, were it read over at the time of consultation any parent would hesitate to consent to the operation being performed." The anaesthetic must be carefully given; the anaesthetic for a tonsil operation is one of the most difficult anaesthetics to give. The operation must be performed to prevent mutilation or leaving pieces of tonsil or adenoid which tend to grow rapidly. When a piece of tonsil that has been left in place becomes embedded in scar it is an even greater source of danger than the intact tonsil was. The tonsil tissue is known as lymphoid tissue and in early childhood this tissue is very active, grows rapidly and swells with the least infection. Hence the common saying "My child's tonsils grew in again". If the operation were properly performed the tonsils did not grow in again—only a lump of lymphoid tissue reformed in the tonsil bed. This is a good reason against unnecessarily early operation.

One of the most certain signs that the tonsils are causing trouble is the enlargement of the glands situated just behind the angle of the jaw. It is well known that the lymphatic glands act as filters to remove from the blood poisonous material from some infection and thus they prevent the blood from receiving doses of poison from this source. When a child has severe tonsillitis the glands mentioned may be enlarged or they may not be enlarged. If they are not enlarged it is because the tonsils are capable of resisting the infection; if they are enlarged it is a proof that the tonsils have not been capable of withstanding the attacks of infection and that the infection has passed beyond the line of defence—the tonsils—and has gone to the next line—the glands. If the attack of tonsillitis subsides and the swelling of the glands disappears it is a proof that the second line of defence was sufficient to withstand the attack. If the glands remain enlarged it is because the poison that reached them has remained active and is temporarily locked up in the glands. In this case, the removal of tonsils is to be recommended because they have proven themselves inefficient as a defensive agent. Then the enlarged glands should disappear following a tonsillectomy. Because the operation has been followed by benefits in some cases the general public has thought that the operation is a cure for many ills. They forget that the doctor who sees the patient and takes the history is rarely able to say, "That child's tonsils must not come out—they are doing no harm". For such is public opinion that if he does so and the child develops any one of the things erroneously or correctly ascribed to tonsil



and adenoid infection, he will be blamed for having given the wrong advice. The public forgets that his advice may have been perfectly correct, and they overlook the fact that the subsequent disease may not have been caused by the tonsils and adenoids. The result of this is that the physician will often have to say that it is advisable that the tonsils should come out. Hence it follows that public hospitals have long lists of patients waiting to have the operation of tonsillectomy and adenoidectomy performed. It is rare though, that real harm comes to any patients on such waiting lists. In conclusion, I should say that the decision to remove tonsils and adenoids should only be reached after careful examination and consideration of the indications for removal. The operation should be performed at the proper time and under the proper auspices.

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### Vitamin Advertising and the Mead Johnson Policy

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

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### FIRST BIBLE IN ENGLAND PRINTED BACK IN 1535

#### One of America's 17 Copies Of First Edition On Public Exhibition

One of America's 17 copies of the first edition of the Bible in English was on public exhibition in celebration of its 400th birthday today.

Professor Edgar J. Goodspeed of the University of Chicago, famous for his translation of the New Testament, stated that in all the world there existed but 44 of the "Coverdales," the name by which they are known. A unknown 16th century printer four centuries ago today completed his work of transcribing the Bible into English and wrote:

"Prynted in the yeaere of oure Lord MDXXXV and fynished the fourthe daye of October."

The first Bible in English, "strangely enough," said Prof. Goodspeed, "was not printed in England. Authorities conceded one of four cities on the continent—Antwerp, Frankfort, Zurich or Basle—as its source."

Popularly the edition of 1535 was ascribed to Bishop Miles Coverdale of Exeter, England, when it derived its name.

Dr. Goodspeed called the "Coverdale" Bible the precursor of the later "King James' Version," widely used in English speaking lands.—*Sydney Post Record*.



# The Coronary Circulation

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C. B. WELD

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THE coronary circulation constitutes the blood supply to the heart muscle, and as in addition to this it differs in several ways from other portions of the systemic circulation, it is worthy of study.

An exact anatomical study of the coronary vessels will not be undertaken here, but a few notes are of interest. The two coronary arteries may be considered as the first branches of the aorta, originating just outside the aortic valves. They branch freely over the surface of and within the myocardium; some anastomoses between terminal branches of the two arteries are found, while frequent anastomoses between larger branches of a single artery are present. Obstructions involving only smaller branches are thus not apt to deprive any region of the heart of its blood supply.

These vessels are richly innervated throughout their whole length by nerve fibres from the autonomic nervous system. It is found that the larger vessels are chiefly innervated by the sympathetic system while the fine nerve fibres supplying the smallest vessels are mostly vagal in origin. Afferent fibres carrying pain sensation appear to be distributed with the sympathetic nerves. The pain felt is not referred to the heart, but to the chest wall, left shoulder and arm. The pain is apparently due to ischaemia of the myocardium.

Whether or not it is an indication of the incessant activity of the heart, the myocardium seems to have a richer capillary supply than any other muscle. There are something like 10,000 mm of functioning capillaries per c. mm. ventricular muscle as against 2000 in resting and 6000 in active systemic muscle. If these could be imagined to be arranged in straight parallel rows, then a cross section would reveal 10,000 capillaries per sq. mm. of section, or 100 per linear mm. There wouldn't seem to be room for many more.

The venous blood from these vessels empties by means of the veins into the cavities of the heart. About 60% of the blood entering the coronary arteries empties through the coronary sinus into the right auricle. The remaining 40% is taken care of by the other veins, such as the posterior cardiac veins and the Thebesian veins. It is found that this same proportion holds good under a variety of conditions. For example, changes in the aortic pressure, coronary pressure, cardiac output, pulse rate, etc. leave this proportion practically unaltered. The Thebesian veins are small veins opening through the endocardium directly into all the cavities of the heart (even the left ventricle). They communicate with coronary veins and may anastomose with one another. They do not communicate directly with arterial vessels in the myocardium. While the greatest coronary vein is the coronary sinus, it must be remembered that it only carries 60% of the blood, and it is not indispensable. Indeed, the coronary sinus may be blocked without causing death, if it is done gradually to allow widening of the venous anastomotic channels.

The movement of blood through the coronary system differs in its time relationships from that of the systemic circulation because the smaller arteries are nearly occluded during systole.



It used to be believed that the flow of blood into the coronary arteries stopped entirely throughout systole but Wiggers has shown that it doesn't quite do this. At the beginning of systole, entrance of blood into the arteries almost ceases. Then, during the ejection phase of cardiac systole when blood is being forced into the aorta, the aortic pressure is increased, forcing more blood into the coronary artery. Consequently a small flow does occur during the systolic period. With diastole, and relaxation of the ventricular muscle, there is a great increase in the arterial blood flow, and the bulk of the coronary flow occurs during diastole.

On measuring the outflow of blood from the coronary sinus it is well known that the greatest flow occurs during systole and the least during diastole. Closer examination reveals a small wave of blood from the sinus coincident with auricular systole, a very small one at the very beginning of ventricular systole, and a large wave extending throughout the ejection phase of ventricular systole.

It is obvious that the factors determining the blood flow through the coronary system must be twofold; (a) the pressure forcing the blood through, the arterial pressure, and (b) the caliber or size of the coronary vessels. In studying these factors the heart-lung preparation in which the heart is denervated and any nervous control mechanisms thereby removed has been of great service. The results have been later followed up in the innervated heart lung preparation and in the intact animal and confirmed and amplified.

It is found that the mean aortic pressure is responsible for the coronary flow. Such factors as the cardiac output, or heart rate, or the systolic and diastolic pressures may be quite widely varied without altering the coronary flow to any extent providing the mean aortic pressure is kept constant. This applies chiefly to the denervated heart but is also true of the innervated organ, except in one particular. Anrep and Segall have described an important reflex by which an increase in cardiac output is accompanied by coronary dilatation and an increased coronary flow. This mechanism, which is lost on sectioning the vagi, ensures an increase in coronary flow when the heart has more work to do even though there is no change in the mean aortic pressure.

Changes in the chemical constitution of the arterial blood are known to greatly modify the calibre or degree of dilation of the coronary vessels. Oxygen deficiency or unsaturation of the *arterial blood* very greatly increases the flow of blood through the coronary system. This action is probably due to the direct effect on the arterial walls of the low oxygen pressure, and is obviously an important safety mechanism which ensures an improved supply of the vital oxygen to the myocardium even though the body as a whole is going short. This safety factor is further aided by the ability of the myocardium to remove from the blood a greater proportion of its oxygen than can ordinary muscle—probably because of the larger number of capillaries present. An excess carbon dioxide content of the arterial blood will also cause an improved coronary flow, though this action is comparatively weak. This question of anoxemia is given further importance when it is realized that for all practical purposes the heart cannot run up an oxygen debt. Its incessant activity would in any event make recovery from an oxygen debt difficult, but apart from this the chemical changes occurring in cardiac muscle during its contraction differ from those of skeletal muscle. They are as yet somewhat obscure but work by Barcroft, and Evans, and Cruikshank, and Clark and many others has clarified the situation somewhat. It appears that the heart is capable of a



limited amount of anaerobic work but that when the anaerobic conditions are ended the oxygen consumption of the organ at once resumes its normal level with no tendency to make up the previous deficiency. The heart cannot therefore be allowed to receive an inadequate oxygen supply. The oxygen consumption of the mammalian heart (in the heart lung preparation) doing moderate work is in the order of 350 cc O<sub>2</sub> per 100 gm muscle per hour. The ventricles—weight for weight—use more than the auricles and about ten times as much as the Purkinje tissues. This oxygen is obtained under these conditions from a coronary flow of about 5,000 cc. blood per 100 gm. per hour. In the human heart of some 300 gms. the coronary flow in the resting individual is probably in the same order of magnitude: 300 or 400 cc. per minute would be a likely figure. It has been calculated that in conditions of extreme exertion the human coronary flow may rise to as much as about 1.5 l. per minute.

It is interesting to note that, as Muller, Salomon and Zuebser have pointed out, the heart has no intrinsic chemical means of regulating its blood flow in according to its needs. It is true that low arterial oxygen or high arterial carbon dioxide cause coronary dilatation but the rate of oxygen utilization of the heart and the degree of oxygen unsaturation in the *capillaries* which this determines, has no effect on coronary flow.

In discussing the nervous control of the coronary circulation we find that in general, stimulation of the vagus causes coronary constriction and a reduced flow while sympathetic stimulation results in dilatation and an increased flow. This is the reverse of the constrictor mechanisms found in the ordinary skeletal vessels and of course is fortunate because most conditions resulting in general sympathetic activity (emergency activities) also require an enhanced heart action. It is found that the larger coronary arteries when removed from the body are somewhat constricted by adrenalin while the smallest vessels are dilated. The total blood flow is generally controlled by the smaller vessels. In man, histamine and pituitrin cause coronary constriction. Theophyllin causes coronary dilatation. Cruikshank and others have also shown that isolated coronary arteries differ from systemic arteries in other respects, such as in their reaction to temperature. They are fully dilated when removed from the body while ordinary arteries are constricted.

We have already discussed one reflex mechanism affecting coronary flow, namely that of Anrep which directly relates the flow to the cardiac output. It is also known that an increase of pressure in the coronary sinus results in coronary constriction. Furthermore, the stimulation of almost any afferent nerve will result in some degree of coronary dilatation, unless the stimulation is very strong when mixed results are obtained.

Thus we see that both chemical and nervous mechanisms affect the coronary flow. Perhaps the most important factors are the mean arterial blood pressure, the oxygen saturation of the arterial blood, and the reflex increasing coronary flow with cardiac output.

A few other points, perhaps a bit aside from the main argument may be of interest here. The first of these is the relation between the pressure in the pulmonary system and the aortic pressure. Normally, a rise in aortic pressure is reflected by a rise in pulmonary pressure, and this is not due to back pressure of blood backing up through the left auricle and pulmonary veins. It is due to the increase in coronary flow which short circuits blood from the aorta to the right ventricle and is accompanied by an increase in the output of both ventricles. In definite pathological heart conditions such as mitral insufficiency



there may be the true development of a "back pressure" but this is not a normal mechanism.

The efficiency of the heart is a subject of some interest and it is found to be greatest when the cardiac output and the blood pressure are both high. High blood pressure alone does not increase cardiac efficiency but an increased cardiac output does, provided the blood pressure is high enough to assure an adequate coronary circulation. By the expression efficiency of the heart is meant the ratio of the work done to the work available from the oxygen used. An efficiency of 25%-30% may be attained but under ordinary quiet conditions the figure is nearer to 5%. This is because work is done by the heart merely by contracting and even if it isn't given much to do, energy is expended just the same. An increase in cardiac output increases the work done more than the energy expenditure and hence increases the efficiency: the overhead is reduced. Adrenalin increases the activity of the heart with benefit perhaps to the rest of the body, but it is at a cost of lower heart efficiency. The oxygen consumption of the heart (mammalian) may be increased fourfold and practically the whole of the available oxygen of the arterial blood may be removed during passage through the coronary capillaries. In other words the metabolism of the heart is increased more than its oxygen supply increases, and reduced myocardial efficiency results. On the other hand acetyl choline (vagus substance), or digitalis, or strophanthine reduce the metabolism of the heart even when the work of the heart is unaltered.

Though it is true that cardiac efficiency is greater when the heart is being worked hard, nevertheless an increase in work on the part of the heart still demands an increased oxygen supply and an increased coronary flow. Consequently it is still necessary clinically when the heart is to be rested, to reduce bodily activity as much as possible and so reduce the amount of work demanded of the heart.

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The English, as everyone knows, love titles, but they bestow them much more cautiously than we do. Such titles as "doctor" and "professor" are also bestowed with circumspection, and even with what may be called reluctance. A surgeon is seldom "Dr." in England, and a dentist almost never; "Mr." is thought to be good enough for them. Even many physicians—or, as the English prefer to say, medical men—are not "M.D.'s" but only "M.B.'s" But when an Englishman is ill he "sends for the doctor," as we do. In this case the demoralization produced by his malaise excuses his departure from the strict letter of honorific decency.—*The Nebraska State Medical Journal.*



# \*Gastro-Intestinal Manifestations of Lymphogranulomatosis (Hodgkin's Disease)

E. DAVID SHERMAN, M. D. Sydney, Nova Scotia.

(This article is a brief resume of an original paper that will appear in another magazine. Due to lack of space, it is impossible to include detailed reports of the cases, literature, autopsies, X-Ray plates, etc.)

**S**INCE Schlagenhauser's publication, studies of gastro-intestinal lymphogranulomatosis, particularly of the localized type, have been made from the clinical and pathologic view points, and from these, the basis of our present conception regarding this type of Hodgkin's disease has been formed. This group of cases warrants particular attention inasmuch as the formulation of the correct clinical diagnosis is extremely difficult, notwithstanding the numerous laboratory procedures available. The diagnosis is usually made after operation or at necropsy upon histologic examination, and not upon the gross anatomic features which cannot be differentiated from other pathological conditions. Two additional cases are here presented and an analysis of the available clinical data in seventy-three other cases from the literature is made.

In 1889, Pitt described lesions in the stomach and duodenum as part of generalized Hodgkin's disease. Wells and Maver in 1904, collected a series of 238 cases of pseudoleukemia from the literature. In seven of these, the changes were confined principally to the gastro-intestinal tract, and consisted of marked hyperplasia of lymphoid tissue. They presented the condition "as a subdivision of the general group of cases that presents the anatomical and symptom complex of Hodgkin's Disease." Ewing differentiated these cases from lymphogranulomatosis and placed them in the class of pseudoleukemia gastro-intestinalis which is defined as a hyperplasia of the lymphoid tissue in the gastro-intestinal tract. Schlagenhauser, in 1913, described a case of gastro-intestinal lymphogranulomatosis limited solely to this tract without involvement even of the regional lymph glands. He is credited as the one responsible for drawing attention to this type of Hodgkin's Disease.

## Etiology.

The etiology of Hodgkin's Disease is obscure. Stewart and Dobson have enumerated the different views. (1) an atypical form of tuberculosis; (2) a specific infection by diphtheroid bacillus; (3) a neoplastic disease; (4) a granuloma of unknown etiology. Wallhauser, Simonds and Barron in reviews of the disease have stated that the majority of the investigators favor this latter view.

## Gross Pathological Features.

Terplan has divided Hodgkin's Disease of the gastro-intestinal tract into two groups, namely:—(1) Cases in which the gastro-intestinal tract is ex-

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clusively involved. (2) Cases in which the gastro-intestinal lesions are part of a generalized or disseminated disease.

The process is the same for both types and usually starts as a nodular infiltration in the sub-mucosa which then protrudes into the lumen or invades the other coats of the gastro-intestinal wall. In the early stages of the disease isolated nodules or small tumors are found only in the submucosa. One can distinguish (1) the ulcerating type which is more common and consists of numerous ulcers and infiltrations of the stomach and bowel; (2) the tumor-like form which may also be subdivided into (a) nodular infiltrations that involve a small segment varying in size from that of a pin head to that of a tangerine, and (b) a more diffuse involvement which produces a stricture of the bowel, and is difficult to differentiate from carcinoma or sarcoma. The latter type producing intestinal obstruction has been reported. Intussusception has been noted.

The ulcerations in lymphogranulomatosis frequently involve the upper part of the gastro-intestinal tract in contrast to tuberculosis which involves the lower segments. Schlagenhauser stressed this as an important point in the differential diagnosis between the two conditions.

The ulcerating process may extend through the various coats of the intestinal wall, perforating into the general peritoneal cavity and resulting in peritonitis. Hemorrhage and severe anemia were observed.

Although the principal manifestations of the diseases are in the gastro-intestinal tract, dissemination to the other organs, as, e. g. the spleen, liver, pancreas, peritoneum, etc. may take place. The spleen and liver are rarely enlarged. Lymphogranulomatous involvement of the esophagus, peritoneum, pleura, gall bladder, kidneys, thyroid, bone marrow, ovaries, sub-maxillary gland, pharynx, and heart were observed in several cases.

### Case Reports

Case 1, S. G. a 63 year old nurse was admitted to the Medical Service of the Mount Sinai Hospital on September 17, 1929. The patient was well until several weeks prior to admission when she complained of epigastric distress and heaviness after meals, with occasional nausea and vomiting, and accompanied by constipation.

*Past History:*—Appendectomy in 1916. Panhysterectomy for carcinoma of the uterus in 1927.

*Positive Findings:*—Reh fuss test meal showed achlorhydria, total acidity 19.

*Blood examination:*—Hemoglobin 63%, red blood cells 4,030,000; white blood cells 10,200; polymorphonuclears 81%, eosinophiles 2%, monocytes 12%, lymphocytes 3%, myeloblasts 2%.

*Gastro-intestinal series:*—Examination of the stomach showed a defect involving the antrum and part of the body. The duodenal bulb appeared regular. There was a slight delay in gastric motility. Diagnosis: Prepyloric newgrowth.

The patient was operated on, and on operation, a mass was found in the posterior wall of the stomach. A partial gastrectomy with no loop posterior gastro-enterostomy was performed.

The patient made an uneventful recovery from the operation. One month



later she gradually started to go down-hill, with vomiting, anorexia, and pain in the left lower quadrant. Despite treatment the patient sank and died.

*Autopsy Diagnosis:*—Lymphogranulomatosis of stomach with infiltration of gastro-hepatic omentum, perigastric and peri-pancreatic lymph-nodes and liver.

Case 2: I. S. a 36 year old woman was admitted to the Medical Service of the Mount Sinai Hospital on December 27th, 1934. The patient was well until one year before admission, when she complained of pain in the umbilical region which came on  $\frac{1}{2}$ -2 hours after meals and was associated with nausea. The pain was pressing in character and did not radiate. It was not relieved by food or alkali, but induced vomiting would relieve the pain.

On admission to the hospital her chief complaints were epigastric pain associated with nervousness and colicky pain in the left lower quadrant. The patient stated that she never noticed tarry or blood stools, diarrhoea or bouts of fever. During the past year she had become progressively weaker and had lost 23 pounds in weight.

*Positive findings:*—Heart. The heart was not enlarged. The first sound was loud and snapping in character. It was preceded by a faint presystolic rumble. The rhythm was regular; blood pressure 88/158. There was definite clubbing of the fingers.

*Abdomen:*—The abdomen was uniformly distended. There was generalized tenderness, which was maximal in the epigastrium and left side of the abdomen. There was voluntary spasm in the upper abdomen and along the entire left rectus muscle. No masses were palpable.

*Blood examination:*—Hemoglobin 43%, red blood cells 2,610,000 white blood cells 6,100, polymorphonuclears 84%, lymphocytes 8%, monocytes 5%, eosinophiles 3%. Stool: Guaiac positive. Anti-formin examination of the stool showed no tubercle bacilli.

Abdominal puncture was performed and a very small amount of fluid was obtained. This fluid revealed an occasional polymorphonuclear and monoclear cell, but no tubercle bacilli.

Gastro-intestinal examinations showed the stomach and duodenum to be normal. Observations were made 2, 4, 6, 8 and 10 hours p.c. to study the small intestines. On all of the films the distal jejunum and perhaps the beginning ileum showed areas of constriction and dilatation. The margins of this portion of the bowel were irregular and fuzzy in appearance. At the 10-hour examination delayed motility of the small bowel was noted. The findings were considered as those seen in non-specific ulcerating enteritis.

At this time it was decided that exploratory laparotomy was indicated. The patient continued to go down-hill in spite of a high caloric diet, vitamins and liver therapy. A transfusion of 500 c.c. of citrated blood was given and the patient responded somewhat. However, she went into stupor and developed signs of fluid at the left base, with marked oedema of the ankles, legs and conjunctivae. Despite all treatment the patient died.

*Autopsy findings:*—Abdomen: The abdomen is moderately distended. The anterior abdominal wall is markedly edematous. The peritoneum is smooth and glistening. The greater omentum is adherent to a proximal jejunal loop. In the pelvis there are several hundred c.c. of free, colorless,



somewhat turbid fluid, smear of which shows occasional lymphocytes. At the root of the mesentery a firm mass can be felt which is irregularly outlined and measures 7 x 4 cm. in diameter.

*Diagnosis:*—Hodgkin's Disease of jejunum with caseating mesenteric lymph nodes; Rheumatic heart disease; Mitral and tricuspid stenosis. Pulmonary edema; Bilateral pleural effusions Ascites.

### Clinical Manifestations

In an analysis of seventy-five cases of gastro-intestinal lymphogranulomatosis, collected from the literature and including the present two cases, it was found that over 50% of the cases occurred between the ages of forty and sixty, 10% between sixty and seventy and the remainder in the other age periods.

In the gastric type, the chief symptoms were epigastric pains and distress after meals of varying severity, vomiting and nausea, eructations of gas, weakness, loss of appetite and weight.

Physical examination was usually negative, except for occasional emaciation. A palpable mass was uncommon, but was observed in some cases. The liver and spleen are usually not palpable. Superficial glandular enlargement is infrequent. Achlorhydria is not a constant finding, but was present in the first case, and in others.

The diagnosis usually made is that of carcinoma or ulcer of the stomach. The former diagnosis was made more frequently.

The intestinal type was characterized by the following symptoms: increased malaise, weakness, loss of weight, loss of appetite, and the predominance of abdominal symptoms, namely, abdominal pain, meteorism, diarrhoea, constipation or alternating diarrhoea and constipation. Melena was not common.

Physical examination sometimes revealed a palpable resistance in the abdomen or a mass. Irregular bouts of fever were occasionally present.

The symptomatology in the intestinal type appeared in two forms: (1) the inflammatory, diagnosed usually as tuberculous enterocolitis. (2) the obstructive, diagnosed commonly as carcinoma.

Blood examination frequently showed a secondary anemia, with a polymorphonucleosis and leukopenia.

### Roentgen Aspect.

The roentgen appearance in the gastric type as observed by Holmes, Dresser and Camp, did not differ from that of carcinoma, except that in some of the cases the peristalsis was not interfered with to the extent generally seen in carcinoma. The diagnosis based on the roentgen findings were carcinoma of the stomach in five cases, and lymphoblastoma in one.

Ruggles and Stone claim that there is no type of lesion or region of involvement characteristic of the disease, and therefore no characteristic findings. When gastric peristalsis persists with a lesion of the stomach, it is most likely to be a lymphoblastoma.

On review of the literature, the roentgen findings in the intestinal type appear to be very meagre. There is apparently no specific form of roentgen diagnosis. The clinical picture is one usually of enteritis or obstruction of the bowel. In the second case reported here, the roentgenograms showed irregular



constrictions and dilatations of the small bowel, which were interpreted as a non-specific ulcerative enteritis, but these findings were no different than what is usually observed in a tuberculous peritonitis or intestinal malignancy.

#### Treatment.

Singer and others have advocated surgical resection combined with radiotherapy for localized lymphogranulomatous lesions of the gastro-intestinal tract. Some others have reported cases that have undergone successful resection of the lesions and have been alive from several months to several years after operation. Where the lesions are inoperable or surgical intervention is contra-indicated, roentgen therapy is advocated for the amelioration of symptoms and prolongation of life.

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#### A Plan For Periodic Health Examination

Alarmed by the loss by death and sickness of large numbers of scholars and teachers at the height of useful careers Columbia University has announced plans for the development of a new health system which will "conserve and prolong the active service of scholars in the arts and sciences."

Periodic Health Examinations will be employed to protect the teachers, particularly those nearing middle life, according to Dr. William H. McCastline, University Medical Officer. The program will serve more than 3,000 officers of administration and instruction at Columbia.

Dr. McCastline also urged yearly health checks for sophomore and upper classmen in Columbia College, similar to the physical examinations now given to incoming students.

"A Scholar who has spent one or often more decades in preparation for a useful career in the field of science or the arts should have available the best that medical science has to offer to conserve and prolong his period of active service," declared Dr. McCastline.

Endorsation of Columbia's plan of health examinations was given today by officials of the Health League of Canada. The promotion of periodic health examinations has long been on the program of this volunteer health education organization.

Modern medical science offers new hopes to men and women, declared officials of the Health League. Men and women need no longer accept the possibility of heart trouble, kidney disorders, high blood pressure, hardening of the arteries and diabetes. Physicians call these "degenerative conditions."

Yet few men and women care to be bothered with precautionary measures when they feel perfectly well. A thorough going over may give a doctor an opportunity to prevent, certainly to alleviate, these bugbears of a less enlightened generation—*Lunenburg Progress-Enterprise*.



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It is to be distinctly understood that the Editors of this Journal do not necessarily subscribe to the views of its contributors, except those which may be expressed in this section.

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THE doctor may well wonder what the future holds for the good or ill of the profession, and in these times has reason to doubt that confidence and prestige will continue indefinitely.

There are at this time events moving which may have an influence detrimental to our welfare and over which we may exert some control. One thinks of state medicine, which it seems to me becomes a problem only when viewed in the light of our relation to our fellows. No one would object to state medicine in the presence of complete national regimentation, but regiment the profession alone and we lose identity, stimulus and prestige.

Surely medical organization will be strong enough to prevent those who pretend to socialism or communism from wreaking their half measures on the profession. We have so often seen the doctor as the stooge of small time politicians. Let us be united in an effort to make certain that disadvantageous or compulsory state medicine comes only with state control of all business and professional life.

Another pertinent factor concerns the relationship which exists between medical schools and medical associations. Which is first? And what control does the profession exert on the immediate policies and aims of any school?

One wonders perhaps if the medical schools are not building for their own progress only, losing sight of the welfare of the profession at large in their personal desire for extension and growth.

Experience abroad has shown a constantly increasing number of doctors graduated year after year without control until they are forced to sharp and illegal practice to obtain the barest needs of life! How close are we in this country approaching the saturation point of medical practitioners? Should we not now before that point is reached, apply some quota system to the training centre whereby the output could be gauged by the sane limits of replacement and demand rather than the greatest number which a school can qualify.

J. W. R.



## CASE REPORTS

### Two Cases of Intra-Ocular Tumor

#### Case I

Mrs. W. Age 58. Housewife. May 1935.

*History:* About a year ago patient noticed that vision of left eye was failing and particularly that objects in the temporal quadrant of visual field were blurred. She consulted a physician and was told that possibly a hemorrhage had occurred in left eye and that the condition might get better. Condition however kept on getting worse. There was never any severe inflammation or any pain present.

*Family History:* Mother died of cancer.

*Findings:* O. S. Vision 20/200. Palpebral and bulbar conjunctiva normal. Cornea normal. Pupil larger than that of the right, reflexes practically normal. Media clear. Fundus examination showed a non-floating elevation of the retina, covering the lower margins of the disc and extending downward nasally approximately for 4 or 5 P. D. Blood vessels on this elevated retina were tortuous. Transillumination of eye was found normal. Left visual field shows an upper temporal defect.

*Diagnosis:* Intraocular tumor—probably sarcoma of choroid.

Patient was advised to have enucleation done which she refused. She was then advised local treatment to do at home.

On April 11th of 1936 she developed an acute glaucoma of left eye. Enucleation was again advised but she still refused. It was then decided to do a iridectomy. This was done the following day and patient was somewhat relieved of some of the suffering pain, but on April 20th pain was still persisting quite severely and she decided to have eye removed.

Enucleation was done under local anesthesia.

*Pathological report:* Choroidal sarcoma.

#### Case II

Mrs. S. Age 78. May 1936.

*History:* For the past two years patient has been noticing failing vision in right eye. In the fall of 1935 patient consulted a specialist to see if vision in right eye could be improved, but was told that glasses could not help vision. Right eye has never been painful nor inflamed. Patient always enjoyed good health with the exception of one attack of rheumatism from which she was free at this time.

*Findings:* Right Eye Vision: Questionable light perception. No scleral redness. Cornea normal. Pupil larger than that of the left, reflexes absent. Anterior chamber clear. On temporal side originating from ciliary body is seen a gray white mass over which runs numerous blood vessels. The lens is pushed



nasally. A very faint red reflex is present. Transillumination is positive. Tension +2. Enucleation was advised and done on June 1936 under local anesthesia.

*Pathological report:* Melano-sarcoma of ciliary body.

*Comments:* The diagnosis of intra-ocular tumor is sometimes difficult, especially if the patient is first seen during or after an attack of acute glaucoma. The same is true when iridocyclitis supervenes for then the eye becomes soft and shrinks. One should use all means at his disposal to make an early diagnosis, for early enucleation means considerable more safety for the patient's life.

J. G. CORMIER

### Acute Yellow Atrophy Of The Liver or Malignant Jaundice

Case was a male age 52 years. Occupation—cold storage and fish plant operator.

First attendance November 15th, 1936. At that time he was complaining of headache, pain in the back and loins, chills and nausea. Temperature 101°, pulse 85, very irregular. He gave a history of exposure while on a hunting trip some time previously and of general malaise since. His family history seemed to have no bearing on the case and he had no previous illness of note.

*Physical Examination:* Medium height and weight, well developed, lean muscular type. His tongue was dry and coated. Examination of lungs was negative. Cardiac sounds were weak and indistinct, markedly arrhythmic, no murmurs or enlargement of cardiac dullness. Patellar reflexes were exaggerated, others normal. Abdomen was retracted with tenderness in the epigastrium, and right hypochondrium. Liver dullness was normal.

Urine was negative except for a heavy deposit of urates and phosphates.

*Progress Notes:* Obstinate constipation was relieved with a large dose of Magnesium Sulphate and soap enemas. Coramine was given hypodermically twice daily for the cardiac distress, with apparent relief. Jaundice appeared on the third or fourth day and the urine and stools showed characteristic changes. The temperature was now subnormal and continued so. There was a slight epistaxis and a profuse blood stained mucus discharge from the mouth and throat. His condition did not appear to be alarming for a week when there was a marked change, the icterus became intensely copper colored, blood showed in both urine and stools. Large ecchymotic areas were noted on the limbs. Percussion over the liver showed a marked diminution in area of dullness. Recourse to intravenous saline and glucose and rectal feeding was attempted. The patient became comatose on the 27th and died on the 28th after an illness of about 14 days.

*Comment:* This would appear to be a case of acute yellow atrophy of the liver, which Hunter characterizes as one of the rarest and most fatal of diseases. More modern authorities point out that the name is a misnomer as the true condition is an acute necrosis.

*Etiology:* There is undoubtedly some virulent organic poison affecting the whole gastro-intestinal tract, but more especially the liver. The poison is probably microbic in origin, but no definite organism has been isolated.



*Differential Diagnosis* From ordinary catarrhal jaundice may be difficult in the early stages: from malignancy and obstructive jaundice by the history and more rapid course: from phosphorous poisoning, here the liver is enlarged instead of atrophied (vide Agatha Christie's late detective yarn): from the jaundice of pernicious anaemia and Banti's disease by the history and more rapid course.

This case has been interesting on account of a marked prevalence of catarrhal jaundice in this locality during the fall months. To my mind acute yellow atrophy bears a definite relationship to it. Malignant type of epidemic jaundice seems to be a more rational name for it.

A. K. ROY

### Acute Appendicitis Followed by Paralytic Ileus

Male, age 22, No. 1328. Admitted Nov. 7th. 1936, complaining of pain in abdomen accompanied by vomiting.

The pain began three days before admission and was followed almost immediately by vomiting. The pain was localized in right lower abdomen and continued during the following days and was accompanied by vomiting. Laxatives and household remedies had no effect on the condition and on the third day the family doctor was called and patient sent to hospital immediately. On admission the patient presented the typical picture of acute appendicitis with localized peritonitis. Operation was immediately performed and the appendix was found lying over the pelvic brim with the terminal portion gangrenous. There was very marked congestion of the peritoneum and bowel and a considerable amount of purulent fluid was present in the pelvis.

The appendix was removed in the usual manner and all fluid carefully sponged and the abdomen closed without drainage. Postoperative condition good. The postoperative course of the patient was normal until about seventy-two hours after operation following the administration of a laxative. The patient began to complain of abdominal distress and vomiting. Examination showed the abdomen to be distended with some tenderness over right quadrant. No visible peristalsis was present and auscultation over abdomen revealed no peristaltic sounds, no rumbling of gas or rolling of fluid which is normally present could be heard.

Enemas were given without relief for the passage of gas. The general condition of the patient was good. The pulse rate being 90 and temp. being 99°F but the patient continued to be very restless and complained of great discomfort in abdomen. The condition was obviously paralytic ileus and the following treatment was immediately begun.

*First.* All fluids discontinued by mouth.

*Second.* Radiant heat to abdomen.

*Third.* Intravenous saline and glucose 5% 1000cc every twelve hours.

*Fourth.* Duodenal tube to prevent vomiting.

*Fifth.* Morphia grains 1/6 every four hours to keep patient comfortable and increase peristalsis.

*Sixth.* Pitutrin 1cc was given at frequent intervals to increase peristalsis.

The above treatment was persisted in during the first twenty-four hours and during the next twenty-four hours with the addition of ox-gall enemas



and triacetyl chloring .igr. for six doses. During this time auscultation revealed no change in abdominal sounds. Enemas gave no results and the pulse rate was slowly creeping up.

500 cc of hypertonic saline 10% was slowly administered intravenously and when about one half the amount had been given the patient began to complain of abdominal cramps, gas was passed freely by the bowel, the distention was considerably lessened and within the next twelve hours the bowels moved freely several times, the stools being large and liquid.

The results following the administration of the hypertonic saline solution were very striking, the general condition of patient immediately improved and he was discharged from hospital ten days later.

The treatment employed in this case is that recommended by Postgraduate Surgery, Edited by Rodney Maingot.

F. J. MACLEOD.

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### Case History

Miss J. Age 15 years.

*Complaint:* Pain in the abdomen with nausea and occasional vomiting.

*Previous History:* Always in good health, with the exception of the usual diseases of childhood.

*Family History:* Negative.

*Present Illness:* Symptoms began August 1st with pain in the upper part of the abdomen and radiating across to the left and up to the right scapula. She had some nausea accompanied by a chilly sensation. This condition continued with mild exacerbations.

*Physical Examination:* on August 22nd showed a female of given age and apparently in good health. Temperature 100°; Pulse 80 per minute. Definite tenderness, deep seated in the region of the gall bladder, but no rigidity.

Sept. 15th. Patient came to the office complaining of an increase in her symptoms with very definite attacks of severe pain lasting for several hours, accompanied by nausea and vomiting and chill. Examination showed temperature 100.5°, pulse 80, marked tenderness and pain in the upper right quadrant of the abdomen with splinting of the muscles. The patient was put to bed with hot fomentations and sedatives.

*Progress Notes:* There followed a slow but definite improvement in the local condition, but at intervals she had slight exacerbations of pain. There was also a constant localized area of dullness in the right hypochondriac region, and as the rigidity lessened a mass was suggested on palpation. X-Ray of the gall bladder after the giving of dye by mouth showed no excretion into the bladder, and a pre-operative diagnosis of stone or stones in the gall bladder with obstruction of the cystic duct was made. This was confirmed at operation by Dr. D. A. McLeod.

The main point of interest in this case to me was the age of the patient at which gall stones were found.

H. J. TOWNSEND.



### Tuberculous Arthritis of the Wrist

January 1933, Mr. J. G. N. age 21 years, a patient under treatment for pleurisy with effusion, began to complain of pain with swelling in the right wrist. This patient had been in bed since June of 1932, and had passed through a long and stormy course with the pleurisy. I had followed a very conservative line of treatment, giving the patient rest with sedatives, had only put a needle in the chest twice, once to confirm the diagnosis, and once to aspirate just enough fluid to relieve respiratory embarrassment. At the time he began to complain of pain in the wrist he still had considerable fluid in the chest.

The wrist became more painful as time went on; and was characterized also by a swelling, stiffness and disability. The bony structures of the wrist seemed to enlarge which was probably more apparent than real due to an atrophy of the muscles of the forearm. The first relief from pain was when the hand and forearm were put in a splint.

May 25, 1933. X-Ray plates of the chest and wrist were taken. Prior to this time we were unable to get X-Ray pictures due to the condition of the patient and also as the roads to the nearest hospital were blocked with snow.

#### *X-Ray Reports.*

*Chest:* Definite clouding over lower half of right lung field, due to pleurisy, impossible to state amount of fluid present: probably a small amount in costophrenic sinus. Upper half of lung field visible and no infiltration present. Left: slight tuberculous infiltration in the apex. Heart in normal position.

#### *Wrist:*

Studies of the right wrist joint show partial destruction of the bases of the last three metacarpals with beginning involvement of the adjacent bones of the wrist. The affected bones present a moth-eaten appearance. The findings suggest a recent arthritis probably tuberculous.

According to text books on the subject treatment of tuberculosis of the wrist is not always successful. It is a type which resists treatment, due to the intricate arrangement of small bones and joints in this region. If it is possible to fuse successfully the carpal regions the use of the hand may be preserved. On June the 3rd, 1933, I put the arm up in a plaster paris cast, extending from the shoulder to the bases of the phalanges, the elbow at right angles, the forearm between supination and pronation, and the hand extended to about an angle of 45 degrees with the horizontal plane of the forearm. A wrist ankylosed in this position is found to be quite useful for work.

This first cast was left until November of the same year, when it was removed. The wrist was X-Rayed again and plaster-cast reapplied in like manner as before.

#### *X-Ray reports.*

*Wrist:* No further destruction and partial ankylosis, no localized abscess. Findings indicate improvement.

*Chest:* Pleuritic clouding still present on the right. The infiltration on the left has disappeared.

Second cast was left on until May 1934, when the wrist was again X-rayed.

#### *X-Ray report.*

*Wrist:* Slightly greater degree of ankylosis.



The third cast was put on and left until October 1934, when it was removed.

The patient's general condition was now good. He had now gained about 40 lbs. during the two years he had been on the cure. Doctor Acker examined the patient at this time, and expressed the opinion that the condition was now inactive, and joint well ankylosed.

During the summer of 1935 he worked part time in a garage, during which he did light work, and considerable car driving. The spring of 1936 he started driving a daily mail car, and continues to do so up to the present. He states the wrist though stiff, does not cause the least inconvenience, and he can do as much work with the hand now, as before he was sick.

December 27th, 1936 X-ray examinations for the purpose of checking up on his wrist and chest were made.

*X-Ray reports. Chest:*

*Right;* further clearing and absorption of the basal pleurisy. At present there is a moderate thickening of basal pleura, with pleural diaphragmatic adhesions, no evidence of pulmonary involvement.

*Left:* This lung is free from pathology.

*Wrist:* No reactivation, and the destructive process has subsided. At present there is a definite ankylosis of the third, fourth and fifth metacarpal articulations. The radial articulations are partly intact. There is partial fusion of the carpal components, especially the unciform and os magnum.

No periarticular swelling. The findings indicate an inactive ankylosing arthritis.

I wish to acknowledge with thanks the co-operation in this case of Dr. H. R. Corbett, N. S. Sanatorium for his interpretation of all X-Ray plates, also Dr. T. B. Acker for his advice on several occasions during the period this patient was under treatment, especially the advice on the position the arm should be put up in plaster cast; to which I believe we can attribute the successful climax.

C. L. MACMILLAN

### A Case of Phrenic Crushing

Pneumothorax has been universally accepted as the ideal method of collapse therapy; in those cases, however, where pneumothorax is impossible we must resort to thoracoplasty or avulsion of the phrenic nerve to acquire such. (Reference is also made to plombage, apicolysis, etc.).

Although thoracoplasty is accepted more or less unanimously by the surgeons, phrenicoexeresis is not. The opinion among them is that its application in cases with upper lobe lesions is not only useless, but even dangerous, inasmuch as it delays a thoracoplasty.

Weber, Jacobson, and Holcomb, have pointed out that phrenicoexeresis may be effectively used in the treatment of apical tuberculosis, and have attempted to analyze some of the more important principles involved. They have attempted to explain the effects of phrenicotomy on the same basis as pneumothorax.

They have substituted the rigid concept of functional rest through compression of the whole lung by one of rest through retraction, "because of the



greater tendency that the atelectatic and partly fibrotic tuberculous tissue has to recoil under pneumothorax, as compared to the expansile tissue of healthy lung". The circulatory changes also play a great part, "the connective tissue proliferation is especially increased by the venous and lymphatic stasis with anoxemia which are always produced in some degree by pneumothorax even in a lung moderately collapsed".

We were taught that cavities were closed by compression, the walls of the cavity being brought together and healing like an abscess. This is impossible when we realize how rigid the wall of an old vomica is, surrounded by healthy lung beyond the area of infiltration.

Corryllos made a statement that cavities disappeared due to atelectasis resulting from a bronchial obstruction, the stenosis being due to a kinking or plugging or to a constriction of the fibrotic tissue around the bronchus.

Therefore, it would be in order to explain the mechanism of collapse therapy by the following sequence:

1. Retraction. The lung, which even during full expiration is under permanent tension, is allowed to retract by reducing the negative pleural pressure. This retraction is more marked in the diseased parts.

2. Resultant relative functional rest with venous and lymphatic stasis and anoxemia.

3. Scar tissue formation.

4. Eventual collapse and disappearance of the cavity as a result of bronchial stenosis.

5. Further retraction made necessary by the gradual increase of fibrosis and the collapse of the cavity.

It is evident that only a pneumothorax with a free pleural space can meet these requirements.

An attempt has been made to show how pneumothorax does its work. Now let us consider the avulsion of the phrenic. When phrenic avulsion was first introduced it was with the idea of compression; the diaphragm elevating and compressing the cavity—this was thought to be particularly suitable for basal lesions. We can readily see how impossible this is when we attempt to compress a fairly resistant substance (tuberculous lesion), if behind it or between it and the compressing agent (elevated diaphragm) we place a material softer than both (normal lung). How then does the lung benefit by the elevation of the diaphragm? There are two sources: 1. Elimination of cough, which in many cases is the worst of all traumas. 2. Abolition of the piston like tug of the diaphragm. These two above may explain functional rest, but how can we explain the circulatory changes on which we depend for the fibrotic transformation of the lesion and the disappearance of the cavities, especially of those cases in which no marked rise of the diaphragm follows operation?

"Felix found that the phrenic nerve receives numerous sympathetic fibres from several ganglia." Bettini stated when a phrenicotomy (severing the sympathetic fibres) was done in animals, "in some areas could be noted a noticeable proliferation of the peribronchial and perivascular elements and of the subpleural connective tissue so that in some of these cases was reproduced the picture of an initial fibrosis".

It has been suggested that the phrenic nerve through its sympathetic fibres, might have some control upon the smooth muscles of the bronchi. Such a possibility would also lead to the hypothesis that an impairment of



the tone of the smooth muscular system would render the already damaged bronchial walls more collapsible, and, therefore, an atelectasis more likely to occur. Thus it is easy to explain the results by phrenicotomy, namely; 1. Functional rest. 2. Increase of Fibrosis about the bronchi and in the lesion, and hence, the cavities disappearing as a result of atelectasis. A case is herewith presented which makes the writer inclined to favor the above mentioned.

*Case:* R. R. Age 22. White Male.

Admitted to the Tuberculosis Annex, Sydney, C. B. Oct. 2. 1935. Weight 126 lbs.

Family History, Negative. No history of Tuberculosis.

*Past History*—This patient enjoyed the best of health until April 1934, when he was seized with an attack of dry pleurisy on the right side. He was not attended by a physician and after a temporary convalescence he felt himself losing ground.

*Present Illness*—Last Sept. 1935, patient complained of a slight cough with expectoration, loss of weight and languor, all the cardinal symptoms of pulmonary tuberculosis.

### Physical Examination

*Chest*—Right Lung.

*Auscultation.* There is broncho-vesicular breathing from 1 to 3rd. rib. There are m. c. rales heard over the same area. W. P. increased.

*Percussion.* Dullness from apex to 4th rib.

*Palpation.* Increased V. F. from 1st to 3rd rib.

Left Lung Negative.

*X-Ray Report.*

*Rt:* There is a localized exudative tuberculosis from 1st to 3rd rib and 3rd to 6th. vertebral spine with thin walled cavity  $2\frac{1}{2} \times 2\frac{1}{2}$  cm. in 1st. interspace middle zone. Diaphragm fairly regular.

*Lt:* This lung is free from pathology.

*Summary:* There is a unilateral advanced tuberculosis involving the right lung to the 3rd. rib with cavity formation.

The above is the report of a plate taken June 3rd, 1935. But a plate taken previously to this in Feb. showed only a suspicion of a cavity. This would indicate that the patient was not improving under rest. He continued to run a temperature and his sputum was positive there being 16 bacilli per field.

Pneumothorax was attempted on this patient six times and only once was a reading obtained, the pressure being as high as plus 10 with only 100 c. c. of air so that this method of therapy had to be abandoned.

On June 26, 1936 the writer performed a crushing of the phrenic. On July 30th. an X-Ray plate was taken and the following report is given:

*Rt.* There is definite improvement in the previously noted upper lobe lesion. The affected area being definitely retracted upwards, and cavity previously noted in 1st. I. S. is now seen only as a suggestive small area of



rarefaction behind clavicle. There is an elevation of the diaphragm approximately  $2\frac{1}{2}$  inches.

*Lt.* Slight congestive changes. No evidence of pc. pathology.

On August 1st. 1936 patient was weighed and showed a gain of five pounds. His sputum was examined and had diminished from sixteen Gaffky to five.

In October 1936 patient was X-rayed and showed absolute disappearance of the cavity and clearance of the lesion compared to the plate taken in July. Patient weighing at this time 152 pounds. His sputum has become negative.

In December 1936 a check up shows a negative sputum and absolute disappearance of lesion. His present weight being 176 pounds.

The patient has only a slight elevation of temperature in the evening. He is now on fifteen minute exercise daily and does not show any increase in temperature after such exercise.

*Conclusion:* The writer has attempted to show that phrenicotomy or the crushing should not be reserved only for basal lesions, if the hypothesis previously stated are correct. A case has been presented which proves the value of such a procedure in an apical cavity where pneumothorax was impossible.

The writer wishes to express his thanks to Dr. J. S. Robertson for his assistance in the operation.

A. GAUM.

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### Acute Pancreatitis with Cholecystitis

The patient was admitted to the hospital complaining of severe pain in the upper abdomen, shortness of breath and weakness.

*The Past History.* The patient has had indigestion and gastric distress for the last few years, which was always relieved by ginger tea and the administration of alkalis. He was treated for hypertension four or five years ago; the systolic reading registering as high as 220 mm. of hg.; also has had a hypertrophied heart and bronchial asthma for several years.

*History of Present Illness.* While at work in the early morning of November 26th, the patient was seized with acute pain in the epigastrium localized mostly on the left side. He was taken out of the pit and when seen by me at about 8.00 a. m. he was suffering extreme pain; the abdomen was very rigid, pulse somewhat increased, the facies anxious, and no mass could be felt at this time; an opiate was administered hypodermically and heat applied to the abdomen. He was seen again at 1.00 p. m.; condition remained unchanged. The pain was still severe, the opiate having had very little effect and the pulse was somewhat raised. In view of the fact that he undoubtedly had an acute abdomen with possible perforation of some viscus, it was thought advisable to hospitalize him at once.

*Physical Examination.* The patient is a male, age 52 years, well developed and wiry. The facies typical of one suffering great pain.

*Respiratory System.* There is some evidence of bronchial asthma.



*The Cardiovascular System.* The heart is hypertrophied with murmur at the apex. Blood pressure 160-85 mm. Leukocyte count 11,500. Lymphocytes 20%. Large mononuclears 5%. Polynuclears 75%.

*Urinary System.* The urine was negative with the exception of one plus albumen.

*Abdomen.* The abdomen does not move on respiration; very tender over the abdominal quadrant, more especially on the left side and in the middle, marked rigidity in both recti.

*The Central Nervous System.* Nothing of any value could be made out. Reflexes normal.

Consultation was held immediately after admittance and it was decided to operate at once.

A pre-operative diagnosis of acute pancreatitis with cholecystitis with possibility of a perforated duodenal or gastric ulcer was made.

*The Operation.* The patient was anesthetized with gas, oxygen and ether. A high right lateral rectus incision was made. The abdomen was opened. The gall bladder was very much distended and slightly inflamed. No stones could be palpated. There seemed to be some slight leakage of bile at the junction of the common bile duct with the duodenum. This was carefully swabbed out. Some fat necrosis of the mesentery was also noticed. The gall bladder was drained in the usual manner. A cigarette drain was put in and the abdomen closed in the usual manner. A right gridiron incision was made. Appendix, which was atrophied and bent on itself and inflamed at the tip, was removed in the usual manner without drainage.

The patient's condition was pretty rocky for several hours following the operation and an intravenous of 10% glucose with 500 c. c. of saline was given. The patient ran a normal post-operative course and was discharged, January 23rd, with a slight serous discharge from the upper end of the incision, after being 59 days in the hospital.

B. C. ARCHIBALD.

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### A Fatal Case of Agranulocytosis.

Mrs. M. S. Age 53. Occupation Housewife.

*Complaints:* 1—Sore throat. 2—Chills.

*Previous History:* Has never been seriously ill. A few months ago had what she termed rheumatism in the ankles with some swelling. For the past few months has been feeling what she described as miserable, became tired very easily when doing her housework. No history of using amidopyrine or any drugs of the benzene ring.

*Present Illness:* On Sunday, October 25th, was out to church, that night went to bed complaining of sore throat. Seen Monday morning complaining of soreness in the throat, chills, inability to get warm, slight difficulty in swallowing, headache and general malaise. Temperature  $101\frac{1}{2}$ , pulse about 100. Local application of heat to the throat, gargles etc. ordered. Tuesday morning condition somewhat the same, temperature down to  $99\frac{1}{2}$ . A nurse



from the V. O. N. was in to see her that afternoon, temperature 104.2. Wednesday morning still feeling about the same, increased difficulty in swallowing, temperature 99.2 per axilla. She was ordered to the hospital and admitted about noon hour. Seen by the throat specialist in consultation. Leucocyte count done. Four separate counts failed to show the presence of even a single lymphocyte. Differential count smear revealed the presence of one lone lymphocyte.

*Physical Examination:* Woman about stated age. Colour—face highly flushed. Nutrition good, no evidence of any recent loss of weight.

Head and neck: Eyes—pupils equal, react to light and accommodation. Nose—no discharge. Ears normal. Teeth—upper plate. Lower, some absent, the others good condition. Tongue coated. Throat—uvula swollen and edematous. Throat red and congested, a little pocket of pus in the left tonsil. Swelling of the uvula becoming more pronounced. Wednesday morning there appeared to be a thin coating on the left tonsil which spread to the right one and up to the hard palate. Fetid odour from the breath. A few small submaxillary glands on the left side enlarged, no other glands palpable.

*Respiratory System:* Well developed chest, normal contour. Percussion good resonant note throughout the chest. Auscultation—bronchovesicular breathing over the entire chest, no rales or rhonchi.

*Cardiovascular System:* Apex beat 5th interspace,  $3\frac{1}{2}$  inches M.S.L. No increase in area of cardiac dullness. No murmurs or thrills. Pulse rapid, weak and thready.

*Abdomen:* Abdomen moves freely on respiration. No distension. No areas of tenderness. No rigidity. No scars present. Kidneys not palpable. Spleen not palpable. Liver palpable about two finger breadths below the right costal margin.

*Central Nervous System:* All reflexes normal.

*Extremities:* No abnormality detected.

*Diagnosis:* Agranulocytosis.

*Progress Notes:* Patient admitted to hospital about 12 p.m., temperature normal. Seen in consultation by several members of the Staff. .03 Neo Salvarsan given intravenously. 1000 c.c. saline and glucose given intravenously. Condition gradually became worse, lapsed into unconsciousness. Around 6 p.m. temperature about 105, went up to  $107\frac{1}{2}$  before death—about 11.30 p.m.

*Note:* Regret we could not try the use of Pento Nucleotide due to the impossibility of obtaining any east of Montreal.

A. L. SUTHERLAND.

### Malignant Tri-dermal Teratoma, probably of the testis.

Male, age 21 years, weight 150 lbs., good physique.

*History:* While working in mine on the 25th day of February, 1936, he strained his back lifting a box of coal. Examination revealed no external evidence of injury. The only symptom noticed was that he complained of



pain at level of tenth dorsal vertebra. Temperature and pulse normal. Patient put at rest and in a day or two pain subsided and he was able to move around. Did not see patient again until March 9th, 1936, when I was called because of return of pain in dorsal region, associated with vomiting on one or two occasions. Admitted to hospital a few days later for observation. Temperature, pulse, urinalysis and blood picture normal. After a day or two all symptoms subsided except for occasional stomach distress after eating. He was kept in the hospital until March 30th, 1936, and was discharged much improved. Readmitted in April with pain again present in back and left kidney region with noticeable enlargement of left testicle. Pulse and temperature normal, blood picture normal. X-Rays taken.—Both lungs negative for pathology. A mediastinal enlargement well demarcated presenting a smooth appearance was noted, located opposite the 4th, 5th, 6th, and 7th dorsal vertebrae, suggesting a possible diagnosis of lymphogranulomatosis (Hodgkin's) or lymphosarcoma. The only obstacle to this condition was the blood picture, white, red and differential counts being normal. A few days later a small swelling in left side of neck was noted, which enlarged rapidly during the next week. The following week another mass located in the left hypochondriac and umbilical regions, where like the neck, swelling enlarged rapidly until it could be palpated in every region of the abdomen. During this time his stomach symptoms became more pronounced, with periodic attacks of vomiting and distress. Fluid soon began to form in the abdomen and before his death in September, 1936, at least twelve gallons of fluid were aspirated in all from time to time. Fluid aspirated was of a milky quality.

*Autopsy*, September 17, 1936. (Performed with Dr. F. V. Woodbury, Halifax.)

Body emaciated, swelling in left side of neck the size of an orange, protruding and filling anterior triangle, irregular in outline. Abdomen contained a gallon or more of turbid, straw coloured fluid. A multilobular growth as large as a foot-ball was found between the layers of the mesentery. This, as well as other masses found in the retroperitoneal area and about the root of the lungs, were of a similar texture to the one in the neck. A pint of fluid was found in each pleural cavity similar to the abdominal fluid.

Other organs and masses examined showed no evidence of disease. The growth was a mixed one and showed gross areas of cartilaginous firmness and cystic formation. The large and small growths were of similar character and of mixed tissue.

*Report of Dr. Ralph P. Smith, Provincial Pathologist.*

"The gross appearances of the tissues from the neck, lymph glands at the root of the lung and from the mesentery, all had a similar character. They were soft, yellowish and necrotic, red and haemorrhagic and semi-cystic. The liver, spleen and other organs apparently showed no special change, the spleen being small and hard and the liver somewhat yellowish from fatty degeneration. The kidneys, stomach, gall-bladder, adrenals and urinary bladder were normal but the pancreas was necrotic (no section was taken). Unfortunately the testicles were not removed or sent for examination.

The histological appearances of the tumour masses all showed a similar and unique character, namely that of a metastatic tri-dermal teratoma. In all the areas cartilage, both embryonal and adult, squamous epithelium and



a few hair follicles, ganglion nerve cells and nerve fibres, and large columnar gland acini filled with amorphous or mucoid material were seen.

The picture presented is therefore most unusual, namely that of a teratoma with metastases of all three germinal layers, which are evidently the result of emboli of undifferentiated cells, capable of producing all three germ layers.

Dr. Fred Stewart, Pathologist to the Memorial Hospital, New York, to whom sections were sent agrees with the diagnosis of malignant tri-dermal teratoma, but regards the autopsy incomplete as no multiple careful sections through the testes had been made.

Only very few cases have been recorded in literature. Steinart quotes a case of tri-dermal teratoma of the testis with metastases to the liver. Another case has been recorded as arising retroperitoneally. In view of the enlargement of the left testicle this must be regarded as the source of the primary growth here. The origin is from the germinal epithelium and it may occasionally arise from the ovary or a supernumary testicle."

H. A. RATCHFORD.

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When placed upon this plane of our existence,  
 As we have been so many times retold,  
 In throats were placed the tonsils for resistance,  
 Against the scourges of the Common Cold.  
 'Tis said, that in the Stone Age, when a Quinsy  
 Made Stone Age throat feel like a piece of beef,  
 The Stone Age back teeth bit them off in frenzy,  
 And so have since been known as Wisdom Teeth.  
 In mid-Victorian days of hoops and ruffles,  
 The Staphylococcus still sought out a home,  
 And when the tonsils reached the size of truffles,  
 They snipped their tips with a tonsillitome.  
 Today, we do it in the manner scientific,  
 And when we see the tonsils on display,  
 We say at once in manner beatific,  
 "Those tonsils must come out, and right away".  
 We take them out with snare or with the sluder,  
 For those we can and those who cannot pay.  
 The Pharynx is the incubating brooder  
 That cheers us on our sanguinary way.

H. L. SCAMMELL



## Abstracts from Current Journals

### MEDICINE

**Prontosil Therapy Against Infection by Haemolytic Streptococci.**—*London Lancet*, January 23, 1937, and *Clinical Journal*,—January, 1937.

Both Journals have articles on above subject. The search for a weapon against bacterial invasion of man has been going on ever since the days of Pasteur. Recently Mandelic acid had proved of real value in the treatment of pyelitis. Much interest is seen at present in prontosil which is said to have a real value in all conditions due to haemolytic streptococcal infection as acute puerperal sepsis, erysipelas, tonsillitis, rheumatic fever, arthritis, bacterial endocarditis and etc. Prontosil is a short trade name for a long complicated complex amino benzene combination which is reduced to sulphanilamide in the body in order that shall have a protective action against infection.

L. Colbrook and M. Kennedy report 26 consecutive cases of puerperal fever at Queen Charlotte hospital, treated by prontosil without a death. All were infected by haemolytic streptococci (as shown by blood culture). The writers had previously treated 38 cases with 3 deaths. The mortality in the 64 cases was 4.7%. This was a remarkable fall in the mortality rate of puerperal infection which in that hospital varied in the years 1931-1935 from 16 to 31%. The usual tendency of puerperal infection to spread by the parametrium and pelvic walls was conspicuously absent. No case developed a palpable mass after the treatment was begun. The writers hold that it is difficult to resist a conclusion that the remarkable improvement in the cases treated was due to prontosil. It may be given orally or by intramuscular injection. It is a product of Bayer and may be obtained in Canada from the Winthrop Chemical Company.

**A New Treatment for Leucorrhoea.**—(*B. M. Journal*, January 16, 1937).

The general practitioner, as well as specialist, will be interested in any advance in the treatment of this annoying and common condition. Aleck Bourne and L. T. Bond of St. Mary's Hospital, London, published the result of a new method of treatment by zinc chloride. Early methods such as the application of Iodized Phenol, picric acid, acriflavine glycerine and so forth have been failures because it is impossible to kill an infection deeply buried in the recesses of the branched cervical glands unless at the same time the tissue itself would be destroyed. Diathermy and ionization after a temporary improvement often leave the Leucorrhoea unaffected. If all, or nearly all, of the cervical glands are destroyed by electro-cautery a clinical cure will follow. But this requires an anaesthetic and it is not easy to destroy the mucosa evenly and sufficiently by this method. After having been disappointed by the various means of treating leucorrhoea it occurred to one of the writers that the cervical mucosa could be destroyed by the application of zinc chloride, without an anaesthetic, and there would be a prospect of a permanent cure. Porous clay pencils saturated with zinc chloride solution were found to be the



best means of carrying out this treatment. The patient lying in the left lateral position, a Sims speculum is introduced and the os held by a vulsellum. One of the pencils is then inserted into the cervical canal. Different sizes of pencils are used to fit various cervixes. They are left in position from two to four hours and then withdrawn by means of wire attached to the base of the pencil. They are obtainable from Allen and Hanburys. Results after two years on re-examination of 41 women showed 27 as cured, 11 admitted considerable improvement, and 3 are no better.

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## PUBLIC HEALTH

### The Phosphatase Test

During the last year or two many references have been made, especially in the English Public Health literature, respecting the Phosphatase Test. Credit for the discovery of this laboratory manipulation is given to Kay and Graham of Reading, England, and it is used to determine whether or not milk has been properly pasteurized. The Phosphatase Test is based on the knowledge that an enzyme known as phosphatase, always present in raw milk, is destroyed at a temperatures of approximately 145°F., for thirty minutes.

The technique is rather complicated and, on that account, a description is not attempted here. Needless to say, it should be carried out only by an experienced technician and in a laboratory properly equipped for the purpose. When applied to milk, with the standard reagents and under proper conditions, a pale blue color results, which does not exceed a certain degree, in the absence of phosphatase. Varying depths of color above the standard, indicate the presence of the enzyme in increasing proportions. Like many other tests this one has its limitations. It is not expected to replace systematic inspections of pasteurization plants; nevertheless it gives us another weapon with which to protect the consumer against practices that may be on the border line of safety.

The Public Health Laboratory has recently been equipped with the necessary apparatus for performing the test and the director, Dr. D. J. McKenzie, has carried out a series with quite interesting results.

P. S. C.

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## FIRST VACCINATIONS IN CANADA

In Ravenel's "A Half Century of Public Health", an interesting reference is made to the introduction and first use of Smallpox Vaccine Virus in Canada. The credit goes to either Dr. Jos. Norman Bond of Yarmouth, N. S., or to Colonel Landman, an army officer stationed at Quebec. The information comes through a letter written in 1921 to Dr. Peter H. Bryce, one time chief medical officer, Department of Immigration and Colonization, Ottawa, by Maria J. I. Thorburn, who was at the time eighty-six years of age.

The full text of the letter is as follows:



"Ottawa, July 29, 1931.

Dear Dr. Bryce:

My son has asked me to give some leading facts which have come to my knowledge re the early introduction of Vaccination into Canada, which I have much pleasure in doing.

My maternal grandfather, Dr. Jos. Norman Bond of Yarmouth, N. S., received from his brother in Bath, England, and intimate friend of Dr. Jenner, a small quantity of Vaccine lymph in a letter in the early spring of 1802. I do not know exact date.

To test it my grandfather tried it on his own child, an infant of a few weeks old. It was apparently successful, but to further satisfy himself as to its efficacy, he inoculated the child with Smallpox. Of course no Smallpox made its appearance. He then introduced it into his general practice. This child grew to manhood and old age and, being a doctor himself, was constantly exposed to Smallpox of a virulent type.

We always considered it probable that this was the first case of Vaccination in British North America, but in November 1885 I came across, in the Toronto Globe, an extract from an old book entitled "Colonel Landman's Travels". Colonel Landman was, I think, an army officer stationed at Quebec. He writes of receiving from England in the winter of 1801 to 1802 Vaccine lymph which he tried on the children of a friend named Blackwall. This may have been a few months previous to my uncle's case, or it may not; I have no precise dates.

In 1901 I read a very interesting article, copied into one of our papers from a medical journal of Philadelphia, written by Dr. Floyd Crandall, of 113 West 59th St., New York. It gave much information re the early introduction of Vaccination into the U. S. A. Unfortunately I lost the clipping, but I distinctly recollect that it antedated by a short time, its introduction into Canada.

My uncle, the child Vaccinated in Yarmouth, was afterwards Dr. Jos. Blackburn Bond, who died about forty years ago.

The above are the facts which I have gathered so far on this, to me, interesting subject.

Yours sincerely,

MARIA J. I. THORBURN.



# Department of the Public Health

## PROVINCE OF NOVA SCOTIA

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 Fraser, R. H., New Waterford.  
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 McLeod, J. K., Sydney.  
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#### CUMBERLAND COUNTY

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 Drury, D., Amherst (Mcpy.)  
 Gilroy, J. R., Oxford.  
 Stewart, Chas. E., Parrsboro.  
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 Walsh, F. E., Springhill.



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Pothier, H. J., Weymouth, (Mcpy.)  
Doiron, L. F., Little Brook.

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Chisholm, A. N., Port Hawkesbury, (M.H.O. for Mulgrave).  
Sodero, G. W., Guysboro (Mcpy).  
Moore, E. F., Canso.  
Monaghan, T. T., Sherbrooke (St. Mary's Mcpy.)

**HALIFAX COUNTY**

Almon, W. B., Halifax.  
Forrest, W. D., Halifax (Mcpy.)  
Glenister, E. I., Dartmouth.

**HANTS COUNTY**

Bissett, E. E., Windsor.  
MacLellan, R. A., Rawdon Gold Mines (East Hants Mcpy).  
Reid, A. R., Windsor (West Hants Mcpy.)  
Shankel, F. R., Windsor, (M.H.O. for Hantsport.)

**INVERNESS COUNTY**

Chisholm, A. N., Port Hawkesbury.  
Boudreau, Gabriel, Port Hood, (Mcpy. and Town).  
MacLeod, F. J., Inverness.

**KINGS COUNTY**

Bishop, B. S., Kentville.  
Bethune, R. O., Berwick (Mcpy.)  
de Witt, C. E. A., Wolfville.  
Morash, R. A., Berwick.

**LUNENBURG COUNTY**

Marcus, S., Bridgewater (Mcpy.)  
Reh fuss, W. N., Bridgewater.  
Morrison, L. N., Magone Bay.  
Zinck, R. C., Lunenburg.  
Zwicker, D. W. N., Chester (Chester Mcpy).

**PICTOU COUNTY**

Blackett, A. E., New Glasgow.  
Chisholm, H. D., Springville, (Mcpy.)  
Bagnail, P. O., Westville.  
Crummey, C. B., Trenton.  
Dunn, G. A., Pictou.  
Benvie, R. M., Stellarton.

**QUEENS COUNTY**

Ford, T. R., Liverpool (Mcpy.)  
Smith, J. W., Liverpool.

**RICHMOND COUNTY**

Digout, J. H., St. Peters (Mcpy.)

**SHELburne COUNTY**

Brown, G. W. Clark's Harbour.  
Fuller, L. O., Shelburne. (Town and Mcpy)  
Wilson, A. M., Barrington, (Barrington Mcpy.)  
Lockwood, T. C., Lockeport.

**VICTORIA COUNTY**

MacMillan, C. L., Baddeck (Mcpy.)

**YARMOUTH COUNTY**

Hawkins, Z., South Ohio (Yarmouth Mcpy).  
Burton, G. V., Yarmouth.  
Lebbetter, T. A., Yarmouth (M.H.O. for Wedgeport).  
Chiasson, B. I., (Argyle Mcpy).

Those physicians wishing to make use of the free diagnostic services offered by the Public Health Laboratory, will please address material to Dr. D. J. MacKenzie, Public Health Laboratory, Pathological Institute, Morris Street, Halifax. This free service has reference to the examination of such specimens as will assist in the diagnosis and control of communicable diseases; including Kahn test, Widal test, blood culture, cerebro spinal fluid, gonococci and sputa smears, bacteriological examination of pleural fluid, urine and faeces for tubercle or typhoid, water and milk analysis.

In connection with Cancer Control, tumor tissues are examined free. These should be addressed to Dr. R. P. Smith, Pathological Institute, Morris Street, Halifax.

All orders for Vaccines and sera are to be sent to the Department of the Public Health, Metropole Building, Halifax.

**Report on Tissues sectioned and examined at the Provincial Pathological Laboratory from February 1st, 1937, to March 1st, 1937.**

During the month, 163 tissues were sectioned and examined, which, with 57 tissues from 8 autopsies, makes a total of 220 tissues.

Tumours, simple.....	22
Tumours, malignant.....	22
Tumours, suspicious of malignancy.....	
Other conditions.....	119
Tissues from 8 autopsies.....	57
	—220



**Communicable Diseases Reported by the Medical Health Officers  
for the month of February, 1937.**

County	Chickenpox	Diphtheria	Cerebro Spinal Meningitis	Influenza	Measles	Mumps	Paratyphoid	Pneumonia	Scarlet Fever	Typhoid Fever	Tbc. Pulmonary	Tbc.-other Forms	V. D. G.	V. D. S.	Whooping Cough	Septic Throat	Erysipelas	German Measles	TOTAL
Annapolis.....	9	..	..	1	60	..	..	..	..	..	..	..	..	..	..	..	..	..	61
Antigonish.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cape Breton....	..	4	..	..	..	..	..	..	17	..	..	..	..	..	50	..	..	..	71
Colchester.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cumberland....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Digby.....	..	..	..	335	1	..	..	1	..	..	..	..	..	..	..	..	..	..	337
Guysboro.....	..	..	..	3	..	..	..	..	..	..	1	..	1	..	..	..	..	..	5
Halifax City..	5	4	..	..	4	2	..	..	12	..	..	..	..	..	11	..	1	..	39
Halifax.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hants.....	4	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24
Inverness.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kings.....	..	..	..	21	..	2	..	..	..	..	1	..	2	..	..	..	..	..	26
Lunenburg....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pictou.....	7	..	..	2	..	..	..	1	1	..	..	..	1	..	..	..	..	..	12
Queens.....	..	..	..	60	..	..	..	..	3	..	..	..	2	..	20	..	..	..	85
Richmond.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shelburne....	5	..	..	27	..	..	..	1	1	..	..	..	1	..	4	..	..	..	39
Victoria.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yarmouth.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL.....	21	8	..	469	65	4	..	3	34	..	2	..	7	..	85	..	1	..	699

Positive cases Tbc. reported by D. M. H. O's. 47.

**RETURNS VITAL STATISTICS FOR JANUARY, 1937.**

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis.....	12	13	9	21	9	0
Antigonish.....	13	11	2	8	11	1
Cape Breton....	55	50	39	28	41	4
Colchester.....	20	19	12	14	10	1
Cumberland....	25	30	20	16	15	0
Digby.....	18	19	12	19	6	1
Guysboro.....	12	15	8	6	4	1
Halifax.....	107	101	40	47	58	8
Hants.....	19	19	11	9	12	1
Inverness.....	15	9	11	9	10	3
Kings.....	28	23	15	5	5	1
Lunenburg....	40	39	13	20	8	2
Pictou.....	36	20	18	21	21	1
Queens.....	6	9	6	5	3	0
Richmond.....	8	8	9	8	4	0
Shelburne....	11	5	6	6	4	0
Victoria.....	7	7	3	4	1	0
Yarmouth.....	16	17	4	13	10	3
	448	414	238	259	232	27



## OBITUARY

ON February 19th, 1937, John Addy Sponagle "turned his face to the everlasting shadow" and thus was closed a long and honourable career in the practice of medicine. He was born February 6th, 1861, and was another one, in the long list of ministers' sons, who made a success of life because of the early training in the principles and precepts of a Christian home.

He was educated in the Common and High Schools of the different towns in which his father was stationed, as a Methodist minister. After graduating from the Halifax Medical College, 1883, as it was then known, he was house surgeon at the Victoria General Hospital and was present at the first operation in Nova Scotia performed under Lister's antiseptic methods. He often described his experiences, having had charge of the apparatus for producing the spray.

He began practice at the early age of twenty-two years, at Dartmouth, but after a few months located at Middleton where he remained to the end of his life. Soon after beginning practice he married Miss Slocomb of Brooklyn, and is survived by two daughters of this marriage, Mrs. J. Reagh and Mrs. H. B. Reagh both of Middleton. He married again in 1906, Miss Adelaide Allan, who had the responsibility of his care during his long and distressing illness. He was deeply interested in everything connected with the medical profession. He was a frequent attendant at medical meetings throughout the Province and other cities in Canada, in which were held the annual meetings of the Canadian Medical Association, the British Medical meeting in Toronto, and others. After graduation, he spent a year in post-graduate work in New York and in 1909 spent six months in London.

He was always greatly interested in military affairs and from the early years of his practice was attached to the C. A. M. C. He became Lieut.-Col. C. A. M. C. and was A. D. M. S. in this military district, being known as an efficient officer. He volunteered in 1915 and went overseas as regimental surgeon of the 25th Regiment, at fifty-four years of age. In England, he had command of the Convalescent Hospital at Uxbridge, and six months on service in France. Returning to Canada in 1917 he was given command of Cogswell Street Military Hospital and Camp Hill; during the latter service the Hospital was inspected by the former King Edward, then Prince of Wales.

He returned to Middleton in 1919 to find his former practice scattered far and wide, but soon reestablished himself in the hearts of the people.

Community interests always found him ready and able to help in any way a good citizen could be of use. He served two terms as Mayor of the Town. He was generous of his time and money in everything for the welfare of the Church, School and Town, and particularly in the beginnings and continued progress of the Soldiers Memorial Hospital at Middleton.

He died after a long life, fifty-three years of which were spent in the practice of Medicine, active up to the last. He was seized with a heart attack while on the way to visit a patient. It may be said that "he died in harness" as he was never able to leave his room afterward.

A very large number of citizens from all over the county, including a delegation of medical friends from Halifax, gathered to honor his memory at



the funeral service, which was conducted with Masonic and military ceremonies at Middleton.

The address, from the text: "Well done, thou good and faithful servant" seemed fitting for we all knew he was a faithful friend, a faithful citizen, a faithful physician and a faithful Christian gentleman.

The high ideals which he upheld, and the fine example which he furnished were always an encouragement and a stimulus to the writer and all of those who knew him intimately.

"He was a man, take him all in all  
I shall not look upon his like again."

---

Dr. Alexander Neil Chisholm, Port Hawkesbury, died at his home on March 3, at the age of fifty-one. Badly overworked in trying to combat the influenza epidemic Dr. Chisholm tried to carry on after he had contracted a heavy cold. His condition finally became serious and he took to his bed, a victim of pneumonia. Death came suddenly. Deceased was a son of Mrs. Chisholm and the late J. B. Chisholm, Port Hastings. He entered St. Francis Xavier University in 1902, and was a classmate of Dr. J. S. Brean, his fellow practitioner across the Strait at Mulgrave, who with Dr. Muir, did all that medical skill could suggest to save his old friend's life. Dr. Chisholm was a medical student at McGill University, Montreal, when the Great War broke out. He enlisted with the McGill hospital unit and went to France in May, 1915. After a year's service he and other medical students received permission to return to Canada to complete their course, and he was graduated in May, 1917. A few months later he joined the C. A. M. C., and with the rank of captain served in a Canadian hospital overseas until the end of the war. He took a course in surgery at the University of Pennsylvania, served on the staff of the Western Hospital, Montreal, for two years, and then opened an office at Port Hawkesbury, where he was appointed port physician and health officer. Surviving are his wife, nee Mona Joncas, and two children; his mother, a sister and two half-brothers; Mrs. A. D. McNeil, Glace Bay, Dr. Dan N. and Leo in New York.

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The BULLETIN extends sympathy to Dr. Clarence Miller of New Glasgow in the death of his mother, Mrs. Barbara McKay Miller, who passed away at her home in Stellarton on January 31st.

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Only last month we noted the death of Dr. W. S. Phinney of Yarmouth, and it is now our painful duty to record the death on March 4th of his widow, formerly Miss Minnette Messenger of Centerlea, Annapolis County. Mrs. Phinney had been in poor health for some months and her death was not unexpected. Besides her aged mother, who resides in Yarmouth North, and two brothers, she is survived by a daughter, Mrs. Richard Dobson, M. D., and one son, Dr. Willoughby Phinney, at present in practice in London; he is now disposing of his practice there and will take his late father's place. To



this son and daughter, both members of our own profession, we extend sincere sympathy. At the funeral, which was largely attended, Doctors Farish, Webster, Williamson, Burton, Hawkins and Anthony were the pall bearers.

The deaths occurred recently of two widows of former members of our profession, Mrs. Marcus Dodds of Bridgeport, C. B., and Mrs. J. W. Clark of Tatamagouche. It will be recalled here that Dr. Dodds was one of the first honorary members of the present Medical Society of Nova Scotia, and began practice in 1886. Dr. Clarke was the successor to the large practice of that sterling old time country doctor, Dr. E. D. Roach of Tatamagouche. He graduated from McGill in 1890, and located at once in his home district. He passed away at a comparatively early age.

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#### Anahaemin—B. D. H.

The British Drug Houses Ltd. wish to advise that a further purification of the original Anahaemin, B. D. H. reported upon by a group of clinicians acting at the request of the Medical Research Council has been effected. According to a recent report (Lancet, December 26, 1936, p. 1513) the power of this more highly-purified product to cause blood regeneration in pernicious anaemia exceeds even that of the original anahaemin; the daily injection of so little as one-twentyfifth of 1 c. c. produces a rapid increase in the red blood-count, and constitutes satisfactory treatment in many cases.

In the treatment of average cases of pernicious anaemia the treatment recommended is to give an initial dose of 2 c.c. of Anahaemin, B. D. H. followed by 1 c.c. at 10-day intervals until the blood count has remained normal for at least a month.

For maintenance, 2 c.c.'s monthly. This in many cases is a satisfactory maintenance dose, but as variations between different cases are so great the optimum maintenance dose must fall between wide margins from case to case. A safe rule to follow, naturally, in maintenance is to give more than is necessary rather than less.

Physicians desiring further information regarding Anahaemin, B. D. H. or to those wishing particulars of the trials conducted by the Medical Research Council of Great Britain, this will be gladly sent if application is made to The British Drug Houses (Canada) Ltd. Toronto.



## Personal Interest Notes

Dr. M. D. Morrison, chief medical officer of the Nova Scotia Workmen's Compensation Board, has tendered his resignation as an official of that body to take effect March 31st. Dr. Morrison has served as medical officer of the Workmen's Compensation Board for the past sixteen years. Previous to that time he practised in Dominion, C. B. Dr. Morrison has, we believe, resigned on account of ill health.

Dr. George W. A. Keddy, son of Dr. and Mrs. O. B. Keddy of Windsor, has recently been appointed to the position of house surgeon in the Orthopaedic Unit of the Manchester Royal Infirmary Hospital.

Dr. and Mrs. W. W. Patton of Port Morien have returned from a six week's cruise having been as far south as British Guiana.

Dr. A. E. MacKintosh of Amherst, who has been attending clinics in Montreal, Toronto and Cleveland, has returned home.

Dr. and Mrs. G. D. Donaldson of Mahone Bay were recent visitors to Halifax.

### Contemplate Addition to Hospital at New Waterford

At a recent meeting of the Board of Directors of the New Waterford General Hospital the need of building an addition was discussed. For some time past the hospital has been overcrowded, and as a rule there is a long waiting list. The question also of securing a radiologist for Cape Breton was taken into consideration and a committee was appointed to discuss this with a group of doctors from Sydney.

Dr. T. M. Creighton, son of Mr. and Mrs. C. E. Creighton of Dartmouth, and a graduate of Dalhousie Medical School, 1912, is now on call to Buckingham Palace, second to the regular attending physician, Sir Stanley Hewitt.

Dr. D. F. MacLellan of New Glasgow has been appointed by the Provincial Government to fill the vacancy on the school board caused by the retirement of M. F. Fraser. Dr. L. P. Churchill of Shelburne has been appointed health officer of that town.

We regret to learn that Dr. A. W. Miller of New Waterford is not regaining his health as had been hoped. It had been the intention of his son, Dr. B. F. Miller, to remain in Edinburgh several months longer, but accompanied by his wife and young son he arrived home the first of March, owing to his father's serious illness. Dr. Miller had been doing special work in surgery.

Mrs. Zwicker, wife of Dr. D. W. N. Zwicker of Chester, has returned to her home after a period of hospitalization in Halifax much improved in health.

Dr. F. A. Minshull, who has practised in Halifax for the last few years, specializing in diseases of children, has moved to Grand Falls, Newfoundland, where he has accepted a position with the Anglo-Newfoundland Development Company.



# NOVARSENOBENZOL BILLON

Acknowledged throughout the world as standard  
arsenical spirochaeticide.

Its great value was clearly demonstrated during the Great War where its use among the Allied Armies checked the menace of an epidemic of Syphilis among the soldiers. Many Canadian practitioners can trace back their unfaltered attachment to Novarsenobenzol Billon to these days.

Since then, Novarsenobenzol Billon has consistently retained the preference of Canadian physicians and specialists. It is now employed in a large number of hospitals and Governmental controlled V. D. Clinics.

Specify "NOVARSENOBENZOL BILLON".

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The following letter, telling of a most unusual case recorded at St. John's in 1856, was sent into the Bulletin by Dr. A. F. MacGregor of New Glasgow.

St. John's Newfoundland, July 4, 1856

Sir,—

On the 14th of October, 1848, William Roberts (of Brigus, Nfld.) aged 30 years, by occupation a fisherman, of large frame and robust constitution, sustained (whilst at Labrador) a very serious injury of the face by the bursting of a gun. His nose and right cheek were severely cut and contused, and the whole face completely blackened. Violent inflammation, with great swelling supervened, and he continued in a state of insensibility for three days. When restored to consciousness he complained of most excruciating pain in the face, which continued unabated for three weeks; and great noise in the head, which lasted for six months. Three weeks after the injury he arrived at Brigus, and then for the first time consulted a medical gentleman, who, however, from the inflamed and oedematous condition of the whole face, could not possibly form a decided opinion as to the precise nature of the injury. The patient was put under medical treatment, and was unable to leave the house until March, 1849; and was then only able to walk a short distance; a constant foetid purulent discharge escaped from the right cheek and nostril. In May, 1849, the wound in the cheek completely healed over, but the discharge continued from the nose. In June he went to the Summer Fishery, but from his debilitated state could work but little.

The wound in the face remained closed until Nov., 1854, when an opening formed near the right *Ala Nasi*, through which a purulent discharge, with a quantity of powder and rust escaped. On the 2nd January, 1855, he was suddenly seized with alarming hemorrhage from the right nostril, the blood being quite florid, and escaping in a full stream, when another medical gentleman was sent for.—The bleeding continued more or less from one until four o'clock, p. m., when it ceased; but recurred every eight or ten days until April of the same year. Since then there has been little or no hemorrhage.

During the whole of the foregoing period the patient suffered from severe head-aches,—sometimes complained of dimness of vision in the right eye, and occasionally of pain in that organ. The sense of smell was completely lost—his appetite varied—sometimes being very good, at other times extremely bad; he subsisted almost entirely on fluids—altogether his general health became seriously impaired.

In May, 1855, he came to reside in St. John's, and consulted several medical gentlemen, but obtained no relief. In August following, the pain in the face became much more intense than it had been since the occurrence of the accident.—An abscess formed in the right cheek, and a copious discharge of purulent and sanious matter, together with more powder and rust followed. After which the pain only occurred occasionally.

He applied to me for advice on Tuesday the 17th June, 1856, stating that his face had been injured nearly eight years previously by the blasting of gun-powder, and made no mention of a gun having burst in his hands until after the operation (about to be described) was performed. He informed me that he had undergone different kinds of treatment, and applied various remedies to the face, without deriving the slightest benefit therefrom. On examination I found the right *Malar* bone considerably enlarged—the right side of the



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face a *little* swollen; and a *cloaca* existed in the right cheek, situated nearly opposite the upper border of the *Ala Nasi*. Having passed a probe into this opening I detected, what I at first supposed to be a large piece of necrosed bone, which could be slightly moved. As he could not open his mouth more than a quarter of an inch, I failed in ascertaining the state of its interior. I examined the nasal cavity with the speculum, but discovered nothing abnormal.

As the man's health was rapidly giving way under the irritation and constant discharges to which he was subjected, I advised him to submit to an operation, to which he most willingly assented. On Thursday the 19th June (two days after I first saw him) I proceeded to operate, assisted by Dr. W. C. Simms. The patient having been put under the influence of Chloroform, I made one incision from the upper border of the right *Ala Nasi* extending across the cheek towards the prominence of the *Malar bone*, and a second beginning at the commencement of the first, and extending downwards towards the angle of the mouth, and retracted the flap thus formed, when it became obvious that the cause of so much suffering was not diseased bone but *metal*. After considerable difficulty I succeeded in extracting (what is almost incredible) the *breach of a gun!* the presence of which had never been suspected. The patient was only sensible of the last two or three efforts at extraction, and although there was no hemorrhage of any consequence during the operation, we did not, during its latter part, induce complete anaesthesia, fearing that blood might find its way into the *trachea*, and cause suffocation.

The piece of metal weighed a little more than *four ounces* and was quite oxidised. The transverse portion measured in length  $1\frac{1}{2}$  inches, in breadth  $\frac{3}{8}$ ths of an inch at one part, and  $\frac{1}{2}$  an inch at its narrowest part—its thickest portion measured  $\frac{5}{8}$  of an inch. That portion of the breach which is screwed on to the stock measured in length 2 6-8 inches, and in breadth 5-8ths of an inch. The screw measured in circumference 2 5-8th inches.

It now only remains for me to state so far as I can, the position occupied by this foreign substance, and the subsequent progress of the case.

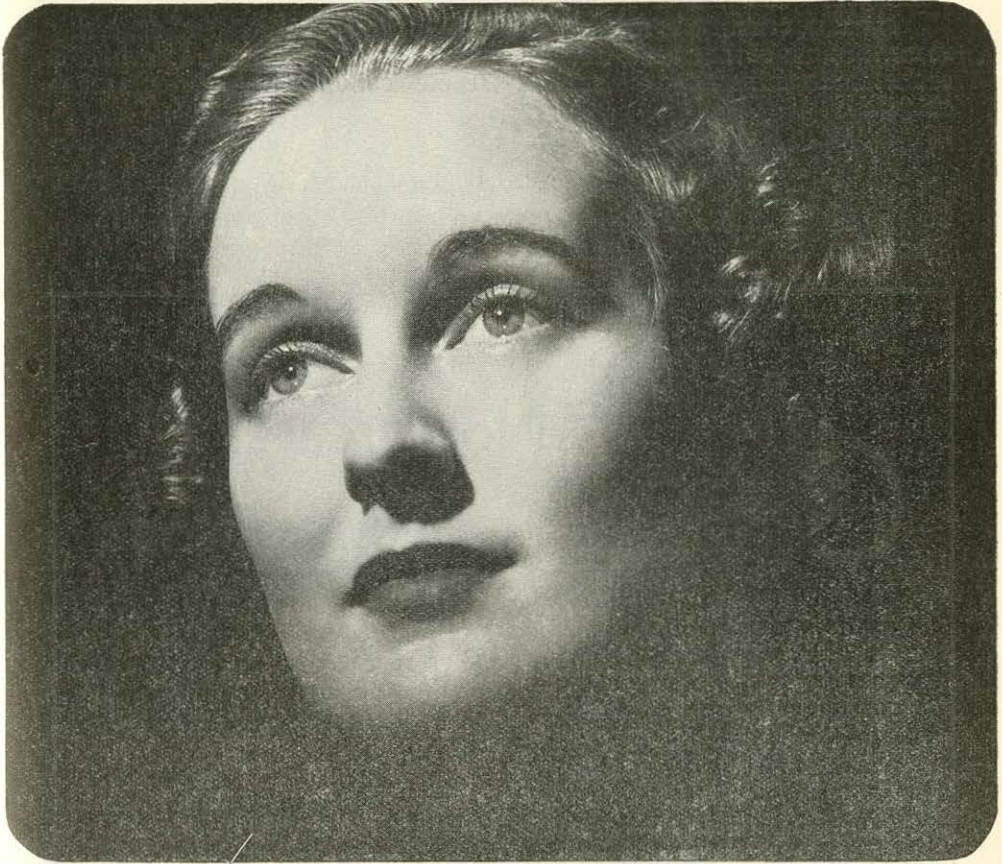
The superior *Maxilla* was evidently fractured over the *Antrum Highmori*, the transverse portion of the breach, with the greater part of the screw passing into that cavity, became embedded there; and a large opening was formed between the *Antrum* and right *Nasal Fossa*. The long part of the breach, or that portion which is screwed on to the back of the stock, passed backwards between the under surface of the *zygomatic Arch* and the *Coronoid process* of the inferior *Maxilla*, its edge resting on the *Alveolar processes* of the superior *Maxilla*; and its extremity extending nearly as far backwards, I imagine, as the lower part of the *Temporal* surface of the *great wing* of the *Sphenoid* bone, its edge, near the extremity, being in close contact with the external plate of the *Pterygoid process* of that bone. Such, I think, must have been pretty nearly the position occupied by this singular intrusion.

No inflammation followed the operation, and since its performance the patient has been almost wholly free from pain.

On removing the breach the cavity appeared quite black, and for a few days a dark purulent discharge together with small pieces of rust escaped. Healthy granulations then sprang up, and the parts rapidly contracted. Now (July 4th) the cavity is nearly filled up, and the external wound almost closed. The action of the lower *Maxilla* is slowly improving, and he has quite recovered the sense of smell. The only after treatment consisted in the administration of one or two doses of aperient medicine; and the constant application to the



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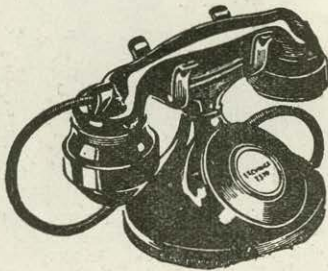
sore of *pledgets* of lint moistened with cold water. In a few days the man will, I think, be quite able to resume his usual calling.

I have no comment to make on this case—it speaks for itself; and appearing to me to be one of the most extraordinary on record, I conceive an account of it cannot fail in interesting your readers. Its publication, therefore, would much oblige,

Sir, yours, &c.

JAMES N. FRASER, M. D., M. R. C. S. E.

To the Editor of the Edinburgh Medical  
and Surgical Monthly Journal.



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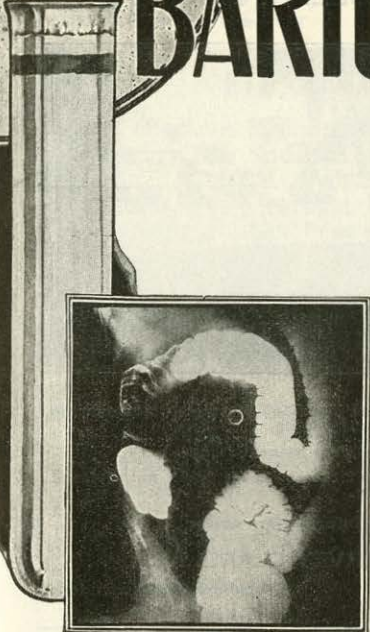


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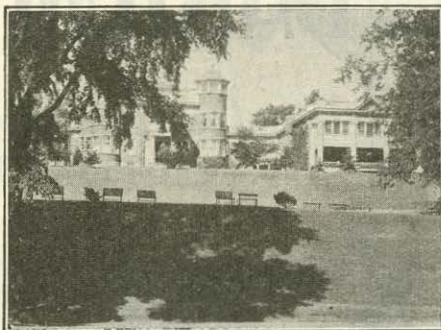
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