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The Bulletin

of the

Vancouver Medical Association

Sequelae of Encephalitis Lethargica

Meyers Memorial

Reviews

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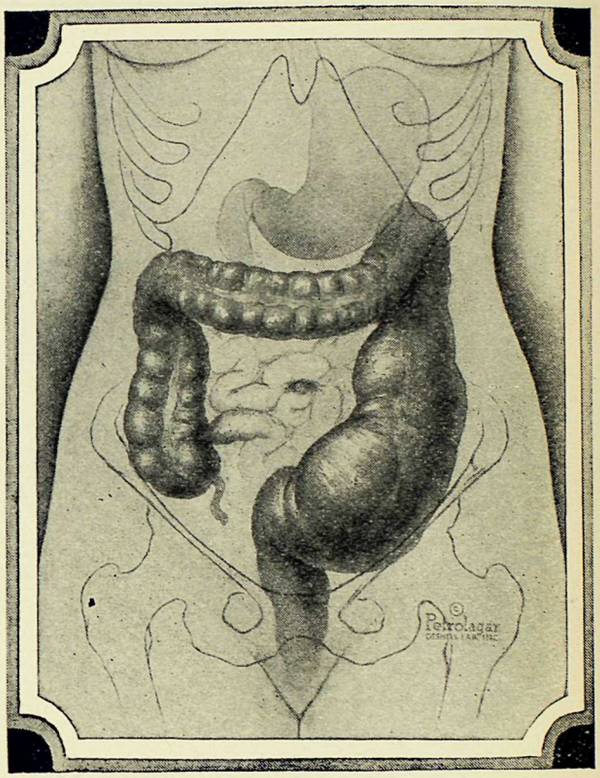

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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Vol. IV. JULY, 1928 No. 10

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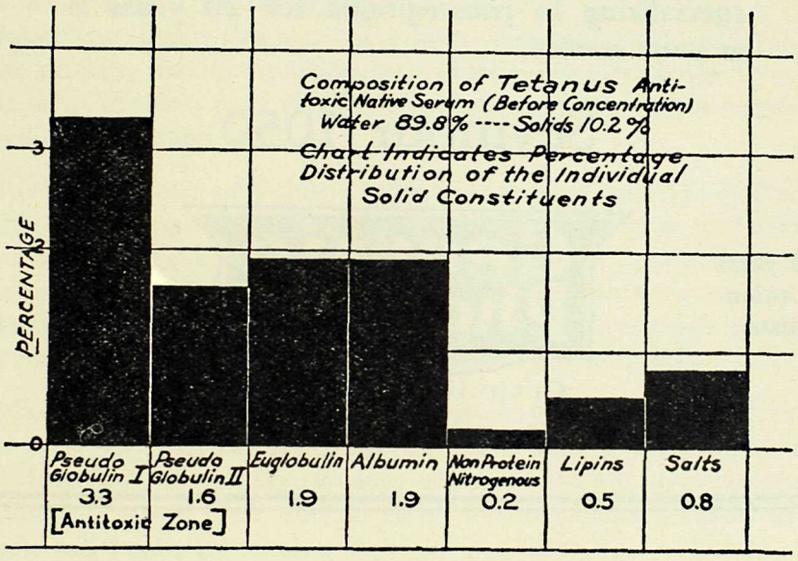

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VANCOUVER, B. C.

IMPORTANT

A case of poliomyelitis developed in the City on June 20th. The Laboratories of the Vancouver General Hospital are very anxious to get in touch with recovered cases in order to obtain convalescent serum in view of a possible recrudescence of this disease.

* * * *

EDITOR'S PAGE

WE are reminded by the recent appearance in the columns of the Vancouver Daily Province of a long and considered editorial on the subject, that the question of a Medical Faculty in the University of British Columbia is of interest to others as well as to the members of the medical profession.

If it is not a matter of Public Health it is at least a matter of Public Economics, concerning which the public may rightfully look to the profession for a lead. Equally with the Compensation Act and with Health Insurance this is a public question. The arguments which are used as to the necessity of medical treatment and of medical pre-vision in these instances are equally applicable to the case of a Medical School.

Somebody is going to ask some very pertinent questions one of these days as to why the medical profession of Vancouver is yearly allowing or rather compelling fifty, sixty, seventy of the native sons and daughters of this Province to seek their medical education in Eastern Canada, or as it very soon will be, in the United States of America.

It is possible, of course, that we can retort that the medical profession of Vancouver is no good, that we have not got anybody who could teach anything, that even if we had the money we should have to import all the teachers, that anyway the founding of a Medical School would encourage so many of our students to enter the medical profession that they and the imported teachers would together swamp the present members.

We might say all this, or think it, but it would not be true. Better far to point to the real truth which lies in a certain inertia, a good deal of innate modesty and a charming hesitation as to our capabilities.

To the medical profession of Vancouver we would say that this matter has been allowed to drift too long. Opportunity after opportunity has slipped by while we have hesitated. The alienated interest of the Rockefeller Foundation, once so keen; the establishment of the School at Edmonton; the loss of President Wesbrook, himself a medical man, are some of the blows we have suffered through delay.

Wake up, Vancouver! The handwriting is on the wall and if we too are not to be weighed in the balance and found wanting we must be up and doing.

Here is a concrete suggestion. In a recent number of a medical journal we notice an advertisement from the University of Hong Kong calling for applications for the position of Professor of Physiology. For this a salary of $4,000 rising to $5,000 is offered, with some minor appurtenances. If this applies to a Chair of Physiology, some such comparable salary might also apply to a Chair of Anatomy. If such cost could be undertaken by the University of British Columbia the teaching of Anatomy would, together with subjects already taught in other departments, comply with the requirements of the first two academic years of Toronto, and we think also of McGill and probably other Universities.

* * * *

We publish this month the first reprint of one of the papers read at the recent Summer School. The publication of these papers has come to be regarded as an extension of the services of the School enabling those who attend the meetings to peruse at leisure and in detail what they have heard. We regret that each year we continue to meet with a singular reluctance on the part of some of the speakers to the publication of their remarks. The reasons for this attitude are not quite clear to us, but there it is and on that account our report of the proceedings is less complete than we should like. We can assure our readers that every effort is made, both before and after the meeting, to obtain permission for publication.

* * * *

SPECIAL MEETINGS

A Special Meeting of the Association will be held in the Auditorium, Tenth and Willow on July 7th at 8 p.m., when Drs. H. B. Cushing of Montreal and Dr. A. W. Canfield of Toronto, both well-known pediatricians, will address the members. Dr. Cushing will speak on the use and dangers of antitoxic sera, the prevention and treatment of diphtheria and scarlet fever and erysipelas and its treatment. Dr. Canfield's lecture will deal with the infant, the growing child and the maturing child. We hope for a good attendance at this meeting.

Two distinguished medical men will be in the city in July, Dr. Lewis A. Smith, formerly physician on the Staff of the London Hospital and Dr. Hildung Berglund, Professor of Medicine in the University of Minnesota. Dr. Smith has been giving a series of lectures in the University of California, while Dr. Berglund is passing through the city on his way to occupy the Chair of Medicine in the Pekin Union Medical College for one year. Both these men will lecture to our Association on July 10th at a special meeting to be held in the Auditorium.

* * * *

NEWS AND NOTES

Dr. W. W. Chipman is at present in the East and intends going over to England and on to Vienna for post-graduate work. The doctor intends to be away about three months.

The new hospital buildings are reported as doing nicely, thank you, or in hospital parlance "as well as can be expected." We are advised that the wards will be ready to receive patients about January, 1929, but are warned that this increased accommodation is not to be considered as "extra beds."

* * * *

An item in a recent "daily" culled from its columns of twenty years ago reminds us, while it astonishes us, that Dr. Fred Brydone Jack and Mrs. Brydone Jack have just celebrated their twentieth wedding anniversary. In extending congratulations may we be permitted to hope that the coming years will continue to deal as lightly with Dr. Brydone Jack as they have evidently done so far.

* * * *

Dr. and Mrs. Hugh Macmillan are also eligible for congratulations upon the arrival of a son, who came just too late to receive mention in our last issue.

* * * *

B. C. MEDICAL ASSOCIATION NEWS

The Annual Meeting of the British Columbia Medical Association was held at Victoria on June 11th and 12th. The Empress Hotel was the headquarters for the meeting.

Owing to the strenuous efforts of the Victoria Medical Society, and especially the Organizing Committee under the chairmanship of Dr. M. W. Thomas this year's meeting was a great success, preparations having been made for entertainment as well as the presentation of scientific papers and the business meeting of the Association. Several doctors brought their wives to Victoria and these were delightfully entertained.

Three of the members of the post-graduate tour, Drs. F. A. C. Scrimger, V.C., F. H. MacKay, and Andrew Hunter gave lectures on both of the days during which the meeting was held. These were fully up to the standard that they set in the meetings of the Vancouver Summer School.

On Tuesday morning a meeting of the Executive was held with twelve members present. Dr. W. S. Turnbull, President of the Vancouver Medical Association, was also present at the meeting and spoke on the suggested closer co-operation between the Vancouver and B. C. Medical Associations. This was one of the most important matters taken up at the meeting, and it was strongly felt by the Executive that the time had arrived for a more business-like arrangement from the point of view of both Associations to reduce expenditures and to increase the efficiency of the services given to the profession. A very full discussion took place and every member of the Executive supported the

idea. The question of details it was felt had to be left for future arrangement but it was decided to recommend to the full meeting that the B. C. Medical Association endorse the principle of a closer co-operation, and this suggestion was accepted by the later meeting of the full Association. At the meeting of the Association held in the evening reports were given by the Chairmen of the various Committees. The Industrial Service Committee was a remarkably full and complete report and showed a tremendous amount of work done by the business office of the B. C. Medical Association. Contracts, Indian Department work, grants to medical men, payment of accounts and supplying of medical men both as locum tenens and as permanent residents in various parts of the Province were referred to and it could be seen in many instances how essential it is to the profession in B. C. that there should be a strong central office keeping close watch on the hundred and one difficult problems that come up from day to day. Work has been done in regard to the Provincial Income Tax, and on the question of Coroners' fees, though this matter has not yet been satisfactorily settled. The question of Marine Hospital and Medical Services, which has been taken up by the Canadian Medical Association, was referred to this Association for a report and Dr. C. W. Prowd's report on the matter has been published among the repotrs of the Federal Organization.

In the matter of the Indian Department an additional $50,000 per year has been given by the Dominion Government to be applied to medical services in this Province and in this matter our Executive-Secretary has done a tremendous amount of work of great value to the Indian Commissioner at Victoria, Mr. Ditchburn. The Auditors' report showed a decrease in expenditures from last year of $623, a slight increase in membership and a balance on the credit side which is satisfactory in that it is neither too big nor too small.

The question of Health Insurance was taken up at this meeting and it was decided to appoint a Committee to go into the matter fully and keep the members in touch with the situation as it develops. Twelve new members were approved and accepted. The following members were unanimously elected for the ensuing year: President, Dr. Wallace Wilson, Vancouver; President-elect, Dr. W. A. Clarke, New Westminste; Vice-President, Dr. Theo. H. Lennie, Vancouver; Secretary-Treasurer, Dr. Lyall Hodgins, Vancouver; three members of the Executive at large, Dr. J. McKee, Courtenay; Dr. A. L. Jones, Revelstoke; Dr. R. McCaffrey, Chilliwack.

The retiring President, Dr. H. E. Ridewood spoke on the work of the Association and thanked the members of the Executive for the splendid work they had done.

* * * *

We offer our congratulations to Dr. J. M. Jackson of Nakusp on his recent marriage to Miss A. Polson of Nelson. The wedding took place at Nelson on June 2nd.

THE MEYERS MEMORIAL

By order of the Executive, the following communication, received from Dr. T. E. Routley, General Secretary Canadian Medical Association, through the kindness of Dr. H. E. Young, Provincial Health Officer, is printed.

In bequeathing the sum of $100.00 per year, for a period of twenty-five years, to the Canadian Medical Association,—the bequest to be known as the Meyers Memorial,—the late Doctor D. Campbell Meyers designates the nature of the memorial in the following, as extracted from his will, and further supplemented in a letter under date February 27th, 1927.

"As I desire to perpetuate the study of the prevention of insanity in certain of its types, to which my life has been largely devoted, and as I believe the treatment of this phase of nervous disease belongs to the general physician and the neurologist, I direct my Trustees to pay to the President of the Canadian Medical Association the annual sum of One Hundred Dollars for a period of Twenty-five years only, to provide an honorarium to be known as the Meyers Memorial, to be awarded by a Committee consisting of the President, a physician and a neurologist (the latter two to be chosen by the President) to such member or guest of the Canadian or Provincial Medical Associations as shall write and read at the annual meeting of any of the said Associations, the best thesis or dissertation on the study and treatment of those functional neuroses which, if untreated, or not treated sufficiently early, might probably terminate in insanity, in the hope that the further study of those neuroses will lead to the formation of specially equipped wards in general hospitals, devoted to their study and early treatment, and more especially in those hospitals where teaching to the medical student as well as the nurse is given, such theses to be submitted to and adjudged by the above Committee. Should no thesis of sufficient merit in the opinion of the Committee be read at the annual meeting of the Association, the said grant shall not be made for that year by my Trustees. I desire that my good friend General John T. Fotheringham, M.D., shall be appointed the first physician and Dr. George W. Boyer the first neurologist on the said Committee, and that they shall continue thereon as long as they desire to act."

Further Notes on the Functional Neuroses as Mentioned in My Will

"As the present nomenclature of both functional nervous and mental disease is more or less transitory and may change materially in the next few years, it is impossible to classify definitely the type of disease referred to above. I desire, however, to refer to those functional Neuroses in which the psychological symptoms form the essential part of the syndrome, and to that type of neurosis which develops in late adolescent or in adult life in a patient of previous good mental and nervous history, especially such neurosis as has its etiology in emotional overstrain caused by excessive grief, worry and allied conditions to which modern life is so conducive, and which, when the present illness is successfully overcome, will enable the patient to at once return to his normal life as

a good and useful citizen and thus avert any of those persistent mental symptoms which so frequently remain as a result of a period of insanity.

"I desire to exclude from this thesis the study of Mental Defectives, Paranoia, and similar conditions of mental disease due to hereditary or organic states, since the treatment of these conditions, however meritorious it may be from a humanitarian point of view, will not, I believe, remove the abnormal mental state of these individuals. Hence the best interests of the state will be obtained by the restoration to their normal health of those individuals who previous to their illness were fully efficient as citizens.

"Dated this 7th day of February, A.D., 1927.

"(Signed) D. CAMPBELL MEYERS."

It is hoped by the Committee in charge of the Meyers Memorial that members of the profession interested will co-operate through their Associations, by way of contributions to the programme of their annual meetings.

* * * *

ABSTRACTS

A STUDY OF THE FACTORS INFLUENCING MORTALITY AND MORBIDITY FOLLOWING GYNECOLOGIC LAPAROTOMIES, W. R. COOKE, (The American Journal of Surgery, N. S. V. III., Nov., 1927).

1. SELECTION OF CASES FOR OPERATION.
   - (*a*) Avoidance of laparotomy in the active stage of infection of the genital tract.
   - (*b*) Rigidly thorough general examination of the patient for temporary or permanent contraindications to operation, with appropriate consultation in regard to doubtful points.
2. PREOPERATIVE CARE.
   - (*a*) Avoidance of preoperative purgation.
   - (*b*) Maintenance of a normal supply of nutrition and water as nearly up to the time of operation as possible.
   - (*c*) Psychologic management, rest, and the reduction of emotional elements, especially of fear.
3. THE OPERATION.
   - (*a*) Selection of the anaesthetic: Will the risk from the particular morbid conditions in this case plus the risk from the anaesthetic be least with ether, with the gases, or with local or spinal novocaine?
   - (*b*) Technique.
     1. Elimination of wasted time.
     2. Thoroughness.

3. Gentleness.
4. Protection of uncontaminated areas from infection
5. Completion of essential procedures as they arise.
6. Conservation of warmth.

4. POSTOPERATIVE CARE.
   (*a*) Rest.
   (*b*) Adequate supply of fluid (water).
   (*c*) Rational supply of food substances.

—W. L. B.

"INTRADERMAL VACCINATION", TOOMEY AND HAUVER, (Am. Jour. Dis. of Children, Feb., 1928)

A well worked out article, and a large series of 9,000 cases.

Intradermal injection of 1.100 dilution of vaccine was used at first, then to increase the size of the scar a dilution of 1.4 was used.

The importance of using a potent vaccine was stressed, potency of vaccine was determined by the Paul reaction.

The advantages of this method may be summed up as follows:

1. Less pain and nervous shock.
2. A definite amount of vaccine used and none lost.
3. The large sloughing wound of secondarily infected ulcer unusual in this type of vaccination.
4. May be used in certain cases where the scratch method is contraindicated as in eczema, etc.
5. Children need no bandage.
6. This method produces vaccination in patients who have been previously unsuccessfully done, and a clean-cut immunity reaction in those who have been successfully done.
7. Skin may be cleaned by any chemical before vaccination without killing the virus.
8. Time is saved when large groups are done.

The objection to this method lies in the fact that it takes a little time to prepare the material, but the advantages clearly outweigh the disadvantages.

R. P. K.

"OBSTRUCTION" BAUM *Annals of Oto-Rhino—Laryngology*, June, 1927.

Tracheotomy is much the older operation, yet O'Dywer's contribution of intubation superseded it in frequency, due to the large number of cases of diphtheritic laryngeal stenosis preceding the discovery and use of the antitoxin.

As a consequence there has recently been a falling off in the use of intubation, whereas tracheotomy is required no less frequently than formerly and is by all odds the more valuable and indispensable procedure.

There are few cases where tracheotomy will not suffice, but there are many where it is not necessary and in which brief intubation is satisfactory as in the following:

1. Acute stenosis due to inflammatory conditions which are likely to subside rapidly; streptococcic (the so-called influenzal type), diphtheritic and those occurring during the course of an acute exanthema. Here the swelling is usually sub-glottic with involvement of the tracheal and bronchial mucosa and tracheotomy tends to cause too rapid evaporation of secretion with drying (which is characteristic of the early stages of these infections). (2). Non-inflammatory conditions—angio neurotic oedema and local trauma. (3). Certain cases of true oedema, pharyngeal abscess, where the exciting cause can be rapidly removed. (4). Cases where tracheotomy will not suffice—pathological conditions of the neck preventing operation.

Intubation is more practical since the introduction of direct laryngoscopy as membrane can be removed before inserting the tube.

Tracheotomy is the procedure of choice in the great majority of laryngeal stenotic cases, chronic obstruction, acute cases where the subsequent course promises to be prolonged and where laryngeal rest is needed, foreign body—particularly before attempts at removal.

Tracheotomy is safer in unskilled hands, may be done with less preparation and more quickly, the tube cannot be coughed out, can be worn indefinitely, but is a surgical operation and so subject to risks.

Intubation is simpler for the patient, easier and subject to less operative risk in skilled hands, the tube can be tolerated for considerable periods long enough for acute diseases to subside, but can be coughed out and membrane can be pushed into the trachea.

—E. E. D.

* * *

ON SOME OF THE SEQUELAE OF ENCEPHALITIS LETHARGIGA

DELIVERED BEFORE THE SUMMER SCHOOL

By Dr. F. H. McKay, of McGill University.

I am not at all satisfied that the title of this paper does not imply an ambiguity.

In referring to the sequelae of a disease, one implies a series of clinical happenings which occur as a result of a previous well-defined but self-limited disease process. Subsequent to 1917, when von Economo with others established the entity of encephalitis lethargica, that vast miscellany of nervous disorders which were its aftermath, had come to be regarded as the clinical expression of pathological activities engendered

by the primary infection. As such, they were termed sequelae. More recently, however, a quite different attitude has been taken towards the nature of these disorders. Many prefer to regard them as manifestations of a chronic process having its inception in a primary infection but flaring up, from time to time, in recurring attacks, comparable in many ways to the progressive activity of the spirochaeta pallida. The similarity to the relation between the primary syphilitic infection and general paresis has been rightly pointed out. And so, we come to speak of chronic encephalitis.

Whichever view is held, however, concerns us little, if at all, in our present discussion, which aims to consider the clinical aspect of some of the more common of these post-infective disorders, be they sequelae or recurring manifestations of a chronic infective process.

Nor does one's viewpoint, in this respect, alter the one glaring truth that the residuals of this infection constitute the most disabling, the most ubiquitous disease process with which human kind has been visited —not even excluding syphilis. While in our fight against syphilis recent reinforcements and refinements of our armamentarium have permitted us to view its advance with some measure of equanimity, we must still meet the devastating hordes of encephalitis with powder that is damp and and guns that are spiked.

Of the many sequelae that follow in the wake of encephalitis lethargica, by far the most common and at the same time the most disabling, is that of the Parkinsonian syndrome. The frequency with which this motor disorder is encountered may be inferred by reference to any large neurological clinic in the records of which, with the possible exception of epilepsy and syphilis, it occupies the prominent place. Too often its appearance is the first indication that the victim has suffered from the dread infection which, as is told us of the planet Neptune, reveals its existence through its disturbing influence.

Any discussion, however, of post-encephalitic Parkinsonism presupposes a certain knowledge of the anatomy and physiology of the basal ganglia of the brain. Since the advent of the disease, our knowledge of the function of these ganglia at the base of the brain has been greatly advanced. The number of contributors to the literature of this subject has been exceeded only by the number of hypotheses propounded. Some of these have thrown light on a very dark and uncharted road; many more have but revealed the limitless wandering of the human imagination; all have borne their quota of controversy and complexity. Within the past decade, we have seen relegated to the basal ganglia and their extrapyramidal connections, almost every motor activity whose ready explanation could not be conceded to any other anatomical region.

Such varying and diverse motor activities as tremor, choreiform movements, athetosis, tic, bradykinesia, torsion-spasm, micrographia and the myoclonia, have, in turn, been attributed to dysfunction of this system.

And yet from all this controversy and admittedly rife speculation, much may be gleaned to advance our constructive knowledge of these

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all-important structures; and to such workers as the Vogts, Kinnier Wilson, Jacob and Ramsay Hunt, may be attributed much of our present knowledge of the extrapyramidal motor system.

Anatomically, the extrapyramidal motor system embodies the following gray nuclei (after Jacob):

1. The corpus striatum, consisting of the caudate nucleus and putamen which are genetically and morphologically uniform. Its cell structure is of two types: (1) large bipolar ganglion cells scattered among; (2) smaller cells of the ganglion type. It is connected by afferent fibres with the thalamus and by outgoing fibres with the pallidum. It is regarded as a highly developed organ endowed with cortical characteristics and exercising a controlling influence over the pallidum—a sort of special cortex to the pallidum.

2. The pallidum is a simply-constructed gray nucleus, ontogenetically assigned to the hypothalamus. It contains only one kind of ganglion cell, the large bipolar motor cell common to it and the striatum. It is connected by afferent fibre tracts with the thalamus an dstriatum, while its efferent or outgoing fibres connect it up with the hypothalmus, the red nucleus, corpus Luysi substantia nigra and oral part of the pons.

3. The corpus Luysi or subthalamus is constituted of a matrix similar to the pallidum, with a similar cellular structure. It is connected up by efferent tracts with the pallidum and thalamus, while its efferent supply brings it into relation with the red nucleus and substantia nigra.

4. The substantia nigra, which is linked up by afferent fibres with the pallidum and red nucleus, and by efferent connections with the pes pedunculi and corpora quadrigemina.

5. A most important part of this mid-brain mechanism is the posterior, longitudinal bundle which takes its origin in the nuclei of the posterior commissure and passing through the entire length of the brain stem, descends into the cervical cord.

   These nuclei of the posterior commissure receive impulses from the nuclei of Deiters and Bechterew, which bring it into physiological relation with the vestibular organs.

   The posterior longitudinal bundle establishes inter-relations between the nuclei of the eye muscles and, at the same time, brings the vestibular apparatus into relation with the nuclei of the eye muscles, the pallidum and the spinal cord. It is to be regarded as the important coordinating tract of the whole motor apparatus of the mid-brain and brain stem, including the nuclei of the eye muscles. It is the essential unit of a coordination mechanism situated in the brain stem and, accord-

ing to the school of Magnus, operates independently of the cerebellum or higher cortical centers.

6. The red nucleus which is intimately bound up with the pallidum, corpus Luysi and substantia nigra, is to be regarded as the oral hypertrophy of the whole motor mechanism. It is the important organ of tone in this group, for which it is the special distributing center. It also plays an important role in the function of posture.

   Taking origin from the red nucleus, the rubro-spinal tract of von Monakow passes over to the opposite side of the brain stem and then downward to constitute the efferent tract, through which all these centers (which collectively constitute the basal ganglia), are brought into physiological relation with the anterior horn cells of the cord.

   The red nucleus is also connected up with the cerebellum through the medium of the dentato-rubral tract which runs from the denta nucleus of the cerebellum to the red nucleus. In this capacity, it carries impulses from the cerebellum to the coordination mechanism of the brain. It is also an important connecting nucleus between the strio-pallidum and the motor coordination apparatus of the brain stem.

Destructive lesions of this extrapyramidal system, in part or in whole, set up dysfunction of the system and so exteriorize themselves in abnormal motor phenomena of many and varied expressions. While some students of this system do not hesitate to attribute definite disease processes to special ganglia, as, for instance: chorea and isolated tics to the striatum; athetosis and torsion spasm to the pallium, etc., we cannot yet feel justified in following their lead into this complex and, to say the least, uncharted wilderness of research.

In order, however, to understand just how disease may interfere with the function of this system, we must regard the whole as a series of superimposed stations, of which the more highly-placed exercise a controlling influence over the more lowly-placed, and in such a sequence that destruction of one or more stations releases from control all stations lying lower and subservient to it.

With this idea in mind, destruction of the striatum or pallidum would release the red nucleus and its brain stem mechanisms from its normal control, with the result that these subservient mechanisms would run wild and so express their release in such abnormal and irregular motor acts as are here considered.

Inasmuch as we are concerned only with the ravages of encephalitis lethargica, it is sufficient for our present purpose to consider only its pathology, in relation to this system.

While it may be said that all parts of the ganglia are more or less affected, it has been shown by most pathologists that the substantia

nigra is the special objective of the virus of encephalitis lethargica. Be this as it may, we know that the virus of this disease has a special predilection for part or parts of this extrapyramidal system, whereby release of subservient centres brings about a typical and constant motor disorder known to us as post-encephalitic Parkinsonism.

The clinical picture of this disease is so well recognized that any recital of its symptoms and signs must be both tedious and superfluous. The slowed-up movement (bradykinesia) both physically and mentally; the loss of associated movement (poverty of movement); the generalized hypertonia; the mask-like facies; the gait and attitude; the tremor; the sialorrhea and trophic skin disturbances—are all to be classed among the commonplace of medicine.

The question, however, arises: Is this syndrome, pathologically and clinically, identical with that of paralysis agitans, for, to a close observer of these two conditions, the similarity is admittedly striking; and yet, notwithstanding this similarity, there are differences sufficiently evident to admit of definite differentiation in almost all cases.

The onset in paralysis agitans is slow and insidious. The tremor is a prominent symptom early in the disease and assumes the pill-rolling characteristic. The hypertonia which is about equally distributed throughout the entire musculature, is slow in its development, rarely, if at all, assuming the complete rigidity seen in the post-encephalitic syndrome. Comparatively, the rigidity assumes a minor importance to the tremor.

Post-encephalitic Parkinsonism is rapid in onset, often assuming formidable proportions in a few days. It may not progress to a final incapacity and is more amenable to treatment. The hypertonia is usually localized to the cervical region and, in its progression, culminates in complete rigidity of these shoulder-girdle and cervical regions. The tremor is always less marked, often absent and, in my experience, never accompanied by the pill-rolling movement. The extreme degree of rigidity in the upper body segments would appear to mask the tremor, thus relegating it to a minor role as compared with the hypertonia.

Parkinsonism, moreover, is not a clear-cut, extra-pyramidal syndrome like that of paralysis agitans. We find, as accompaniments, tics and myoclonias of varying intensities. Sialorrhoea and glossiness of the skin are frequently observed and involvement of the pyramidal tract is by no means rare. Finally, it may become arrested and not infrequently clear up.

Pathologically, the similarity of these two conditions evidences a similar anatomical substratum, and there can be no doubt that both are expressions of dysfunction of the extra-pyramidal motor system. The distinction must be sought in the involvement of different ganglia or their cellular constituents.

Paralysis agitans represents a pure degenerative lesion of one or other ganglionic parts of the system, remaining well within the confines

of the system itself. Post-encephalitic Parkinsonism is the result of an acute infection which may attack several, if not all, of the ganglionic parts as well as surrounding regions of the cerebrum, such as the cortex, the cranial nerves or the pyramidal tract. This widespread pathological involvement no doubt explains the polymorphic character of the disease and accounts for its impure and variable symptomatology.

TICS.

The next abnormal motor activity which has been observed as residual of encephalitis is that of isolated tic or myoclonia, and in its description I cannot do better than cite you a case which is under consideration at the neurological clinic of the Montreal General Hospital at the present time.

This is the case of a well-developed, strong, muscular man of 38 years of age, who appeared at the clinic about 2 years ago complaining of twitching of the left face. He showed a constant rhythmical contraction of the left lower facial muscles which, with metronomic regularity, drew the mouth towards the left—at the same time slightly elevating the corner of the mouth. This myoclonic spasm was constant and, in spite of the absence of any other sign of nerve involvement but with the support given by a history of a sleepy period, during which he would fall asleep over his work, six months previously, the diagnosis of encephalitis lethargica was made, not, however, without some little hesitation and considerable local discussion. Within seven months following his appearance at the Clinic, the development of a typical Parkinsonism with intense sialorrhoea and glossy, perspiring skin, allayed any doubt as to the correctness of the diagnosis.

These isolated muscle twitchings are not an uncommon finding among the residuals of encephalitis, and are attributed by most authorities to dysfunction of the basal ganglia.

THE OCULOGYRIC PHENOMENON.

This unusual and inexplicable motor phenomenon has been observed and described by several writers within the past few years. It consists in an upward movement of the eye muscles, during which the eyes are forcibly rotated and held in spasm for varying periods of time.

We have under observation in our clinic, a young man of 28 years of age who, as a bank clerk, was occasionally summoned before his superiors. Under the tension of such an interview, he was frequently seized with a peculiar upward movement of his eyes—a performance disconcerting to both parties and, needless to say, necessitating a hasty termination of the interview. In the course of 5 or 10 minutes, the eyes would slowly resume their normal position, with no subsequent discomfort.

While taking his history, a sudden spasm developed: the eyes were rolled up under the lids and held in spasm. Coincidentally, the chin

third ventricle and mid-brain reminds us of yet another sequel of encephalitis which I shall mention in passing.

POST-ENCEPHALITIC OBESITY.

Following the acute attack, the rapid acquisition of fat has been reported by several writers, some of whom have attributed it to endocrine disorder with special reference to the pituitary. T. G. Walsh, however, reminds us that Ashner in 1912 produced similar obese states in the development of experimental lesions of the mid-brain, and holds that lesions in this region may be followed by abnormal fat deposition. Whether, however, the pathology be attributed to the pituitary or to structures lying higher within the mid-brain, the clinical picture of rapidly-developing obesity in the wake of an acute attack of encephalitis ensures it a place among the sequelae of this disease.

THE POST-ENCEPHALITIC RESPIRATORY DISORDERS.

The respiratory disorders which follow the acute attack have been classified by Pierre Marie under three headings; but as my experience embraces only one type of his classification, I shall describe a case which I was privileged to study during the past summer.

This was a youth of 12 years of age who had passed through a typical attack, with somnolence, diplopia and fever, some 14 months previously. He was admitted to hospital because of attacks of difficult breathing. Between these attacks his breathing was normal in all respects and in no way was it altered during sleep. The attack would begin suddenly with a period of apnoea which was followed shortly by rapid, forced respiratory excursions of incredibly increased rate and amplitude. At the height of the paroxysm, the rate on one occasion was 36 per min., the amplitude was enormously increased, and the respiratory murmur, which had developed into a grunt, could be heard the length of the ward. The attack lasted, I should say, several minutes and the patient gradually subsided into his normal rate and amplitude somewhat after the fashion of Cheyne-Stokes respiration.

The obvious psychic element which attended the paroxysm, and the boy's statement that he felt better after it passed off, as it seemed to "clear the air" for him, strongly suggests its likeness to psychic tic.

THE ARGYLE ROBERTSON PUPIL.

This phenomenon has long been regarded as pathognomonic of syphilis of the central nervous system and doubtless constitutes the most constant sign of this disease in some of its several forms. It is not, however, pathognomonic, for its incidence as a post-encephalitic sequel has been noted more than once in patients who, neither clinically nor serologically, could be regarded as syphilitic.

While more commonly accommodation suffers more severely than the light reflex in acute encephalitis lethargica, I have seen the Argyle Robertson reaction in two cases of post-encephalitic Parkinsonism.

ENCEPHALITIC HEMIPLEGIA.

Before leaving the physical disorders that may occur in the course of the chronic disease, I would like to refer to a type of case which may be regarded more correctly as an accompaniment of the acute phase, but which, because of its unusual interest, I shall outline for you here.

E. L., a young man of 24 years of age, asked me rather casually to look at his face which went wrong while he was having lunch and felt "queer" since. During lunch, his speech became thick and slurring and he had some difficulty in swallowing.

On examination, there was definite paresis of the left lower face and left arm and hand, and in the course of three hours there developed a complete left-sided hemiplegia. Eye movements, pupillary reactions and eye fundi were at this time normal. The reflexes over the left side were absent on admission, but in the course of 24 hours became markedly accelerated and accompanied by such pathological reflexes as the Babinsky and Chaddock signs and well-marked ankle clonus.

Temp. 98^{2}. Pulse 56. Resp. 18.
Cardio-vascular system normal.
B.P. 130/80.
Urine 1010, acid, clear. No albumin. No sugar.

White cell elements in the blood, 11,500—with normal relative proportions maintained.

Lumbar puncture showed clear fluid under pressure of 24 mm. Hg. Cells 3 per field. Globulin negative to Pandy Test.
Pressure showed normal response to jugular compression.

Sugar content 0.086.

He gradually passed into a deep lethargy in which he remained for 10 days and from which he gradually recovered. One week after admission, there was well-marked bilateral papilloedema of 1½ diopters, and during convalescence he complained of fleeting but recurring diplopia. After one month's stay in hospital, he was discharged, the hemiplegia fully recovered and the papilloedema entirely disappeared.

For several months he continued to gain in strength and activity, played golf steadily during the summer, and nine months after discharge gave confirmation to an uncertain diagnosis through the development of an early Parkinsonism.

PSYCHIC DISORDERS.

Interesting, however, as these physical disorders may be, it is among the so-called psychic residuals that one encounters the greatest difficul-

ties. Almost any type of psychic disorder may be found—from frank idiocy to highly systematized psychoses; and it is an impressive fact that almost all of the post-encephalitic psychic disorders occur in children.

The vast majority of these disorders are characterized by abnormal behavior—often referred to as the behavior syndrome—in which the child becomes restless, irritable and impulsive. A complete character change would appear to dominate the picture, often to defy the ordinary disciplinary measures of the home. Sudden impulsive outbursts frequently result in destructive acts. In a boy of 10 years of age, I have seen, on several occasions, such a sudden change from restful quiet to uncontrolled fury. On one occasion, while looking over some pictures in a book, this boy suddenly jumped and hurled a skate against a mirror. This explosion followed upon a passing reference to his illness. He frequently spent the night cutting or tearing up his personal clothing, the bedding or wall-paper. A prolonged period of disciplinary care on a boys' farm failed to correct or modify his impulsive reactions. And yet, with all this, his intelligence quotient remained unchanged from that of his pre-infection life.

This behavior syndrome is found frequently in the middle period of childhood. In the earlier years, definite mental deficiency is apt to color the picture; while older children, like adults, are prone to present the frankly organic states previously described.

If we seek a pathogenic explanation of the age incidence in the development of this behavior syndrome, it most likely is found in interference with the relation or control of the higher intellectual centres over the lower instinctive mechanism. This is the age when the educational control is becoming established and the individual is coming to accept the restrictions and limitations of society at the expense of his instinctive reaction. He is just about to find his social self. In this adjustment process, disease assumes the role of the proverbial "monkey-wrench," the instinctive levels are freed and abnormal behavior fully established.

One other feature of this syndrome to which I wish to refer is that of the reversal of the sleep cycle, seen not infrequently in children of this age. Here, the child sleeps soundly and normally throughout the day, but no amount of inducement or coercion will suffice to break his waking state during the night. He remains wide-awake, often employing himself in destructive acts, such as tearing or cutting up his bedding or valuable books, but, in my experience, not given to the sudden, impulsive reactions which we have just been considering.

My aim in this paper has been to recall for our consideration some of the more striking sequelae of acute epidemic encephalitis; and though, in many ways, it has been little more than an enumeration, it may serve as a reminder of that vast miscellany of nervous disorders with which we have all become acquainted since the advent of this terrible scourge. While admittedly our knowledge of neuronic function has been greatly extended through the study of this disease, this apparent advantage has been more than offset by our responsibility towards that

vast army of cripples that everywhere bears testimony to its implacable devasting inroad upon society.

* * * *

SOME IMPRESSIONS OF THE SUMMER SCHOOL

By Dr. Gordon Burke

The Eighth Annual Summer School of the Vancouver Medical Association was held in the Ballroom of the Hotel Georgia June 5, 6, 7 and 8, and judging from the attendance at the various sessions, the interest displayed, and the discussion aroused, it was a complete success.

The Committee is to be congratulated upon the speakers and upon the choice of subjects, the latter covering the field of medicine and surgery from tumors, which have always been with us, to vitamines and hormones, here today and supplanted tomorrow by another child of the biochemist.

For the benefit of distant visitors our famous, and at times notorious, British Columbia climate displayed almost its full bag of June tricks. We had clouds and fair weather, gentle drizzles and real rain, and enough wind at times to clear the clouds from about Grouse Mountain and The Lions and show our friends our front yard at its best. But we were blessed with delightfully cool weather, which added much to the pleasure of the meetings.

The Hotel Georgia provided very convenient headquarters for the Clniics, and the Ballroom gave us the best auditorium the sessions have ever enjoyed. True ,some of the members had nothing nice to say about the chairs provided by the management, and it must be admitted that after two or three hours they did remind one of the Spanish Inquisition. The Ballroom was adequate as to space and excellent as to acoustics, the ventilation was always good in spite of the smoke screen laid down about the altar of my Lady Nicotine, which latter seems to be a great comfort to many. The lantern was unobtrusive, and ably handled by our friend Mr. Ashley. The spacious lounge adjoining the lecture room was very inviting, and the scene of many re-unions among old friends.

The attendance this year was very gratifying, running over the 200 mark, a point never reached before, about fifty of this number being out-of-town visitors. The Northern Province was covered by Dr. Learoyd of Anyox and Kergin of Prince Rupert, while Powell River sent down Dr. Miller, our old Compensation Board friend. From round-about were noticed among others Drs. Irving and Archibald of Kamloops, Dr. Silk of Merritt, Dr. Beech of Ashcroft, Drs. Bapty, McPherson and G. Kenning of Victoria, Dr. McCaffrey of Chilliwack and Dr. McKinnon of Cranbrook. The neighboring state of Washington, was well represented, Seattle sending a delegation headed by Drs. Horsfall and Don Trueblood, supported by Drs. Haskell, Rush, Hannah, Johnson, Dalton, Calhoun and others. Drs. Janes, Penny and McLean from Tacoma were suspected of attempting to take our dietitian, Miss Pipes, back

with them. Dr. McKinnis brought us greetings from Bellingham, with Dr. England from Yakima and Dr. Bevis from Tenasket, over in the Okanogan country. Our Washington friends asked our support of their two sessions, the annual meeting of the Pacific Northwest Medical Association to be held at Tacoma starting July 5th, and the Extension Summer School Course of the University of Washington starting about July 18th. Excellent programmes have been arranged for both of these meetings and it is to be hoped that Vancouver and British Columbia will attend in numbers. It is now possible for medical men in the Pacific Northwest to keep in personal touch with the leaders from the great medical centres of America, and oftentimes to accomplish quite as much as in an expensive and protracted trip through the east. There is no question that one's reading becomes very much more interesting when the writer is no longer a linotype machine or a laboratory, and when one has possibly had the privilege of an informal talk with the writer. The personal touch is always a great inspiration and it has been very gratifying, through our various summer school and convention sessions, to see our leaders and prophets slip down from their heights and mingle so freely with their followers.

The Summer School rather thoughtfully made no formal attempt to entertain its visitors and guests, other than a luncheon at the Georgia with an address by Dr. Bloodgood, and an informal dinner at the Chalet Friday evening after the sessions were over, and of course there was always a seething undercurrent, quieted at intervals by the rattle of golf clubs. This possibly is a little unfortunate, for Miss Firmin, the guardian of all things medical, states that there were many inquiries as to what might be done and how to do it, and particularly as to whether or not any entertainment was provided for the wives of the visitors. Unfortunately most of the local men were called upon to attend to their regular duties, before and after, and at times during lectures, and many of them were unable to spend any time with the visitors. Possibly the Summer School would be made more attractive to our friends if they could feel that they could bring their better portions along without having to turn them adrift on the tender mercies of a more or less strange city. And speaking of wives, we were honored by the presence of Mrs. Bloodgood of Baltimore, Mrs. Andrew Hunter of Toronto, Mrs. Holton of Sedro Wooley and Mrs. Janes of Tacoma.

The addresses and talks, and we must confess to a fondness for talks rather than formal papers, will be covered in other parts of the Bulletin, but it might be mentioned in passing that the programme covered a diverse range of subjects. Dr. Phillips of Western Reserve University told us much of the activities of that most wonderful laboratory of organic chemistry, the liver, and admitted that it probably still holds many of its activities secret. Dr. Scrimger of McGill University told us somewhat of the newer surgery of the gall bladder, of intestinal obstruction, of the thyroid—and here it was gratifying to note that the pendulum is swinging back to a much simpler classification of thyroid conditions. Dr. Scrimger also gave us much on Buerger's disease, an

obscure and formerly little known gangrene of the feet and legs, and of the possibilities in this and other conditions of surgery of the sympathetic system. Dr. Peters of McGill University brought out the newer work on our old friends pneumonia, gastric ulcer and rheumatic fever, and then led us a devious course through that mazey field of referred symptoms. Dr. Fred H. McKay, also of McGill University, discussed lower back pain with special reference to cord tumours, and later a differential diagnosis of cord tumours; he covered briefly syphilis of the nervous system, emphasizing the absolute importance of early and repeated spinal punctures in all cases, and reiterating his faith in the treatment of our fathers in medicine, mercury, and the later arsenicals. Dr. McKay also talked of some of the sequelae of encephalitis lethargica with particular reference to its relationship to paralysis agitans, a condition as to whose aetiology we formerly knew nothing. Dr. Andrew Hunter of the University of Toronto, a bio-chemist by the way, told us very much of various things,—deficiency diseases and the modern vitamines, which have already been forced from their place in the sun by the ultra-modern sterols; of ketosis and anti-ketosis, until several of the audience confessed to feeling like animated benzene rings; and of those mysterious secretions, or emanations, or forces, called hormones—and all in such a fascinating way as to make us want Dr. Hunter again. Possibly the high note of the Clinics was struck by Dr. Joseph C. Bloodgood of Johns Hopkins University in his plea for preventive medicine through education of the public, first and most effectively through our school children, and next through the public press. His titles "What Every Doctor Should Know—" about various things, tumours ,mouth conditions, etc., merely afforded Dr. Bloodgood the opportunity of emphasizing how basic in medical work is public education, and the several timely and well-told anecdotes about children only proved how fertile is the field. True, the discussion of tumours, diagnosis, pathology and treatment, was scientific and masterly, but only a step more important than teaching our patient that, as he tersely put it, "when a tumour is discovered not to wait for pain, and when a pain is felt not to wait for a tumour." Several interesting clinics were given by Dr. Phillips, Dr. McKay and Dr. Bloodgood at St. Paul's Hospital where the use of the lecture room was allowed us. Miss Firmin had many inquiries as to operative clinics from out-of-town men.

The Eighth Annual Summer School is now history. It lived up to the high standards set in former years, and cannot but be an inspiration to all who attended. Great credit is due to the Committee, for it is a tremendous and more or less thankless task to handle such an enterprise. The atendance was the best ever, and augurs well for the future. We trust our friends will all come back to us next year and bring their friends with them. And we have a great faith that the future Summer School Clinics will serve as have those of the past in bringing us closer to our goal, the alleviation of suffering and disability, both mental and physical, and the lengthening of the span of useful years of our race.

VANCOUVER HEALTH DEPARTMENT

STATISTICS, MAY, 1928

Total Population (estimated)		142,150
Asiatic Population (estimated)		10,940
	Rate per 1,000 of Population	
Total Deaths	159	13.21
Asiatic Deaths	13	14.03
Deaths—Residents only	122	10.13
TOTAL BIRTHS:		
Male 150		
Female 136	286	
Stillbirths—not included in above	9	
INFANTILE MORTALITY—		
Deaths under one year of age	16	
Death Rate per 1,000 Births	55.94	

CASES OF INFECTIOUS DISEASES REPORTED IN CITY

	April, 1928		May, 1928		June 1st to 15th, 1928	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	23	0	16	0	3	0
Scarlet Fever	2	0	2	0	2	0
Diphtheria	38	0	49	3	21	2
Chicken-pox	101	0	78	0	13	0
Measles	13	0	5	0	0	0
Mumps	65	0	48	0	7	0
Whooping-cough	3	0	5	0	3	0
Typhoid Fever	3	1	1	0	0	0
Tuberculosis	19	18	22	14	7	–
Erysipelas	6	0	6	0	2	0
Cerebral-Spinal Meningitis	0	0	3	2	0	0
Cases from Outside City—Included in Above.						
Diphtheria	6	0	11	1	6	0
Scarlet Fever	1	0	1	0	2	0
Smallpox	1	0	2	0	0	0
Typhoid Fever	2	1	1	0	0	0

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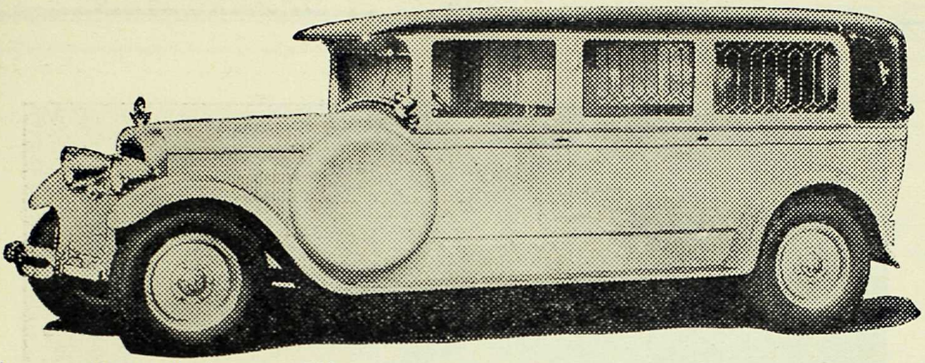

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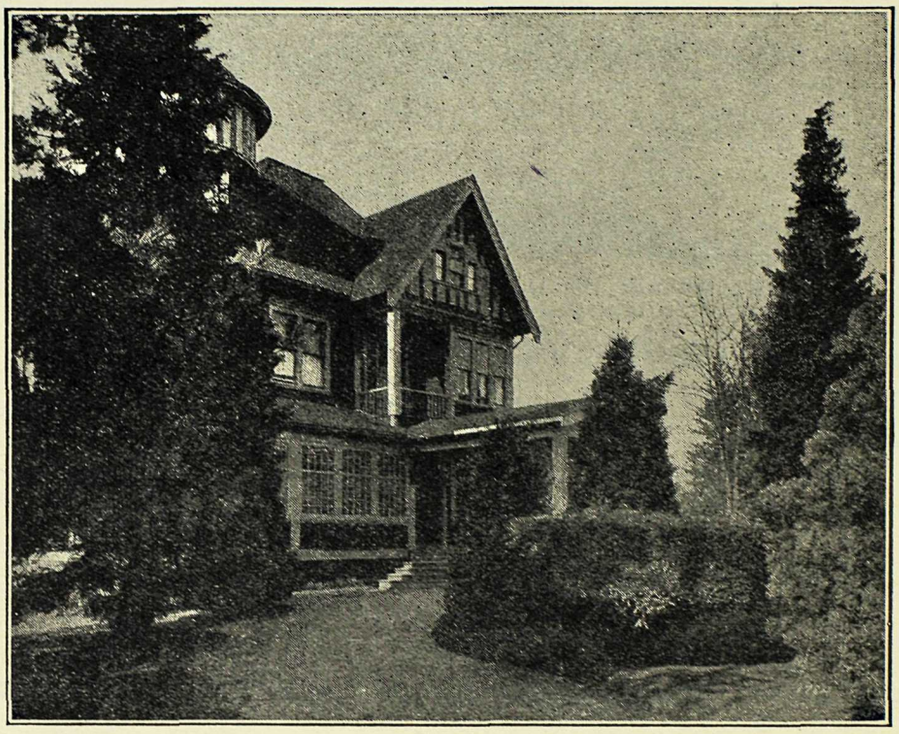

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