Intravenous Histamine Tolerance Test*

(Preliminary Report)

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*Refer to previous report "Histamine Tolerance in a Schizophrenic" published in the Nova Scotia Medical Bulletin, June, 1955.

INTRODUCTION

OUR present knowledge regarding the physiopathology of schizophrenia may be compared to an apparently meaningless jig-saw puzzle: we have a general idea of the colors in the picture but the contours of the design are still not evident. It has to be admitted, that as far as the etiology and mechanism of this psychosis (or group of psychoses) is concerned, we are still in the descriptive, fact-collecting phase. Much precise observation is needed before its integration into ordered knowledge will be possible. The era of theoretical construction based on experiment ("model-psychoses" induced by mescaline, LSD, adrenochrome, TMA, &c) is only at its dawn. As regards the naturally occurring illness, there is only one clinical entity in the group of schizophrenias which has been more clearly defined from the physiopathologic point of view, namely Gjessing's periodic catatonia, a circularly recurring schizophrenic illness in which the mental disturbance shows a close relationship to nitrogen metabolism, changes in the E.E.G. and blood-oxygen saturation, and which is influenced by the exhibition of thyroid. Apart from Gjessing's catatonia the remainder of the schizophrenic disorders await their physiopathological classification. It is suspected, that in these disorders, there are multiple chains of abnormalities including biochemical aberrations. One of the links in this chain may be the fact, that schizophrenic patients are less reactive to physiological stress than normal individuals.

Insensitivity of schizophrenic patients to stressful stimuli has been reported by many researchers; they have been found to be less than normally sensitive to adrenalin (1,2,3,4,5,) and to thyrotoxin (6); they react much less promptly than normal persons to carbon dioxide tension (7); they suffer no distress when breathing hot, water-saturated oxygen which in one quarter of normal controls causes collapse (8). The enormous doses of insulin required to produce coma in some schizophrenic patients are well known to all who had used hypoglycemic shock therapy (9,10,11); an equally high tolerance was reported for dinitrophenol (12) and A.C.T.H.(13).

Some of these phenomena have been used as a basis for various prognostic and diagnostic tests. The Funkenstein test (in which blood pressure response pattern after injection of epinephrine and mechoyl is used to estimate central sympathetic reactivity) has yielded some measure of success in predicting response to electro-convulsive therapy (14), and in the assessment of the results of treatment with reserpine (15). Hoffer (16) using atropine found differences in sympathetic reactivity in acute and chronic schizophrenics and other psychotics. Pilocarpine was also used in a similar way (17). One of the recent

additions to this battery of tests in which autonomic drugs are used to explore and chart the physiologic substratum of schizophrenia is Lucy's histamine tolerance test (18, 19) which elicits differences between various groups of schizophrenics and which may find practical use in an objective assessment of the length of the schizophrenic process or in differentiating this psychosis from other mental disorders.

The present paper deals with a modification of Lucy's histamine *tolerance* test and introduces the histamine *response* test.

(Critique of Lucy's histamine tolerance test)

The following is briefly Lucy's standard procedure: Histamine is given by subcutaneous injection, the initial dose being 0.75 mgm. (histamine base) and the blood pressure and pulse are recorded in 5 or 10 minute intervals. Thirty minutes after the first injection, a second, larger one is given. This procedure is repeated daily, the amount of histamine being gradually increased until the dose is reached which will cause a fall of blood pressure to 60mm. HG. or below for two consecutive readings, i.e. for ten or more minutes.

The advantage of this procedure is its large margin of safety and the fact that it can be performed by one person. If readings are taken at 10 minute intervals, even two patients may be subjected to the test simultaneously. There are however several practical disadvantages and theoretical objections:

1. *Duration.* The complete test may extend over a period of several days; (nine days in a case of a hebephrenic patient reported by the present writer (20) where the histamine tolerance was 40 mgms. (histamine base)

2. *Use of different solutions.* In order to avoid injection of large amounts of fluid subcutaneously when the dose reaches the 20 mgms. mark, it is necessary to use more concentrated solutions: (13,82 mgms. and 27,65) mgms. of histamine acid phosphate per one cc. instead of the usual solution containing 2,765 or 2,75 mgms. per cc.) Solutions of such strength are not marketed and they have to be specially ordered from the manufacturers. The alternative way would be to use different sites of injection and a smaller dose in each injection. Both methods are introducing variables which may affect the validity of results.

3. *The effect* of histamine given subcutaneously is much less clear-cut than when given intravenously.

4. *Acquired tolerance* or desensitization. A definite increase in tolerance was reported to occur in patients suffering from migraine who had been treated with repeated doses of histamine.(21) Schizophrenic patients who were subjected to Lucy's (subcutaneous) histamine test, and who after a period of six months were given the maximum dose without a previous buildup, have shown a greater fall in blood pressure than in the original test and untoward reactions were more common. It is only in these cases that I had to use epinephrine to counteract severe shock. In one patient who tolerated 11 mgms. of histamine (base) in the test performed according to Lucy's method, the same amount of histamine given six months later produced a fall of blood pressure from 130 mm Hg to 36 mm Hg (systolic) in 12 minutes, with imperceptible pulse, profuse perspiration, cyanosis and defecation.

5. *The arbitrary limit* of "60 mm Hg or below" to which blood pressure is reduced in Lucy's test is felt to be dangerous in patients with high initial blood

pressure. A proportional reduction, say to one half of the initial reading seems preferable.

6. *Five or ten minute intervals* at which readings are taken in Lucy's test are thought to be too long. The pattern of the blood pressure curve can be more accurately traced when recordings are taken in at least 3 minute intervals. The fact that the minute dial on most stop-watches is numbered at 3 minute intervals is also taken into consideration. Lastly, more frequent readings add to safety: an excessive and too rapid fall of pressure is less likely to be overlooked.

7. *Pulse rate* was found to be an unreliable datum as frequently the radial pulse is imperceptible. Stethoscopic recording of heart rate at the apex was necessary in such cases.

The above mentioned considerations prompted me to experiment with the view of introducing a modification of the tolerance test in which the intravenous route is used.

Technique of the Test

A. *Personnel*: In the absence of specialized equipment permitting simultaneous recording of the blood pressure and pulse, at least two, but preferably three persons are required to carry out the test: one to give the intravenous injection, one to take the blood pressure, and one to take the heart rate and record the data.

B. *Material*: (1) Histamine solution (0.276 mgm of histamine acid phosphate per one cubic centimeter i.e. one milligram of histamine base per one cc. of the solution).

(2) A 20 cc. syringe. (The total dose of histamine base required to halve a schizophrenic patient's blood pressure does not as a rule exceed 2 milligrams i.e. 20 cc. To avoid waste of material a 20 cc. syringe is used. In rare cases where tolerance exceeds 2 mgms. the test is repeated, using a 30 cc. syringe.

(3) A sphygmomanometer.

(4) A chronometer.

(5) Epinephrine should be ready at hand as an antidote, (though I never had to use it in more than 100 intravenous injections.)

(6) Two forms for recording data;

C. Procedure:

1. *Assessment of resting blood pressure*: The patient rests (lying) for 15 minutes. His blood pressure is then taken and recorded. Another reading is taken 10 minutes later. If the readings are unequal, their average is considered to be the "initial" BP. This figure divided by two will give the limit to which the subject's BP will be reduced. Administration of histamine is started 5 min. after the second BP reading was obtained, i.e. after the patient had rested for one half hour.
2. The injection is given into the cephalic or basilic vein at the rate of 5 cc. per minute, i.e. in terms of histamine base 0.5 mgm per minute. The injection is discontinued as soon as the blood pressure is reported

to have fallen to one half of its initial value. In practice an error of 2 to 4 mm Hg must be allowed.

3. The blood pressure is recorded continuously for fifteen minutes, but between each reading the cuff is deflated completely. With this method readings are possible at 30 second intervals. The experimenter recording the blood pressure reports the readings verbally to the assistant who is injecting histamine. The latter discontinues injection when the blood pressure shows the desired degree of fall.
4. The heart rate is taken by another assistant who also records the BP readings. During the initial phase of the test, shortly after the injection of histamine the heart rate changes very rapidly and counts are made during 30 second periods and the figure then multiplied by two.
5. The duration of the test is arbitrarily limited to fifteen minutes since by that time the BP usually returns to normal. The BP reading taken at the fifteenth minute is regarded for the purpose of the test as the "final" blood pressure.
6. The BP and heart rate curves should not be plotted immediately on squared paper form since it is very easy to make a mistake by marking the wrong square. The data should be written in figures in four parallel vertical columns on a form with the time marked at one half minute intervals: EXAMPLE

Time (minutes)	I Histamine (cubic cent.)	II Systolic BP (mm Hg)	III Heart rate (beats per min.)	IV Remarks
—15		112	70	
— 5		108	70	
0	start injection	(110)		
½	2,5	105	37 x 2	
1	5	100	39 ,, ,,	
1½	7,5	88	40 ,, ,,	flushing
2	10	78	42 ,, ,,	
2½	12,5	66	43 ,, ,,	skin moist
3	15 stop inj.	56	45 ,, ,,	
3½		50	45 ,, ,,	
4		58	40 ,, ,,	
4½		60	40 ,, ,,	
5		64	38 ,, ,,	perspiring profusely
5½		68	35 ,, ,,	
etc.				

These figures are then plotted on squared paper to form three curves:

1. The systolic blood pressure curve,
2. The heart rate curve and
3. The rate of injection curve.

(The remarks as to patient's physical condition and behavior are entered in appropriate places).

Behavior of the BP and Heart Rate Curves

Phase I. While histamine is being injected at a rate of 5 cc. per minute, the blood pressure falls at a rate of from 8 to 50 mm Hg per minute. There is a correlation between the rapidity of the blood pressure fall and the total histamine tolerance. After the injection has been discontinued at a point where the blood pressure fell to one half of its resting value, (point B on the graph) it may continue to fall for the next ½ to 4 minutes. (The lowest reading occurs at point C on the graph). However, very often it starts to pick up the very moment the injection had been stopped. (In this case points B and C coincide.)

Phase II. Having resumed its upward course, the BP may rise very quickly reaching the pre-injection level in 4 or 5 minutes after the end of injection, or it may increase at a very slow pace and never reach the resting level before the end of the experiment i.e. by the fifteenth minute counting from the start of injection (point E on the graph). Of interest is a point on the curve (D) at which the BP has regained one half of the ground lost. In some patients it is reached very quickly but then there may be either a continuation of the rapid rise or a levelling off of the curve.

This test which I propose to call the "standard rate, sustained stress" test is essentially a quantitative test in which the quantity of histamine is increased in order to attain a pre-determined objective i.e. lowering of BP to one half of its initial value. It can be compared to stretching a coil spring by gradually adding small amounts of weight. The total quantity of histamine used in the test expresses the degree of insensitivity (tolerance) to histamine.

The differences in the behaviour of the BP curve in various individuals suggest that there are qualitative differences as well. The number of cases which have been studied (45) is not sufficient to permit to draw statistically valid conclusions.

Histamine Response Test

In contrast to the "standard rate, sustained stress" test (SRSS) the "standard dose, acute stress" test (SDAS) is a qualitative one. The quantity of histamine is kept constant and the physiological variable which is allowed to seek its own value is the pattern of response recorded in the form of the systolic blood pressure curve. This test relates to the counter-mechanisms to histamine action and expresses the resilience of the autonomic system. It can be compared to a rapid stretching of a coil spring by a sudden application of a fairly heavy weight. A phenomenon of rebound occurs in this case.

Procedure

1. Assessment of resting BP (as in the previous test).
2. Four cubic centimeters of histamine acid phosphate solution (the 4 cc. containing a total of 0,4 mgms of histamine base) are injected rapidly, i.e. in 8 to 10 seconds by intravenous route.

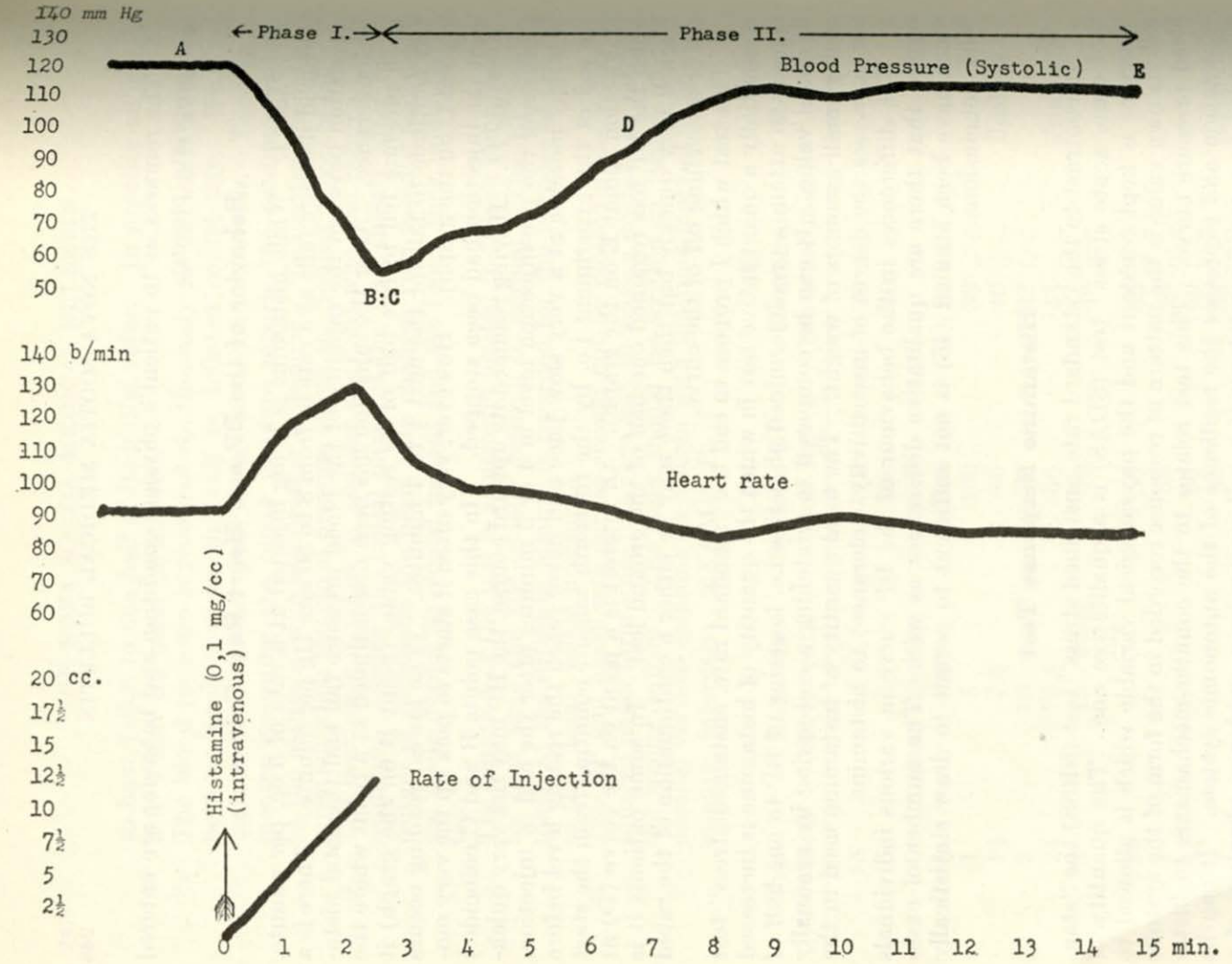

FIG. 1.

Standard rate, sustained stress test; Response type I.

Histamine base 0,1 milligram per one cubic centimeter) is injected intravenously at a rate of five cubic centimeters per minute. Pari passu with the injection of Histamine the blood pressure decreases at a rate of approximately 27 mm Hg per minute. The injection is discontinued when the blood pressure had fallen from 120 mm Hg to 58 mm Hg i.e. to (approximately) one-half of its pre-injection threshold; the injection lasted 2½ minutes and 12,5 cubic centimeters of Histamine solution (0,125 milligrams of Histamine base) had entered the venous circulation in that space of time. Immediately after the interruption of the injection the blood pressure starts to rise and continues to do so at a rate of approximately 10 mm Hg per minute. At this rate, the blood pressure regains one-half of the ground lost in the first phase 3½ minutes after the injection had been discontinued i.e. by the sixth minute counting from the start of the injection. It reaches its pre-injection level or nearly so, by the ninth minute i.e. six minutes before the end of the test.

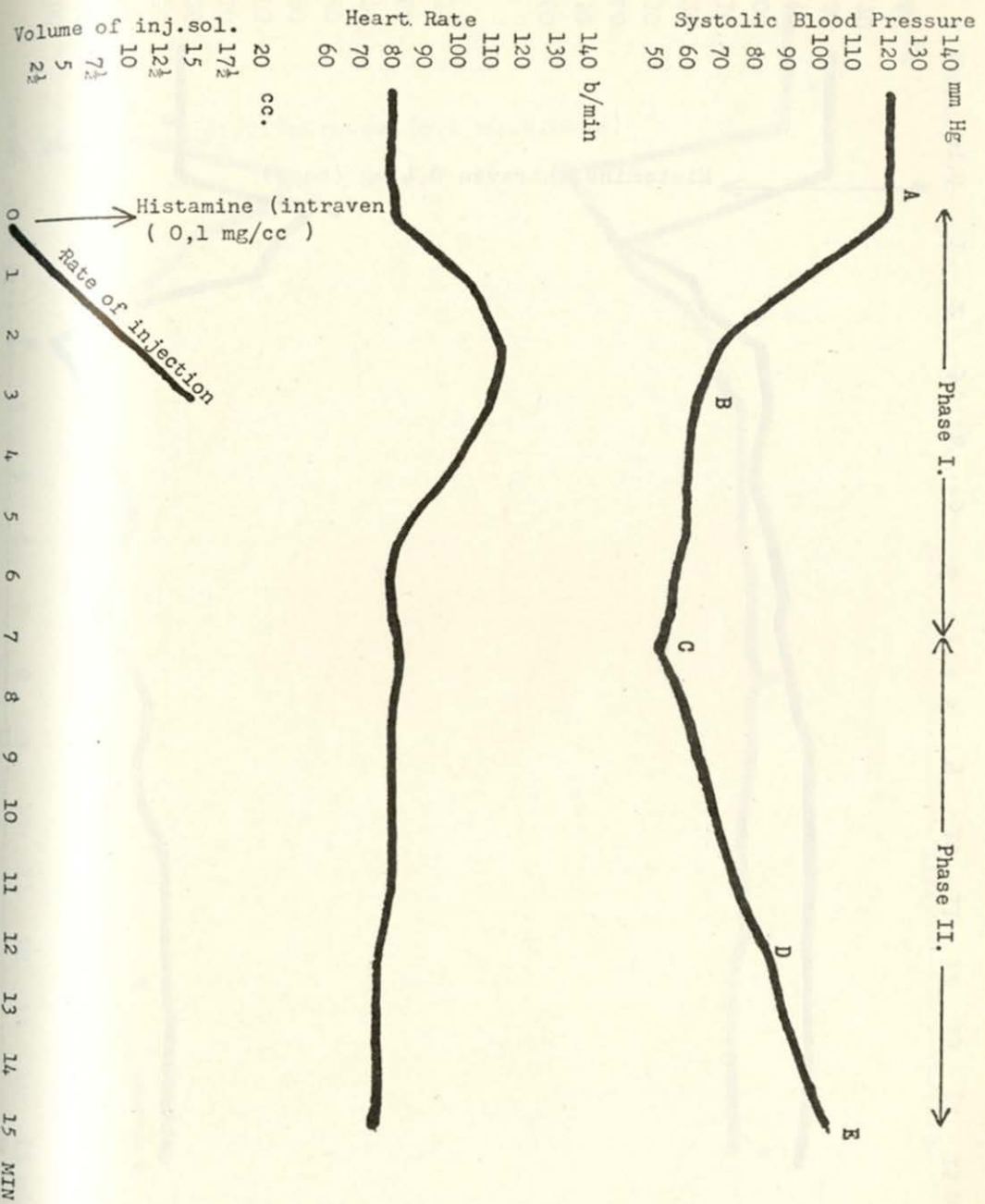

FIG. 2.

Standard rate, sustained stress test; Response type II.

In this type of blood pressure response, the administration of Histamine poduces a slightly slower down-fall of the blood pressure, (about 20 mm Hg per minute), but when the injection is discontinued, the blood pressure remains for some time at the same level or (as in Fig. 2), it continues to fall at a slow rate (2,5 mm Hg/min) during the next two to four minutes. At the end of the experiment (fifteenth minute counting from the start of injection) the blood pressure is still 20mm Hg below the pre-injection threshold.

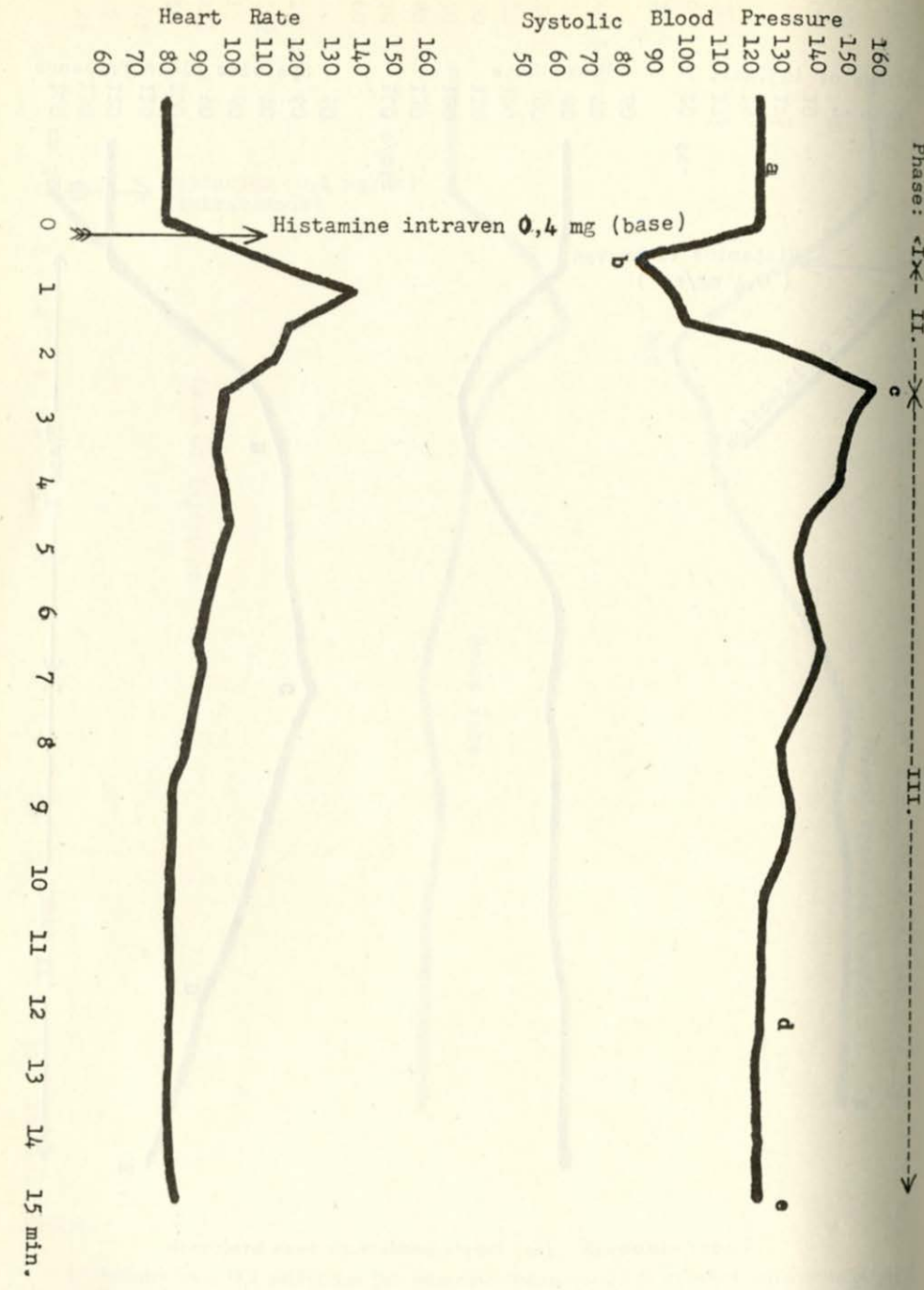

FIG. 3.

Standard dose, acute stress test; Response Type A.

Immediately after a rapid intravenous injection (lasting 8 to 10 seconds) of a standard dose of Histamine (0,4 mgm of Histamine base) there is a rapid drop in the blood pressure (from 122 mm Hg to 88 mm Hg or 34 mm Hg in 30 seconds) followed by a slower rise (36 mm Hg per minute), which continues beyond the pre-injection threshold. In two minutes the blood-pressure reaches 160 mm Hg i.e. 44 mm Hg above the initial level. Thereafter it decreases gradually in an oscillating or step-ladder course until by the tenth minute it returns to its pre-injection level (approximately). All three phases of the blood pressure curve are clear-cut and the peak of the rebound elevation of the blood pressure is well defined.

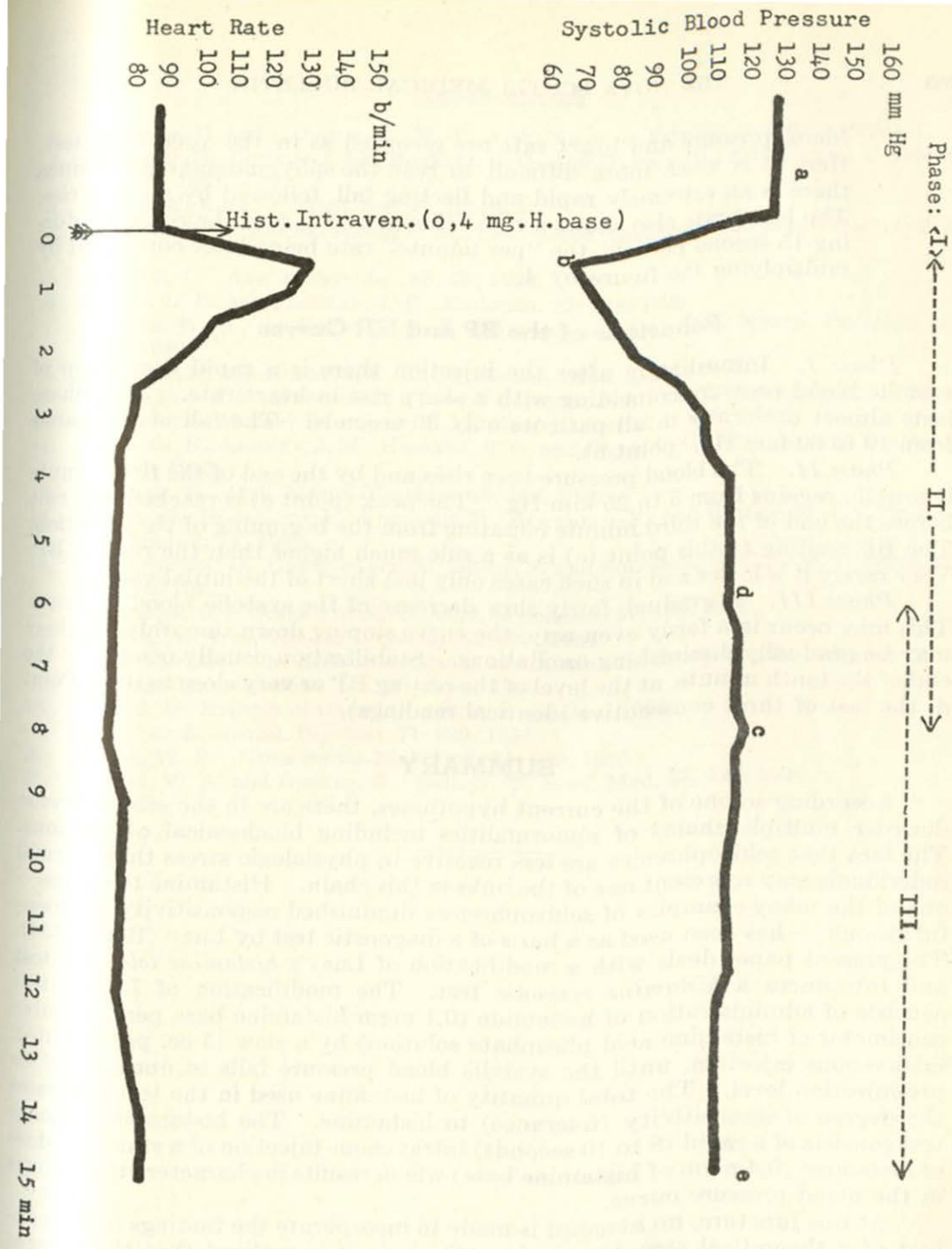

FIG. 4.

Standard dose, acute stress test; Response type B.

The blood pressure falls down more rapidly than in the type A curve, (from 124 to 68 mm Hg i.e. 56 mm Hg in 30 seconds) but the subsequent rise is very slow (approximately 12 mm Hg per minute) and it does not overshoot the pre-injection level. In fact the blood pressure does not regain its pre-injection threshold and having reached 112 mm Hg during the fourth minute remains almost constantly at this level until the end of the test. The highest reading is recorded during the eighth minute i.e. 4 minutes after the blood pressure had become more or less stabilized. Phase II and III of the blood pressure curve are thus overlapping due to the absence of a well defined peak of the rebound elevation of the blood pressure.

3. Blood pressure and heart rate are recorded as in the preceding test. Here it is much more difficult to read the sphygmomanometer since there is an extremely rapid and fleeting fall, followed by a rapid rise. The heart rate also shows a rapid change and it must be recorded during 15 second periods, the "per minute" rate being later computed by multiplying the figure by 4.

Behaviour of the BP and HR Curves

Phase I. Immediately after the injection there is a rapid deep drop of systolic blood pressure coinciding with a sharp rise in heart rate. This phase lasts almost uniformly in all patients only 30 seconds. The fall of BP varies from 10 to 60 mm Hg. (point b).

Phase II. The blood pressure then rises and by the end of the first minute it usually regains from 5 to 25 mm Hg. The peak (point c) is reached as a rule before the end of the third minute counting from the beginning of the injection. The BP reading at this point (c) is as a rule much higher than the resting BP. Very rarely it is lower and in such cases only just short of the initial value.

Phase III. A gradual, fairly slow decrease of the systolic blood pressure. This may occur in a fairly even way, the curve sloping down smoothly, or there may be gradually diminishing oscillations. Stabilization usually occurs by the end of the tenth minute, at the level of the resting BP or very close to it. (Point d, the last of three consecutive identical readings).

SUMMARY

According to one of the current hypotheses, there are in the schizophrenic disorder multiple chains of abnormalities including biochemical aberrations. The fact that schizophrenics are less reactive to physiologic stress than normal individuals may represent one of the links in this chain. Histamine tolerance—one of the many examples of schizophrenics diminished responsitivity to stressful stimuli — has been used as a basis of a diagnostic test by Lucy (1953, 1954). The present paper deals with a modification of Lucy's *histamine tolerance* test and introduces a *histamine response* test. The modification of Lucy's test consists of administration of histamine (0,1 mgm histamine base per one cubic centimeter of histamine acid phosphate solution) by a slow (5 cc. per minute), intravenous injection, until the systolic blood pressure falls to one half of its pre-injection level. The total quantity of histamine used in the test expresses the degree of insensitivity (tolerance) to histamine. The histamine response test consists of a rapid (8 to 10 seconds) intravenous injection of a standard dose of histamine (0,4 mgm of histamine base) which results in characteristic changes in the blood pressure curve.

At this juncture, no attempt is made to incorporate the findings in the context of a theoretical structure or hypothesis as it is realized that the present study is in its descriptive phase. The tests are submitted as a method in studying and charting the patterns of the physiologic substratum of schizophrenia.

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MORE ABOUT HEALTH INSURANCE IN CANADA

In reference to Doctor Joseph A. McMillan's address entitled "Proposals and Development for Government Health Insurance in Canada" which was published in the July, 1956 issue of the Bulletin the following letter has been received which is self-explanatory and of importance.

July 4, 1956.

Dr. C. W. Beckwith
Editor-in-Chief
Nova Scotia Medical Bulletin
Dalhousie Public Health Clinic
University Avenue
Halifax, Nova Scotia
Dear Dr. Beckwith:

Since giving you permission to reproduce an outline of the proposals and developments for government health insurance, which I made on April 12, 1956, to the Blue Cross-Blue Shield Plans in Hollywood, Florida, certain things have happened and I would ask you to publish this letter in conjunction with that speech, so that your readers may be brought up to date on the following points.

1. Although I said that so-called catastrophic insurance has not received either the attention or demand in Canada, since that time, Quebec Hospital Service Association has indicated that they will offer a program for extended medical benefit coverage or catastrophic insurance in the very near future.

2. Dr. Fred Robertson, Parliamentary Assistant to the Minister of Health at Ottawa, speaking before the Maritime Pharmaceutical Association's Annual Convention in Charlottetown on June 26, 1956, made the following statements, which, since they are at variance with previous interpretations of the federal proposals as outlined by myself in my talk, deserve attention because they may represent reversal of federal government thinking.

(a) Although inclusion of diagnostic services in an overall hospital insurance plan was first proposed, as a condition without which the Federal government would not participate, Dr. Robertson indicated that if six provinces representing 50% of the population wanted to put in the hospital part of the program without the diagnostic services, that "it would be optional."

(b) He stated emphatically that although care for mental patients and tuberculosis cases in government-operated hospitals would not be included under the plan, such care would be included if the patients received care in general hospitals.

Very truly yours,
JOSEPH A. McMILLAN, M.D.
Executive Medical Director

DOCTOR WANTED

The sudden death of Doctor O'Rourke on July 12th has left Mulgrave and all that territory without a doctor, and they require an energetic and trustworthy doctor. There is a great opportunity for the right man.

The Town of Mulgrave will be glad to co-operate in every way. Apply to B. W. Hutchinson, Mayor of Mulgrave.

Some Impressions of the Quebec Meeting

W. A. Hewat, M.D.
Lunenburg, N. S.

THIS year for the first time I represented the Nova Scotia Division on the General Council of the C.M.A. and before all my impressions are dulled by the every day struggle to attempt to explain to patients the inexplicable I would like to get a few of them in print for the record.

These are my own impressions and are not necessarily those of your other representatives who no doubt will give you their own views of the Meeting.

I presume that the Reports of the various Committees will be published in the Canadian Medical Association Journal and would suggest that they be read carefully, especially the Reports of the Executive Committee, Income Tax Committee, Economic Committee and Public Health Committee.

There is of course, some overlapping of these latter reports with the overall report of the Executive Committee, and in many instances there was considerable discussion terminating in amendments of the report in question.

Two things impressed me greatly during these discussions. First importance of Government Legislation and secondly organization within the C.M.A. at both the C.M.A. and Division Levels.

Government Legislation has already had a marked influence on the physicians way of life and will have a greater effect in the future, and attempts in the past to modify legislation have often been very frustrating. For example take the report of the Income Tax Committee. It is obvious that the Government has no intention of making any radical change in the Income Tax Law as it affects the medical profession. A new approach to the problem and radical changes in policy are needed.

One wonders why no report was made before the General Council this year concerning a Resolution by Dr. Morton passed unanimously at the Toronto Meeting which advocated the employment of an Income Tax expert to study our problem. If we do not implement our own Policy we cannot expect handouts from the Federal Government.

The General Council after much discussion gave its support to the principle of National Hospital Insurance. The Honourable Paul Martin jumped into print with a statement to the effect that he is happy that the Medical Profession of Canada approves of his plan. There was no discussion of any specific plan, but only of general principles. While National Hospital Insurance may not seem of major importance to many of us it would be one step closer to National Health Insurance which would mean extensive and serious changes for us as physicians.

It seems to me that the discussion brought to light one of our major weaknesses. We have no plan of our own but apparently are waiting passively for the Government to produce one, hoping to obtain satisfactory modifications. In which case we will be negotiating from weakness.

I have discussed this problem with the Federal Minister from Nova Scotia and I have good reason to believe that while the Federal Cabinet has a Plan it does not have a firm Policy regarding the implementation of National Health Insurance. Therefore, there is still time to develop within the C.M.A. a scheme which will best suit the needs of its different Divisions providing the Divisions

will co-operate in working out recommendations which can be knit into an overall plan.

Taking such action does not necessarily mean approval or disapproval of National Health Insurance. It merely strengthens our hand if and when the day comes that Government decides to make it a matter of Policy.

Canada is a country which varies greatly between the Atlantic and Pacific in its Economic, Cultural, and Social conditions. Any Plan must be sufficiently elastic to meet the needs of the people in the different areas. Therefore, each Division must be alert and ready with some positive suggestions and not wait to attempt to tear apart a Plan forced on us.

Once again I suggest that we discuss matters of Policy with our elected representatives not with the Deputy Ministers.

It naturally follows that if the problems of our Division are to be discussed forcibly and intelligently in General Council of the C.M.A. our Divisional Annual Meeting must precede the C.M.A. Annual Meeting whether or not the President and Secretary of the C.M.A. can be present.

The strength of the C.M.A. is concentrated in the General Council which studies the various problems of the Association and formulates policy. In the same way the strength of our Nova Scotia Division will be in its Executive Committee. This Committee will be made up of men nominated by the various Branch Societies. Apart from his ability to serve his Branch he must be interested and willing to tackle the problems of his Division.

Those present at the General Council Meetings could readily appreciate the value of a full time Secretary, but again care must be taken in selecting the right man. The superior organization of the Ontario and British Columbia Divisions could be plainly seen.

The advantage of having the Annual Meeting of the Division before the C.M.A. Annual could be seen also in the manner in which the Ontario Division presented its arguments on various subjects. The Ontario Division had had its Annual Meeting prior to the C.M.A. Meeting.

The trend is now definitely established. The Trade Unions are demanding National Health Insurance. The Minister of Health represents a constituency in which Trade Unionism is strong and he undoubtedly will be greatly influenced by the attitude of this body.

Political expediency may become a factor. National Health Insurance becoming law by Order-in-Council rather than by Parliamentary debate, to relieve the pressure on members in industrial areas.

Let us have a Plan and a Policy of our own and let us make it clear to our representatives in Parliament that we want to know their position in this serious matter definitely, and without equivocation. To do this we must be strong throughout our organization from Branch Societies through Division and C.M.A. Council and let us at every level be prepared to deal with the elected representative the only vulnerable point in Government.

APPOINTMENT IN PATHOLOGY

The appointment of Dr. William A. Taylor to the Chair of Pathology at Dalhousie University has recently been announced. Dr. Taylor will hold the joint post of Professor of Pathology and Director of the Pathology Division of the Provincial Department of Public Health.

Dr. Taylor is of Scottish birth and schooling. He was born in Balloch and received his early education in the Vale of Leven Academy where he was gold medallist. He then attended Dumbarton Academy and Glasgow University. He graduated with the degree of Bachelor of Science with first class honours in Physiology in 1942 with a thesis on the Comparative Histology of the Epiphysis Cerebri.

Because of the disorganization of the medical training programme in Britain during the war, the Rockefeller Foundation of New York made it possible for twenty-five students from Britain to take their clinical studies at schools in the United States or Canada. Dr. Taylor was one of the five students from Scotland. He entered second year medical studies at Stanford University Medical School in San Francisco and then transferred to Cornell University Medical School in New York. He returned to Glasgow in 1944 to complete his interne training in the wards of Professors Noah Morris and C. F. W. Illingworth. He graduated with the degree M.B., Ch.B. in June 1945.

Dr. Taylor immediately entered upon graduate training in Pathology at the University of Glasgow and was later appointed to the staff of the University and as Assistant Pathologist to the Western Infirmary of Glasgow. During the next ten years Dr. Taylor participated fully in the under-graduate, post-graduate and technician training in Professor Cappell's department. He was also examiner in Pathology and Bacteriology for the General Medical Council, and examiner in Histology to the Institute of Medical Laboratory Technicians. He participated in the work of the department as a reference centre for the Consultant Panel on Morbid Histology of the British Empire Cancer Society and served on numerous hospital committees. His work as Secretary of the Medical Records Committee in 1948-1955 received especially high praise. In 1954 he was appointed to the Council of the Royal Medical-Chirurgical Society of Glasgow, and in the same year to the assistant editorship of the Glasgow Medical Journal.

Dr. Taylor has conducted considerable experimental work and has published a number of papers on the renal circulation in rabbits, principally devoting his attention to the effect of citrates. In the course of this work a centre for renal vaso-motor control in the spinal cord was first demonstrated. Dr. Taylor has also had publications on rheumatic heart disease and, since coming to Halifax, has published a study on cancer in Nova Scotia.

Dr. Taylor is a most active and stimulating teacher and has been described by his former chief at the University of Glasgow as one of the ablest men who ever worked with him, and as a unique person combining the basic science training of a Scottish University, under-graduate and clinical training in first class American Universities and post-graduate training and teaching in one of the best nurseries for young pathologists in Great Britain.

When Dr. Taylor and his family moved to Halifax in 1955, his crossing of the Atlantic was much less eventful than on the first occasion. On his way

to his studies at Stanford University in 1942 Dr. Taylor's ship, the "Loch Katrine" was torpedoed 500 miles off Newfoundland. One of the three medical students was killed, but Dr. Taylor and a companion were picked up by the Canadian corvette "Agassiz" and brought into Halifax. He was unable to proceed to the United States for two or three weeks because of the loss of his passport and other documents. He spent some time with Professor Bean at Dalhousie University and visited throughout the surrounding areas of Nova Scotia. Since coming to live in Halifax a year ago, he has already become thoroughly acquainted with the Province, largely through travelling on medico-legal cases.

Dr. Taylor was married during his student days in the U.S.A. to a fellow-graduate of Stanford University in Bacteriology. Mrs. Taylor's home was in Hawaii. They have four children, three sons and a daughter aged two to eight years.

Dr. Taylor's many friends will join in wishing him every success in building up a strong and active Department of Pathology in the joint University and Provincial post which he now holds.

INTRAVENOUS INFUSION OF FORMALDEHYDE BEING STUDIED AT DALHOUSIE UNIVERSITY

As a result of previous clinical studies on acute methanel poisoning in humans and animals,* the intravenous use of formaldehyde as a systemic antiseptic in certain specific pathological conditions has been under investigation since 1955 by D. J. Tonning, M.D. and C. A. Gordon, M.D. of the Departments of Medicine, Dalhousie University and Victoria General Hospital. Solutions of formaldehyde, 1:5000 in sodium lactate have been infused into human patients at the rate of 1 ml. per minute for as long as three days with no untoward side affects. The possibility of using higher concentrations is being investigated concurrently in the Department of Medicine and Bacteriology together with toxicological studies on animals carried on in the Department of Pharmacology, Dalhousie University.

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*Tonning, D. J., Aldous, J. G., Studies on Acute Methyl Alcohol Poisoning, N. S. Med. Bull., May, 1954.

SOCIETY MEETINGS

WESTERN NOVA SCOTIA MEDICAL SOCIETY

The Western Nova Scotia Medical Society held its annual meeting on Thursday, August 16, at Lakeside Inn, Yarmouth, twenty-one doctors attending.

Refreshments began in the boathouse, where cocktails and delicious hors d'oeuvres were had in quantity, moved on to the Tuna Room to enjoy one of Chef Danbach's famous buffet luncheons complete even to ice sculpture and featured Lobster Newburg, turkey, tongues and various other cold cuts, salad, salmon, lobster in the shell, French Pastry to mention but a few.

Following the meal we proceeded back, and fortunately down, to the boathouse and to our business session to hear the special speaker Doctor E. F. Ross give an illustrated lecture on "Diseases of the Rectum and Anus." Thanks to Chef Danbach and Doctor Ross the evening was well covered from stem to stern.

Election of officers resulted in the following:

President — Doctor B. J. D'eon of Yarmouth.

Vice-Presidents — Doctors D. S. Robb of Shelburne, G. V. Burton of Yarmouth and H. J. Pothier of Weymouth.

Secretary-Treasurer — Doctor D. F. Macdonald of Yarmouth.

Representative to Executive of The Medical Society of Nova Scotia — Doctor A. F. Weir of Hebron.

Member of the Nominating Committee — Doctor L. M. Morton of Yarmouth, Alternate, Doctor P. E. Belliveau of Meteghan.

Doctor G. V. Burton extended the thanks of the group to Doctor Ross for his instructive address and on motion it was decided that our next meeting next summer will be held at Lakeside Inn with our wives attending.

D. F. MACDONALD,
Secretary-Treasurer.

PICTOU COUNTY MEDICAL SOCIETY

The summer meeting of the Pictou County Medical Society was held at the Norfolk Hotel, New Glasgow on Monday evening, August 6th, with President G. Ritchie Douglas, twenty-two members and three guests present. The guests were Doctor Spiro, a former New Glasgow practitioner, Doctor Donald MacKay, radiologist and Doctor J. E. Stapleton, Professor of Radiology at Dalhousie University our guest speaker.

A very pleasant part of the dinner meeting was the presentation to Doctor G. A. Dunn of Pictou of an engraved tray of silver and a scroll marking his fiftieth year in the practise of medicine. The presentation was made by Doctor Fred Granville of Stellarton with an appropriate address to Doctor Dunn. Following this presentation remarks were made by Doctor Dunn in reply and by Doctors J. C. Ballem, Clarence M. Miller and W. A. MacLeod.

A short business meeting was held and following this the members listened with great interest to Doctor J. E. Stapleton as he presented "The Modern Concept of Radiotherapy" and afterwards answered numerous questions by the members on this very important subject.

H. A. LOCKE,
Secretary-Treasurer

Abstracts

Present Status of Anticoagulant Therapy in the Treatment of Myocardial Infarction*

The use of anticoagulants in the treatment of myocardial infarction is now being adopted in many leading centres throughout the civilized world. It is also being used in many smaller communities with suitable facilities. Some workers believe that anticoagulants should be used only for severe cases, or for those who have already suffered thromboembolic complications; but the trend in the leading clinics with large experience with this form of therapy is in favour of using anticoagulants in all cases of myocardial infarction unless there are contraindications to their use.

Long-term anticoagulant therapy after one or more myocardial infarctions appears to give the patient a better prognosis. However, further study and analysis are essential before this position can be accepted as absolutely conclusive.

Major factors responsible for the misuse of anticoagulants include: (1) self-medication without prothrombin tests; (2) medication under physician's directions but without correct control; (3) administration of anticoagulants in the face of contraindications; (4) withholding of anticoagulant therapy in the presence of definite indications; (5) excessive dosage; (6) inadequate dosage.

Accumulated experience with these drugs has reduced the relative incidence of serious haemorrhage. Serious haemorrhage is rare in mild and moderately ill patients. The availability of vitamin K_1 has increased the safety.

Heparin remains the only drug of its type suitable for clinical use.

The so-called anticoagulants with enzymatic properties are thus far in an experimental phase and are not recommended for general use in man, pending much more comprehensive and critical evaluation.

New coumarin and phenylindandione derivatives have been introduced for clinical use, and these have been discussed. The value of these drugs do not appear to be very different, and the facitity with which the physician uses them probably constitutes the most important single factor in securing therapeutic results with safety.

Wright, I. A., Annals of Internal Medicine. Vol. 43, No. 5, November, 1955.

Phlebitis, A Study of 748 Cases at the Boston City Hospital*

Seven hundred and forty-eight cases of phlebitis seen at the Boston City Hospital over the past decade are reviewed. Eighty-three per cent of the patients were over forty years of age; the mortality increased with age. No seasonal variation could be found.

The predisposing conditions in order of frequency were: cardiac disease, postoperative state, trauma, idiopathic manifestations, infection, varicose veins, childbirth, haemiplegia, cancer and miscellaneous.

Fatal pulmonary emboli occurred frequently in phlebothrombosis and thrombophlebitis; it is misleading to think of these as separate entities.

The mortality rate with the various methods of treatment was as follows: conservative (347 cases), 37 per cent; surgical (369 cases), 2.1 per cent; and anticoagulant (32 cases), 29 per cent.

Bilateral division of the superficial femoral veins should be performed as soon as the diagnosis of phlebitis is made. If there are thigh signs (oedema, tenderness and evidence of trauma) the common femoral vein should be divided. When clots are adherent or difficult to extract, further treatment (anticoagulants or ligation of the vena cava) is indicated.

Phlebitis should be actively treated before embolization occurs since 84 per cent of the initial emboli in this series were fatal.

The postphlebitic syndrome is associated with the severity of the phlebitis rather than the type of treatment.

Byrne, J. J., New England Journal of Medicine. Vol. 253, No. 14, 1955.

"Coin" Lesions of the Lung*

Medical literature contains reports of 729 pulmonary "coin" lesions. This paper adds 124 such lesions from the Alleghency General Hospital and the University of Pittsburg Medical Centres. The dangers of diagnosis without thoractomy are emphasized and a definition for the term "coin" lesion is offered in the statement that a "coin" lesion is a well-circumscribed tumor between one and four centimeters in diameter which is surrounded by lung and does not present evidence of major bronchial obstruction.

Histologically, twelve different lesions were found. Fifty-two and four-tenths per cent of the total number of tumors were bronchogenic carcinoma. Considerable emphasis is given the point that a much higher incidence of cancerous "coin" lesions are proved in the patients above thirty years of age.

Of the benign lesions, 71.19 per cent were granulomas which were thought to be tuberculomas but were classified only as granulomas since no effort to culture fungi or tubercle bacilli was made.

Exploratory thoractomy is recommended as a diagnostic procedure since it is no longer dangerous and provides the only definitive diagnostic approach.

Ford, W. B., Kent, E. M., Neville, J. F., and Fisher, D. L., American Review of Tuberculosis and Pulmonary Diseases. 73: 134 - 138, January, 1956.

Passive Immunization Against Measles*

Convalsescent serum was the first product used in the prophylaxis of measles. To be effective the serum must be drawn between the seventh and tenth day after deferverscence, injected within five days of exposure to infection and used in adequate doses. For a healthy child 1 ml. is given per year of age with a maximum of 15 ml. over fifteen years of age. The dose may be doubled if the subject is suffering from disease at the time of exposure.

If convalescent serum is injected during the second part of the incubation period, i. e. between the fifth and seventh days, an attenuated form of measles may appear which seems to confer immunity as durable as that produced by normal measles.

A number of studies have been made recently of gamma-globulin extracted from the mixed plasma of 200 to 10,000 human donors. When the product of the initial plasma is concentrated 15 to 30 times, the antibody content is correspondingly increased. Weak doses of gamma-globulin (0.2 m. per kg. of body-

weight) are thus sufficient for absolute protection, and one-fifth of these weak doses will produce an attenuated form of measles. The duration of immunity granted by gamma-globulin is between two and four weeks.

The activity of the products known as gamma-globulin may vary according to the method of extraction employed. Some methods denature the measles antibodies. One of the great advantages of gamma-globulin is its safety. The danger of transmitting virus hepatitis is much less than it is with blood plasma or crude serum. Contradictory accounts have been published with regard to the efficacy of placental globulin, which has the disadvantage of often provoking local or general reactions.

Concentrated ascitic fluid of cirrhotic subjects, or its globulin fraction gives from 37.5 per cent to 80 per cent absolute protection, according to the globulin concentration.

Maternal antibodies in a mother who has had measles confers three to five months protection to an infant. If sufficient quantities of the immunizing product are available, preventive treatment should be given between the ages of three months and five years. Certain circumstances, such as pregnancy, the presence of an associated disease, or debility in children, or the grouping together of children in communities, may call for absolute protection.

A choice must be made between aiming at absolute protection and at attenuation of the disease. For absolute protection a fairly strong dose must be injected within five days of exposure to infection. Attenuation is mainly to be recommended as a method suitable for families, to be applied to healthy children over two years of age.

Failures in passive immunization against measles occur mainly in connection with absolute protection. The failure may be total, when a normal attack of measles appears, or partial, in which case a mild form of the disease develops. The latter is desirable in isolated cases since the subject acquires durable immunity at less cost, but from the point of view of the community, the mild forms, which are nevertheless infectious, have had the disadvantage of perpetuating the disease.

It is difficult to select the appropriate moment for immunization, particularly in groups of children from different localities. The only safe method is repetition of the injections. Two systems have been suggested. The first method is to give any new case an abortive injection and to isolate the subject immediately. The second method is to give injections of gamma-globulin sixteen days before the children assemble, at the beginning of their community life, and subsequently every three weeks. The second is a surer method, but it requires large quantities of gamma-globulin.

Bertoye, A., Bulletin of the World Health Organization. 13: 423 - 435, Fall, 1955.

Trends in the Management of Tuberculosis in Children*

Proper care of the child at the time of his first tuberculosis infection may give a considerable degree of protection against future relapse — a matter of both individual and public health concern. In that public sanitation makes exogenous re-infection improbable, the problem is to make relapse of the primary lesion, or endogenous re-infection just as unlikely. Accordingly, the

approach to the management of tuberculosis in children should be: (1) to obtain maximum stability and security for each active primary lesion by optimum drug therapy; (2) to follow each child with a positive tuberculin reaction for many years.

It is proposed that anti-tuberculosis drug treatment be given to the following categories of children with positive tuberculin reaction: (a) all children with evidence of recent tuberculin conversion (one year); (b) all children of three or less who are found to have a positive tuberculin reaction; (c) all children with roentgenologic or bacteriologic evidence of active disease. There is no direct evidence to support the theory that drug therapy will prevent subsequent endogenous re-infection, but the quantity of infectious material remaining in the child's body, the authors believe, can be reduced by drug therapy, and must, therefore, diminish the opportunity for re-infection as well as the probable dosage of bacilli in the event of re-infection.

Verhoeff, D., and Peck, W. M., North Carolina Medical Journal. 16: 511 - 514, November, 1955.

Surgical Treatment of Coronary Artery Disease*

Of prime importance in the successful application of surgical treatment for coronary artery disease is the basic concept of the consequences of the disease in man. It has been demonstrated that the catastrophic sequelae are due to muscle destruction only to a minor degree. The great majority of coronary deaths are caused by a disruption of the normal co-ordinated mechanism of the heart beat. By and large, coronary death is due to inequalities in blood supply to contiguous areas of the myocardium. The Beck I operation, by stimulating functional intercoronary channels and extracoronary communications provides more adequate distribution of a somewhat augmented arterial blood supply.

The following observations are based on a series of seventy patients who have undergone such surgery since 1952.

The primary indication for operation is a positive diagnosis of coronary artery disease unless there is a specific contraindication. Operation can prevent mechanism-death and it can relieve areas of ischemia responsible for pain, but it cannot restore degenerated heart muscle, nor can it arrest the occlusive process in the coronary arteries. Therefore, best results are obtained by operating early in the course of the disease.

Of the last fifty-five surgical patients operated upon, three died in the immediate post-operative period, giving an operative mortality of 5.5 per cent. In a series of forty-four consecutive patients with a long-term follow-up of nine months to three years, only two have died; thirty-eight, 86.5 percent, have little or no pain; thirty-seven, or 84 per cent, are working either full time or more than before operation.

In view of the proved effectiveness of the Beck operation for coronary disease, the demonstration of a low operative mortality of 5.5 per cent removes the operation from the category of salvage procedures and justified its early application to a majority of patients with coronary disease.

Brofman, B. L., Geriatrics. 16: 511 - 515, November, 1955.

*From Medical Abstracts, February, 1956.

Sulphonamide Compounds For Diabetes*

The authors comment on reports from Germany on the treatment of diabetes mellitus with relatively non-toxic sulphonamides. The compound with which most experience has been obtained is sulphonilyl-*n*-butyl-urea, known at present as a "BZ-55." From the patient's point of view the great advantage of this form of treatment is that it can be taken by mouth. The most recent report from Professor F. Bertram's clinic in Hamburg and describes the results in 335 patients. In 218 the treatment is described as having been successful, but only 76 of them had been followed for more than two months and none for more than ten. The great majority of "the successes" were middle-aged or elderly obese diabetics, very few of the younger patients being able to dispense with insulin injections. In an attempt to assess the place of these new drugs in the management of diabetics, clinical trials are being undertaken in Great Britain and in the United States and Canada. From the results that have already been reported certain tentative conclusions may be drawn.

The clinical subdivision of diabetes into the insulin-deficient (thin) type and the insulin-resistant (obese) type, although by no means clear cut, is now widely accepted. From the German reports it is apparent that BZ-55 is not an "oral insulin" and that the insulin-deficient diabetic rarely responds to it. When he does, it is probable that the disease is still secreting small amounts of insulin. It is in the obese diabetic that the action of the new drugs in reducing the blood sugar and eliminating glycosuria is best seen. In Britain it is believed that the right way to treat these patients is to correct the obesity, and that if this can be done by strict dieting the carbohydrate metabolism will be improved and in some cases actually be restored to normal. Treated in this way, the patient benefits not only having his blood sugar reduced but also by being freed from the well-known dangers of obesity. BZ-55 seems to lower the blood sugar without need for a low-caloric diet, and although no longer overtly diabetic the patient remains obese. It would appear wrong to use BZ-55 as the mainstay of treatment in such cases. A number of these obese diabetics are at present treated with insulin, and in many of them BZ-55 could be given instead, but a more physiological approach would be to attempt to correct the obesity. Ideally, obese diabetics should be given insulin only if they remain hyperglycemic after their weight has been brought down to within normal limits by diet. It is in this small group of obese patients whose diabetes is not controlled by diet that BZ-55 may well produce good results.

The way in which these sulphonamide compounds act is not yet known. Animal experiments and clinical observation suggest that there must be some insulin present if they are to produce a hypoglycemic effect; thus they potentiate the action of insulin. Few physicians will be prepared to advise patients to take a drug with such marked metabolic effects until they have definite information about how it acts — a drug, furthermore, that is likely to have to be taken for the rest of the patient's life and which belongs to such a potentially toxic group as the sulphonamides. Admittedly some patients have received the drug for as long as two years and comparatively few toxic effects have been

reported, but the total number of cases is still small. Treatment with BZ-55 is indicated only in a small proportion of diabetics, and there are good reasons for advising patients to await the outcome of the clinical trials now in progress before using it.

British Medical Journal. 4969: 733-734, March 31, 1956.

Control of Nausea and Vomiting with Chlorpromazine*

Whatever the precipitating cause of emesis, stimuli must travel centrally to irritate the chemoreceptor trigger-zone or vomiting-centre in the medulla. Many different drugs have been recommended to control these symptoms, but none has proved entirely satisfactory, either because it does not relieve vomiting, in the majority of patients, or because its side-actions limit its safe and universal applicability.

Chlorpromazine is one of the most recent drugs being utilized to control emesis. The preponderance of reports indicates that it is the most effective compound yet presented to the medical profession for this purpose. At the same time, it is being shown that the action of this drug is wide-spread in the central nervous system and peripherally. Some of these actions, called side-effects as far as control of vomiting is concerned, may jeopardize the vital functions of the patient. For these reasons, it is questionable whether chlorpromazine should be given in a routine fashion to any patient with symptoms of nausea and vomiting, even after a diagnosis is established. It is doubtful whether this drug should be given prophylactically to prevent vomiting, as during the postoperative period. In any situation, the seriousness of the vomiting to the welfare of the patient should be weighed in balance with the possible side-effects which may accrue from the multiple actions of the drug, and then a decision can be made concerning its administration.

Stephen, C. R., Dent, S., and Bourgeois-Gavordin, M., Archives of Internal Medicine. 96: 794-798, December, 1955.

Clinical and Bacteriological Aspects of Impetigo Contagiosa*

The results of an investigation into the clinical, epidemiological, and bacteriological features of impetigo contagiosa, with special reference to the type and identification of staphylococci and streptococci, are reported and discussed.

Of 106 impetigo cases studied, *Staphylococcus aureus* was isolated alone from 86 lesions (81 per cent), *Streptococcus pyogenes* alone from six (5.6 per cent), and a mixed growth of *Staph, aureus* and haemolytic streptococci in 14 instances (13.2 per cent).

Of the 100 strains of *Staph, aureus* isolated from impetigo lesions, 63 were identified in phage type ("type 71"), and a further 17 were closely related ("weak 71").

Only one representative of "type 71," and nine of "weak 71," were obtained from 164 strains of *Staph. aureus* from 200 persons in three control groups.

Of 90 strains of *Staph. aureus* from impetigo lesions, 64 (71 per cent) were resistant to penicillin. Of these penicillin-resistant strains, 54 (84 per cent) were of "type 71," or close variants.

Strep. pyogenes was probably causative in at least six of the 18 patients yielding this organism from lesions; it was presumed to be a secondary invader in the remainder.

It is doubtful if nasal carriage is of importance in the epidemiology of impetigo.

It is concluded that there is a specific "type" of staphylycoccus associated with this form of impetigo.

Barrow, G. I., Journal of Hygiene. 53: 584-507, December, 1955.

Zinc Oxide*

Zinc oxide is perhaps the most frequently and most voluminously used agent in topical dermato-therapy. Because of an almost total absence of pharmacological discussion in the formal texts on dermatology, its use by the dermatologist is developed in a nebulous, almost subconsciously instinctive manner. The usual concept of its action is probably that of an inert blanket. The authors could not demonstrate any value as a bacteriostat against several common bacteria.

Calamine, used in external preparations for well over 300 years, is a zinc ore found naturally in Europe, England, and America. Exactly how it was introduced into dermatology is not clear, but the fact that some calamines possess reddish or brownish-red colours, approximating skin colour, probably was the most important factor in the spread of its use. Because of its wide variation in composition, as well as its inconstancy of colour, it was replaced by a synthetic called prepared calamine, made by adding about 0.5 per cent red ferric oxide to white zinc oxide. This is pale pink.

Neocalamine, a much more cosmetically acceptable skin cover, made by adding three per cent red ferric oxide and four per cent yellow ferric oxide to white zinc oxide, enjoyed only a few years of popularity. Principally because of its staining property, it has been deleted from the tenth revision of the National Formulary.

Neo-Zinc Oxide Hyperfine is a new form of chemically pure zinc oxide. By the special technique of its manufacture, its molecular structure has a distortion in its crystal lattice which reflects light so that its colour is a moderate orange-pink ("flesh," "red," "brick red," buff red," etc.) The particulate size is extraordinarily small, about 200 A.Aggregates of the particulates can be milled or micronized down to as small as 1u. The prepared powder has a characteristic mobility, is easily dispered when rubbed on the skin, to which it adheres with a dry, palpable tenacity.

It combines pharmaceutically as easily in all formulations as does white zinc oxide but is cosmetically as effective a skin cover as the usual cosmetic preparations. Studies of its penetrability and dispersion through the skin by electron microscopy and histology are in progress.

It gives promise of displacing white zinc oxide and calamine in topical dermatotherapy.

Appel, N., Ohmort, L.M., and Sterner, R. F., Archives of Dermatology. 73: 318-324, April, 1956.

A New Treatment for Resistant Warts*

The basic concept of the treatment presented is the clinical observations that certain hyperkeratoses are related to a deficiency of Vitamin A. A solution containing Vitamin A, alphatocopherol, with a small amount of fatty oil was injected slowly into the base of the verruca, following injection of a small amount of local anaesthesic. The author found that usually two to eight injections were necessary to obtain complete response. There were only seven failures in the three hundred cases treated. No additional therapy was used in any of the three hundred, in order to better evaluate the results.

Steinberg, M. D., Surgery. 39: 642-644, April, 1956.

Hydrocortisone-Antibiotic Therapy in Upper Respiratory Infections*

A study was conducted to determine whether hydrocortisone-antibiotic therapy might be effective in any upper respiratory tract complaint. The study was conducted over an eight-month period on 109 patients (85 suffered from upper respiratory tract infections and 24 from uninfected inflammations of the nasal mucosa).

The medication formula contained 0.020 per cent hydrocortisone alcohol, 0.5 per cent hydroxyamphetamine hydrobromide, 0.125 per cent phenylephrine hydrochloride, 0.005 per cent gramicidin, 0.1 per cent polymyxin B sulfate. The patient was instructed to instill three squeezes from a spray bottle or one dropperful of the solution in each nostril every three hours. Both methods deliver 0.2 cc of the medication to each nostril.

The objective results were: (1) excellent, with 21 cases of complete remission of infection in one week; (2) good, with 70 cases of complete remission within two weeks; (3) fair, with 10 complete remission within a month; (4) poor, with 8 cases of incomplete remissions after a month of treatment.

The subjective results were: (1) excellent, with 1 patient having seven hours relief from nasal blockage; (2) good, with 81 patients having four to six hours of relief; (3) fair, with 18 patients having two hours or less of relief accompanied by undesirable side effects such as nausea or head-aches; (4), poor, with 19 patients obtaining no relief.

It can be concluded that the medication is well-tolerated and effective for most patients.

Persky, A. H., Archives of Otolaryngology. 62: 354-356, October, 1955.

Treatment of Acute Sore Throat in General Practice*

A clinical and bacteriological survey of cases of acute sore throat in general practice and the results of a strictly controlled trial of oral penicillin, sulphadimidine, and a placebo in its treatment are described.

Whereas 61 per cent of patients receiving the pacebo were still ill on the third day of treatment the corresponding rates for those on sulphadimidine and penicillin were 38 per cent and 31 per cent respectively. The difference between 61 per cent and the other two rates was statistically significant, but that between 38 per cent and 31 per cent was not. However, the difference between penicillin and sulphadimidine in those ten years of age and over was

greater than in those under ten years. Fewer failures of treatment occurred in those who received penicillin.

The unexpected observation was made that the results of treatment were practically the same in streptococcal and non-streptococcal sore throats.

Analysis of the presenting symptoms and signs in patients with and without a haemolytic streptococci in pre-treatment throat swabs showed only minor differences between the two groups. No clue to the aetiology of the non-streptococcal illnesses was found, apart from their apparent response to both sulphadimidine and penicillin.

Chapple, P. A. L., Franklin, L. M., Paulett, J. D., Tuckman, E., Woodall, J. T., Tomlinson, A. J. H., and McDonald, J. C., British Medical Journal. 4969: 705-708, March 31, 1956.

The Value and Limitations of Chlorpromazine in the Treatment of Anxiety States*

A controlled therapeutic trial of chlorpromazine in a group of 150 patients with anxiety states is described.

Utilizing the double-blind method and other controlled procedures, it was found that the results obtained by chlorpromazine were significantly better than with inert tablets.

Extended trial with chlorpromazine at optimum dosages resulted in 54 per cent of the group showing marked or moderate symptomatic improvement. Two-thirds of these patients relapsed after a few weeks of clinical improvement despite continued medication with chlorpromazine.

The high tendency to relapse, together with the development of side effects, considerably limits the value of the drug. The usefulness of chlorpromazine in anxiety states would appear to be largely restricted to short-term symptomatic treatment and management.

Rees, W. L., Journal of Mental Science. 101: 834-840, October, 1955.

The Treatment of Chronic Alcoholism: A Survey of Current Methods*

Increasing interest in alcoholism as a medical-social problem has stimulated research into the nature of the condition. As a result, various therapeutic approaches have been offered.

The acute alcoholic state is a phase of chronic alcoholism and offers an opportunity to begin long-range rehabilitation. The use of adrenocortical hormones, chlorpromazine and Rauwolfia derivatives has simplified treatment of this aspect of alcoholism and made it more effective.

Long-range therapies are basically physiologic, abstinence-producing or psychologic. With the exception of the first therapy, all recognize that the alcoholic can never drink normally.

Endocrine treatment of alcoholism is based on the assumption that alcoholism results from a disorder of the pituitary-adrenal system, and that this can be corrected by treatment with hormonal substances. No significant effect has been noted on the over-all course of chronic alcoholism. The use of adrenal hormones, however, has a place in the treatment of the acute state.

The genetotrophic concept considers alcoholism a manifestation of nutritional deficiency in a hereditarily predisposed individual. By the administration of large excesses of proteins, vitamines, and minerals, the deficiency can be corrected and the alcoholism cured. Data of various workers do not, by and large, confirm this view.

Alcoholics Anonymous is a lay organization whose main precept is that an alcoholic is powerless to imbibe alcohol in moderation and must rebuild his life on the premise of total abstinence. All activity revolves around this principle. It is an extremely important resource because of its great accessibility, and its record of success is good.

Antabuse therapy aims at inducing abstinence through the use of a chemical agent. The use of alcohol in an Antabuse-treated patient results in physical symptoms which make continued drinking impossible. Present low dosages and the use of antihistamines as antidotes have increased the safety of Antabuse, and few, if any, medical contraindications exist.

Conditioned-reflex therapy creates an aversion to alcohol through the association of drinking and vomiting. The latter is produced by the use of such medications as emetine. Most opinions are that conditioned-reflex therapy offers no better results than are obtained by more realistically-directed methods.

Psychotherapy is directed toward bringing insight into the reasons for drinking, and giving the alcoholic support and direction in his effort to achieve abstinence. Group psychotherapy gives the alcoholic greater security and a sense of belonging, with seem to catalyze treatment. All approaches to the treatment of alcoholics should include psychotherapy in some form.

The use of probation to get the alcoholic into treatment is often of value. Real motivation frequently develops in people who would not have initiated treatment through their own efforts.

The broad rehabilitiative approach attempts to help the alcoholic in all the areas in which he is involved. It mobilizes the skills of different disciplines and encourages the participation of community resources and agencies.

Feldman, D. J., Annals of Internal Medicine. 44: 78-87, January, 1956.

From Medical Abstracts, June, 1956.

Obituary

Dr. Bruce Corbett Archibald, M.D., C.M., Dalhousie, 1921, passed away at Ottawa on August 6, 1956. Born in Bridgewater, N. S., Dr. Archibald was a graduate of the Dalhousie Medical School, receiving his degree in 1921. He first practised at Holden, Alberta, but later moved to Glace Bay, Cape Breton, where he practised until 1940.

In 1940 he joined the Royal Canadian Army Medical Corps in which he served in Canada and Great Britain until 1945. At the termination of hostilities he was discharged with the rank of Major. He served with the D.V.A. in Sydney for a time, but later was transferred to the Department of Indian Affairs and had charge of Department operations in Cape Bretoh from 1950 onward. In February of 1956, he was transferred to Ottawa and promoted to the post of Assistant to the Deputy Minister of Indian Affairs.

He is survived by his widow, the former Marjorie MacDougall of Kentville, N. S., (L.L.B. Dalhousie, 1921), and two sons, Dr. David and Dr. Willis Archibald, both graduates of Dalhousie Medical School, and one daughter, Mary Janice, a graduate from Edgehill School, Windsor, N. S., 1956.
