The BULLETIN

OF THE

VANCOUVER MEDICAL ASSOCIATION

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Vol. XIV. JANUARY, 1938 No. 3

In This Issue:

SYMPOSIUM ON MENTAL CONDITIONS

THE SOURCES AND CLINICAL IMPORTANCE OF THE VITAMINS

NEWS AND NOTES

VANCOUVER MEDICAL ASSOCIATION SUMMER SCHOOL
JUNE 21-24, 1938

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—NOVEMBER, 1937

Total population—estimated	253,363
Japanese population—estimated	8,522
Chinese population—estimated	7,765
Hindu population—estimated	352

	Number	Rate per 1,000 Population
Total deaths	209	10.0
Japanese deaths	2	2.9
Chinese deaths	12	18.8
Deaths—residents only	182	8.7
BIRTH REGISTRATIONS:		
Male, 173; Female, 183	356	17.1

INFANTILE MORTALITY:	Nov., 1937	Nov., 1936
Deaths under one year of age	3	15
Death rate—per 1,000 births	8.4	50.4
Stillbirths (not included in above)	12	10

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	October, 1937		November, 1937		December 1st to 15th, 1937	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Scarlet Fever	21	0	43	0	24	0
Diphtheria	0	0	0	0	0	0
Chicken Pox	146	0	104	0	42	0
Measles	4	0	5	0	5	0
Rubella	5	0	5	0	0	0
Mumps	18	0	47	0	33	0
Whooping Cough	6	0	17	0	6	0
Typhoid Fever	2	0	8	0	4	0
Undulant Fever	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0
Tuberculosis	33	14	26	14	12	--
Erysipelas	0	0	1	0	1	0

VENEREAL DISEASE CASES REPORTED TO PROVINCIAL BOARD OF HEALTH, DIVISION OF V. D. CONTROL

	Vancouver Clinic	Hospitals and private doctors	Totals
Syphilis	82	67	149
Gonorrhœa	95	22	117

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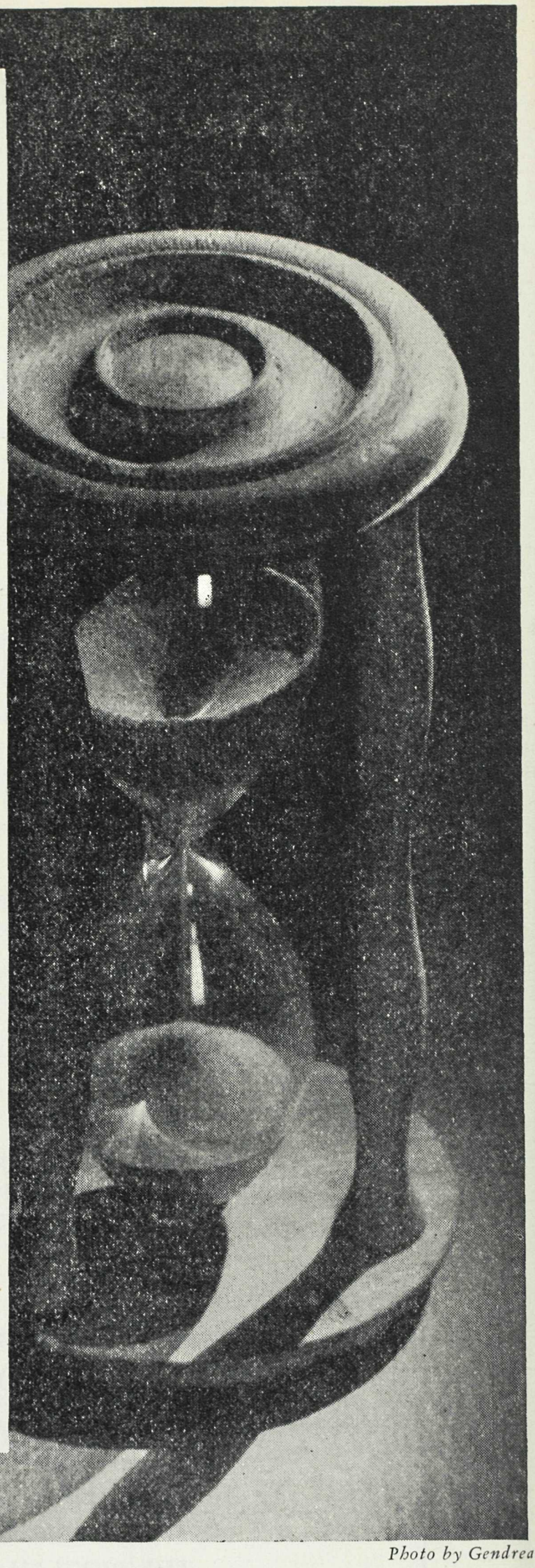

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VANCOUVER MEDICAL ASSOCIATION

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Programme of the 40th Annual Session

GENERAL MEETINGS will be held on the first Tuesday of the month at 8 p.m.

CLINICAL MEETINGS will be held on the third Tuesday of the month at 8 p.m.

Place of meeting will appear on Agenda.

General meetings will conform to the following order:

8:00 p.m.—Business as per Agenda.
9:00 p.m.—Papers of the evening.

1937.

October 5th—GENERAL MEETING.
DR. H. A. SPOHN: "Conditioned Reflexes and Their Relation to Medical Practice."
Discussion: DR. G. A. DAVIDSON.
DR. ETHLYN TRAPP.

October 19th—CLINICAL MEETING.

November 2nd—GENERAL MEETING.
DR. W. N. KEMP: "Dietary Sources and Clinical Significance of the Vitamins."
Discussion: DR. W. W. SIMPSON.
DR. H. H. PITTS.

November 16th—CLINICAL MEETING.

December 7th—GENERAL MEETING.
DR. A. L. CREASE
DR. G. A. DAVIDSON
DR. S. STEWART MURRAY
DR. E. J. RYAN
"Symposium on Mental Conditions."

December 21st—CLINICAL MEETING.

1938.

January 4th—GENERAL MEETING.
DR. D. E. H. CLEVELAND: "Kipling and the Doctor."

January 18th—CLINICAL MEETING.

February 1st—GENERAL MEETING.
DR. C. E. SEARS, Portland, Ore.: "The Pathogenesis and Treatment of Vascular Hypertension."

March 1st—OSLER LECTURE—DR. L. H. APPLEBY.

March 15th—CLINICAL MEETING.

April 5th—GENERAL MEETING.

April 19th—CLINICAL MEETING.

EDITOR'S PAGE

To all its readers the BULLETIN wishes a very happy and prosperous New Year.

It is almost a conditioned reflex (this shews how carefully and profitably we have read Dr. Spohn's paper on the subject), this uttering of good wishes at this season of the year. Just what conditions us is not quite clear—turkey and plum pudding at our time of life are not good conditioning agents—but the habit persists, and no doubt it is a very good habit—though it would be a better thing if the feeling could stay with us all through the year.

It is the time of year when one indulges in speculation as to the future. No doubt Christmas cheer has something to do with stimulating our imagination in this respect, and as one looks into the crystal one sees visions. What is to be the future of medicine? we ask the oracle. That there are to be changes, and radical ones, cannot be doubted. That they are overdue in many respects is also true. We must trade in the old car for a new model. But we must be prudent and wise in our trading. We must not be attracted overmuch by showiness and the specious promises of a glib salesman. The old car was a good one—gave good service, and carried us safely. But it cannot keep up with modern traffic conditions.

We must not labour our metaphor, nor stretch the simile further than it can bear. Still, we feel that the point is well taken, that sound and staunch as is the framework and structure of medicine, new additions must be made—a new flexibility acquired, a re-orientation of our attitude to the economic and social conditions of the modern world.

Take one thing only: public health and preventive medicine. It was stated in a speech the other day by the Hon. Josephine Roche of the United States Senate that whereas twenty years ago or so, 95% of all deaths were due to acute illness, today 65% of deaths come from chronic conditions—cancer, tuberculosis, heart disease, diabetes, etc.

What has brought about this silent, almost unnoticed revolution in the health conditions of the people? Not treatment, not curative medicine, though this has played some part. The real hero of the piece is preventive medicine and public health work. Typhoid, infantile diarrhœa, diphtheria, to mention only a few, that killed thousands and tens of thousands annually, have been practically cleaned up by public health measures.

And treatment of established illness will never clean up the chronic conditions which now head the list. Only by extending and continually improving our preventive methods can we hope to achieve victory. Periodic examination at every age, early diagnosis and recognition of disease—these are the first essentials.

And this means that the doctor in practice, the general practitioner and specialist, must be enlisted as part of the preventive force. They have their share, and till that is done we shall not obtain the maximum effect. The dichotomy between therapeusis and prevention must be done away with—these two must be reunited.

This is a great task for the future. It is along these lines, we feel, that our problems, and the problems of the legislator, and those of the community at large, will find solution. Mere palliatives will only prolong our misery; an honest search for the cause will suggest the real remedy.

VANCOUVER MEDICAL ASSOCIATION

NEW YEAR GREETINGS

The President and members of the Executive Committee of the Vancouver Medical Association extend their best wishes to members of the Association for the year 1938. May the New Year be one of New Hopes and New Cheer, and may we remember always that the great business of life is to be, to do, to do without, and to depart; but always to *live* all the days of our lives.

G. H. CLEMENT, M.D.

BRITISH COLUMBIA MEDICAL ASSOCIATION

MESSAGE FOR THE NEW YEAR FROM THE PRESIDENT

The year 1937 has been an eventful one in the history of our profession in British Columbia.

The Executive Officers and the individual members are to be congratulated upon the activity of the Association during the year.

There are many reasons, scientific and economic, for maintaining the present standard.

It is hoped that "Federation" within the Canadian Medical Association will be an accomplished fact within the year 1938.

A continued co-operation with the Council of the College of Physicians and Surgeons will result in a solution of our problems which will be satisfactory to the people of this province and to the profession.

On behalf of your Officers and Directors may I extend to each member of our Association the best wishes for the New Year.

GORDON C. KENNING.

18th December, 1937.

COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA

PRESIDENT'S GREETING

The membership of the College has given loyal support to its Council during 1937 and I wish to thank each member for his splendid co-operation and display of confidence in those to whom many vital decisions have been entrusted.

Christmas provides us with an opportunity to voice appreciation of the splendid contribution in time, study and work which many men have so willingly made in behalf of their profession.

I bespeak for 1938 a continuance of this strong interest shewn by our members in their affairs and a courage born of confidence which makes for a strong united profession impelled by a real desire for progressively better standards in medical practice in this Province.

The members of the Council of your College extend to you a sincere wish for your happiness and well-being in 1938.

S. CAMERON MCEWEN.

New Westminster.

VANCOUVER MEDICAL ASSOCIATION

Dr. D. E. H. Cleveland will be the speaker at the regular meeting of the Association on January 4th. His subject will be "Kipling and the Doctor."

The regular meeting of the Association on February 1st will be a dinner meeting, to be held at the Hotel Georgia. The speaker on that occasion will be Dr. C. E. Sears, of Portland, Oregon. His subject will be "Pathogenesis and Treatment of Vascular Hypertension."

SYMPOSIUM ON MENTAL CONDITIONS

The regular meeting of the Vancouver Medical Association of December 7th was given over, from a scientific standpoint, to the description and treatment of mental disorders. There were four speakers, of whom each devoted ten minutes to the branch of the subject allotted to him.

One of our members, Dr. J. G. McKay, who discussed this symposium, spoke very truly when he said that there was one grave defect in this presentation—namely, that four excellent speakers, each of whom could easily and with great profit to his audience, and greater justice to his subject, have been given a whole evening to himself, were compelled to cover most sketchily, and at breakneck speed, an amount of ground which was altogether too vast to compass in this way. Dr. McKay was, we feel, quite right. Possibly it could not be altogether helped; we have few evenings available, and cannot devote four of them to one subject. But certainly we should go more deeply into this subject of insanity and psychoses. As general practitioners, we are woefully ignorant of the diagnosis, in its early stages, of mental disorder. Anyone can recognise acute mania or melancholia, most of us know a severe dementia praecox when we see it. General paresis of the insane in its later stages calls aloud for institutional care and segregation from society.

But this is not nearly enough. In past generations, there was—since we knew of no cure for dementia praecox or g.p.i.—no special urgency about early diagnosis, until actual need for incarceration arose. But the picture today is an entirely different one.

As these men all stressed the point, early diagnosis, early recognition of the incipient stages of mental disorder, are all important.

Medicine today is moving ever further in the direction of early diagnosis; cancer perhaps being an outstanding example of a disease which, as far as we can see at present, we shall never adequately combat or master until we have all (and this means every general practitioner especially) learnt to think in terms of prevention, of early recognition, of constant watchfulness for signs which are not recognisable by any but the most careful methods. So medicine is really becoming more and more a matter of Public Health work, in which the general practitioner must be a first consideration, and of which he must be an integral part. This is another story, however, which should engage our interest again. But to return to our present subject: consider the following. Every bed in a general hospital in Canada for treatment of the sick is duplicated by a bed in a mental hospital for treatment of the mentally disordered. The difference is that, by preventive and curative work, we are curing most of the former. Only the surface has been scratched as regards prevention for the latter—but curative work is increasing in efficiency. It will not, however, reach its maximum effect till prevention, early diagnosis and early application of treatment are applied. Then we may hope, as Dr. Ryan pointed out, to cure 45% of our dementia praecox cases, hitherto 100% hopeless, and 40% of our g.p.i., also all hopeless till recently; and we may begin, in some measure, to plug this appalling leak in our ship of health and well-being, which leak otherwise threatens to swamp and sink the ship, and overwhelm our community economically and every other way.

Hence the enormous importance of education of our profession along these lines. As one listened to the speakers the other night, one felt almost that it is criminal that so little should be done about making every man in our profession conscious of the urgency of the situation. As we said, as long as nothing could be done, there was nothing to do, but the alienist and psychiatrist of today is an entirely new being. He has started moving with amazing speed from one discovery to another. Dr. McKay gave a hint of this in his Osler Lecture three or four years ago, and even in that short time an immense amount of progress has been made.

We would urge on the Executive of the Vancouver Medical Association that they take what Dr. McKay said very much to heart. We all know that treatment is the smallest part of our armamentarium against disease; that knowing what we do now, we must emphasize prevention and early diagnosis ever more and more. We should have a course of lectures, demonstrations, clinics, along this line, to fit ourselves to recognise mental disease ever earlier, to secure treatment ever sooner, and so to make a real attack which will eventuate in victory, on what is the saddest, most tragic, most hopeless of the enemies that beset our health, our happiness, and our liberty.

* * * *

I. Dr. S. Stewart Murray

Frank cases of mental disease, exclusive of feeble-mindedness, epilepsy and those associated with brain damage resulting from birth injury, trauma or disease such as epidemic encephalitis, are fairly uncommon in childhood. In a series of 1500 cases referred to the children's clinic at the psychiatric hospital in Toronto, only three exhibited signs and symptoms diagnostic of psychosis. This does not mean, however, that the field of infancy or childhood is sterile in regard to positive and constructive psychiatric work. Study of adult cases of mental disease proves conclusively that the true beginning is to be found in some behaviour pattern acquired during the more formative periods from infancy to maturity. The individual was improperly conditioned, and thus, when meeting the stress and strain of maturity, failed to make a satisfactory adjustment, and in the more serious cases disease resulted. You will note I mentioned in the more serious cases only did frank disease occur. There is a huge group of failures in many lines, unhappiness in various walks of life and misfits, all of which are indications of maladjustment.

In every activity of life psychic or biological adjustment must occur or conflict results. Conflict is necessary to a degree to bring about complete integration of the organism, but sustained conflict results in disintegration and failure of varying degrees.

Recognizing, then, that childhood offers a field for constructive work, what are the factors which one must consider when a child and parent ask for help and the parent or teacher or some other adult complains that the child is misbehaving?

First: The human animal, child or adult, is a psycho-biological one and each one is individual. Therefore there is an inseparable relationship between physical and mental processes and the mental reaction is influenced by the physical health and defects and vice versa.

Second: Being biological, the child has certain innate potentialities which can and will be modified by growth and environment. Inheritance and environment cannot be considered individually. The germ plasm itself is influenced for better or for worse by the state of health of the host—in short, its environment.

Third: Being a living organism and subject to growth, one must remember to study and weigh the behaviour, emotional, intellectual or social, in keeping with the level of the age of the child, both mentally and physically. In short, one must view the child and his reactions genetically and consider them as subject to change. This does not mean that one should sit passively by and do nothing, as the change may be retrogressive as well as progressive.

Fourth: The environment for any individual, regardless of age, includes all factors external to the individual. In childhood the home and parents, the school, teacher and fellow students form an extremely important part. One then must consider the parents—their personality, make-up and attitudes, e.g., the over-solicitous and the over-strict; the over-ambitious; the disappointed parent who sees in the child the opportunity of gratifying a wish not fulfilled in their early life; the unhappy parent; the parent of an unwanted child; the psychoneurotic parent; and many other types whose attitudes,

again social, emotional or intellectual, have a direct bearing on the behaviour of the child. The same applies to the home, the relations, teachers and others. (May I state here—My impression is that the attitude of the majority of present-day teachers in Vancouver toward the child is one of an attempt at wholesome, intelligent, sympathetic and co-operative understanding of the child.)

Fifth: The child develops attitudes, ideals, emotional reactions, etc., from everyday activities. One then must consider the physiological appetities of hunger, thirst, elimination, rest, change and sex.

These show: (a) Physiological background; (b) rhythm; (c) conscious aspect; (d) innate response; (e) maturation (mature); (f) subject to modification by learning and exhibit evidence of: enjoyment; social control; and if dissatisfied or misdirected are subject to maladjustments.

Sixth: The child's neurological make-up must be considered. The hypertonic infant shows an instability or unbalance of the anatomic nervous system and is of necessity subject to more care and therefore more influence from the parents.

Seventh: During the early formative period the child is essentially (a) egoistic, (b) egocentric, and in the growing-up process will, because of this, receive more knocks or have more frustration of its desires with resulting behaviour frequently unaccepted socially.

Eighth: The intellectual development of the child must be considered. This can be measured with a practical degree of accuracy in the vast majority of cases.

Ninth: The daily routine of the child is of extreme importance.

Tenth: The opportunity for unhampered expression will become apparent throughout study of other factors.

Having a picture of the child in this environment, one then considers the response or behaviour, from which one turns then to the cause of stimulus.

Regarding these latter two—prolonged discussion with the child is usually not conducive to good results, because the child reacts to the situation encountered without weighing the reasons.

Having then studied the child in his environment, one must turn to treatment, keeping in mind that: (a) The child is tremendously influenced by his environment; (b) the child is plastic: can learn new patterns of response.

Example: L. H., boy, 15 years. Neurasthenic parent; uneducated and emotional mother; borderline intelligence in child; physical illness.

Result: Boy psychoneurotic and refuses to face reality.

Proper treatment, consisting of correcting various environmental factors and re-education, will prevent development of dementia praecox.

* * * *

II. Dr. G. Davidson

This speaker gave a necessarily brief but none the less excellent classification of mental disorders, which should help us greatly in forming a clear and coherent mental picture.

There are five main *groups* of mental disorders.

Group I.: *Psychogenic.*—These have their origin in the function of the mind and we find no constant structural change in the brain with them. This group constitutes 60% of all mental disease.

(a) The main one, *Schizophrenia*, or split personality.

The outstanding example is *dementia praecox*. No public health problem approaches this, in Dr. Davidson's opinion, in importance or difficulty, as no other problem presents the same degree of loss and waste. Dementia praecox *comes on early, and should be recognised and treated early.*

The shy, withdrawn child, manneristic, cataleptic, aloof, behaviouristic, shewing sometimes delusions of persecution—often a behaviour problem to parent and school. This type of child can be recognised daily, and picked out for observation and treatment.

(b) The *manic-depressive type.* Quite common, characterised by alternating moods of elation and depression. There are various degrees of this, some quite mild. There is unreasonable optimism, followed by equally unreasonable depression.

(c) Then we see the *paranoiac type,* sometimes found in other psychoses, *e.g.*, alcoholism, arteriosclerosis, etc. Here we have the intense concentration on self, and the importance of self.

(d) The psychoneuroses: a large group.

GROUP II: The *organic group,* arising from:

(a) Age, arteriosclerosis and senility. Here we have progressive mental deterioration to total loss. There are some six subheadings here, as regarding symptoms, among which are depression, agitation, paranoid conditions, etc.

(b) *Syphilis,* e.g., general paresis of the insane, the outstanding type.

(c) Organic disease of brain, *e.g.*, disseminated sclerosis, paralysis agitans, tumours, encephalitis, etc.

GROUP III: The *toxic group.*

Toxins may be *exogenous,* as regards the body, or *endogenous.*

Endogenous toxins are exemplified by diabetes, the insanity of the puerperium, etc.

Exogenous are such as alcohol and drugs. We must be on our guard against overlooking alcoholic dementia—a mistake often made.

GROUP IV: Constitutional inferiority, especially mental deficiency.

The child's development is slow; its progress at school very slow; it finds competition with other children difficult or impossible; there is sometimes illegitimacy. In this class we find, too, the moral imbecile who never grows to normal stature, the cheque forger, and so on. There is a constant unsocial attitude.

We must remember, too, that mental defect may be associated with any other form of psychosis.

GROUP V: *Epilepsy.* There is a certain divergency of opinion here, some authorities emphasizing organic causes, others feeling that some toxic element is mainly to blame. Dr. Davidson, we gathered, felt that while epilepsy should be included in any classification of psychoses, yet the placing of it correctly is yet to be done, and much study is necessary before we have an adequate knowledge of its place.

* * * *

III. DR. CREASE

Dr. Crease dealt especially with the question of psycho-neuroses. These are very much more common than the average man, even the average doctor, realises. In one day's admissions to the Vancouver General Hospital, for example, one would find at least one major and two minor cases of psychoneurosis; and there is besides this the usual, often unrecognised, and insufficiently estimated, relation between unhappiness and illness—and the effect of illness in producing misery and leading to despair.

Unhappiness varies directly with illness. In the psycho-neurotic case these people are not unhappy because they are ill—they are ill because they are unhappy. One must first find and treat the emotional and psychic lesion before one can in any way affect the physical being for the better. Man is a function of his emotions, to put it mathematically.

Dr. Crease then wrote down on the blackboard a long series of factors in the mental set-up of a man—what might be called his mental physiology.

The human being is composed of cell units. Each of these has all the powers that we have as an aggregation of units: growth, motion, digestion, excretion, reproduction. The cell-unit, too, is *one of a colony*, as is the human unit. It lives in relation to others, and is motivated by this relation, conditioned by repeated contacts. Each impulse received leaves something behind as it passes through the cell; habits are thus formed, and the response tends to become constant to repetition of the same impulse.

The cell, the composite human being, has to be *plastic*. Each must learn to recognise its problems. The manner in which it attacks the problem, the success or failure of each attack, the nature of the habits formed, the plasticity attained, the habit of victory, are all vital to the question of happiness and success in life.

Stimuli come from without and within, may be entero- or exero-ceptive or proprio-ceptive, derived from the nature of the tissue itself.

We start with instincts as our guide to action, and we learn to modify these, in the case of the human being, as we experience the contacts of daily life and the emotions which these contacts arouse.

First is perception of phenomena in the child; then intellection, as these are sorted and arranged. Then we have *volition* and *emotion*, which determine our action. Other factors enter in to influence the developing personality: gregariousness, acquisitiveness, pugnacity, laughter, sex. This last, Dr. Crease feels, has been greatly overstressed. It is, of course, a very important factor in life, one of the most important, but no so overwhelmingly determinant as the Freudian school, for example, thought and preached.

Perhaps the most important emotion in undermining our physical and mental health, and producing psycho-neurosis, is *fear*, in this modern age, and our present degree of civilisation.

Fear, in the primitive man, is a protective agency. It is chiefly an alertness, a constant preparation for quick action, for immediate response to danger, that necessitates the emotion of fear.

In modern life we are not beset by the constant danger to our existence that is faced by the savage or animal. Fear as a protective agency is not called for in the conditions of life today, so we have an emotion not used, and not sublimated, which becomes *anxiety*. (It is a commonplace that the man exposed to constant danger is usually very placid, and free from worry in the intervals between exposures.—Ed.)

This is the key to the understanding and appreciation of much apparent organic or physical illness, which is really *an expression of fear*.

Consider the physiological effects of fear. We have rapid pulse, raised blood pressure, increased breathing rate. The blood-sugar rises, the muscle tone increases; the pupil is dilated, the mouth dry and the stomach feels constricted; swallowing is difficult and spasmodic.

All these are seen in greater or less degree in the "neurotic" patient. We do not recognise them for what they are—we *do not take the time* to diagnose the condition. *We should take more time.* Dr. Crease emphasized this point: that we may need an hour or two to examine such a patient.

There is a type of patient, very common, that is anxious, worried, completely self-centred, that goes from doctor to doctor, then from quack to quack, and never changes or improves, till perhaps they meet some person, or cult, which re-orients them, disconnects them from their ego, and so cures them. Failing this, they drift into chronic hopeless invalidism.

Their symptoms follow a certain type very uniformly. There is the anxiety, the lump in the throat, dyspnœa, rapid pulse, praecordial pressure and distress, gas and anorexia, etc. Often they are diagnosed as hyperthyroid or myocardial cases, but are not.

In these cases, an accurate history of their emotional life is most important; and here Dr. Crease uttered a warning, that we must avoid creating in these people's minds phobias, such as cardio-phobia, especially this perhaps.

We shall find the cause generally somewhere in their domestic or economic relations. We shall find maladjustment, frustration, disappointment, psychic hurts, etc. The causes are multiple, so that recurrences are common. But till we hunt down and treat these maladjustments to life we shall do no good by physical treatment.

Emotional disturbances may be in the form of overproduction—*e.g.*, the sort of thing described above—too much fear, too much self-consciousness, too much ego—or in the form of under-production, when we get hysteria, amnesia, various phobias, etc.

As to treatment: The first thing, of course, is to recognise the underlying cause. The word "complex" has become a commonplace, and Dr. Crease defined this as "a series of ideas embedded in which and affecting which is more or less deep emotion: sometimes multiple, very often buried and unrecognised for what it is." The first thing is to recognise their existence. Freud suggested that we dig them out, to the deepest and most long-standing of them. This, Dr. Crease suggests, is a very long, difficult and expensive process, and is not necessary to this degree. The more recent ones, perhaps, may be exhumed and explained.

Various schools—Jung, Adler, etc.—have modified our ideas of complexes, have brought in other factors. Adler, for instance, believes that the bodily weakness complained of is an overcompensation for the sense of inferiority, the inferiority complex.

To conclude, Dr. Crease's advice was that of Horace, to follow a middle path: Take time, be patient, do not hesitate to dig up the obvious complexes and air them, but do not be too exhaustive and exhausting. Results are apt to be good.

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IV. Dr. Ryan

Dr. Ryan gave a brief account of some of the work being done in the modern mental hospitals, of which Essondale, where he works, is an outstanding example.

He dwelt on the urgency and important to an adequately conceived set-up of a psychopathic ward or wards, which had been in contemplation in Vancouver prior to "the depression," and which exist in many cities. This hospital must be properly compartmented, and should be of immense value and fill a definite place.

In the short time at his disposal, Dr. Ryan could only touch briefly on some of the highlights of psychiatry. For instance, he emphasized the great importance of a *complete* history, personal and family. The background of family life, or early training and environment, of heredity, of early illness or defect; all these must be patiently sought out and recorded.

The physical examination must be complete and searching. Nothing less than this is of any value.

He spoke of some points in treatment of the *manic phase* of the manic-depressive syndrome. In this phase we give *sedatives*, mainly of the luminal and veronal group; but perhaps of greater value are foam baths, lasting two to three hours and given every day.

We must get rest and sleep within nine days at the outset, or look for a fatal result. In the depressive phase we must stimulate the patient's interest in other people and in some object other than himself. Suicide is the great danger here.

When patients are admitted, they must be allowed no visitors for at least ten days. This is to secure their confidence, and break the chain that binds

them to relatives. Dr. Ryan spoke feelingly and with some bitterness about relatives, who are one of the greatest handicaps to thorough and satisfactory treatment in mental disorders. Their misplaced sympathy, their sentimental refusal to look facts in the face, their constant interruptions of the process of mental cure, make the work of the mental hospital often unnecessarily difficult.

Dementia praecox. This gives rise to one-third of the admissions, and is the form of mental disorder present in 50% of the mental hospital's patients. Till some year and a half ago, dementia praecox was one hundred per cent incurable, and every case was a dead loss and a permanent liability to the community. Now the treatment by insulin shock has begun to revolutionize things, and is the greatest advance ever made in the treatment of this disease and one of the greatest advances in psychiatry as a whole. Metrosol is another drug being used. There is some danger undoubtedly—but in Dr. Ryan's opinion the results already obtained more than justify our taking an even greater risk than exists, since without these there is no other chance of recovery.

Sacco of Vienna began his work eighteen months ago in New York, and in this city treatment is being widely carried out. The best results are obtained in early cases, especially those who have not been more than one year under treatment. But many of two years' standing or more have been benefited. He started a series of treatment cases in 1936.

We start with a fasting patient and give 15-20 units of insulin to begin with. There is drowsiness, followed by some excitement. We should give enough to produce coma. We must get to know the patient before we allow any length of coma—but as we can estimate his resistance we prolong the coma, usually up to two hours or so. Then by nasal feeding we give sugar to arouse them and follow this by a full meal.

We do this for six days a week, and give the seventh day as a day of rest. Sometimes we must make the interval two or three days.

The usual dose to produce coma is 40 units. We gradually lower the dose but must still make sure that we obtain coma. The longer the coma, the better the results.

There is sweating, motor disturbances, sometimes convulsions. When these come, we arouse the patient, if necessary with intravenously given sugar.

In Essondale eight cases have been treated so far: two with cure. Some of the others are still under treatment.

In New York 45% of males treated are recorded as "recovered," and another 5 to 10% markedly improved; women show not so favourable results, but even here there are 28% of recoveries. Deaths have occurred in from 3 to 4% of cases treated.

In the administration of this treatment one nurse must be in attendance for each two patients. During the actual process of treatment a doctor must be in the room all the time. Most of the deaths are from bronchopneumonia.

Dr. Ryan made a special plea for co-operation by the medical profession, who should, when asked their advice as the family physician, unhesitatingly urge treatment. He reminded us that these cases are admitted at the rate of 250 every year in Essondale alone; that unless treated, 100% are permanently insane, a dead loss to the community and their friends; that 45% of males are cured, 5 to 10% improved, and that a death rate of 3 to 4% is exceedingly small considering the immense gain to be had on the balance. Many of these people will return to a useful and happy life.

Metrosol is easier to handle than insulin. It produces convulsions, and when used is given every day in such dosage as to maintain convulsions for from one minute to a minute and a half.

General paresis of the insane. Here again is a very bright chapter being written in the history of the treatment of mental disease. As is well known, malaria is induced in the general paretic following a course of tryparsamide.

Forty per cent of them are returned to useful life—an amazingly satisfactory result. But there is even more to be gained from this treatment than this. As Dr. Ryan pointed out, prior to the introduction of this treatment, the general paretic was a foul and disgusting object, and became increasingly so with the advance of the disease, so that the ward with several of these patients in it was a revolting and often horrible sight. Now, even those who are not cured become tidy, clean of habits, more orderly and happier, and much of the need for care and nursing is mitigated. And 40% become useful citizens again. Some have attained promotion and high office since their discharge.

NEWS AND NOTES

Dr. Ethlyn Trapp has opened offices in the Medical-Dental Building, and will confine her practice to x-ray and radium therapy of cancer. Dr. Trapp is installing a high-voltage deep therapy equipment.

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Dr. Leith Webster is at present in England, where he is doing post-graduate work.

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We learn that Dr. Jack Harrison will be spending Christmas in Vienna, where he is doing post-graduate work.

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We are glad to report that Dr. W. M. Paton, who has been in hospital for some weeks, will be able to leave the hospital in time to spend Christmas at home.

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The death in England of Dr. R. V. Dolbey was reported in the daily papers of December 10th. Dr. Dolbey left Vancouver at the outbreak of war and went to France with the First Expeditionary Force. He served in the army until the end of the war, when he was appointed to the Chair of Surgery at Cairo, remaining in Egypt until 1930. Dr. Dolbey first practiced in Victoria, being associated with Dr. Owen Jones, and then came to Vancouver, when he became a member of the Vancouver Medical Association.

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We regret to note the passing of Mrs. F. X. McPhillips, the wife of Dr. Francis Xavier McPhillips. Dr. McPhillips, who began practice in the Province in 1893, joined the Vancouver Medical Association in 1898. We extend our most sincere sympathy to him in his bereavement.

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An act to officially establish the Metropolitan Health Board will be introduced at the next session of the Legislature. Among the recommendations which the Board will make to the City Council are the appointment of Dr. S. Stewart Murray as assistant to the senior medical health officer; appointment of Dr. K. Brandon to position of epidemiologist to fill the vacancy created by the death of Dr. E. D. Carder, and the appointment of Dr. E. J. Curtis as consultant for communicable diseases.

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Miss Kathleen Sanderson, who has been for some years the Executive Secretary of the Greater Vancouver Health League, will resign from that position at the end of the year.

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The dates for the Vancouver Medical Association Summer School for 1938 have been set for June 21 to 24 inclusive.

Dr. L. A. C. Panton of North Battleford, Sask., has arrived in Kelowna to start practice. He will confine his work to diseases of the eye, ear, nose and throat.

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A Clinic under the direction of Dr. J. A. Leroux has been established at Nanaimo under the Division of Venereal Disease Control of the Provincial Department of Health. This Clinic will serve the Upper Island district.

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Dr. S. C. Peterson, Director of the Division of Venereal Disease Control, addressed a well-attended meeting on December 16th, illustrating by lantern a very comprehensive survey of the work of his department, following which he devoted an hour to replying to many questions from his interested audience.

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Dr. H. R. Christie of Rossland travelled to Edmonton to attend the funeral of his father-in-law, the late Dr. H. A. Woods.

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Dr. D. J. M. Crawford of Trail is spending the Christmas vacation at his former home in Medicine Hat.

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A clinic under the Division of Venereal Disease Control of the Provincial Department of Health was opened in Trail on December 1st.

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In the published results of the judging at the Winter Fair held in Vancouver early in December the following item appears: "Class 23, wheat, hard red winter, 18 lbs., Ridit—Dr. W. B. McKechnie, Armstrong." Congratulations to our old friend, who is now a successful farmer-doctor.

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Dr. McKenzie Morrison of Stewart called at the office of the Executive Secretary. He is looking very fit and is going East for two months' intensive post-graduate study.

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Dr. H. A. Whillans is carrying on as *locum tenens* for Dr. Morrison at Stewart during the latter's absence.

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Dr. H. F. Tyerman of Nakusp will have a month's vacation in California.

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Dr. John Brown, who has retired from the service at Shaughnessy Military Hospital, has gone to Nakusp to relieve Dr. Tyerman.

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Dr. J. W. Welch embarked as ship's surgeon on *R.M.S. Niagara*, Canadian-Australasian Line. During his absence Dr. W. R. Sutherland Groves will conduct the practice.

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Dr. E. O. DuVernet is visiting relatives in the Maritime Provinces over the holiday season.

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Dr. Hubert Dumont is *locum tenens* in Dr. DuVernet's practice.

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Dr. Arthur B. Nash and Dr. W. Allan Fraser, both of Victoria, have returned from a tour of medical centres in Canada and the United States, visiting Edmonton, Winnipeg, Toronto, Montreal, New York, Boston, Chicago, returning by way of Los Angeles. Dr. Fraser specializes in urology and genito-urinary surgery, and Dr. Nash confines his practice to obstetrics and gynæcology. Their post-graduate studies were contred in their specialties.

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Dr. J. A. Leroux is associated with the Division of Venereal Disease Control and is located at Nanaimo, his specific work extending over the Upper Island.

Dr. Norman C. Cook of Victoria has recovered from a major operation.

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Dr. N. A. Hanson has joined the staff of Resthaven Sanitarium at Sidney, B. C.

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Dr. A. E. B. Perry, who practised at Port Simpson for six years, is now in Ontario.

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Dr. C. A. Armstrong, who was formerly associated in the practice at Port Simpson, has taken over the practice.

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Dr. J. MacKay Macdonald, who practised during many years in Toronto, has opened offices in Victoria.

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A ceremony of interest took place on December 7th at St. Stephen's United Church when Miss Rebecca MacLellan of Vancouver and Dr. G. L. Watson of Revelstoke were wedded. Dr. W. Keith Burwell was groomsman and Doctors W. L. Turnbull and T. Dalrymple were ushers. Dr. and Mrs. Watson will make their home in Revelstoke, where Dr. Watson is associated in practice with Dr. A. Llewellyn Jones.

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Dr. George E. Langley of Wells has been in Vancouver on a brief vacation and attended Dr. Watson's wedding.

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Dr. B. deF. Boyce of Kelowna visited Vancouver this month and called at the office.

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Dr. G. F. Amyot of the Provincial Department of Health has left for the East. He will be absent from the Province for two years, engaged in a survey to be conducted by the American Public Health Association.

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Dr. H. G. Chisholm, formerly assistant superintendent at Tranquille Sanitarium, is now associated in Victoria with the Tuberculosis Division of the Provincial Department of Health.

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The members throughout the Interior of the Province have often inquired regarding the whereabouts and doings of Mr. C. J. Fletcher, who during eleven years served as Executive Secretary to the British Columbia Medical Association in the years following its revival immediately after the war. Dr. Thomas took a boat trip one Sunday last September and visited Mr. Fletcher in his home at Hopkins Landing and found him and his good wife in comfort and health. Mr. Fletcher was cheery and very pleased to realize that the visit was made primarily to learn first-hand of his well-being so that we could authentically reply to interested inquirers among his friends made in former days.

LIBRARY CORNER

RECENT ADDITIONS TO THE LIBRARY

Surgical Clinics of North America, August, 1937. Contains a *Symposium on the Acute Abdomen.*

Surgical Clinics of North America, October, 1937. Contains a *Symposium on Recent Advances in Surgical Technique.*

Operative Surgery, by M. Kirschner : v. r ; "Head and Neck." 1937.

Facial Neuralgias, by W. Harris, 1937.

Textbook of Medicine, edited by F. W. Price, 1937.

Textbook of Medicine, edited by R. L. Cecil, 1937.

Synopsis of Digestive Diseases, by John L. Kantor, 1937.

THE JOHN MAWER PEARSON FUND

The growth of the John Mawer Pearson fund has been not by leaps and bounds but by the gradual accretion of donations given by a host of our members.

There seems to be an almost unanimous opinion that in no more fitting way could our Association show its appreciation of Pearson's persistent, steady, thoughtful endeavour on its behalf.

The torch that he lit and valiantly carried for so many years is still flaming but the bearers are many. Let us see that the memory of his work is worthily commemorated.

There are still many who would like to associate themselves with this important development in our Association's affairs. Send in your cheque to the Treasurer as soon as you can and thus do your share to lighten the work of the committee.

Received to date:

J. M. Pearson bequest	$ 300.00
Members Pearson family	74.45
Contributions from V. M. A. members	859.00
	$1233.45

—W. D. Keith, M.D.

VICTORIA MEDICAL SOCIETY ANNUAL MEETING

Following dinner at the Union Club in Victoria, the Victoria Medical Society held its 43rd Annual General Meeting on Monday, October 4th. (The first Annual Meeting was held in October, 1895. Prior to May, 1895, the Victoria group formed a branch of the British Medical Association which held meetings for over twenty years.)

Dr. G. W. C. Bissett of Duncan, Vice-President, presided in the absence of the president, Dr. H. E. Ridewood. The report of the Library Committee showed nine journals regularly received and twelve new monographs purchased. In developing the library the committee has received valued co-operation and assistance from other Libraries.

The Committee on Care of Indigents reported that services to indigents in Victoria and Saanich were valued at $45,786.00 based on the Schedule of Minimum Fees, and averaged approximately $11.00 per individual for the year.

The Committee on the Housing of Cases of Infectious Diseases had presented a report covering the need of better facilities for the care of these patients. This report is now being considered by the authorities of the various municipalities.

The report of the Treasurer showed the Society to be financially healthy.

Doctors D. S. McHaffie of Duncan and C. H. Beevor-Potts of Cowichan Lake were elected to associate membership.

Following the meeting Dr. Arthur B. Nash showed motion pictures of local medicos in characteristic poses on and off the golf courses. These were highly entertaining.

The elections placed the following in office:

President: Dr. G. W. C. Bissett, Duncan; Vice-President: Dr. P. A. C. Cousland; Honorary Treasurer: Dr. Charles A. Watson; Honorary Secretary: Dr. W. E. M. Mitchell; Representative to the Board of Directors, British Columbia Medical Association: Dr. W. Allan Fraser; Reporter: Dr. Charles A. Watson; Library Committee: Doctors W. A. Fraser, A. B. Nash, O. C. Lucas; Committee on Care of Indigents: Doctors R. L. Miller, F. M. Bryant, E. W. Boak, W. J. C. Ekins, G. F. Aylward and J. M. Mackinnon.

COMMITTEE ON THE STUDY OF CANCER

BRITISH COLUMBIA MEDICAL ASSOCIATION, 1937-1938

Chairman: Dr. A. Y. McNair, Vancouver.

Secretary: Dr. Ethlyn Trapp, Vancouver.

Members: Dr. Gordon C. Kenning, Victoria; Dr. F. M. Auld, Nelson; Dr. M. R. Basted, Trail; Dr. B. J. Harrison, Vancouver; Dr. Roy Huggard, Vancouver; Dr. L. W. Kergin, Prince Rupert; Dr. J. W. Lang, West Vancouver; Dr. F. R. G. Langston, New Westminster; Dr. H. H. Milburn, Vancouver; Dr. B. R. Mooney, Victoria; Dr. H. H. Murphy, Victoria; Dr. H. H. Pitts, Vancouver; Dr. C. W. Prowd, Vancouver; Dr. A. B. Schinbein, Vancouver; Dr. G. F. Strong, Vancouver; Dr. J. W. Thomson, Vancouver; Dr. S. A. Wallace, Kamloops; Dr. S. L. Williams, Nanaimo; Dr. M. W. Thomas (ex-officio), Vancouver.

Plans are under way for extending Cancer activities throughout the Province by increasing the number of Cancer Study Groups and making biopsy service more easily available.

Any suggestions from the men in practice which would make the work of this Committee more valuable to them would be welcome and very greatly appreciated.

Secretary, Committee on the Study of Cancer.
ETHLYN TRAPP, M.D.,

MOTOR VEHICLE LICENSE PLATES— DOCTOR'S SERIES

[We would call our readers' attention to the following communication, which is self-explanatory. Please note especially the final paragraph.—ED.]

Dr. A. J. McLachlan, Registrar, December 18, 1937.
College of Physicians & Surgeons of B. C.,
203 Medical-Dental Building,
Vancouver, B. C.

Dear Dr. MacLachlan,

With further reference to this matter I beg to state that the Doctor's Series number plates marked "PN" and numbered, have now been made for the coming year.

A certain amount of trouble has been experienced in connection with the issuance of the special series plates for the medical profession, particularly during the rush period (*i.e.*, end of February), owing to the reason that some doctors wish the special series, and others do not.

When we first started to issue these plates we checked the name of the person against the Register, and if a member of the College of Physicians & Surgeons of B. C., a Doctor's Series plate was issued. In many cases, however, these plates were returned to us by the licensee, demanding an issue of the regular series. This upset our issuance and audit considerably. Under the circumstances, therefore, we asked that those wishing Doctor's Series so note on their applications, and when this was not done an ordinary series number was issued. Again many plates were returned to us, as the licensees wished to have the Doctor's Series.

In order that we may take care of this situation with as little trouble as possible would you kindly advise the members of your Association to plainly mark on the top of their application forms "Doctor's Series Required," when such series will be issued covering the particular application concerned, and that if the application is not so marked the ordinary series will be issued.

Yours truly,
J. M. MCMULLIN,
Commissioner, B. C. Police.

LUNG ABSCESS

Dr. Harold Brunn

(Presented at Vancouver Medical Association Summer School, June, 1937)

I thank the introducer for his very kind remarks. I hardly live up to the kind words these friends say about me. I take this opportunity, also, of thanking the doctors who have been so kind to me in the way of entertainment. I wish I were sitting down there with you, smoking a cigarette, after a heavy meal.

The question of lung abscess is not so interesting to everyone because ordinarily no one man gets many cases, and there are several reasons why we began a study of the cases that came under our review both at the University Hospital and the San Francisco Hospital, and, also, Dr. Eloesser has a service like mine. So that, in all, we were able to gather together 205 cases of lung abscess. Now, I never believe very much in statistics, surgically speaking. Any can can usually prove things by his or someone else's statistics. When you go over the histories and see them so wanting in details and you have to piece in so many facts, and you don't know all the elements which went to make up the condition of the patient, you really haven't got 205 cases known by the surgeon. We have a little fun in our hospital and the medical and surgical side have to have their play, and many times I write a paper just to show the medical side where they are wrong. We have many fights and differences of opinion on the ward; and when this gets to be very acute we invite them to dinner and we put the facts before them and talk it over.

Lung abscess is a peculiar thing in that it is both medical and surgical. In the first place, when a case is admitted to a big hospital sometimes it will go to the medical side and sometimes to the surgical side. If it goes to the medical side it will stay there, and there will be someone in charge of the medical ward who does not want to tell about this case. We will bounce in there and look at it. But that idea of keeping something to themselves is all wrong. Of course, no ward owns the case. The surgical side does not want to see a case because they want to operate, but because they want to follow the case. We really like to use our judgment somewhat as to the time of operation or as to the method of treatment. This disease has a high mortality both on the medical and surgical side. It is not uncommon in a way, so the man in general practice should know what to do. It came to me one time also, when one of my friends, a medical man, had a young girl who had an accident and had a lung abscess. She was allowed almost to die, and he said, "Well, I didn't call you before because no one seems to know very much about lung abscess."

As regards treatment, you can find nothing in the literature of the treatment of these cases. We formed a club once and we broke up on lung abscess because everyone had an idea but no one could prove it. All of these things prompted me to look into it. After all, you can once in a while have some fun with these cases.

I would like first to show a few slides to show that this disease is a chronic disease, but we have no idea how much time is spent in a hospital by these people. They stay a long time and they lose their jobs and they lose their money, and, consequently, the economic and social loss is great. It occurred to us to question whether that was necessary. Do we have to wait expectantly for its cure? This is a disease that is treated both medically and surgically. They have about the same number of cases on the medical side that we have. About one-third of cases of lung abscess get well under the expectant treatment. You wait and wait and wait. The surgeon is called in when they are in very bad condition and the chances of the patient getting well are lost. The point is to avoid that kind of unnecessary waiting. You see, there are two-thirds of them that don't get well. A great many die under

medical treatment. Somewhere there is something wrong. Of the medical treatment cases, there were 48 that improved. They were in the hospital 144 days. Forty-six were operated upon later—a loss of time that was unnecessary. (Then a statistical report was shown on the screen, outlining the total number of cases under review, the duration of symptoms, mortality rate, etc.) These figures were made during the last two years, and our surgical figures are very much better than this. We have had, in the last two years, 45 cases. Of the 21 treated medically, 11 were improved and 10 died. We operated upon 19 and we only had three die, two of them because of surgical "accidents." We have done very much better surgically since this paper was first started. We have made some headway.

Then there was a question of recurrence. A great many of our cases went home and came back with another abscess. This happened on the medical side much more than on the surgical side. An abscess must be treated like tuberculosis, and although the patient may be perfectly well symptomatically, if there is still a pneumonitis present he is not well, and will almost surely always come back with a recurrence of the abscess, and when he comes back his case is usually much worse. The medical side will often send them out because they want to clear out their wards, but 81% of these cases treated medically came back. Of the surgically treated, 19% came back. Twenty-two cases died, or 16%. This mortality is much higher than the other mortality. All of these cases had lesions in the lung and they went out. There was a total of 580 days' hospitalization for the cases that died, and the reason they died is because we did not get them early enough. They die from hæmorrhage, from abscess of the brain, etc. Then we took cases operated on within 100 days from the time of onset of their symptoms. We did a two-stage thoracoplasty in 20 of these, first-stage in 10. There was a 20% mortality in the first cases; 4 cases improved and 6 died, a 60% mortality, in the latter cases. A two-stage thoracoplasty is much safer than a one-stage.

Now, what is the difficulty in handling this disease? Is it a difficulty in diagnosis? Is there a difficulty in x-ray interpretation? Do we treat them too long medically or is the surgeon also at times to blame? We have been called in to see cases which have suddenly got better before operation. A man may be very, very sick, sweating, trembling, coughing, etc., and you are asked to go in and see him. Suddenly, however, he may cough up large amounts of sputum and seem instantly better. The following day or two he suddenly opens up his bronchus again, coughs up sputum, and is all better again. Again he gets a bad attack and again we wait, or try some new treatment. Or we allow someone to try something and still the man's sick. All these delays add to the mortality of the disease. We have to arrange our treatment, I think, on very definite lines if we are going to get anywhere.

Now let's see what we mean by lung abscess—and there are a lot which are not included in this list. (Slide shown here.) We mean by these the vicious ones and we do not include in this list the embolic ones, the staphylococcic or streptococcic. Most of these are due to aspiratory causes. What is the actual cause of lung abscess? I remember, in the early stages of my chest work, we thought that aspiration was the cause. But we found that we could produce lung abscess by injecting germs and letting them travel by the blood stream to see where they lodged. They would lodge in the lung and produce an embolus. On the other hand, we never could produce an abscess by aspiration at all. It would seem that the aspiratory theory had lost ground. Some of us didn't believe it. Then someone did produce it by aspiration, and now we are producing it with great consistency in the dog. A dog is a very hard animal to produce a lung abscess in, but when you get the proper conditions the dog will get the abscess just like the human being.

Now let us talk about the factors of safety that we have in ourselves. If it weren't for these, all of us would have lung abscesses. We have streptococci and staphylococci in our mouths but we don't get a lung abscess; we

don't get infected. The factors of safety of nature are very great, especially as regards the lung. If, for instance, you drain an abscess and by chance the infection gets in the muscle wall, those patients nearly always die, as the resistance there is low, while the resistance of the lung is high. Sometimes we have elastic fibres in the sputum. You don't see many fluid levels. Cases get well very rapidly without surgical treatment as a rule. They have a foul sputum, with a very foul odour. We went after the bacteria, and we got the sputum in the bronchoscope and thought if we could work out the bacteria that we could find a criterion for those cases. But we couldn't. We were in a mess. Two years were spent on it. We wrote a paper on it but it didn't get us anywhere. And nobody now can tell me what's going to happen to a lung abscess case in the future. We studied these patients very hard. We made mistakes, but this disease is very encouraging in its character. You have got to be watching them all the time. Every night something has occurred that modifies the disease. Never go in with the idea that something is there this week because the x-ray picture was taken last week; so changeable in this disease.

Now, in the medical treatment of an abscess, I put down several things: postural drainage, bronchoscopy, salvarsan, latterly injections of sodium benzoate. Postural drainage is pretty fair in lung abscess. Sometimes it takes a long time to break, but if you have the position of the abscess you can tip him over and get some drainage. But lung abscesses do not drain like a bronchiectasis. When you put lipiodol into a patient with bronchiectasis you see the lipiodol outlined very minutely. Now, lipiodol in a lung abscess does not show. It is no help to us. You only know you have a lung abscess because you say, "That must be a lung abscess because it doesn't fill with lipiodol." It smears the field. It stays there for months afterwards. The lipiodol changes the picture of the disease. Lipiodol does not fill a lung abscess. And for the same reason that a lung abscess does not fill with lipiodol, the pus in the abscess does not run out as well as it might. There are some dangers. You all know that when you have a coughing spell and you are just lying down, you can get stuff out of your lung much better by sitting up. One of my men, who afterwant to St. Louis, wrote an article which he sent me. He said that pulmonary wards went to St. Louis, wrote an article which he sent me. He said that pulmonary ventilation is stimulated. The diaphragm is lower. In their experience of 13 individuals, they found that in all cases the interpleural position was less negative in the upright position. So that, while we do use postural drainage, we particularize with it and we are careful to use it with patients who can stand it. So that we use postural drainage, but with care. Some clinics treat cases by bronchoscopy. Most of the surgical clinics do not believe that bronchoscopy is a good cure. We use it first as a diagnostic method, to see if it is malignant. We also do it for treatment at times because the bronchus leading to an abscess may be injected, swollen, and you can look at it. The patient will be very much relieved. But to do a bronchoscopy twice a week is almost impossible with a sick person. We come to pneumothorax next. Pneumothorax has great dangers also. The cases we have picked have done very well and have got better quicker than some of our other cases. Every little while someone breaks a lung abscess, and if a lung abscess is broken the mortality is 90%. But if you have one of these types you are kind of afraid. Increasing it slowly always keeps the pressure negative, never positive. And so we picked those that gave such a good result. I picked a case once—a bad one—and it got well.

Sometimes we crush the phrenic nerves. I don't believe very strongly in it. Then we use salvarsan; but when you are looking for spirochetes you have to do it right at the bedside. We give salvarsan as a tonic; it is stimulating. I believe we used it because certain clinics have got them cured so quickly. Then we use the x-ray, not always for a cure, but we have some of these cases where we know there is an abscess there and it won't break; and we begin using diathermy first and if this doesn't do it we use the x-ray treatment

and we have broken them and they have gotten well. So we use all these things. A word about alcohol injections. The French have used it in many cases. You had better use it with 5% glucose, otherwise you kill the vein. This often happens whenever you have a bunch of cases. It happens with our pneumothorax cases. A new one is sodium benzoate. It may be that this will find a place in surgery or medicine in the treatment of lung abscess.

A word about diagnosis first. The x-ray is most important, of course. We have had a lot of lung abscess cases in animals that have died and we take x-rays of the body before the postmortem is made. It does not tell half that you see in the autopsy. It doesn't tell you all that's going on in the lung.

Now, how does an abscess get well? We have here a disease caused by anærobic bacteria. You don't get so much air in there as if you have a through-and-through drain by an operation. It doesn't always break at the lowest point. A little pus and you are not draining surgically this abscess. So that drainage doesn't always work. The bronchus plugs off so often. Maybe a secondary abscess develops.

I would like to define also the word pneumonitis. Medical men often speak of it as a pneumonia. When we have pneumonitis it is the interstitial tissue. When you swallow or aspirate something from the tonsils and it takes hold for some reason or other, there is a very sudden process there of necrosis, and we used to think that that would show this deep area that there was no necrosis there. It doesn't take long for the infection to get into the lung to cause a necrosis. You have only a very few hours or days and a necrotic area forms. Sometimes this gets mobilized. We have opened up many abscesses. It just lies in there like a putty-like mass. So we have that necrotic mass there. Newhoff operates on them very early. He can go in and go through an area that is adherent and he gets them out very early. The thing to do is to wait and see what the abscess will do, except in cases that are practically moribund. Sometimes even the worst ones get well. Now this breaks down and empties itself into a bronchus. They drain themselves much better than in the lower lobes and we have found that there is a part of the lower lobe which is very commonly affected with lung abscess. It is the posterior part of this lobe.

The point in the medical treatment, it seems to me, is not to keep the case too long. We have set an arbitrary limit of six weeks, or maybe two months. And then it gets more and more circumscribed if they continue to get well. There is a tendency to lay down fibrous tissue. Now when fibrous tissue is there, when you operate it will not contract. The adjacent tissue in the lung will collapse, but if you operate on these chronic cases so many months afterwards we have a hard ring of fibrous tissue in the abscess itself, and there it lies as a great big cavity with bronchi in it. And it won't move at all. And they have months of hospitalization because the primary abscess was allowed to become chronic. That is bad surgery and bad medicine; so that we don't allow cases to go much more than six weeks, when we find an abscess in a place that can be well opened. And in those cases where they haven't, we have had them get better, go to bed again with another abscess formed, and we realize it has been a very bad way to treat the disease. When we do operate upon these cases, leaving out lobectomy, we localize very carefully, and I want to say here and now that no picture of a chest should be taken which is not taken in two views, an A.P. and a true lateral. It is no longer correct for you to treat a fracture of both bones of the forearm with an A.P. picture. You can't tell anything about it. Half the story comes in the true lateral. It is just as criminal to decide on a picture with one view in these chest cases. You never can tell anything till you take your lateral. Never accept an A.P. picture alone. We localize very accurately. We go over it with the x-ray man. We want to get at that abscess at the very point where it is stuck. Sometimes it is an interlobar fissure and in the upper lobe it is very hard to get at it through a scapula and your back or anywhere. You have to be very careful, however; if you go too far on one side you break into the pleura and the

apex drops down. We localize as carefully as we can. We take enough ribs and we take them out very carefully under a light anæsthetic. We expose the ribs. We take off the periosteum and we look to see if the lung is stuck. We are very careful, as there are a lot of deaths from poor surgery. Accuracy is important. Care is important. You don't open the pleura and you put a pack of iodoform gauze under the ribs and back against the ribs. It is unwise also to pack too hard. You may block off the bronchus. Overhold has an operation. He advises not opening the lung at all. We don't do that, but our patients will often stop coughing and look very much better. If a lot of serum collects you have iodine, and pressure against the lung may be bad and it may be wise to open it up. You leave it in till you are sure you have adhesions. When you go in another danger arises. We have had one man die, two drop over unconscious on the table from putting in a needle. It seems impossible. We don't put needles in any more, or very rarely. We think we know where the lung abscess is. We take pictures and then we try to go right in to see; and we cauterize very slowly. Or you may separate the lung from the chest wall. I have seen a little child, all stuck. The lung dropped away from the chest wall and an empyema was formed. We burn out the cavity. We open the cavity and clean it out, and when we burn a little more until we get the whole roof of the cavity uncovered and allow the rest of the lung to close and get smaller and smaller. If you have a bronchial fissure, as soon as you close it the man will get another lung abscess. When you stop the free flow of air you know you can't close a bronchial fistula. So that aeration from one side is not always enough. If they are operated on early enough they clear up very quickly. Some of these cases very early in their course bleed. We are very much afraid of people who bleed. You can not go in there and stop those arteries. Bleeding from a vein you can stop. We are very careful in our dressings.

Now, all these cases do not tell us very much really. Anyway, I would like to impress these several points: First, in diagnosis; secondly, in the difficulty in handling these cases.

This disease is a medical disease up to a certain point. There is both a medical and a surgical mortality, but the medical mortality should be cut down very materially. They should be operated upon very early, and in that way the surgeon can bring them through with a better mortality.

THE SOURCES AND CLINICAL IMPORTANCE OF THE VITAMINS

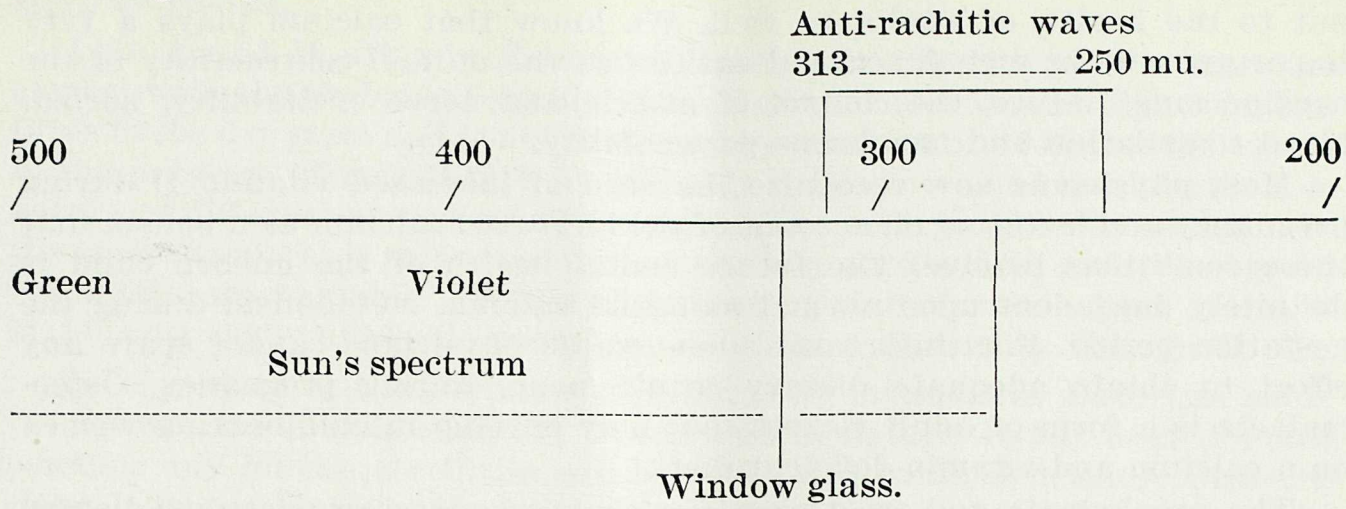
(*Continued from last issue*)

VITAMIN D

This fat soluble vitamin is, of course, closely associated with vitamin A in fish liver oils. In fact, the antirachitic effect of cod liver oil was at first ascribed to vitamin A. In 1922 McCollum presented proof that the latter was not antirachitic and that some other vitamin must be the calcifying factor present in cod liver oil. This antirachitic factor was named vitamin D and an active search for it commenced. Windaus in Germany demonstrated that a sterol derived from ergot (ergosterol) has the capacity of becoming antirachitic if irradiated with ultra-violet light of certain wave lengths.

Light waves shorter than 400 millimicrons (mu) are called ultra-violet. Of these, only those whose wave lengths lie between 313 and 250 mu have

antirachitic properties. These facts can be graphically represented by the following diagram:



Although calciferol, one of the products of this type of radiation, is generally considered as identical with vitamin D, yet the calcifying factor or factors in cod liver oil have not been isolated in chemically pure form; indeed recent work has made it probable that fish oils contain anti-rachitic vitamins other than irradiated ergosterol. Evidence is also accumulating to show that ergosterol is not the only precursor of vitamin D. The fact that the irradiation of milk and cholesterol produces a calcifying vitamin different from irradiated ergosterol is now established.

The international standard of vitamin D is a solution of irradiated ergosterol made under defined conditions and of strength corresponding with 1 mgm. of the original ergosterol in 10 c.c. of olive oil. *The International Unit of vitamin D is 1 mgm. of this solution.* The physiological activity of this quantity of vitamin is such that 1 mgm. given daily to rachitic rats for eight successive days should produce a characteristic wide calcium "line" in the metaphysis of any long bone.

The common medicinal sources of vitamin D contain the vitamin in varying amounts. *One teaspoonful (3.6 grams) of U.S.P. cod liver oil is equivalent to 306 U.S.P. or International Units of vitamin D.* One quart of "metabolized" milk is equal to 1.4 teaspoonfuls for standard cod liver oil or 428 I.U. of vitamin D. One quart of irradiated milk is equivalent to 0.4 teaspoonful of standard cod liver oil or approximately 150 I.U. of vitamin D.

Nature provides small quantities of vitamin D in egg yolk, whole summer milk and butter fat. According to Sherman, the vitamin D found in these sources is sufficiently stable to resist loss from storage or cooking operations. There is no vitamin D in fruits and vegetables.

The most important function of vitamin D is concerned with the formation of normal bone in children. This latter process involves a number of factors, including an adequate supply of calcium and phosphorus. It is well known that rickets can be produced at will in experimental animals by varying the calcium-phosphorus ratio (Ca/P) in the diet, a ratio of 3:1 being protective and a 6:1 ratio productive of rickets. If such rachitic diets are reinforced by vitamin D the effect of the faulty mineral content is counteracted and normal bone is produced. *Vitamin D has, therefore, the power of producing a calcifying effect in spite of an unbalanced Ca/P ratio.*

We may summarize the important effects or functions of vitamin D as follows:

(1) To increase the absorption of calcium and phosphorus into the blood stream from the gut.

(2) To restore the phosphate content of the blood to normal and to produce a satisfactory Ca x P product (50).

(3) To mobilize phosphatase to the bone matrix, where it can develop sufficient concentration of Ca and P to bring about precipitation of calcium phosphate for bone formation.

A consideration of the foregoing functions of vitamin D leads to the natural conclusion that this vitamin is essential not only to growing children, but to the health of adults as well. We know that calcium plays a very important role in such functional entities as the normal contractility of the cardiac musculature, the control of muscle and nerve excitability, normal blood coagulation and membrane permeability.

Most physicians now recognize the need of increased vitamin D during pregnancy and lactation on account of the increased calcium metabolism that these conditions involve. The future dental health of the unborn child is definitely dependent upon normal maternal calcium metabolism during the gestation period. For this reason alone we as physicians cannot spare any effort to obtain adequate dietary requirements during pregnancy. Osteomalacia is a form of adult rickets that may develop in childbearing women on a calcium and vitamin-deficient diet.

The prophylaxis and treatment of rickets requires an adequate dietary intake of calcium, phosphorus and vitamin D. (The latter may, of course, be provided directly by sunlight.) It is generally considered that *400 to 600 I.U. or U.S.P. units of vitamin D are adequate protection against rickets* if given in the form of fish liver oil or as a concentrate of such oils. On the other hand, excellent clinical results have been reported with less than the usual amount of vitamin D if given as irradiated milk. A quart of such milk a day containing roughly 150 units of D, has repeatedly been found ample protection against rickets. It is possible that the association of the vitamin with the minerals of the milk affords superior function. In the treatment of rickets it is advisable to double the prophylactic dose, since rapidity of cure and the prevention of deformities depends largely on vitamin D dosage. Viosterol should be given in almost double the dosage of cod liver oil.

Dental caries may certainly be classed today as a multiple dietary deficiency disease. A few years ago the theory of Miller held complete sway and was primarily responsible for the development of oral hygiene practices. It was thought that tooth decay is produced by the solution of tooth enamel by organic acid (lactic) secreted by bacteria lodged on the surface of the tooth. Thanks to the studies of Dr. Percy Howe and the world-wide clinical studies of Dr. W. A. Price, it is now apparent that diet, not alone tooth cleanliness or environmental factors, is a most important factor in predisposing enamel to decay or in producing oral conditions or structural modifications in tooth and gums favorable to the processes of decay. The remarkable and well-recognized increase of dental caries in children at puberty, so frequently remarked upon by local dentists, would indicate that there probably are some as yet unrecognized endocrine factors favorable to dental decay at work in some cases.

VITAMIN E

In 1921 Evans and Bishop, while studying the influence of diet on ovulatory rhythm and on the various stems in the physiology of reproduction, and using a daily diet consisting of casein, corn-starch, lard, butter-fat, salt and dried yeast, found that female rats on this diet appeared normal in every way but yet failed to produce normal litters. The rat fœtuses were not born, but died and were resorbed. This form of fœtal death persisted in spite of dietary supplementings with vitamins A, B, C and D. *Only when fresh green lettuce leaves had been added to the dietary were litters of normal healthy young rats produced.* Accordingly they postulated the existence of a new vitamin, calling it "substance X." In 1923 they reported that lack of this factor not only produces fœtal death in female rats but *complete sterility in male rats.* In 1924 Sure suggested that "substance X" be called *vitamin E.* This term, or the *antisterility factor,* is now generally used.

The fœtal anatomical effects are predominantly limited to the circulatory and mesodermal tissues. Whether through tissue asphyxia or otherwise, the products of conception die and are slowly resorbed. In the adult male rat

the cells of the seminiferous tubules become atrophied and desquamated, and sterility results.

Like A and D, vitamin E is fat-soluble. It is thought to be a sterol or alcohol with the probable formula of $C_{29}H_{50}O_2$. It is stable at high temperatures in the dry state and is not destroyed by aeration at 97 degrees C. except in the presence of rancid fats. It probably exists in varied combinations in nature of different physiological potencies. The embryo of seeds seems to be the richest source of this vitamin. Lettuce is a good source and other green vegetables are valuable. From a therapeutic point of view wheat germ oil is the most easily available potent source of the antisterility vitamin E.

In regard to the importance of vitamin E in humans, Sure has said: "Since vitamin E is abundantly distributed in nature, it has been doubted whether any human sterilities can be attributed to its deficiency. Obstetricians, however, state that at least six to eight per cent of sterilities cannot be accounted for by diseased conditions in either husband or wife. The diet of many people in this country is derived mainly from degerminated cereals, from which the vitamin E has been removed by milling. Furthermore, that diet is not supplemented sufficiently by eggs and vegetables. It remains, therefore, to be demonstrated clinically that such cases will not respond to vitamin E administration. In Europe Poulsson (1927) and V. Möller (1931) have cured a few cases of habitual abortion in women by the ingestion of vitamin E during pregnancy."

VITAMIN B

The antineuritic vitamin B has the distinction of being the only vitamin that is a vitamine according to Funk's original use of the word. This vitamin was first isolated in pure form by Jansen and Donath in 1926. Its synthesis was accomplished ten years later by R. R. Williams. It is the specific substance whose deficiency in the diet causes beriberi. It is called B_1 by British and Continental writers in contradistinction to the other members of the "B-complex," B_2 and B_6 (G and H to American workers).

In adults the chief clinical features of beriberi are *peripheral neuritis, cardial weakness* and *œdema.* In infants who are frequently victims of the disease in the Orient, the clinical manifestations are *anorexia, vomiting, loose green stools and wasting.* Paroxyms of pain, rigidity and cyanosis often occur. It is the eleventh most common cause of death in infants in Japan. As recently as 1918 beriberi was the third most common cause of death among infants in the Philippines.

In countries removed from the Orient frank beriberi is very uncommon. Nevertheless it is highly probable that latent or sub-clinical beriberi is not uncommon in the Occident. This possibility we will discuss in greater length after considering other important properties of vitamin B.

Unlike vitamins A, D and E, the antineuritic vitamin B is water soluble. It has always been considered very heat labile, but recent work of Sherman and associates has shown that in the absence of alkalies vitamin B is relatively heat stable. It was found that the vitamin B of milk would withstand a temperature of 100 degrees C. for six hours without appreciable loss by oxidation.

The richest natural sources of B are the embryos and coats of seeds. Yeast is also a rich source of this vitamin. In our modern milling processes for the production of the much-prized white flour the most essential part of the cereal, of course, is lost!

An International Unit of vitamin B is the equivalent of 0.005 mgm. of the crystalline vitamin. One such unit is equal to two Sherman-Chase units.

The average minimal requirements, as stated by the A.M.A. Council of Pharmacy, are 50 IU. for infants and 200 I.U. for adults. It is quite possible that optional requirements of this vitamin exceed these amounts.

Human anatomical studies throw little light on the mode of action of this vitamin. In most instances functional changes precede rather than follow definite anatomical change. In an extremely avitaminous condition such as beriberi, definite lesions are found in the peripheral nerves and degenerative changes are common in the muscles of the leg and foot. In acute cases the cardiac changes are most striking. This organ is hypertrophic and dilated.

In experimental vitamin B deficiency some very interesting findings have been recorded. Hypochlorhydria and achlorhydria are usual in dogs deficient in B. Loss of libido occurs in males and interruption of normal follicular function of the ovaries occurs in females.

In humans anorexia and constipation are the better known results of avitaminosis B. These symptoms are undoubtedly due to the atony of the gastrointestinal tract that results from B deficiency.

Peters and associates have recently revived interest in the old question of the relationship between vitamin B and carbohydrate metabolism. It would appear that this vitamin is essential for complete carbohydrate metabolism. In avitaminous B pigeons these investigators found that pyruvate, a near-end product in carbohydrate metabolism, accumulates in the brain with toxic effects. This is evidence of the importance of vitamin B in cell respiration.

Mild or latent cases of beriberi are difficult to recognize. The disturbances of function in such cases are usually limited to the gastrointestinal tract and the peripheral nerves. The cardiac symptoms of beriberi do not occur, but it is quite reasonable to assume that vitamin B deficiency may further handicap an already ill-functioning heart. As mentioned previously, anorexia and chronic constipation are well-recognized accompaniments of vitamin B deficiency.

It is generally agreed that alcoholic polyneuritis is due to a combination of chronic alcoholism and avitaminosis B. I am convinced that many other forms of polyneuritis are etiologically related to vitamin B deficiency.

Moore and Plymate have reported pyloric obstruction in a series of new-born rats whose mothers had been kept on a vitamin B deficient diet during gestation and lactation. It does not follow that B deficiency is the cause of pyloric stenosis in infants, but it is a "lead" that is well worth following.

It is worthy of note that there is a close functional relationship between vitamin B and the reproductive system in rats. Experimental work has shown that there is arrested function of the ovarian follicular apparatus in animals on a B deficient diet. It has also been shown that there is an increased requirement of B during lactation. Applying this work to human needs, Tarr and McNeile and others have commented on the beneficial effects of additional vitamin B during pregnancy in humans. Such patients had higher hæmoglobin values, lactated more successfully and were completely free of gastric and intestinal atony while twenty per cent of a control group had symptoms referable to the gastrointestinal tract. Commenting on this phase of the subject, Eddy and Daldorf say: "We may, perhaps, be pardoned for mentioning here that many cases of death in the new-born are the result of poorly understood mechanisms. Autopsies may yield little anatomical evidence of a satisfactory explanation of death. Since prematurity and early death are also common in the young of animals fed deficient diets, the study of the requirements of pregnancy may yield extremely helpful information."

In this connection it may be recalled here, if you will pardon a personal reference, that the writer has shown in a previous paper (1932) that unexplained or "idiopathic" stillbirths are six times as common in Vancouver when dietary iodine ingestion has been omitted. It is possible that lack of vitamin B may also be a predisposing factor in unexplained cases of stillbirth. Certainly the problem is worthy of more than passing comment.

Bloomfield and Polland have estimated that the general incidence of clinical gastric anacidity is fifteen per cent. Animal experimentation has

definitely shown that gastric hypoacidity and anacidity is an effect of B and G deficiency in dogs. This possibility should be kept in mind in searching for the cause of some obscure case of anacidity in clinical practice.

In any condition involving increased metabolic function, such as fever, hyperthyroidism and pregnancy, more than the usual amount of vitamin B is required.

(To be concluded next issue.)

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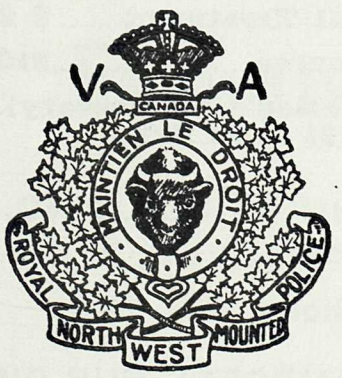

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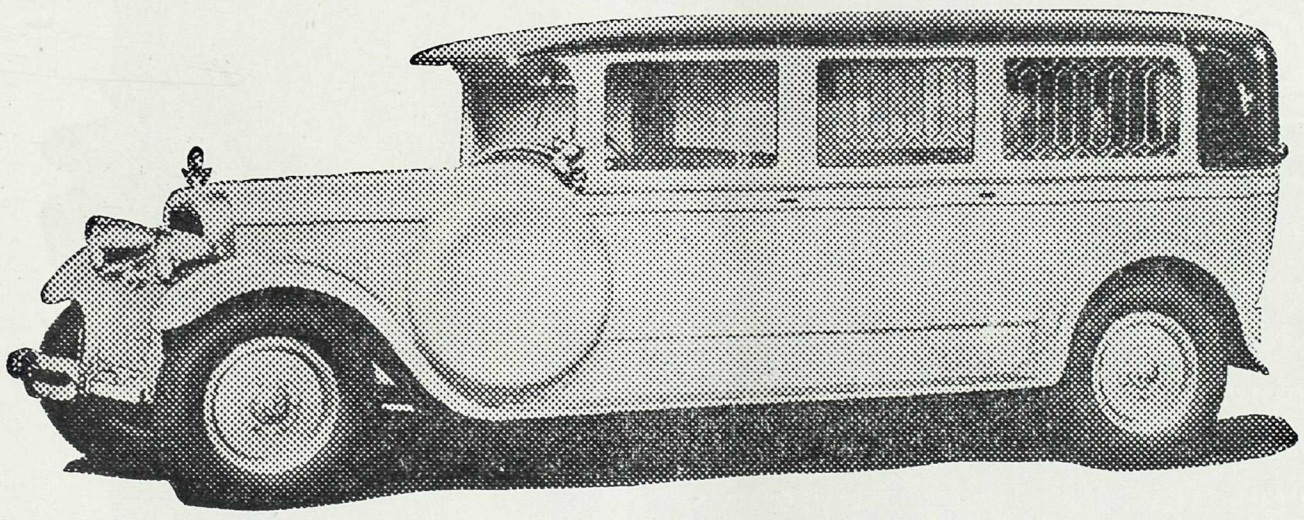

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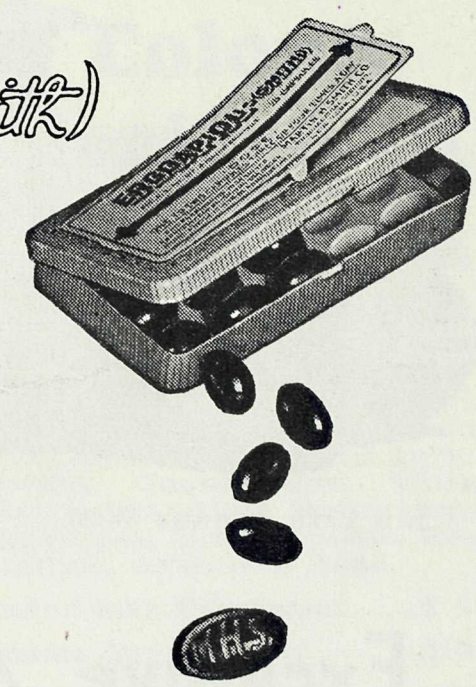

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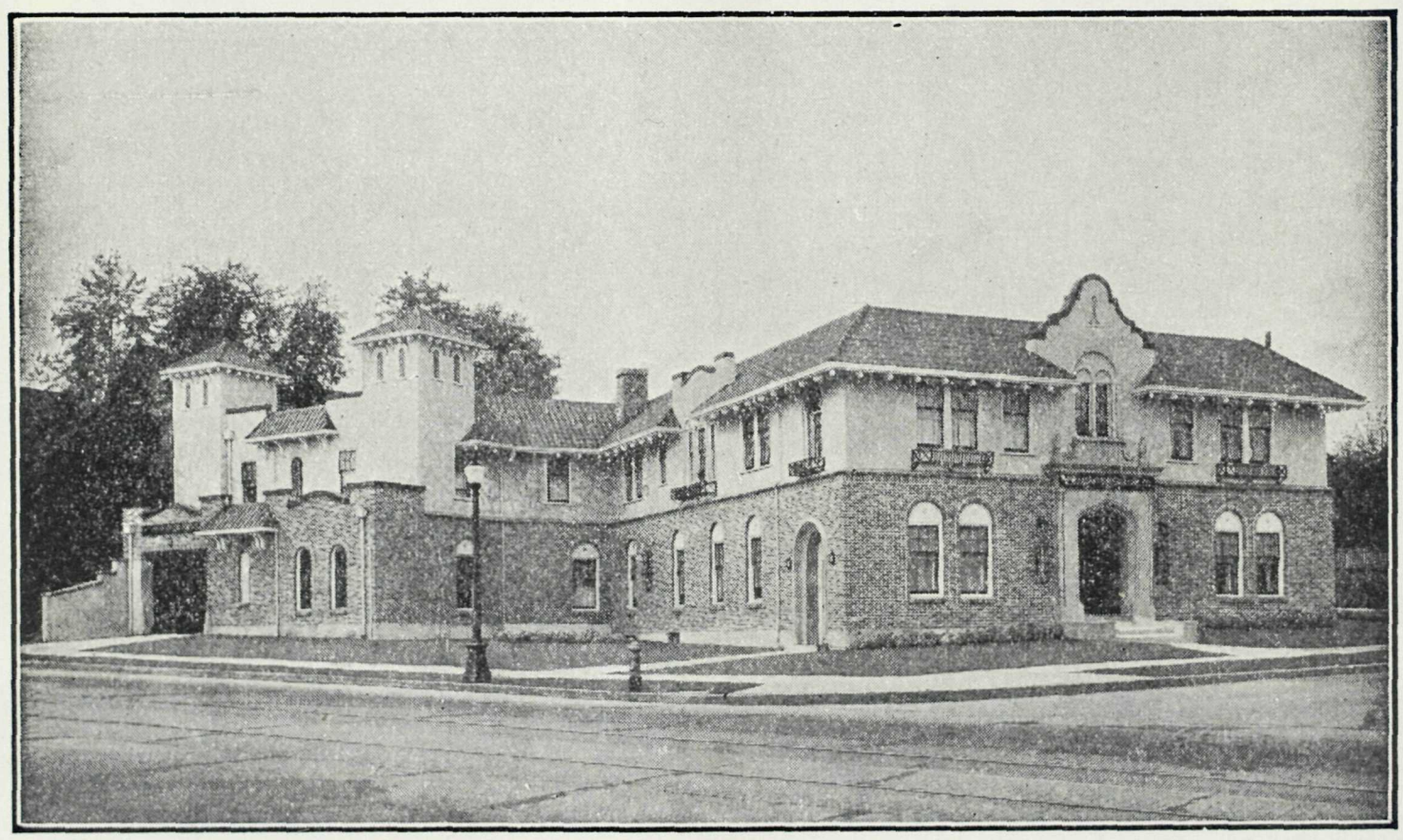

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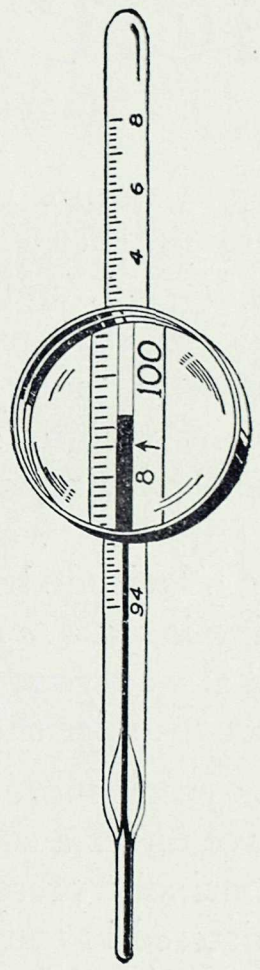

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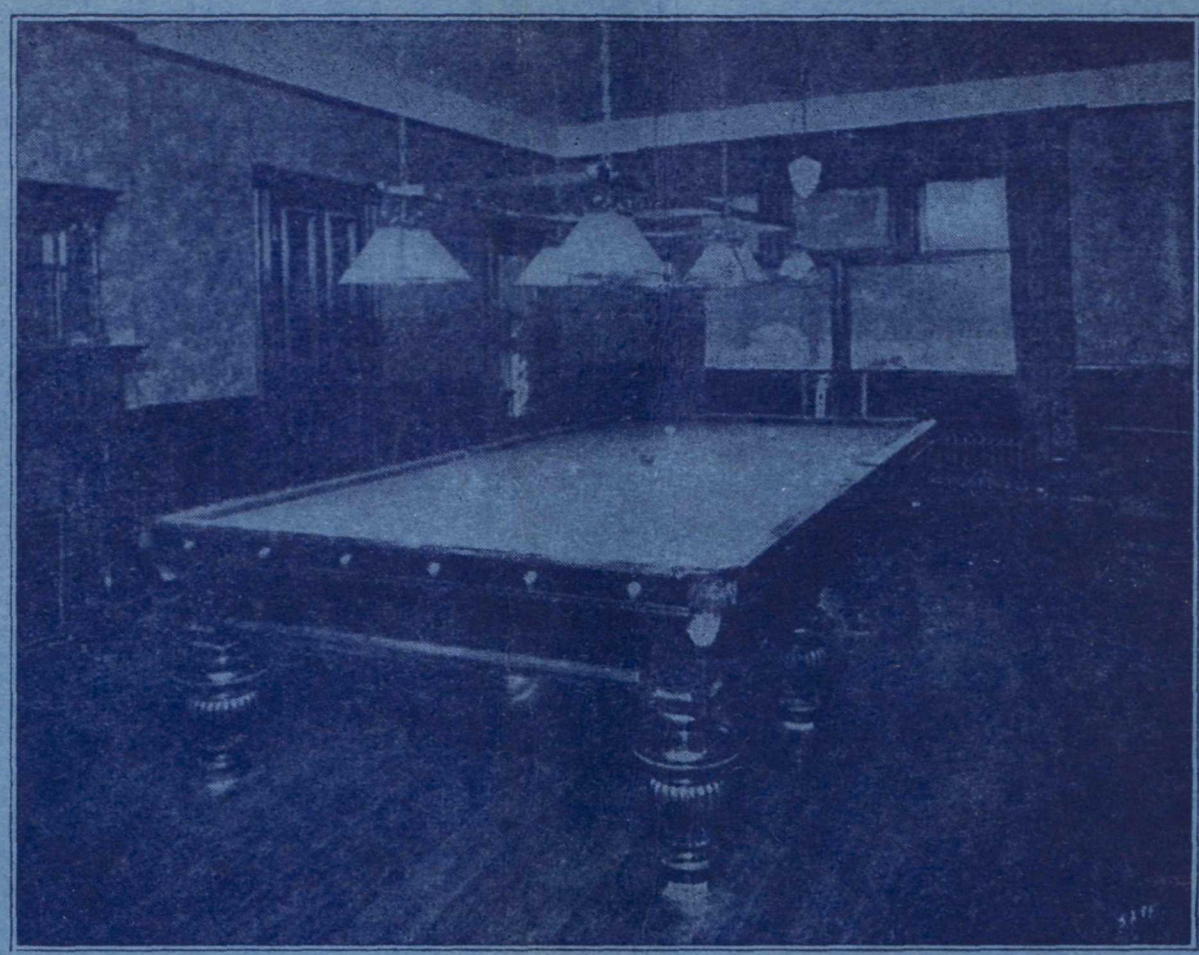

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