

*The Uses and Abuses of Sulphonamides

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THE development of chemotherapy by the use of sulphonamides has been the outstanding advance in medical science in the past decade. From the original sulphanilamide, sulphapyridine, sulphathiazol, sulphadiazene have successively improved and widened the scope of these therapeutic agents. The improvement has been in reduction of their toxic effects and the scope has been widened to include many severe infections.

Sulphanilamide is effective in haemolytic streptococcal, gonococcal and meningococcal infections. Sulphapyridine widened the scope of the usefulness of sulphonamides by its effect as a therapeutic agent in the treatment of pneumococcal infections. Sulphathiazol added infections due to haemolytic staphylococcus to the list of diseases that were effectively treated by this chemotherapeutic group of drugs. Sulphadiazene, on the other hand, is a sulphonamide that is effective in all these infections, and being more slowly excreted, a sufficient concentration of the drug in the blood can more readily be maintained. Further, its toxic effects are very definitely reduced.

In addition to the administration of these drugs by mouth it has been found that the direct application of sulphathiazol and sulphadiazene to infected areas controls the local infection due to these pyogenic organisms. In abdominal surgery it is used freely when the operative field may be infected. In the treatment of burns, the application of the drug in a suitable medium has reduced to a minimum the toxæmia due to secondary infection that previously occurred in severe burns. Similarly, in injuries in which the skin is broken, the application of sulphathiazol and sulphadiazene prevents and controls infection in vital tissue. This has been particularly useful in the treatment of compound fractures.

There are four methods of administration of the drug; by ingestion, intravenously, intramuscularly, and by direct application. The sodium salt of the drug in solution is used for intravenous and intramuscular injection.

The objective is to obtain a sufficient concentration of the drug in the blood and maintain it for as long a period as is necessary to eradicate the infection. The first two doses by mouth of sulphathiazol or sulphadiazene for the average individual is 2 grams four hours apart. Subsequent doses are one gram at four hourly intervals. Intramuscularly or intravenously one to two and a half grams are given in solution at four hourly intervals. By this regime 8 grams (120 grains) are administered during the first 24 hours and 6 grams (90 grains) in subsequent 24 hour periods. It is our practice to make frequent observations of the blood level of the drug. Estimations are made daily for the first three days and every second day for the balance of the period in which the drug is administered. An effective level for sulphathiazol is from 4 to 10 milligrams per 100 c.c. of blood and for sulphadiazene from 8 to 15 milligrams per 100 c.c. of blood. The dosage should be adjusted to maintain these concentrations. It is inadvisable to use the drug in those cases in which the white blood count remains low. It is desirable that the blood count be checked frequently. It

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is our practice to record the white blood count on every second day in order that the drug may be discontinued in the event of the white blood count falling below normal. We believe it is unwise to continue the use of the drug for a longer period than 5 days in those cases in which there does not appear to be any therapeutic response such as a lowering of the temperature. In those cases in which there is a therapeutic response the drug should be continued for three days after the fever has subsided. In any case it is unwise to continue the administration of the drug for a longer period than 10 days. It sometimes happens that fever will persist so long as the drug is administered in which cases the drug apparently is responsible for the continuation of the fever.

Sulphathiazol more frequently than sulphadiazene is responsible for toxic reactions. Skin rash of the macular type that has the appearance of ordinary measles is the most common. On its appearance the drug should be immediately discontinued. In certain cases haematuria or anuria occurs. This apparently is due to the formation of crystals in the kidney which are excreted in the urine and can be seen under the microscope. The appearance of sulphathiazol or sulphadiazene crystals in the urine is an indication for discontinuing the administration of the drug before haematuria or anuria occurs. Daily examination and measurement of output of urine after the third day are desirable in the management of the treatment by sulphonamides. Anorexia rarely is a complication of sulphadiazene or sulphathiazol. It has recently been reported that certain individuals can be sensitized to these drugs. It is estimated that 10% of the people who have had previous treatment with sulphonamide are unable to tolerate the administration of the drug in the treatment of another illness. I personally have not seen such a case. It has further been reported that some of these organisms are resistant to sulphonamide therapy. The explanation for this resistance to the drug is that the organisms have acquired an immunity to the drug by previous contact with it. This is found particularly in gonococcal and pneumococcal infections. From my own experience I am not certain that in a few cases of lobar pneumonia in which sulphonamide therapy was ineffective that the above explanation was a fact. For example, two brothers developed a Type 1 pneumococcal pneumonia a few days apart. The first brother was treated with sulphadiazene in hospital and recovered. The other brother later developed a Type 1 pneumococcal pneumonia and was admitted to hospital and put in a small ward along with another patient who was recovering from pneumonia of a different type. This third contact developed a Type 1 pneumococcal pneumonia. Both of these patients died. It was argued that because these two people died of a Type 1 pneumococcal pneumonia which apparently came from the first case that this particular Type 1 pneumococcus acquired a resistance to sulphonamide to the extent that adequate therapy was not effective. Whether this is true or not is a matter of opinion. At present, I believe that we have insufficient evidence to make it certain that any organism can acquire a resistance to sulphonamide. However, there is a widespread feeling among medical men that certain individuals can be sensitized to the drug and that some organisms can acquire resistance to sulphonamides. The experience of these observers cannot be ignored. It would seem, therefore, to be advisable to restrict the use of this very efficient chemo-therapeutic agent to those cases of moderate severity. In other words, the drug should not be used for minor infections such as common cold. I would suggest that in so far as respiratory infections are concerned that the drug be used in those cases in which the fever has risen to 101 deg.

A recent press report of a paper read in Chicago stated that the United States Navy found that the administration of a gram of sulphadiazene per day to the sailors aboard ship had prevented epidemics of acute respiratory infections. It would appear, therefore, that the medical officers of the U. S. Navy are not concerned about the sensitization of individuals to sulphonamides nor to the organisms responsible for these epidemics becoming resistant to the drug. It must be remembered, however, that it is imperative to keep the personnel of naval vessels on the job to the fullest extent and in the long run the benefits of prevention of these epidemics are of a greater usefulness in winning the war than the possibility of ten percent of these people being unable to subsequently take sulphonamides and the likelihood of these infecting organisms becoming sulphonamide resistant.

Summary:

1. Sulphathiazol and sulphadiazene are proven means in combatting infections due to gonococcus, meningococcus, pneumococcus, haemolytic streptococcus, haemolytic staphylococcus.

2. Sulphonamides to be effective should be given in adequate dosage to eradicate the disease, that is to say, that the administration of half a gram of sulphadiazene three times a day for a period of a week is in our opinion ineffective and possibly dangerous.

Insulin Therapy at the Nova Scotia Hospital*

MURRAY MacKAY, M.D.

AT the Nova Scotia Hospital we have been using Insulin Therapy for seven years, and now feel that we have had enough experience in the practical use of this type of treatment to speak with some authority on its application and results. Because of the tendency of mental illness to recur, after what was apparently a complete remission, psychiatric treatments have been subjected to the criticism that at the best only temporary results could be obtained. After carefully reviewing the work of seven years, and finding out that practically all of the patients who were considered as recoveries 5, 6 and 7 years ago continue to be healthy and self-supporting, we feel that Insulin Therapy has established itself, and that we are now in a position to make a reasonable estimate on its value.

Statistics published show considerable variation, as statistics always do, and in the case of Insulin Therapy there are at least three good reasons for it:—

- (1) Variation in the selection of cases for treatment.
- (2) “ “ “ methods of application.
- (3) “ “ “ standard by which recovery is measured.

To these should be added a fourth which is common to all forms of therapy; i.e., the enthusiasm or prejudice of the clinician or writer.

This paper deals with the methods employed and the results obtained at the Nova Scotia Hospital under the following general headings:—

- (1) Selection of Cases for Insulin Therapy.
- (2) Outline of Treatment.
- (3) Mental and Physical Reactions to Insulin.
- (4) Dangers of Insulin Treatment.
- (5) Results of Treatment.
- (6) Conclusions.

Selection of Cases for Insulin Therapy

Insulin Therapy or, Insulin Shock Therapy as it is generally called, is used in cases of Dementia Praecox. It has been tried out in other forms of mental illness but without any important success, and at the present time I do not know of any Institution which is applying it to other forms of mental illness, except in connection with research work. However even with this restriction the field is a very large one. In the province of Nova Scotia there are more institutional beds occupied by Dementia Praecox patients than by patients suffering from any other disease, barring none, not even tuberculosis. The number of cases treated is limited by the tragic fact that the vast majority of them are not recognized or sent for treatment until it is too late for treatment to be of any value. So frequently when the family physician suspects this illness he will, under pressure from the relatives, let the matter drift to see what happens. If a malignant growth was suspected this would not be permitted, and yet delay in a case of Dementia Praecox may be more tragic for the patient and their relatives than it would be in the most malignant

cancer. In fact a fully developed, well advanced case of Dementia Praecox may be compared from the prognostic standpoint with a case of malignancy in which metastasis has taken place. All cases where there is any doubt should be examined by a psychiatrist. Authorities have stated that in order to have a reasonable chance for cure cases should start the Insulin Therapy within the first six months of their development, yet the average case admitted to the Nova Scotia Hospital has been ill for at least eighteen months before commitment took place; and if our information was more exact we would undoubtedly find out that the average goes back even further. Another complication is that the time factor though a rough indication is not a reliable guide unless considered in its proper relation with other factors. Some cases develop so rapidly that they show marked mental deterioration in a few months after the onset of the illness; while others again do not show evidence of deterioration even many years after they have been committed.

In the sub-types we find that early cases of the Paranoid or Katatonic groups are the most suitable. We have also had some success in cases of the Simple type, but as yet never any success in the Hebephrenic variety.

Lack of insight into their condition is an important symptom of Dementia Praecox, and is common to all groups, but like other factors it is also variable; and we have found that those who retain some insight are more suitable for treatment.

A very important factor, possibly the most important, is the cooperation of the patient. Many patients show resistance to the treatment especially in the beginning, but with a lot of persuasion and coaxing, many can be brought around to accept it when they find out that nothing serious is going to happen to them. Here it is valuable to note that mental resistance to the therapy is more serious from the patient's standpoint than physical resistance. Many such patients who are quite easy to treat from the physical standpoint, will set up a mental resistance which defies everything, and if this attitude continues treatment of any kind is hopeless. Arguing with them only strengthens their delusions and their resistance. In arguments you seldom convince anybody anyway; this is true in normal people, and even more true in cases of mental illness. Yet, these patients do show various spontaneous changes from time to time, and it is important to watch the patient and if possible give them the Insulin Treatment at a time when they are themselves making an effort towards recovery. We call it "catching them on the upgrade."

We had one case who was receiving Insulin Treatment a few years ago, and for a time did very well. One day I was informed that M. C. was not getting on as well as usual and I attempted to have a talk with him. He remained silent for several minutes, and then to all my statements and questions gave one final, brief and definite reply—"I do not have to get better if I don't want to," and from that day on the treatment was of no value to him.

The level of a patient's intelligence is also of importance, those cases which have a background of mental deficiency are not so promising.

In general one may state that Insulin Therapy works best in those cases of Dementia Praecox which would normally hold out the best hope for improvement or recovery; and does no more than help nature where nature is making an effort in that direction.

The patient selected for therapy is given a careful check over physically and mentally with laboratory tests, including a sugar tolerance test, and those who are not likely to stand it are generally eliminated.

Outline of Treatment

The treatment is carried out in a room which is especially prepared for the purpose. From five to seven cases are treated at the one time. There is so much individual variation, in the requirements of the different patients, that we do not have any dogmatic rules with regard to dose, number of treatments, etc. The length of treatment has varied from two weeks to three months, the average length for seven years being six weeks. When the patient goes on treatment, they are sent to the Insulin room each morning except Sunday, without breakfast. A single dose of Insulin is administered each day, starting at about ten units, and gradually increased on succeeding days until satisfactory results have been obtained or the patient fails to respond. Some cases are found where twenty-five units will produce coma, while we had one case in which 400 units were required. On the average about 150 units were required for this purpose. In our experience those who required a much larger than average dose did not have as good a prognosis, although there was one outstanding exception. Some individuals showed a marked tendency to become more sensitive to the Insulin so that a dose which produced only a slight coma at first might become a fatal dose later on. Not only does the dose required to produce coma vary but the depth of coma which is most beneficial to the patient also varies. In some cases only a light tranquil sleep is necessary, and the patient appears to make the best response at this level, but in others a deep coma is required. The most appropriate level must be judged separately in each individual case.

The period of hypoglycaemia is terminated by the use of intravenous glucose solution. We have used the stomach tube instead of the intravenous route but without the same measure of success, because in such cases the patients were more likely to show mental disturbance than when they were brought out suddenly. When the intravenous method is used, a patient will sometimes return from deep coma in less than one minute from the time the injection is started. The amount given is generally 40 cc. of 25% glucose but in some cases a larger quantity is required. One of the most important points in the whole treatment is to know the right time for this injection and it has to be worked out in every individual case. This is important because there is a tendency for the mental state which is dominant at the time of the sugar injection to persist. After the patient is aroused by this method, they are given drinks rich in carbohydrates. If this is not done, the coma will return. Then at noon they are given a meal which is very rich in carbohydrates, which generally though not always prevents any delayed reaction.

Mental and Physical Reactions While Under the Maximum Dose of Insulin

We have found that there is seldom any marked mental or physiological response during the first hour except a mild drowsiness, and frequently a light sleep from which the patient can be easily aroused. This sleep when it occurs appears so natural that the nurses seldom attribute it to the effects of the Insulin, but I believe that Insulin plays a considerable part. Unexpected reactions may occur, quite recently one of our patients had a very severe convulsion about forty-five minutes after the Insulin injection.

During the second hour the drowsiness gradually increases. In cases which show katatonic phenomena, there may be during the second hour, an increasing interest in their environment or even excitement instead of the usual drowsiness. Patients in whom fear plays an important part in their daily reactions frequently show a reactivation of their delusions at this time, with great excitement and even violence. The temptation to put an end to this behaviour by terminating the treatment at once is considerable, but if possible the treatment should be continued through this stage until coma is reached, because if they are taken out during this time mental confusion may follow for several hours or days.

During the early part of the third hour all cases tend to show a certain degree of restlessness, which varies in length, and generally terminates by a gradual slipping into increasing drowsiness and coma before the end of the hour.

Coma is present in mild degree when the swallowing reflex is gone, drooling is present, and the eyes tend to wander in their orbits. Deep coma is present when the corneal reflexes are gone or there is a positive Babinski. Coma is allowed to proceed for varying periods, from a few minutes to an hour. Estimates on the blood sugar level have not been of any value to us in determining either the time or depth of coma. Dilation of the pupils, and a sudden increase in the pulse and respiratory rate may denote that coma is close, but they may also indicate the developing of a convulsion. The pulse and respiratory rate may remain high during light coma, but become slower as coma deepens. Cyanosis in a mild degree may accompany the coma.

In favorable cases excessive perspiration appears during the second hour and becomes very copious before coma is induced. This latter phase is also accompanied by excessive salivation. In a few cases perspiration occurs late and is relatively mild, and for some reason which we do not know, this type is not likely to gain much benefit from the treatment.

Muscular tremors frequently appear early in the second hour and may become quite severe before coma appears. Any or all of the voluntary muscles may be involved but it is most common in the eye and face muscles.

Seizures, epileptiform in type, and very severe may occur at any time during the treatment. Where this happens the patient is taken out as soon as possible, because one convulsion will follow another in rapid succession. For some unknown reason there is a difference in mental reaction following the convulsion, and depending on the stage during which it occurred. Patients who have had a convulsion during the coma stage are much more likely to have desirable mental reactions afterwards than those in which the convulsion occurred in an earlier stage of treatment.

Supplementary forms of therapy play a very definite and important part in the Insulin Treatment. When the patient shows a tendency to return to normal, everything possible must be done to keep them going in the right direction. In our Insulin Unit we have two or three nurses who spend their whole time with the patients. The patients who receive Insulin in the morning, spend the afternoon at Occupational or Recreational Therapy. Recovery from the insulin shock is so rapid and complete that patients who have been in deep coma are able to engage in routine mental and physical activities within an hour. In the case of troublesome patients it may be necessary to send them back on the ward after they have been given enough carbohydrate to guard against a return of the hypoglycaemia; but at the earliest possible

date they are brought into the activities of the group, and if this cannot be done by the time the maximum dose of Insulin has been reached, the outlook for that particular patient is poor. When the patient under the influence of Insulin Shock turns his mind away from the world of phantasy and delusions to become interested in the activities about him, it is necessary to stimulate that interest by every means possible. Failure or success at this critical time means everything to the patient's future. This is why the nurses engaged in Insulin Therapy have to live in close contact with the patients and give them a great deal of individual attention. Without this extra attention we are quite sure that many of them would relapse, because it has been noted that a change in nurses, or a shortage of staff, which even temporarily disrupts the patient's personal contacts may ruin everything that has been gained. A great deal also depends on the group. If a patient is being treated in a group, which as a whole is making steady progress he is fortunate; but if the group is one showing poor results, his own progress may be injured considerably. Patients who show a very poor prognosis should really be treated in a separate unit and then if they show improvement graduated to the better group; but our lack of staff during the past few years has been so serious that two such units were impossible.

Psychotherapy is used to keep the patient in as tranquil a state as possible. Everything in the way of Psycho-analysis is discouraged, because we have found that probing and deep analysis of the patient's symptoms is very upsetting to them. If the patient himself requests information on some special point, they are given as simple an explanation as possible, and if they express any fears or doubts they are reassured. The nurse should be motherly but firm, sympathetic towards but not curious about their complaints.

The most important effect of the whole therapy is the development, in successful cases, of insight into their condition. This generally comes on slowly, but in a few cases is so rapid as to be startling. In these latter cases it is first noticed immediately after the patient is brought out of coma. At first it may last only a few minutes, but there is a distinct tendency for these lucid periods to recur at subsequent treatments, and they gradually last longer and longer until the normal periods coalesce, and the patient is free from symptoms. But these are only the sensational cases that we read so much about in the early history of Insulin Treatments. We have had a few such cases at the Nova Scotia Hospital and continue to strike one occasionally, but it probably does more harm than good to emphasize this type of case, because by far the great majority of those recovering do so as the result of a great deal of persistent, hard work, on the part of the staff and are not due to anything spectacular. Dementia Praecox is a disease which develops slowly over a long period of many months, or more likely years, and there is no "Quick Royal Road" to its cure. Furthermore many of these so-called miraculous cures do not stand the test of time, our back wards contain several of them. When a patient is sent to hospital for Insulin Therapy, the relatives should be told that it will require at least three months and possibly six. Of course home conditions make a great difference in the time of a patient's discharge, and it is true that some of these patients will never make a complete "come back" so long as they are sheltered in hospital. Those who show a promising measure of recovery, but are inclined to lean too much on the hospital for security may need to be pushed out into the cold world before

recovery is complete. When this is done, many of them will, as a comparison of tables I and II indicate, complete the process of recovery at home. While the patient is in the Insulin Unit improvement or recovery is difficult to pass final judgment on, because they are in a specially protected environment, like a plant in a hot-house. They must go back to living on the ward again, start at Occupational Therapy with another group, and gradually take on more liberty if their improvement is to hold or progress. What the patient does with this gradually increasing freedom is the real test. Finally if their response is good, they are permitted the freedom of the grounds and occasionally allowed to go to town by themselves. In giving the patient this extra freedom we frequently take some risks, but the taking of such chances is a necessary part of the whole scheme, without which the patient will not show further improvement and is very liable to lose what he has previously gained.

Dangers of Insulin Treatment

The most frequent complication is the epileptiform seizures described previously. If the patient who goes into one of these seizures is not taken out of the Insulin Shock, the seizure will continue or be followed by others in rapid succession, finally producing a state like status epilepticus. We have never permitted a patient to continue in one of these states, but judging from their condition, I do not think that they would survive for long. We do not know of any sure way to predict the coming of these seizures, although doctors and nurses with long experience can frequently sense that something is wrong and be prepared in advance. Neither is the dose of Insulin which produces a seizure constant, in different patients or in the same patient.

Failure to arouse from coma is a danger which may occur. We have been fortunate in that we never had this experience, but we have heard and read of two or three.

Delayed reactions to the Insulin may occur at any time of the night or day, and we have had quite a number of these. Careful observation and the further use of glucose is the remedy.

Because large doses of Insulin produce pulmonary congestion cases with pathology of this system are poor risks for treatment.

A physician can easily imagine the ordeal of treatment producing a psychic trauma, but apparently this is rarely the case. The explanation probably rests in the fact that the patient has amnesia for the critical phase of the treatment. Patients will sometimes state that they found the treatment pleasant, when it is obvious that they remember very little about it.

So far we have had no fatalities in our Insulin Unit, but they do occur, and we have no illusions about the fact that "sooner or later" we will run into one.

Results of Treatment

In making out tabulations on the results I have largely ignored the statistics of the last two years, not because they show any difference from the previous five years, but because I wished to study a series of cases in which at least two years had elapsed since the completion of treatment.

All cases treated were classified into four groups:—Full Remission, Social Remission, Improved and Negative.

Full Remission applies to those cases where:—

- (1) All Psychotic signs and symptoms have disappeared.
- (2) Patients have complete insight into their illness.
- (3) They can discuss their illness with equanimity.
- (4) No residual changes in personality.
- (5) Normal affection (emotional) relationships.
- (6) Able to resume work at the previous level of efficiency.

Social Remission applies to those cases where:—

- (1) There are no gross or debilitating psychotic signs or symptoms.
- (2) Partial insight into illness.
- (3) Slight residual changes in personality.
- (4) Patients are able to carry on with their work, but previous level of efficiency may be slightly impaired.

Improved—Patients are more easily managed, and able to care for fundamental needs without supervision.

Negative—This term speaks for itself.

Table I represents the immediate results which were compiled at the time the patient left the Institution, or if they did not leave the Institution about three months after treatment. It covers a period of five years, starting in November, 1937, and ending in November, 1942, and represents the total number of Dementia Praecox patients treated with Insulin Therapy during that time. They were divided between the different groups as follows:—Paranoid 83, Katatonic 44, Hebephrenic 14, Simple 9. Seventy-seven of those treated were women, seventy-three were men.

Table II, which I have called final results merely as a matter of differentiation, represents the same cases as Table I but from two to seven years after treatment, and shows what happened to them in the meantime. In order to make up Table II it was necessary to trace out every patient that had left the hospital in the meantime. In doing this we were successful in all cases except five. These five are given the same status in both tables because we do not have the knowledge to put them in any other place. Many of these patients visited the hospital following our inquiries, and in some cases we were able to visit with them.

The chief difference between Table I and Table II is that many in the middle groups, Social Recovery and Improved, either progressed to Full Recovery or failed to hold what they had gained. To break it down into detail.

The Full Recovery Group;

Gained—sixteen from the S. R. Group.
 twelve “ “ Improved Group.
 two “ “ Negative Group.
 Lost —one to the Negative Group.

The whole representing a gain of twenty-nine for the Full Recovery Group.

The Negative Group:

Gained—one from the Full Recovery Group.
 one " " S. R. Group.
 eight " " Improved Group.

Lost —two² to the Full Remission Group.
 one " " S. R. Group.
 three " " Improved Group.

The whole representing a gain of four for this Group.

Seven others changed from the Improved to Social Recovery Group.

In order to make a fair estimate of our results a control was used. This control consisted of 100 consecutive admissions of Dementia Praecox, which were admitted to hospital **before we started to use Insulin.**

Table III represents the Immediate Results in the control Group.

Table IV represents the status of these control cases over seven years later, keeping in mind that all control patients were in hospital before the days of Insulin at our Institution. Two of the control cases died in the meantime. Eight of these we were unable to trace and had to leave in the same Group.

TABLE I—Immediate Results

F. R.	S. R.	Improved	Negative	Total
53	23	35	39	150

TABLE II—Final Results

F. R.	S. R.	Improved	Negative	Total
82	14	11	43	150

TABLE III—(Control) Immediate Results

F. R.	S. R.	Improved	Negative	Total
3	3	8	86	100

TABLE IV—(Control) Final Results

F. R.	S. R.	Improved	Negative	Died	Total
4	5	6	83	2	100

CONCLUSIONS.

To get results with Insulin Shock Therapy there are certain requirements:—

- (1) The patients should be treated early in the development of the disease, when a case is fully developed treatment is almost hopeless.
- (2) The treatment must be intensive, thorough and carried out over a considerable period of time.
- (3) Three other forms of therapy—Occupational Therapy, Recreational Therapy and Psycho-therapy should be used along with the Insulin Treatments.
- (4) A high proportion of staff, to the number of patients treated, is required.
- (5) A trained staff and persistent hard work is the key to success—if you are looking for easy, spectacular results you will be disappointed.

Finally, and most important, results once obtained hold up well.

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Case Histories^{*}

V. D. SCHAFFNER, M.D.

Kentville, N. S.

1. *W. S. age 7.*

Admitted to hospital with diagnosis of right sided pneumonia on March 25, 1940. Extremely ill, temperature 105.8° F., pulse 140, respiration 60. Clinical and X-ray examination confirmed presence of pneumonia. Patient intensively treated with Daganan without improvement in general condition. Cyanosis increased, requiring constant oxygen. On April 3, nine days after admission, his physician noted marked dullness in the chest, and X-ray examination confirmed massive empyema.

Chest was aspirated for diagnostic purposes, and a thin greyish fluid obtained, positive on culture for streptococcus non-haemolyticus. Between this date and April 26, numerous aspirations were carried out, the volume ranging from 180 to 360 c.c. Temperature fluctuated from 100° to 105° F. daily during this period. On April 26, rib resection was done, with immediate and marked improvement in his condition. From that date to June 17, at which time he was discharged, improvement was steady. The cavity became obliterated. The boy remained well, with the exception of asthmatic attacks for the following three years.

Due to his asthmatic attacks repeated X-rays of his chest were taken which would indicate no residue of the empyema.

In October, 1942, however, he developed an empyema necessitans at the old site. This was re-opened and drained through the old operative wound. A large intra-pleural pocket was found and drained.

Progress was satisfactory but he developed broncho-pleural fistula—which required plastic operation in April of 1943 for closure. Since this last operation patient has been perfectly well.

Points of interest: (1) Extreme thinness of pus following Daganan treatment: (2) subsidence of all symptoms following drainage: (3) recurrence of empyema and fistula following apparent complete cure.

2. *R. A. P.* Admitted May 15, 1942. Discharged November 2, 1943.

This man developed a head cold in March, 1941. This cleared up promptly but on April 10, 1941, he had a chill, developed a cough and shortness of breath. His doctor diagnosed the illness as pneumonia and placed him on sulfonamides. His condition rapidly improved until May, 1941, when his temperature again became elevated and pleurisy with effusion was diagnosed. He was not aspirated and received no further treatment for the time being. He gradually lost weight and strength and ran persistent fever all summer and fall. In December, 1941, the illness became critical and he was sent to another hospital, where rib resection under ether anaesthesia was carried out. The drainage tube was removed after two weeks. His symptoms did not improve and he was sent to the Nova Scotia Sanatorium.

On admission he was seriously ill with fever to 104° F., night sweats and shortness of breath. He was very emaciated. There was a draining sinus over the site of the rib resection at the seventh rib, two ribs above the bottom of the cavity, in the posterior axillary line. A catheter was introduced and aspiration and irrigation with Dakin solution performed for several days.

*These case histories were cited by Dr. Schaffner to illustrate his paper on Empyema and Lung Abscess given at the Dalhousie Refresher Course, Halifax, October 9, 1944, and published in the November, 1944 edition of the NOVA SCOTIA MEDICAL BULLETIN.

A more efficient thoracotomy with resection of a portion of the ninth rib was done and a Lahey tube placed in position. X-ray examination at this time showed complete collapse of the right lung with no disease in the left. Numerous specimens of the pus were positive for staphylococcus only.

This man's general condition improved rapidly. His temperature became normal and he gained in weight and strength but no re-expansion of the lung took place and a year after his admission it was necessary to begin a combined extra pleural thoracoplasty and Schede procedure. This was done in four stages, the last being completed May 25, 1943. The empyema cavity was completely obliterated and complete healing of the wound occurred within four months. He was discharged cured November 2, 1943.

Points of interest: (1) Delay in drainage; (2) inadequate drainage; (3) too early removal of the tube.

3. *M. W. R.*

This man developed pneumonia in April, 1936, followed by empyema. A rib resection was done at another hospital and a drain was inserted and left in the chest for two months. He was discharged from the hospital with a good X-ray report. He remained in good health until February, 1940, when he developed a cough with two ounces of sputum. He developed a temperature and his doctor treated him for pneumonia. His condition improved but he was left with cough and sputum. X-ray examination showed no evidence of fluid. During the last week of May, 1942, he began to run a temperature of 103° F. and X-ray examination showed a hydropneumothorax on the right. Aspiration was performed and about 25 c.c. of thick pus positive for pneumococci were obtained. His sputum at this time resembled the pleural exudate, his fever remained at 103° F and he was losing weight. Following admission to the Sanatorium a broncho-pleural fistula was demonstrated. A Schede procedure was carried out in two stages, the last being completed on April 21, 1943, with excellent results including obliteration of the empyema space, closure of the fistula and wound healing in two weeks. At the second Schede operation a portion of the pectoral muscle was sutured over the visceral pleural closing the numerous fistulae present. Fourteen specimens of sputum were negative for tubercle bacilli and three tuberculin tests were negative. The pleural fluid was positive for pneumococci.

4. *A. MacD.*

On December 4, 1942, diagnosed as pneumonia. Treated with sulpha drugs but with no improvement insofar as the lungs were concerned. Temperature remained elevated and patient breathless and cyanosed. On the ninth day the chest was X-rayed and a massive effusion was found. He was aspirated several times and a sero-purulent fluid obtained. Bacteriology was not reported. On December 27, twenty-three days following the onset of his illness rib resection and open drainage was done. Following this there was marked improvement until March 3rd of the same year, when the temperature returned and he had considerable pain in his chest. The incision was explored and a large amount of drainage obtained. From that date onward to July he had frequent recurrences of pain and fever.

At this time, he had a small but irregular empyema cavity situated posteriorly with a long sinus entering into a small space. It was decided to

continue with drainage. Progress was unsatisfactory in that he had frequent returns of fever. In February, 1944, he was operated upon in Indiana, a small anterior pocket being opened. This did not relieve the condition and he was again re-admitted to our hospital in May, 1944, at which time a draining sinus was found in the post axillary line which communicated with a small pleural space extended upward and forward. Contours of this space were extremely irregular as shown by Lipiodol injection. A partial Schede operation was performed. The man has remained well since and is working, but I believe still has a small draining sinus in the back.

Points of interest: (1) Thinness of the pus following sulpha treatment; (2) extreme thickening of the pleura; (3) loculation of the empyema.

5. *K. R.*

Patient well until January, 1941, at which time he became suddenly sick aboard ship, with cough, sputum, loss of weight and loss of strength. Sputum was of a purulent nature. Taken to hospital in Aruba, where he was told he had tuberculosis of an acute nature, in spite of the fact repeated examinations were negative for tubercle bacilli. He showed slow improvement but had several serious relapses. Arrived in this country in December, 1941, practically one year after the onset of symptoms. Very ill, having bouts of fever and a considerable quantity of foul sputum. Investigated at the Nova Scotia Sanatorium. Diagnosis: Pulmonary abscess of the right upper lobe. Operation, February 19, 1942: One stage draining of the abscess. Post operative course uneventful. All symptoms cleared up immediately but a persistent fistula resulted. Patient remained in good health, and when last seen, the fistula was becoming considerably smaller. An attempt was made to close fistula with a plastic operation but this partially broke down.

Case exemplifies (1) lung abscess of long standing and difficulty to produce anatomical cure; (2) large amounts of purulent sputum negative for tubercle should not be regarded or treated as cases of tuberculosis.

6. *Miss L. S.*

In February, 1940, operated upon for combined tonsil and septum, done under general anaesthesia. Following operation, did well—but several days later developed a pain in right chest, and fever. Diagnosed at this time by her family physician as bronchial pneumonia of the right lower lobe. Treated with sulpha, with apparent steady improvement in her condition.

In March, 1940, about one month following operation, X-ray of her chest showed only a small infiltrative change in the lower lobe, but a marked improvement over previous films.

Further improvement was noted on April 13, a month later, but she still had some slight cough and sputum. From April on, cough increased and she had fever. There was marked loss of weight and strength.

In May, 1940, X-rays showed a marked extension over previous films and she was again treated by her family physician with sulpha drugs. This caused slight improvement in her general condition and she was treated medically until August, 1940, at which time there was a marked increase in the amount of sputum and she had numerous small haemorrhages.

X-ray examination in August showed large consolidated area in the lower lobe. Sputum very purulent and foul. During this time, ran fever consistently. From that time until October there was a steady progress of the disease,

with increase in fever, increase in loss of weight, increase in amount of purulent sputum, and frequent haemorrhages. At this time, referred for surgical opinion and possible operation. Large inspissated abscess of the lower lobe was found. On November 13, right lower lobe lobectomy performed. With the exception of slight pleural infection which cleared up, patient made uneventful recovery. Improvement rapid and marked, and patient has remained completely symptom free since. Is married and has had one child.

Points of interest: (1) Chronic abscess, which at times showed improvement under conservative treatment. Later it developed into a severe extremely debilitating illness; (2) due to the fact it was centrally placed, inspissated, and associated with haemorrhages, lobectomy done rather than drainage.

7. P. V.

Well until December, 1940, at which time had a severe pain in his right chest, associated with cough and some sputum. Sputum was of a purulent nature. Apparently recovered from this illness and was able to work part of February, 1941, but soon had a return of pain, and cough. He expectorated about 3 ounces of purulent sputum per day. He continued in this state of health until June, 1941, at which time he was X-rayed. Infiltrative change was seen in the right upper lobe, and was diagnosed as being suspiciously tuberculous. During this month he had three severe haemorrhages. He was put to bed and treated as a tuberculous patient. On July 17, six months after the onset of his illness, X-ray examination showed the presence of a cavity. He remained in bed during July, August and September and during this time had frequent bouts of fever and severe night sweats. During this time there was a constant loss of weight and strength. It was not until December of 1941, one year after the onset of his illness, that he was diagnosed as abscess.

He was admitted to hospital and operated upon on February 12, 1942, one year and two months following onset of his illness. An attempt was made to free the upper lobe for lobectomy but this was impossible due to the extreme thickness of the pleura. The lung itself was found extremely hard. The abscessed cavity was therefore opened with cautery. It was latticed and irregular. The cavity was packed. Patient improved markedly following operation—and is symptom free and in good health now, but a persistent bronchocutaneous fistula remains in spite of attempts to close it.

8. J. A.

Developed what was diagnosed as a left lower lobe pneumonia in December, 1940. Well previous to this time. Onset of illness was characterized by pain in the chest and fever. Three days later had a severe chill and developed a cough which was productive of a thin brownish sputum. The pneumonia was complicated by an empyema which was first aspirated and later drained. The empyema was opened January 9, 1941, approximately two or three weeks after the onset of his illness. The drain remained in place until May, 1941. Following the removal of the drain the chest wound healed rapidly but he had not been well since the onset of the illness. For a year following, however, he had no cough and no sputum, but in January, 1942, two years following this illness, he began to cough up thick foul sputum. After that he coughed up a small amount of blood on several occasions. From June, 1942 on, he continued to cough from four to eight ounces of extremely foul sputum per

day. Patient was bronchoscoped by Dr. MacRae in December, 1942, two years after the onset of his illness, and diagnosis of abscess and bronchiectasis made. Was then referred for surgery, and a large abscess cavity opened December, 1942. Patient's symptoms improved rapidly and he has remained well, with the exception of the persistence of a bronchocutaneous fistula. Two attempts have been made to close this fistula but it still remains open and on one occasion patient had rather severe haemorrhage through it.

Points of interest: Chronic case of abscess resulting in incomplete anatomical cure complicated by a bronchiectasis and lobectomy treatment of choice, but due to the extreme illness of the patient and extremely adherent lung this was impossible.

9. *M. H.*

Patient well until December, 1942. At that time he spat up a small amount of blood. This was not remarkable and he paid no particular attention to it and it cleared up. He continued at his work and developed a hacking cough which at first was non-productive of sputum but later began to bring up small quantities of blood. The amount of blood was never large. He saw his family physician, who immediately had him X-rayed.

This X-ray showed a marked increase in the hilar shadow on the right, having the appearance of carcinoma. Investigation was therefore advised. Bronchoscopic examination by Dr. McGrath showed muco-purulent sputum coming from the right middle lobe bronchus. No growth could be seen.

Lipiodol investigation was suggestive of carcinoma middle lobe bronchus. Patient operated upon on January 12, 1944. Hard, rounded mass felt in the middle lobe, which felt more like carcinoma than abscess. Entire lung removed. Pathological examination showed presence of abscess only and no evidence of carcinoma. Patient made uneventful recovery, and when last seen was perfectly well and had no symptoms.

Points of interest: History definitely that of carcinoma rather than abscess. X-ray appearance also suggestive of carcinoma, although bronchoscopic examinations failed to show its presence.

10. *Mr. S. A.*

Patient admitted to hospital on April 17, 1939, following an extremely severe pulmonary haemorrhage. Seven years previously had had pneumonia in left lung complicated by empyema. This was opened and drained and a large rubber tube inserted. His progress was satisfactory and he was discharged from the hospital with the tube in place, to be cared for by his family physician. The parents report that the wound healed rapidly but following this illness had a chronic cough, some sputum, and was in constant ill health. This was blamed on the old pneumonia but in seven years had no real acute illness until a severe haemorrhage just previous to admission.

X-ray examination at this time showed the presence of a rubber tube 3 inches long near the hilus of the left lung. He was referred and admitted to the hospital and given several transfusions. On May 3, 1939, a large abscess was opened near the left hilus, and the rubber tube removed. The abscess was drained and closed satisfactorily. There was a rapid and marked improvement in the general health, and according to the latest reports received, this patient is now serving in the Canadian Army Overseas.

11. *J. W. R.*

Admitted to hospital February 24, 1939. From history obtained, patient had not been well for a period of five years. During this time complained of a dry hacking cough with little or no sputum until two years previous to hospital admission, at which time he was suddenly seized with severe pain in the chest, later accompanied by an expectoration of a large amount of foul sputum. Seen by his family physician, who had his chest X-rayed, and this time X-ray was suggestive of carcinoma with lung abscess behind it. However, patient was not referred at that time for further investigation. He was treated conservatively and during the following months had many bouts of fever and expectoration of large amounts of foul sputum.

In February, 1939, two years following onset of symptoms of abscess, and five years following the history suggestive of carcinoma, he was referred for further investigation. He was bronchoscoped by Dr. MacRae, and a carcinoma of the right stem bronchus found, confirmed by biopsy. In spite of the long history and extensive infection the condition was explained to the patient, who himself requested the operation be attempted. A complete resection of the right lung was done on March 11, 1939. The lung contained carcinoma of the right stem bronchus with an extremely large multilocular abscess of the lower lobe. The patient did well for five days following operation and he suddenly died from a massive intra-pleural haemorrhage. Autopsy showed that the azygos vein had been caught in a silk ligature which had sloughed it through taking out a button the size of a small 5 cent piece. This was an unfortunate operative accident in that further dissection of the mediastinal glands failed to show the presence of metastasis.

Points of interest: (1) Abscess originating in a lung following a period of hacking cough and mucoid sputum probably originated on the basis of carcinoma. Early investigation necessary. (2) Possibility of cure even when complicated by abscess and after the elapse of a long period of time.

12. *F. L.*

Admitted to hospital September 27, 1943. Stated he was perfectly well previous to November, 1942, ten months previous to hospital admission. At that time received an injury to right chest. Following this accident continued to complain of pain in chest. In December, 1942, developed a dry hacking cough. Lost weight and strength. In December, 1942, developed a pneumonic condition in the right upper lobe, which did not clear up. He continued to have cough and foul sputum. In February, 1943, was X-rayed, and tuberculosis of the right upper lobe suspected, in spite of repeated negative sputa. Following this, had some streaking and haemorrhages. Symptoms persisted and in June, 1943, admitted to the Nova Scotia Sanatorium. Following investigation, carcinoma of the right upper lobe bronchus with abscess was diagnosed. Bronchoscopy by Dr. MacRae showed a narrowing of the lumen of the lower end of the trachea, suggestive of pressure from without. Profuse discharge of bloody purulent sputum from the right upper lobe bronchus. Upper lobe orifice irregular and granulation tissue present. No actual tumour tissue found but case suspected as one of carcinoma and abscess. Operation performed on September 30, the entire right lung being removed. Pathological examination showed the presence of multiple small abscess cavities in the right upper lobe. There was no evidence of carcinoma.

Points of interest: History and various examinations suggestive of carcinoma with abscess but multiple abscess of the upper lobe of unknown etiology found.

13. *W. F.*

Admitted August 21, 1944. In May, 1944, complained of pain in right chest and later developed cough and expectoration. This increased in amount and sputum became foul. Rapid loss of weight and strength. X-ray examination at the time showed single abscess in the right middle lobe. Treated with sulfathiazole and no improvement shown, and did not tolerate the drug. In July, transferred to another hospital for further investigation. Bronchoscopic examination confirmed presence of a large abscess in the right middle lobe.

X-ray examination showed numerous cavities. Further treatment with sulfathiazole, with improvement. Then given large doses of Penicillin. This caused a decrease in the temperature but this never really came to normal.

Very little improvement in general condition. Transferred for surgical operation. Large abscess opened on September 7. Since then temperature has continued. Abscess of the latticed type.

14. *P. B.*

Admitted to hospital August 29, 1944. History of chronic cough since childhood. Numerous examinations including X-ray, and no remarkable disease of the lung found. In July, 1944, he had an increase in cough and sputum and was not feeling well although not acutely ill. Sputum was not excessive and no bleeding.

X-ray examination showed a large cavity in the right middle lobe. All sputum examinations negative for tubercle bacilli. Drainage lung abscess August 30, 1944. Afebrile since and marked improvement in general condition. Patient is without cough for the first time since childhood and feels perfectly well. Space obliterating satisfactorily to date.

Minutes of the Semi-Annual Meeting of The Medical Society of Nova Scotia, 1944

THE semi-annual meeting of the Executive of The Medical Society of Nova Scotia was held at the Dalhousie Public Health Clinic, Halifax, N. S., on November 29, 1944, at 2.45 p.m.

Dr. P. S. Cochrane of Wolfville presided. The following representatives of the Executive and members of Council of the Canadian Medical Association attended: Dr. J. G. B. Lynch, Dr. A. E. Blackett, Dr. D. M. MacRae, Dr. H. K. MacDonald, Dr. N. H. Gosse, Dr. D. F. McInnis, Dr. J. P. McGrath, Dr. A. R. Morton, Dr. A. L. Murphy, Dr. W. L. Muir, Dr. J. R. Corston, Dr. A. G. MacLeod, Dr. H. W. Schwartz, Dr. H. G. Grant, Dr. J. W. Reid and Dr. J. J. MacRitchie, secretary of the Nova Scotia Health Officers' Association and Dr. W. G. Colwell, chairman of the Dalhousie Refresher Course.

The President called the meeting to order and the first item to be considered on the agenda was the next annual meeting. In connection with this the Secretary read an excerpt from a letter of Dr. T. C. Routley's, General Secretary of the Canadian Medical Association, dated July 17, 1944:

Next year, as you know, the C. M. A. is meeting in Montreal during the third week in June. New Brunswick passed a resolution recommending that their annual meeting be held in Sept. as it would be unlikely that any appreciable number of men would go to Montreal from New Brunswick and a couple of weeks later turn out to a meeting in the home province. When I returned to Montreal I talked with Dr. Gerin-Lajoie who next year will be our President, and he is favourably disposed toward the New Brunswick suggestion. Does this meet with your approval in Nova Scotia? I am sure if it did, Prince Edward Island would fall in line. I shall be glad to have your views.

Dr. H. K. MacDonald advised that at the executive meeting of the Canadian Medical Association the exact time for the Nova Scotia meeting had been a bit indefinite, and he had explained the situation here that we usually had a Refresher Course in October and that College opened in September. The New Brunswick representative had been rather in favour of having their meeting late in September. He felt that the meeting of the Provincial Medical Society could dovetail in with the Refresher Course.

Dr. J. J. MacRitchie stated that the meeting of the Nova Scotia Health Officers' Association was always held the day before the meeting of The Medical Society and he did not think they could have a separate meeting in another place.

Dr. H. K. MacDonald moved that the Executive give authority to the President to settle the date and place of the annual meeting after conferring with the Chairman of the Refresher Course Committee and the Secretary of the Nova Scotia Health Officers' Association, and also to arrange the programme.

Dr. Cochrane stated that at the last annual meeting it was suggested that instead of having the annual meeting a day and a half that it be held two days and a half, with the same number of papers. This would give time for the business meetings and for discussion of the papers.

Dr. MacDonald's motion was seconded by Dr. J. G. B. Lynch and carried. Dr. Cochrane advised that Dr. Grant would speak on the next item on the agenda, the cost of advertising booths. Dr. Grant stated that at the last annual meeting it was decided that if the hotel at the place chosen for the annual meeting were adaptable, we should sell advertising space to the various biological and pharmaceutical firms. He said that twenty firms had already shown an interest in advertising next year, and we had in mind that we would charge \$50.00 a booth. It was moved and seconded by Dr. J. G. B. Lynch and Dr. H. K. MacDonald that the Secretary get the best fee he can out of it. Carried.

The following letter was read by the Secretary.

Ottawa, Canada, Aug. 24, 1944

Secretary, Canadian Medical Association
184 College Street
Toronto, Ontario

Army Programme on Physical Rehabilitation

Dear Sir:

As you may be aware, the Canadian Army has embarked on an extensive programme of Physical Rehabilitation of casualties. This programme is in operation both abroad and in Canada and while it is still to some extent in the development stage, it is considered that it will be of increasing importance as time goes on, not alone in the Army but for its influence in civilian fields.

Up to the present comparatively little attention has been paid to the matter of physical rehabilitation of casualties by any group in the profession except those who were particularly interested in physiotherapy as a specialty and the Compensation Boards in the various provinces.

The Army has undertaken not only to provide special centres for treatment of all types of casualties, but medical officers are being especially trained for work in this field and a great deal of attention has been given to the educational and research aspects. In this connection the R.C.A.M.C. has available a number of moving picture films which would be available for showing. Titles of some of these are:

"Making the Grade"
"Life Begins Again"
"Fit to Fight"

On request, the R.C.A.M.C. would be prepared to provide these films and/or officers especially trained for physical rehabilitation for use in district or other medical association meetings throughout Canada. Such requests should be addressed to the Director General of Medical Services, allowing sufficient time to make the necessary arrangements.

It is felt that the Army is in a position to make a definite contribution to the advanced thinking along this line in Canadian medical circles and the purpose of this letter is to offer such facilities and services as we may be able to put at the disposal of the general profession.

Yours very truly

(Sgd.) G. B. Chisholm, Major-General
Director General of Medical Services

It was suggested that the Secretary find out from the Army how long the different films would take to run off, and that a copy of Major-General Chisholm's or an abstract of it be sent to the different branch societies.

The following letter was next read by the Secretary.

184 College Street
Toronto 2B, Nov. 2, 1944

To Secretaries of Divisions

Dear Doctor:

As you are no doubt aware, for the past two years the Canadian Medical Association has been publishing *The Overseas Bulletin*, five issues having been forwarded, to date, to our colleagues overseas. The purpose of this publication has been, primarily, to enlighten the men overseas with regard to the study of health insurance here in Canada.

At the last meeting of the Executive Committee, the opinion was expressed that it would be advantageous if the next issue could contain as much information as possible with regard to medical service plans now in operation, and it was agreed that the Divisions be asked to send us, as soon as possible, a report regarding voluntary medical service schemes now operating in their areas.

It will be very much appreciated if you will let us have a report from your Division at your earliest convenience.

Thanking you, I am,

Yours sincerely

(Sgd.) T. C. Routley
General Secretary

The Secretary stated that he had sent a copy of this letter to Dr. Eric Macdonald, Chairman of the Economic Committee, and advised that we have no voluntary schemes in Nova Scotia.

The following letter was next read by the Secretary.

184 College Street
Toronto 2B, Nov. 2, 1944

To Secretaries of Divisions

Dear Doctor:

Acting upon the instructions of the Executive Committee, I am bringing to your attention the following resolution which was approved by General Council last May and later referred to the Association of Medical Colleges and the licensing bodies of the different provinces:

“That we recommend for the consideration of the Association of Medical Colleges and the Colleges of Physicians and Surgeons the question of standardizing the pre-medical year which would make it possible to take this at any school where it is available—”

This matter is referred to your Division for consideration and such action as you see fit to take.

Yours sincerely

(Sgd.) T. C. Routley
General Secretary

Dr. J. G. B. Lynch moved that a copy of this letter be sent to the Provincial Medical Board which was seconded by Dr. MacDonald, and carried. As the Provincial Medical Board would meet the next evening, the letter was given to Dr. H. K. MacDonald to present at the meeting.

(Later) The letter was presented to the Provincial Medical Board, who returned it to The Medical Society of Nova Scotia as they considered it a matter for the Faculty of Medicine of Dalhousie University.

The following draft of proposed changes in the set-up of the Medical Services of the Canadian Army, as presented to the Executive Committee

of the Canadian Medical Association by Major-General Chisholm, Director General of Medical Services, was next read by the Secretary.

DRAFT

Attached is a draft of changes in the set-up of the Medical Services of the Canadian Army which are being suggested by Major-General G. B. Chisholm, Director General of Medical Services, with the following statement attached:

"It is believed that the whole organization of all the functions under the control of the Director General of Medical Services should be reviewed with the object of bringing the organization more in line with the function as it is now working. Rapid expansion of function has occurred and has been covered by the placing of certain professional groups under the direction of the Director General of Medical Services but without incorporation in the Medical Corps. At the same time considerable numbers of other professional people representing a variety of professions have been brought into the Medical Corps and in very many cases in commissioned ranks though they are not qualified medical practitioners. This has produced a situation where considerable numbers of people, whose work is under the director of the Director General of Medical Services, are wearing Infantry, Artillery, Armoured Corps, General Services and various other uniforms and badges. At the same time very considerable numbers of officers are wearing medical badges who are not medical practitioners but are indistinguishable from doctors.

"Because battlefields now have spread into very many parts of the world where conditions of services affecting the health of troops very widely, the function of the Director General of Medical Services and his staff has increased very considerably in the field of liaison, research and advice to general staff and others in relation to health matters of all kinds under widely varying conditions. These responsibilities demand consideration of social and all kinds of environmental conditions in many countries. While these and many other technical considerations including the selection of suitable types of men and women for employment in many jobs and places are accepted as within the broad field of health, there is considerable question as to the validity of their inclusion in the responsibilities of a 'Medical Corps.'

"The draft recommendations attached hereto have been approved by the Deans of the Medical Colleges of Canada, by the National Committee for Mental Hygiene (Canada), by the Executive Director of the Canadian Welfare Council, the Canadian Psychological Association, and the Civilian Advisory Committee to the Director General of Medical Services."

The Executive Committee of the Canadian Medical Association has considered these recommendations and is now referring them to the Provincial Medical Association for their consideration and opinions.

DRAFT

1. During recent years a trend on the part of Medicine in other countries to broaden its field of interest in order to ensure better prevention and treatment of disease has developed. For instance Oxford University has set up a chair of Social Medicine. Other Universities will undoubtedly follow this course but it will be a number of years before there will be much effect on the profession at large from such teaching. What is being taught at Oxford is much the inclusive attitude of this Directorate—an attempt to teach Doctors to use all possible resources in prevention and treatment of disease, and particularly the parallel disciplines of Psychology, Social Science and Sociology.

2. The R.C.A.M.C. has now achieved a loose functional organization, under the D.G.M.S., with Psychology, Personnel Selection and Social Science. Within this group many professional groups and interests are represented, some medical and some non-medical—in the narrow sense in which "Medical" means "Doctor of Medicine." Among such groups and interests are: Medical (including various groups of Specialists) Surgical (Ortho-

paedic, Plastic, General, Genito-Urinary, Vascular, Neuro-) Preventive Medicine, Hygiene and Sanitation, Psychiatry, Pathology, Anaesthesia, X-ray, Physical Medicine, Nursing, Biochemistry, Nutrition, Dietetics, Chemical Warfare, Epidemiology, Medical Research (various groups), Psychology (various groups), Rehabilitation, Pharmacy, Social Science, Physiotherapy, Occupational Therapy, Optometry, Hospital Administration, Medical and Surgical Supply, Venereal Disease Control, Night Vision Training and Testing, Medical Intelligence, Medical History, Liaison (U. K., Washington, Red Cross, St. John's Ambulance, Canadian Medical Association, Canadian Psychological Association, National Committee for Mental Hygiene, Medical Colleges, etc.), Medical Procurement and Assignment, Statistics (Medical, Surgical, Epidemiological, Social, Sociological), etc.

3. Some of these are, in the narrow sense "Medical," some are not, and some (such as Pathology, Biochemistry, etc.) may or may not be. Many of the "non-medical" disciplines represented are well developed professional callings in their own right. While functionally properly grouped, they should not be called "Medical" and should not really be a part of a "Medical" Corps. It is increasingly obvious also that Medicine generally is outgrowing the narrow implications of the designation "Medical" which still implies a bottle, powders, pills or lancet.

4. Illustrative of the widened interests of the groups functioning under the D.G.M.S. are, among others, the following developments:—Personnel Selection, Social Science, Pulhems System, Casualty Retraining Centres, The Link Training System, Recruit Development Centres, Education Basic Training Centres, Special Training Centres, Industrial Hygiene Program, Night Vision Training and Testing, Venereal Disease Control, Psychological Problems of Demobilization, Tump-Line Film, Shoek Film, Survey of R.C.M.P., Survey of Personnel Needs of Canadian Navy and set up of their Personnel Organization, Dust Control Program, etc.

5. The orientation of the profession as a whole is more and more turning toward prevention and environmental treatment. As a result "Health Centre" is now a much more appropriate designation than "Medical Inspection Room" for the Camp Centre where medical, surgical, social, psychological, personnel, X-ray, biochemical, pharmaceutical, and other work is done. The great importance of mental health which includes total relationship to environment, has been recognized in all armies.

6. All these considerations force the conclusion that any organization dealing adequately with the whole field of health cannot be confined within the narrow designation of "Medical." Though the indivisibility of social, psychological and medical problems in the health field is recognized, it is manifestly unfair to subjugate advanced professional disciplines such as psychology, social science and others to "Medicine." It is, however, of the greatest importance that these professions should be brought together in the closest possible intimacy under a common name which will signify their common purpose. The lowest common denominator is "HEALTH" not "MEDICINE."

7. Because of all these considerations and because of the very desirable impact on teaching in Canadian Medical Schools in the direction of broadening of Medical Education, it is therefore strongly urged that consideration be given to the setting up of a "Royal Canadian Army Health Corps" which will include all the diverse professions now functioning as a team under the D.G.M.S.

8. It is also recommended that the designation of the Director General of Medical Services be changed to Director General of Health Services and that corresponding changes be made in all designations throughout the corps.

9. It is further recommended that qualified Doctors of Medicine continue to wear the present bronze badge but that the word "Medical" on it be changed to "Health," and that all other members of the "Health Corps" wear a silver colour badge of the same design.

(Sgd.) G. B. Chisholm, Major-General
Director General of Medical Services

Dr. H. K. MacDonald stated that he was present at the Executive meeting of the Canadian Medical Association when this matter was discussed and there had been a great deal of discussion, and Major-General Chisholm was also present at the same meeting. After some discussion it was moved by Dr. MacRae and seconded by Dr. Gosse that the Executive in session go on record as being opposed to the draft, and that it should be brought before the general meeting, and that in the meantime a copy should be sent to the branch societies, and that the Secretary write to Dr. Routley advising that we are against it in principle, but that it would be taken up at the regular business meeting.

At this point Dr. W. G. Colwell arrived and was asked by the President if he had anything definite to report regarding the next meeting of the Dalhousie Refresher Course and Dr. Colwell replied that it would probably be held next October.

The Secretary next read the following letter.

184 College Street
Toronto 2B, Nov. 18
1944

TO SECRETARIES OF DIVISIONS

Dear Doctor:

Re Annual Fee

We have already advised you that, for the years 1944 and 1945, each Division is entitled to an abatement of \$1.00 from each \$8.00 fee collected for the C. M. A. In order that the Divisions may have the full advantage of this provision, it will be proper for you to collect, in 1945, the sum of \$8.00 in respect to each C. M. A. membership, remitting \$7.00 to this office and retaining \$1.00 for the Division.

It will be observed that two points stand out in this arrangement:

- (1) That the C. M. A. fee still stands at \$8.00; and
- (2) That the \$1.00 abatement in each of the years 1944 and 1945, accrues to the benefit of the Divisions.

Yours sincerely

(Sgd.) T. C. Routley
General Secretary

The Secretary advised that the rebate for 1944 amounted to \$261.00.

The Secretary next read a letter from Dr. P. E. Belliveau of Meteghan.

Meteghan, N. S., Oct. 21, 1944

Dr. H. G. Grant
Secretary, N. S. Medical Association
Halifax, N. S.

Dear Dr. Grant:

I am enclosing letter sent me by Mr. Crimes of the Oil Controller office, after sending my "Final Book" cover of coupons, Category "E."

This letter was sent a few days after I sent the cover, without any coupons. Therefore, I have no more gasoline for my practice, which, as you know, is extensive, and requires a lot of driving, as I have no hospital here, the nearest ones being Yarmouth, 30 miles away, and Digby, 40 miles away.

It had been stated in the MEDICAL BULLETIN that the doctors would not have any trouble in getting gasoline, but this does not appear to be so now.

I have already called the attention of Hon. V. Pottier of Yarmouth, as well as that of Hon. F. R. Davis and Hon. J. W. Comeau to this matter, but in view of the fact that several doctors are also on their last book of coupons, I wish to make this known to you, so that measures be taken that the profession be fairly dealt with.

Yours truly

(Sgd.) P. E. Belliveau

Department of Munitions and Supply

100 Sackville St.

Halifax, Nova Scotia

October 18, 1944

Dr. Pierre E. Belliveau
Meteghan, Digby Co.
Nova Scotia

Dear Sir:

Re: License number 30310

We acknowledge receipt of cover of exhausted "E" book number S2-69121 for license number 30310.

Before giving replacement consideration, we should like to point out that you have received 300 special category units or 900 gallons of gasoline which provides for approximately 17,000 driving miles.

This appears to be a liberal allowance with only the first six months of the rationing period elapsed.

While the requirements of the medical profession are fully appreciated, the actual essential use of the gasoline supplied would call for a survey, in view of the reasonable gasoline restrictions.

Yours very truly

(Sgd.) H. G. Crimes

Assistant Regional Director—Gasoline Rationing
for the Oil Controller for Canada

The Secretary advised that he had sent this letter to Dr. Cochrane, and had called Mr. F. W. Annand, Regional Oil Controller, who stated that in the case of country practitioners there had never been any hold-up or any delay.

A second letter from Dr. Belliveau dated November 6, 1944, was then read.

Dear Doctor Grant:

I thank you for your letter of Oct. 30th regarding the gasoline situation for doctors and for the interest you have taken in this matter.

As far as I am concerned, the difficulties have been ironed out in this way. Mr. Crimes, assistant controller at Halifax told Hon. V. Pottier, M.P., at Yarmouth, N. S., that he would send me "some" coupons upon receipt of a letter from me to justify this action. The coupons I have received consist of one book stamped "This is Your Final Book" inside the cover. This is 180 gallons, and will carry me to some time in December.

I hope that when I finish this book of coupons I shall not be refused again a further supply. I had to refuse calls the other week when out of coupons, and get somehow to an automobile accident which was fatal to a little boy 12 miles away from here in Grosses Coques, N. S.

I thank you for your cooperation in seeing that doctors, with the aid of the Medical Society, be given a fair deal, so that they get an adequate supply of gasoline to travel all that is necessary for the benefit of their patients.

Yours sincerely

(Sgd.) P. E. Belliveau

The Secretary next read the following letter.

Bear River, N. S., Nov. 20, 1944

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

Dear Doctor Grant:

Enclosed you will find a letter I received recently from the Dependents' Advisory Committee, Halifax, and also a copy of the letter I wrote to them in reply. In any correspondence that I have had with this committee, there have been no names mentioned, exception that of "Claire Fulton, Secretary." No doubt you will be able to contact the gentlemen who form the Committee.

I feel that there are a few things which should be straightened out. First of all, the letter I received is, clearly, a Form Letter. The objectionable part is, as stated in my letter to them that settlement in this manner, would lead a patient to feel that a bill for an excessive amount had been presented, and that the Committee had arranged, one might almost say, forced, a reduction. There is, in this Form Letter, just a little bit of a suggestion that the Doctor had better accept the amount as "in full" or else the Committee might not do anything. I am sure that you and Doctor Cochrane, and all the other members of the Executive will agree with me when I state that Doctors, as a whole, are very ready to make a reduction for a patient, especially in the case of a settlement. It is imperative, to my mind that any reduction be a matter between the doctor and the patient, and that outside parties should not be given the privilege of being generous with our services.

I hope to be in Halifax very soon, for the meeting of the P. M. B. and hope to see you then.

Yours truly

(Sgd.) A. B. Campbell, M.D.

Dependents' Advisory Committee
144 Hollis Street
Halifax, N. S.
Nov. 7, 1944

Dr. A. B. Campbell
Bear River, N. S.

Re: Gardiner, Harry C.—No. 2714—Wife: Dorothy Gardiner, Clementsport, N. S.
Dear Sir:

The above named Mrs. Gardiner applied to this office for assistance submitting a bill from you for \$185.50.

The Board is willing to meet this bill at the rate of \$150.50, and a cheque in this amount is enclosed herewith. If you are able to accept this cheque in full settlement, we should be glad to receive your receipt at your convenience.

If you are unable to accept this settlement, please return the cheque to us as soon as possible.

If we do not hear from you to the contrary within one month of the date of this letter, we shall assume that this arrangement is satisfactory and shall inform the applicant that her obligation is settled.

Yours sincerely

(Sgd.) Claire Fulton, Secretary

P.S. This settlement does not include Dr. Rowter's charge for anaesthetic for which a separate bill was rendered.

Bear River, N. S., Nov. 20, 1944

The Dependents' Advisory Committee

144 Hollis St.

Halifax, N. S.

Gentlemen:

Re Gardiner, Harry C., No. 2714—wife, Mrs. Dorothy Gardiner, Clementsport, N. S.

Attention Claire Fulton, Secretary

Enclosed you will find the cheque for \$150.50 sent me in your letter of November 7th, with the suggestion that I accept it as in full settlement of this account. I feel unable to accept this settlement because, on going over the bill, I feel certain that the total amount of \$185.50 is not excessive for the services rendered Mrs. Gardiner and her child. Mrs. Gardiner's case was a difficult one, and required considerable attention both before and after her operation. She lived at Clementsport, eight miles from here, and previous to her admission to hospital, had to be seen there. The calls for her child were also at the home in Clementsport.

I realize that the Committee cannot appreciate all these points in connection with attendance on a patient. I would suggest that a cheque be made out, for the sum of \$150.50, and made payable to Mrs. Gardiner and myself,—that this cheque be sent to Mrs. Gardiner notifying her that this assistance can be given her by the Committee, and instructing her to endorse the cheque and send it to me. This has been done in the past by the Committee and has been a very satisfactory way of handling these cases. I feel that any reduction made in an account, should be between the doctor and the patient. Settlement of the bill by the method suggested in your letter of Nov. 7th, would, in my mind, lead the patient to feel that a bill for an excessive amount had been presented, and that your Committee had arranged to have it reduced.

I am sending a copy of this letter to Dr. H. G. Grant, Secretary of the Nova Scotia Medical Society, with the request that he talk the matter over with the Executive and with your Committee. It hardly seems fair for any Committee to be so generous with a Doctor's time and his accounts, especially at this time, when civilian practice is such a treadmill.

Yours truly

(Sgd.) A. B. Campbell, M.D.

Encl. (1) cheque returned.

Dr. J. G. B. Lynch advised that this was very similar to points brought up at Toronto last spring and the feeling was that there was interference between the doctor and the patient.

Dr. H. K. MacDonald stated that this matter was brought up at the meeting of the Executive of the Canadian Medical Association and there had been a three hour session on it. Mr. Pembroke is chairman of the committee that functions in Ottawa and is appointed by the Government. A scale of fees had been submitted by the nine different provinces and the idea was that they take the highest and lowest fees and strike an average. Brigadier Meakins spent hours on it in order to get a scale of fees which would be acceptable. The present scale of fees which the Department of Pensions and National Health has been using, is twenty years old. The representatives of the nine provinces present at the meeting refused to accept that fee and that is where the matter now stands.

After further discussion Dr. Gosse moved that the Secretary make such representation to the General Secretary of the Canadian Medical Association as may be necessary to at least bring the local situation in line with the views expressed by the National President of the Board as stated by Dr. H. K.

MacDonald. This was seconded by Dr. Reid and carried. It was suggested that it might be a good idea to send Dr. Campbell's letter along to Dr. Routley.

Dr. Cochrane then brought up the question of one hundred per cent membership in the Society and advised that he and Dr. Grant had met with Dr. MacDougall, Chairman of the Provincial Medical Board and the matter had his sympathy but he had no solution to offer, and thought there may be a great many difficulties encountered and the move should be made slowly and carefully. It would mean the changing of several clauses of the Medical Act.

Dr. MacDonald suggested that a questionnaire be sent out to the different branch societies.

Dr. Blackett thought that looked like a stall, because the difficulties that exist in Nova Scotia cannot be any greater than in New Brunswick. As letters had already been sent to the branch societies he failed to see what advantage could be gained by sending out a questionnaire. At the annual meeting in July the Pietou, Cumberland and Valley Medical Societies had stated they were in favour of such a resolution.

After further discussion it was moved by Dr. Lynch and seconded by Dr. Morton that a committee be appointed to go before the Provincial Medical Board, which meets to-morrow evening, to discuss the matter. Carried. The President and Secretary and Dr. Reid were the committee appointed.

There being no further business the meeting adjourned at 5.05 p.m.

* * * * *

On Thursday evening, November 30, 1944, a committee made up of Dr. P. S. Cochrane, the President, Dr. H. G. Grant, the Secretary, and Dr. J. W. Reid, appeared before the Provincial Medical Board. Dr. Cochrane presented the request of The Medical Society of Nova Scotia stating that for a number of years The Medical Society had been attempting one hundred per cent membership and that we were now requesting the Board to put on an annual licensing fee which would be sufficient to cover the fee to The Medical Society of Nova Scotia, the Canadian Medical Association and the cost of collection, and that from this composite fee a certain amount would be returned to The Medical Society of Nova Scotia from the Provincial Medical Board each year. Dr. Grant made a few remarks supplementing the presentation of the President and so also did Dr. Reid. The committee were kept for a while and certain questions were asked by members of the Board in an endeavour to see how this could be brought about. The committee then retired and were promised that the matter would be discussed further by the Board and that we would be notified shortly of their action.

Abstracts from Current Literature

THE CLINICAL USE OF PENICILLIN IN GENITOURINARY INFECTIONS. Thompson, G. J., Jour. Amer. Med. Ass., 1944, 126:403.

Thompson reports on the clinical use of penicillin in 500 cases in which a diagnosis was made of gonococcal infection of the urethra or its adnexa and 100 cases in which the patient suffered from various nonspecific infections of the genitourinary tract. All the patients were of the male sex.

According to this paper, the following conclusions were formulated. Penicillin is a particularly valuable drug for the treatment of gonorrhoea. The most practical method of administration is the intramuscular injection of a solution containing 5000 or 10,000 units per cubic centimeter. Doses of 20,000 units injected every three hours until 100,000 units has been given will result in cure in fully 98 per cent of the cases. Penicillin is unstable in solution and at room temperature will rapidly lose its antibacterial power. Solutions should be freshly prepared and kept in the icebox between injections. Penicillin is an extremely useful drug in the treatment of various nonspecific infections of the genitourinary tract. If the infection is caused by penicillin sensitive organisms the result of treatment is excellent. In most cases, however, the infection is of mixed type and the result of therapy is not dramatic. Nevertheless it is worthwhile. Penicillin combined with other urinary antiseptics in these cases might well be superior to other methods of treatment. The results of treatment in urologic cases can be determined well by making repeated Gram's stains of the urethral or prostatic secretions or of the sediment of the centrifuged urine. Treatment with penicillin is so devoid of toxic reaction that there is no reason to outline difficult schedules or to use complicated methods. The physician need not be fearful of using too much of the drug and should follow the dictum that the dose of any medicine is "enough."

No serious toxic reactions were noted in any of the 600 cases. One patient had an elevation of temperature to 101.5° F., but this was attributed to some contaminant rather than to the penicillin. Several days after treatment 2 patients had a mild macular eruption which faded quickly. Three patients had an id reaction on the palms which very definitely was precipitated by injections of penicillin. It was found unnecessary to alter the diet in any way in these cases.

COMBINED PENICILLIN AND SULFONAMIDE THERAPY IN THE TREATMENT OF PNEUMOCOCCIC MENINGITIS. Waring, A. J. and Smith, M. H. D., Jour. Amer. Med. Ass., 1944, 126:418.

The authors report on their results of twelve patients with pneumococcal meningitis who were treated with combined penicillin and sulfonamide therapy. The sulfadiazine and sulfapyridine compounds were used in these children. The initial dose in most instances is given intravenously in the form of the sodium salt, which for children is 0.05 gm. of the sodium salt per kilogram of body weight, freshly made up in a 5 per cent solution with distilled water. At the same time the patient receives 0.1 gm. per kilogram of body weight by mouth or, if unconscious, by stomach tube. From then on approximately

0.2 gm. per kilogram of body weight is given in six divided doses during each twenty-four hour period. Adults receive initially 3.0 gm. intravenously and 2.0 to 4.0 gm. by mouth at the same time. Subsequently 1.0 gm. is given every four hours. Blood levels are determined daily, and the dosage is manipulated in such a manner to assure the maintenance of a blood concentration between 6.0 and 12.0 mg. per hundred cubic centimeters. Actually, levels over 4.0 mg. per hundred cubic centimeters are probably effective, and it has been shown in the authors' experience that no advantage is achieved by obtaining levels higher than 12.0 mg. per hundred cubic centimeters. The only drug reactions encountered were both in adults and consisted of drug fever.

Penicillin therapy was instituted by the intramuscular and intrathecal routes as soon as the diagnosis was established. There is no regular dosage system for this agent, but the following general rules are observed: Infants and small children receive daily 5,000 to 10,000 Oxford units intrathecally. During the first two or three days of treatment this is given twice daily in dosages of 2,500 to 5,000 Oxford units. Thereafter a single intrathecal injection of 2,500 to 5,000 units is given daily. Infants and small children also receive 1,500 to 2,500 units intramuscularly every three hours day and night, a total of 12,000 to 20,000 units daily. Older children and adults receive 10,000 to 20,000 units intrathecally daily and 5,000 to 10,000 units intramuscularly every three hours day and night.

The penicillin is prepared for intrathecal injections by taking up the required dose in five cc. of sterile isotonic solution of sodium chloride. A lumbar puncture needle is inserted into the spinal canal and approximately 5 cc. of spinal fluid allowed to drip out into the sterile container. The penicillin is then slowly injected by syringe into the spinal canal. Particular care is taken to avoid going into the same interspace twice in succession; the three upper lumbar spaces are used in rotation. Whenever possible, treatments are performed by the same individual; rigorous sterile technic is always employed, the operator preferably wearing rubber gloves.

The general rule which has evolved for the maintenance of combined therapy is that treatment be continued for at least six days following the last positive spinal fluid culture. After this period has elapsed penicillin is withdrawn, but the sulfonamide is continued for an additional seven to fourteen days. After the sulfonamide has been discontinued, the patient is kept in the hospital for at least a week with no specific treatment at all.

Unless there is obvious need for surgical drainage of a sinus or a mastoid it is felt that these procedures should be avoided. Myringotomy is performed freely as indicated. In any event it is the policy to defer any surgical procedure until the acute phase of the illness has passed.

General supportive measures are used as indicated. Fluids are forced by mouth and gavage. If vomiting is a prominent feature, the fluid complement is maintained through intravenous or subcutaneous routes. In the face of high fever or collapse, continued intravenous infusion is employed and blood plasma, 10 per cent glucose, 5 per cent glucose and isotonic solutions of sodium chloride are given as indicated. For infants the authors used 0.45 per cent in preference to isotonic solution of sodium chloride.

Sedation is often necessary. Paraldehyde is used either by gavage or intramuscular injection, and the use of the barbiturates, codeine and morphine is avoided.

In 12 consecutive cases of pneumococcic meningitis combined use of sulfonamide and penicillin was employed according to the aforementioned instructions. Eight of the patients were infants ranging from 2 to 16 months of age. One was a child of seven years. The remaining 3 were adults. The majority of the cases were seen early in the disease, 9 within the first 48 hours, 3 within the first 72 hours.

Of these twelve patients, eleven recovered and one died. Death occurred within ten hours of admission. Three had previously failed to respond to penicillin therapy alone. These results are better than the authors' experience with sulfonamide alone, with sulfonamide and serum combined or with penicillin alone. If combined sulfonamide and penicillin therapy is used, particular pains must be taken to pursue both forms of treatment vigorously as well as simultaneously.

ANESTHESIA FOR THE PATIENT IN SHOCK. Gould, R. B., *Anesthesiology*, 1944, 5:129.

The chief duty of the anesthetist in a shock case is to avoid any agent or technique which might enhance the attendant anoxia. The manifestations of shock include pallor, thirst, vomiting, perspiration, oliguria, a rapid, weak pulse, and declining systolic and pulse pressures. Moon's theories on this condition are brought forward with emphasis on the progressive circulatory deficiency, hemo-concentration and generalized anoxia. Stress is laid upon the fact that a fall of the blood pressure is not an essential feature of shock, for the latter may be present while the arterial pressure is well maintained. A period of observation before operation is essential for the evaluation of the degree of shock. Hemo-concentration is considered one of its earliest signs. An erythrocyte count from five to six million represents a hemoconcentration of 20 per cent, and is an infallible sign of the presence of shock even in the absence of any other effects of circulatory deficiency. A concentration of 40 per cent is a grave sign and is usually accompanied by a fall of the blood pressure, while a concentration of over 40 per cent leads to a grave prognosis. In the estimation of the anesthetic risk of a patient in shock, age is considered of prognostic importance, the mortality being eight times as great in patients over fifty years of age as in patients below this age.

Adequate resuscitation is imperative and surgery should be postponed while shock is present. In a few cases only does early operation save life. The treatment of shock should involve absolute rest in the "head down" position, warmth, simple surgical measures, and intravenous therapy. Plasma, blood, or saline solution can be given as the indication arises. The rate of infusion is usually three-quarters of an hour for the first two pints, with the subsequent rate of one pint every three to four hours. A rise of from 10 to 20 mm. of mercury in the systolic pressure may be expected after each pint of blood or plasma is transfused. Oxygen may be a life-saving measure. The selection of the anesthetic agent and the technique to be used is of utmost importance, and the author evaluates the various anesthetic methods available. He considers nitrous oxide and oxygen an inadequate anesthetic for the patient in shock because of the impossibility of producing narcosis in the majority of patients without some degree of attendant anoxia. Ether is the safest agent for experienced and inexperienced anesthetists alike. It can be used alone or as a supplement to nitrous oxide and oxygen. The place that pentothal

occupies in the shock case is still a questionable one, more experience being needed before this drug can be well evaluated.

CONGENITAL PYLORIC STENOSIS. Vance, C. A., *Ann. Surg.*, 1944, 119-351.

Congenital pyloric stenosis is the most common condition that requires surgical treatment in the first few weeks of life. The baby with this condition has an increase in size of the pyloric muscle, so that the lumen is compressed and obstructed and there are signs of high intestinal obstruction.

The mortality in this condition varied from 50 to 75 per cent prior to 1908. To-day, proper surgical technique combined with good preoperative and postoperative care has reduced the mortality in competent hands from 1 to 2 per cent.

The cause of congenital pyloric stenosis is not understood. Three factors seem to enter into its formation: (1) congenital hypertrophy of the pyloric muscle; (2) spasm, which may be secondary to the congenital hypertrophy; and (3) an added compensatory or work hypertrophy. It affects male children predominantly, in a ratio of about 9 or 10 to 1. There seems to be a preference for first-born babies who are robust and above the average weight at birth. It would appear that the parents are most often young, healthy, and in favourable economic circumstances. Familial occurrence has been frequently mentioned in later reports.

The pathological findings are hypertrophy of the circular pyloric muscle and an actual increase in the number of smooth muscle fibers. This produces an olive-sized, bulbous or fusiform mass which has a smooth external surface. It seems almost as hard as cartilage. The lumen of the stomach is gradually reduced in size toward the pylorus, but the lumen of the duodenum assumes its full size at once because of the abrupt termination of the pyloric sphincter at its distal end.

The symptoms of all cases are those of high obstruction and severe loss of body fluids. Symptoms start suddenly with vomiting which becomes projectile and is followed by constipation, loss of weight, and exaggerated gastric peristalsis. However, the pathognomonic symptom which makes certain the diagnosis of congenital pyloric stenosis is the presence of a palpable tumor in the right upper quadrant, a little above the level of the umbilicus at the outer border of the right rectus muscle. Roentgenological examination is not always necessary. There are, however, a few cases in which the history is atypical, or the physical examination is unsatisfactory, and whenever the diagnosis is in doubt, it is best to obtain additional information by roentgenological examination.

Operative treatment for congenital pyloric stenosis is not an emergency procedure, and a baby destined to surgery should be prepared for operation by a good medical regimen.

Through a high rectus incision on the right side the pylorus is delivered into the wound and the tumor held between the thumb and index finger while a longitudinal incision is made over the tumor at its least vascular part until the mucosa is bulging. Then the back of the knife is used to complete the operation until the mucosa is bulging into the wound. Any bleeding can usually be controlled by moist pads. It is most important to see that all bleeding is stopped before the abdominal-wall incision is closed because death due to hemorrhage from the pyloric incision has been reported. The complication

most to be dreaded is the accidental opening of the duodenum. The change from thick pyloric tumor to thin duodenum is abrupt, therefore great care must be exercised in separating the cut edges of the muscle toward the duodenal end.

After the pyloromyotomy for congenital pyloric stenosis, gastric peristalsis is inhibited for several hours or longer. Water is given sparingly at first and if the child is not vomiting at the end of twelve hours, a suitable formula or breast milk is started and given every three hours. At the end of two weeks generous feedings are tolerated, the baby is gaining weight normally, and the wound has healed.

CANCER OF THE LIP. A STUDY OF 56 FIVE-YEAR CASES. Whitcomb, C. A.,
Am. J. Surg., 1944, 63:304.

After cancer of the skin, cancer of the lip is the commonest type of malignancy occurring in men; 148 men were treated for squamous carcinoma of the skin of the face during the same period in which 56 men were treated for cancer of the lip. Cancer of the lip in women occurs rarely, and on the upper lip. Cervical metastasis is usually the cause of death. A five-year survival of 15 per cent of the patients who had metastasis (stages two and three), and of 83 per cent of those without metastasis was recorded by the author. The prognosis in cases of metastases from cancer of the lip is better than that in metastases from cancer of the mouth or of the throat; 1 lip cancer in 4 metastasizes to the cervical lymph nodes, and visceral metastases are rare. Death occurs as a result of uncontrolled metastases of the neck, not from cancer of the lip itself.

X-rays, radium or surgery may be used successfully to destroy cancer of the lip. Surgery is believed to be a better method of treatment than radiation because it does not depend for its success upon the unpredictable biological reaction of tissues to irradiation, which is called radiosensitivity.

The lip cancer was excised in 41 of the 56 patients; 9 were successfully treated by radium only, and 1 patient was treated by radium and surgery; in the remaining 5, the cancer of the lip had been destroyed before admission of the patients to the hospital. Prophylactic treatment of the lymphatics of the neck by means of surgery or X-rays is not necessary because most cancers of the lip do not develop metastatic nodes. Follow-up examination of the neck is a more ideal form of treatment. Movable metastatic nodes are treated, by choice, by block dissection of the cervical lymphatics. The cancer cells in lymph nodes can be destroyed by the combined effect of irradiation and radon implant—rarely, if ever, by external irradiation alone; but the disease in the neck may be cured by combined irradiation only if no new metastatic nodes develop in the implanted area or elsewhere in the neck.

Fixation of large submaxillary metastasis from lip cancer is sometimes due to tension of the walls of the submaxillary space rather than to the invasion of the mandible or floor of the mouth. This type of fixed metastasis is operable.

Fortunately, bilateral submaxillary metastasis from lip cancer are not necessarily simultaneous. A difference in the time of appearance of nodes on the two sides of the neck permits convalescence from one neck dissection before operation is needed on the other side of the neck.

E. DAVID SHERMAN, M.D.

Abstract Editor

Issued by the Department of the Public Health Nova Scotia

Dear Doctor:

There is throughout Canada at the present time a great deal of interest among all classes and groups of the population in the problem of venereal disease.

It is felt that it would be of value to you if we outlined briefly some of the steps which have been taken, and some of the plans which have been made to solve this problem. The information which has been gathered by the Armed Services and the provincial health departments of Canada concerning the incidence and prevalence of venereal disease, and the effectiveness of certain control measures, will undoubtedly be valuable to you.

As a result of intensive venereal disease control programmes instituted in the three Services early in 1943, it was discovered that venereal disease was occurring at an alarming rate. By December, 1943, 40,000 cases had occurred among armed service personnel in Canada. It was also discovered that the machinery of most provincial and municipal health departments for tracing contacts of cases of venereal disease, and for getting them under treatment was inadequate and ineffective.

It was discovered that in most Canadian communities there existed a variety of conditions which were directly facilitating the spread of venereal disease. In some cases these situations persisted because of the profit which certain people were making; in other cases, the owners and operators were quite unaware of the part they were playing in spreading the disease.

Because of the information which the Armed Forces have obtained, they have been able to assist and co-operate with health departments in building up more effective contact-tracing organizations, and in correcting, in many instances, the conditions which were facilitating the spread of disease. As a result of these efforts, there has been considerable improvement in some areas, and within the Armed Services the incidence rates have been reduced to less than half.

However, this is only a beginning and a great deal remains to be done. One of the most important objectives at the present time is to educate the people of Canada, as a whole, about the seriousness of venereal disease, about the extent of these diseases among the Canadian population, and about the results which can be obtained by the concerted efforts of all lay and professional groups in the fields of medicine, social services, law and religion.

The 40,000 cases diagnosed in the services, however, are only an index of the Canadian situation, since the incidence among the civilian population is undoubtedly as high as that occurring in the Armed Services. It must be remembered that these 40,000 cases were acquired from infected civilians. Moreover, these 40,000 patients undoubtedly infected many civilians during the incubation period of their diseases.

The very notable improvement in the Armed Service rates has been attributed to two factors. The first is the educational programme within the Services where men have been taught about the diseases, how and where they are acquired, how they can be avoided, and what to do if infected. The

second factor has been the work of provincial and municipal health departments, firstly, in locating and treating infected contacts, thus reducing sources of disease, and secondly, in the action health departments have initiated to correct community conditions which facilitated the meeting and exposure of non-infected and infected persons. It has been repeatedly proved that either factor, alone, is effective, but when both factors are operating, results have been dramatic.

In the next few months an extensive educational programme sponsored by the Federal Government, in co-operation with the Provincial Governments, will be inaugurated throughout Canada. The media to be used will include advertisements and articles in journals, magazines and newspapers, radio programmes, public addresses, moving pictures, and displays.

Emphasis in the campaign will be on the following points:

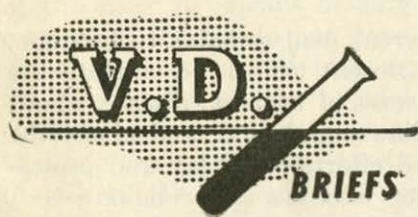
1. The importance of united action on the health, welfare, legal and moral fronts.
2. The value of pre-marital, pre-natal and pre-employment blood testing in protecting the family group.
3. The part that unsavoury community conditions play in facilitating the spread of venereal disease.

It is hoped that large sections of the general public will be so well informed that they will expect, and even request, blood tests as a part of any medical examination.

It is hoped that the majority of the people will be so well informed of the price they are paying, because of the present epidemic of venereal disease, that they will unite in demanding action by the medical profession, health departments, social agencies, courts of law and the clergy, to stamp out venereal disease.

When the public knows the facts, the real cost of venereal disease, the fact that it is preventable, and that other countries have succeeded in curbing this scourge, a great step will have been taken towards final victory over these diseases.

Halifax, N. S. November 17, 1944



—“Yes it does”—Osler

“But I see an incredulous look on some faces and I hear the whispered comment—’tis heard often enough! ‘Where is all this syphilis? It does not come my way.’ Yes it does. The syphilis we see, but do not recognize, everywhere awaits diagnosis, so protean are its manifestations.” Sir William Osler’s warning to the Medical Society of London, like an unlearned lesson, bears repeating.

—“Treat When in Doubt”—Gonorrhoea in Women

“With the public health in mind it is far better to treat some women who are not infected, than to neglect to treat women whose infection is not obvious but who may serve as a source of infection to others. Any woman who has recently had intercourse with a man known to have gonorrhoea should herself be given treatment regardless of clinical or laboratory findings. Women who are believed or known to practice indiscriminate sexual intercourse are usually infected and had best be treated if leukorrhoea is present. Laboratory evidence in such cases is desirable but not essential for the institution of treatment by the foregoing scheme.”—“Venereal Disease Information,” May, 1943.

“Find V. D. Cont acts—Report V. D. Cases”

Obituary

THE death occurred on November 21st, at Victoria, B. C., of Doctor Gordon Alexander McCurdy. Doctor McCurdy was born at Sydney, N. S., on November 15, 1907, and was educated at Argyle School and the Sydney Academy, and graduated in Medicine from Dalhousie University in 1933. Following graduation he took a post-graduate course at Glasgow University, and returned to Canada in 1934 and was appointed assistant to Dr. Ralph P. Smith, provincial pathologist at Halifax, and continued in this capacity until 1937 when he accepted the position of pathologist at Jubilee Hospital in Victoria. Besides his widow, the former Miss Minnie Black of Fredericton, N. B., he is survived by his parents, Mr. and Mrs. H. B. McCurdy of Sydney, Dr. David McCurdy, with the medical staff of a health centre in London, England, Hugh McCurdy with the Canadian Forces in England and one sister, Mrs. (Dr.) K. B. MacMillan in Pittsburgh, the former Barbara McCurdy.

The death occurred at Toronto on November 25th of Colonel Frederick Samuel Lampson Ford, former District Medical Officer for Military District No. 2 (Toronto) and one-time Inspector of Military Hospitals in Canada.

Doctor Ford was born at Milton, N. S., and received his education at Liverpool High School, the College of Physicians and Surgeons, University of Maryland, graduating in 1894. From 1894 to 1907 he practised medicine in Nova Scotia.

Doctor Ford served with distinction in the First Great War, mobilizing the 1st Canadian Casualty Clearing Station of which he was the officer commanding in Canada, England and France. Later in France and Belgium he became Deputy Assistant Director of Medical Services with the 1st Canadian Division with the rank of Colonel.

After being seriously wounded he was invalided home and appointed Inspector of Military Hospitals in Canada for 1918-19. He held the office of District Medical Officer for Military District No. 2 from 1919 to 1932 when he retired. He was mentioned in dispatches by Sir Douglas Haig and awarded the C. M. G. He also held the 1914-15 Star, the British War Medal, the Victory Medal and V. D.

Colonel Ford is survived by two brothers, Enos of Milton, Queens County, and Robie of Wolfville. He was unmarried.

Burial took place in the family lot at Milton, Queens County, with a service at Trinity Church, Liverpool, in whose chancel hang the war-torn flags of the unit he commanded overseas 1914-17.

Colonel Frederick Samuel Lampson Ford

COLONEL FREDERICK SAMUEL LAMPSON FORD, C.M.G., V.D., M.D., L.M.C.C., was born at Milton, Queens County, Nova Scotia, February 2, 1869, the seventh son and eighth child of the late James Morton Ford and his wife, Ann Letitia Sponagle.

On the paternal as well as the maternal side, he was descended from passengers who came to New England on the ship *Mayflower*, A.D. 1620. His father was descended from John Howland, *Mayflower* Pilgrim; his mother from Richard Warren, *Mayflower* Pilgrim.

William Ford, a paternal ancestor, was born in England in 1604, came to New England in 1621 in the ship *Fortune*, and died at Marshfield, N. E., 1676.

Theodosius Ford, the great, graet grandfather of the subject of the sketch, was born at Hanover, New England in 1735, and came to Liverpool, Nova Scotia, in 1760 with the New England pioneers who founded the town. With him came his wife, Hannah Burgank, and their infant daughter Hannah. Nine additional children were born to this couple after their removal to Nova Scotia. The father died February 20, 1777, at Liverpool, N. S., aged 42 years; cause of death "supposed to be a pleurisie" (Perkins). He was a mariner and is referred to by Perkins as Captain Ford. He was a proprietor of the Township of Liverpool, and ancestor of all who bear the name of Ford in Western Nova Scotia and many of the Freemans and Mortons of Queens County and elsewhere.

Colonel F. S. L. Ford received his preliminary education at the Milton Public School and the Liverpool (N. S.) High School, where he came under the influence of the principal, Nicholas Smith, M.A., who inspired many youths to higher attainments in life. His medical education was received at the College of Physicians and Surgeons, University of Maryland, from which he graduated in 1894 (Gold Medallist); and at London hospitals. From 1894 to 1907 he practised his profession in Nova Scotia. His appointment as a Lieutenant in the Canadian Army Medical Corps was made in November, 1905, and he became a Licentiate of the Medical Council of Canada in 1913.

At the outbreak of the Great War, he was in command of a unit of the Canadian Army Medical Corps, which was recruited up to authorized strength, and taken from Liverpool, N. S., to Valcartier Camp, August 20, 1914. An equal number of all ranks from the corresponding Unit in Toronto joined at Valcartier Camp to form what was officially known as The Clearing Hospital, C. A. M. C. of the Canadian Expeditionary Force, the name to be changed in England to the First Canadian Casualty Station, British Expeditionary Force, which served with distinction in Canada, England, France and Belgium until 1919 when it returned to Canada and was demobilized. The flags of the 1st Canadian Casualty Clearing Station were laid up in Trinity Church Liverpool, N. S., with appropriate ceremonies on Sunday, August 16, 1931.

At Valcartier Camp, Major Ford was promoted to the rank of Lieutenant-Colonel, to command the Clearing Hospital.

Arriving at Plymouth, October 14th, the Unit proceeded to Salisbury Plain, where training was carried out until December 16th, when it was transferred to Cliveden, the country seat of Major William Waldorf Astor, now the Viscount Astor, at Taplow, near Maidenhead. Here the initial steps were taken to organize and equip what afterwards became the 2000-bed Duchess of Connaught Canadian Red Cross Hospital. Departure from Cliveden took place on February 1, 1915, and arrival in France on the 3rd.

During the stay at Cliveden, many kindnesses were showered upon the personnel of the Unit by Major Astor, and his charming and dynamic wife, now the Viscountess Astor, M.P.

The first Canadian Nursing Sisters to serve at the front within the area of active operations, were those of the 1st Canadian Casualty Clearing Station. This also applies to the Dental Services, one of whose officers, Major B. L. Neiley, was upon arrival of the Unit in France, attached for duty. Major Neiley organized and was Officer in Charge of the Dental Laboratory of the Canadian Army Corps, the first laboratory of its kind to be established in an area of active military operations in any war.

In June, 1916, Lieutenant-Colonel Ford was appointed Deputy Assistant Director Medical Services, of the Canadian Army Corps, then commanded by Sir Julian Byng, afterwards Viscount Byng of Vimy. In February, 1916, he was promoted to the rank of Colonel when appointed Assistant Director Medical Services, 1st Canadian Division, commanded by Major General (afterwards General Sir Arthur) Currie, and served in that capacity until seriously wounded at Vimy in 1917. He was mentioned in dispatches by Sir Douglas Haig "for Gallant and Distinguished Conduct in the Field," and awarded the Companionship of the Most Distinguished Order of St. Michael and St. George, following the battle of Neuve Chapelle in 1915, being the first C. M. G. awarded to a Canadian in the Great War. The Insignia of the Order was conferred by His Majesty the late King George V at Buckingham Palace. Other honours and awards include the 1914-1915 Star, the British War Medal, Victory Medal, and the Colonial Auxiliary Forces Officers' Decoration.

After ten months spent in hospital, in 1918 he returned for duty in Canada, and was Inspector of Military Hospitals for all Canada, until June, 1919, when he was appointed Senior Medical Officer, and later District Medical Officer, Military District No. 2 at Toronto, where he continued to serve until retirement in 1932.

A notable incident during Colonel Ford's service in France was the visit paid by His Majesty, the late King George V, and the then Prince of Wales, when the 1st Canadian Casualty Clearing Station was honoured by a Royal visit. His Majesty displayed much interest in the work done by the Unit, and spoke kindly to many of the invalids. This inspection took place on October 24, 1915, at Aire-sur-la-Lye. Four days later, the King, while upon inspection duty, was thrown from his horse and seriously injured. He was taken to a nearby chateau, and the Clearing Station was called upon to furnish dressings and equipment; and a Nursing Sister, Miss Vivian Tremaine, was asked for, and went from the unit to attend the Royal patient. She proceeded to England, and remained on duty at Buckingham Palace during the King's convalescence, and was made, among other marks of appreciation of her services, a member of the Victorian Order. Thus the 1st Canadian Casualty Clearing Station had the unique distinction of being privileged to render personal service to Royalty in the field.

Upon appointment as District Medical Officer of Military District No. 2, it devolved upon him to reorganize the Medical Services of this, the largest Military District in Canada, (in point of number of troops) as well as to supervise and administer the military hospitals, of which there were thirteen, located at Toronto, Whitby, York Township, Burlington, Hamilton and St. Catharines, with 4,500 beds. These had been established to care for the invalids of the Canadian Expeditionary Force who were being transferred from England, as well as for sick and injured from local troops. In November, 1920, these hospitals were transferred to the Department of Soldiers' Civil Reestablishment, afterwards the Department of Pensions and National Health, leaving medical care of the Permanent and Non-Permanent Active Militia, and of the Royal Canadian Air Force at Camp Borden to the Department of National Defence. This work was carried out under the supervision of the District Medical Officer.

In the reorganization and training of the Non-Permanent Medical Services of the Militia, there were raised and trained, five Field Ambulances, one Casualty Clearing Station, and one Field Hygiene Section. The General Hospitals were also organized as to officer personnel, including Nursing Sisters.

Colonel Ford was a member of the Toronto Academy of Medicine, the Canadian Military Institute, the Royal Canadian Yacht Club, the Aesculapian Club, and the Massachusetts Society of Mayflower Descendants. He was an Anglican in religion; Past Master Acadia Lodge, No. 39, A. F., A. M., Bridgewater, N. S., and Past District Deputy Grand Master of Masons in Nova Scotia.

Personal Interest Notes

DR. ROYDEN SIMPSON GASS (Dal. 1925) who has been director of tuberculosis control for Tennessee for the past twelve years, left recently for overseas to serve as consultant on tuberculosis with the U. N. R. R. A. As senior surgeon of the U. S. Public Health Reserve Corps, Dr. Gass holds the rank of Lieutenant-Colonel.

The Bulletin extends congratulations to Dr. and Mrs. Gordon R. Mahaney (Dorothy Davis) of Bridgetown on the birth of a son, Gordon Ralston, on November 18th; and to Dr. and Mrs. G. L. Covert of Halifax on the birth of a son on November 21st.

Dr. and Mrs. A. M. Siddall of Pubnico are at present on a visit to Boston. Dr. Siddall is at the Lahey Clinic for a few days while Mrs. Siddall is visiting at her former home in Somerville.

THE NOVA SCOTIA MEDICAL BULLETIN

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Abbreviations used: Ab. for abstract; anon. for anonymous; biog. for biographical note; C. for correspondence; C.R. for case report; diagr. for diagram; Ed. for editorial; illus. for illustration; Pers. for personal item; Obit. for obituary; port. for portrait.

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