Vol. V. JULY, 1929 No. 10

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of the

Vancouver Medical Association

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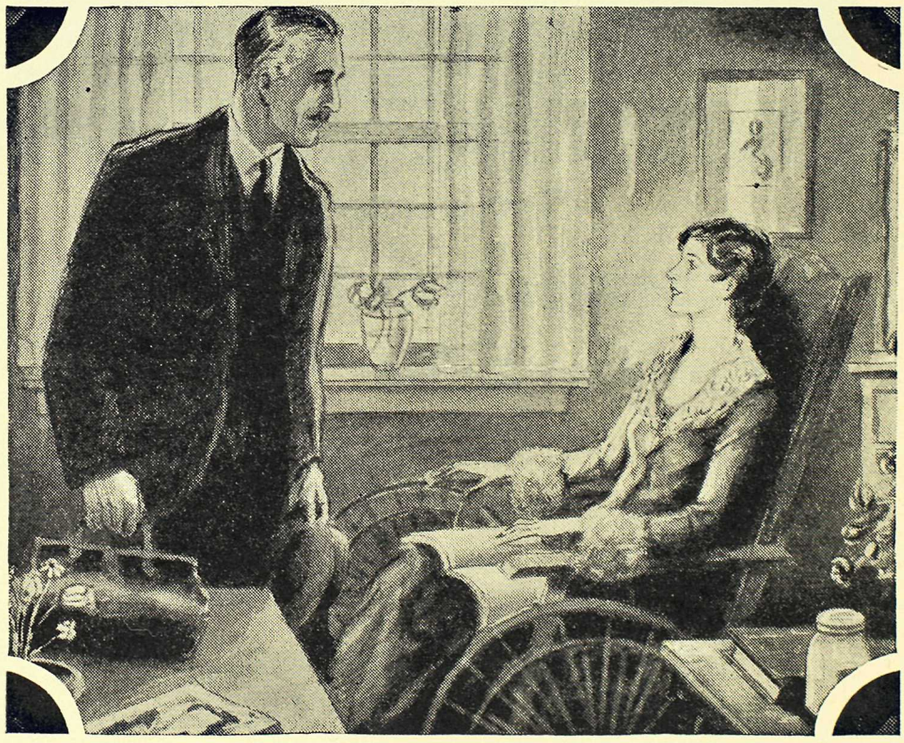

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BULLETIN

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VOL. V. JULY, 1929 No. 10

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VANCOUVER HEALTH DEPARTMENT

STATISTICS, 1929

Total Population (Estimated)		228,193
Asiatic Population (Estimated)		12,306
		Rate per 1,000 of Population
Total Deaths	195	10.06
Asiatic Deaths	17	16.27
Deaths—Residents only	164	8.46

Total Births:—
Male 195
Female 218

INFANTILE MORTALITY—

Deaths under one year of age	9
Death Rate per 1,000 Births	21.79
Stillbirths (not included in above)	13

CASES OF CONTAGIOUS DISEASES REPORTED IN CITY

	April, 1929		May, 1929		June 1st to 15th, 1929	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	42	0	22	1	3	0
Scarlet Fever	14	0	14	0	8	0
Diphtheria	37	1	35	0	8	0
Chicken-pox	50	0	65	0	15	0
Measles	496	0	607	1	162	3
Mumps	207	0	156	0	44	0
Whooping-cough	9	0	13	0	11	0
Tuberculosis	5	18	16	15	11	–
Erysipelas	9	1	8	0	6	0
Typhoid Fever	5	0	1	0	1	0
Poliomyelitis	0	0	2	0	0	0
Meningococcus Meningitis	–	–	5	2	1	0

N.B.:—Typhoid cases from outside City.

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EDITOR'S PAGE

The Ball Room of the Hotel Georgia wore something of an international aspect when President Lennie of the Vancouver Medical Association took his seat at the dinner table on the evening of Tuesday, June 11th.

On his right hand sat Dr. Roatta of Florence, Councillor of the Italian Society for the Control of Tuberculosis, while the chair on his left was occupied by Dr. Armand Delille of Paris, a French paediatrician of note, interested especially in work among tuberculous children.

Both gentlemen addressed the assembly after dinner. We had hoped to have provided our readers with a substantial verbatim report of the proceedings but the fact that the speakers were using, to them, a foreign language, coupled with the difficult acoustics of the room, made it impossible for us to do so.

Those who were privileged to see Dr. Delille's pathological specimens of pulmonary tuberculosis in infancy with X-ray pictures of the same condition during life, got a practical demonstration of the incidence of the disease in early years which must have been a revelation to most of us.

Apart, however, from the subject of the addresses we were impressed with the ease with which these men of other nationalities, under the bond of a common interest, slipped into the spirit of the meeting. What a universality there is about a mutual occupation. A common science speaks a universal language and apparently especially so if that science be medical science. We deal with the same problems, the attempted solutions may be characteristically national but they are internationally applicable.

The new Calmette vaccine will interest paediatricians in Canada as in France and preventive medicine here appreciates the value of the segregation methods of the French.

When our Italian confrere spoke of Fascism and Fascist advances in State Medicine, perhaps the audience would appreciate the public health part of it more than the governmental methods under which it was produced. Freedom to make a mess of things is still a valuable prerogative with us.

But to know and know at first hand what other peoples are doing in this great field of medicine is a powerful antidote to Chauvinism. Osler gave a memorable address on this aspect of mischief which is still worth reading. For narrow nationalism not to say provincialism is still all too prevalent.

Too frequently one notes in books and magazines in our own as well as in foreign countries, conditions which call for such comment as the following, taken from a review of a recent monograph "As is common in German textbooks almost all the references are to German literature." In this instance German, but the application is almost universal

and this despite the numerous endeavours to abstract the medical literature of the world.

Huxley has said "I have no sympathy with Chauvinism of any kind, surely of all kinds that is the worst which obtrudes pitiful national jealousies and rivalries into the realm of science."

To all of which we say "Amen" and therefore shall welcome such cosmopolitan gatherings as that which we attended the other evening.

We congratulate the Canadian Medical Association upon its enterprise in facilitating the tour of these visitors.

* * *

CLEVELAND CLINIC DISASTER

We extract the following items from the "Cleveland (Ohio) News" of May 29th, reporting the enquiry now being conducted:

The principal witness Wednesday was J. E. Crawshaw of the United States Bureau of Mines.

Crawshaw declared he was convinced an electric light bulb ignited the X-ray films in the Clinic basement storage-room.

Gases Ignited

"This started decomposition and the room slowly filled with gases liberated by the smouldering films," he said. "Finally, these gases burst into flames. Then as the oxygen in the room was consumed the flaming films returned to the smouldering state and once more gas filled the room.

"It is my opinion heat generated by the gases caused an electric light bulb to burst, again igniting the fumes. This would account for the second explosion testified to by witnesses. It is likely another bulb burst and ignited more gases."

The witness said he considered the spontaneous combustion theory as completely remote.

Ralph Griffith, Clinic purchasing agent, was a witness during the morning. He said probably 143,000 X-ray plates—two or three tons—were stored in the basement room.

The theory that a lighted electric light bulb caused the X-ray films in the Clinic building basement room to decompose was strengthened by the testimony of Professor F. D. Burke, professor of physical chemistry at John Carroll university, former chief explosive instructor of the U. S. army in the Philadelphia district.

Previous testimony was to the effect that a lighted bulb was hanging within eight or ten inches of a wooden cabinet in the Clinic basement room where films were stored. Professor Burke said a 100-watt bulb at this distance from films would generate sufficient heat to cause the films to decompose and give off poisonous gases.

Paul C. Seel, general film superintendent of the Eastman Kodak Co., Rochester, N. Y., was the principal witness at Coroner Pearse's inquiry.

Explains Film Deposition

He said that cellulose nitrate X-ray films—similar to those stored in the Clinic basement—would begin to decompose at a temperature of 300 degrees Fahrenheit. He declared a single film, blazing, would not liberate poisonous gases, but that smouldering packs of films would generate a gas that was deadly poison.

He testified that steam released from a leaking pipe in the storage room was no factor in the decomposition of films, but that heat from the steampipe itself might start decomposition.

* * *

NEWS *and* NOTES

We extend our sincere sympathy to Dr. R. Grant Lawrence in the recent death of his mother in Victoria.

* * *

Dr. W. B. Burnett left on the 14th of June for Montreal to attend the Annual Meeting of the Canadian Medical Association. Dr. Burnett will give a paper before the Section of Obstetric and Gynaecology on "The Technique of Version."

* * *

Dr. J. T. Wall left on the 3rd of June for Vienna. The doctor also intends to undertake post-graduate study in London, Edinburgh and Dublin. He will take special courses in women's diseases and surgery. Dr. Wall will not be back in Vancouver before December.

* * *

We offer our congratulations to Dr. Henry Wackenroder on his marriage to Miss Dorothy Newcombe, which took place at the Canadian Memorial Church on June 17th. The Doctor and Mrs. Wackenroder spent their honeymoon on a trip to Alaska.

* * *

A dinner of the B. C. and Vancouver Medical Associations was held in the Georgia Hotel on Tuesday, June 11th, when the guests of honour were Dr. Armand Delille of Paris, and Dr. G. B. Roatta, of Florence, Italy. Dr. Delille is one of the oustanding French paediatrists and has devoted special attention to work among tuberculous children. At the dinner Dr. Delille gave an account of the most recent statistics relative to the use of the Calmette (B. C. G.) vaccine in infants. Dr. Delille is Physician on the staff of the American Hospital in Paris.

Dr. Roatta is a Councillor of the National Federation of the Italian Facista for the control of tuberculosis. He addressed the men present at the dinner on Health Insurance, especially in connection with the prevention of disease. Both gentlemen spoke in English. Their visit in the West was short as they were due to speak at the Canadian Medical Association in Montreal.

* * *

In view of the pending opening of the new Medical and Dental Building, members of the Association who are moving offices are asked to send in their change of address to the Secretary as soon as possible.

* * *

The Library Committee will be very glad if members will take the opportunity occasioned by the move to new quarters to look over their books and return any belonging to the Library.

* * *

Dr. W. H. Sutherland, former M.L.A. for Revelstoke, has accepted the position of house physician at the Hotel Vancouver, replacing Dr. G. M. Foster.

* * *

Dr. Fred Brydone-Jack has returned from a three-week's holiday spent in motoring to California. He went as far as Los Angeles. He reports that the weather was very fine throughout. Dr. Brydone-Jack found much interest in Canada and Canadian affairs all through California.

* * *

The medical profession is perhaps undeservedly accredited, among other things, with an undue amount of scepticism relative to extra-mundane affairs. We take pleasure, therefore ,in recording a little incident in the home of a well-known Vancouver surgeon. The pet dog had been reported absent without leave. Tearful perturbation of the small daughter of the house followed. Daddy's permission, and—shall we not say, cheerful acquiescence?—obtained, a petition was included in the daughter's evening devotions. Almost instantaneously, a stranger appeared at the front door leading the delinquent. "My, but God answered quickly, didn't He, Mummy?" We are particularly interested in the identity and the origin of the mysterious stranger who held the leash. If a mortal how would Dr. Dobson classify the "urge" which started him on his errand?

* * *

Recent news of Dr. McCullough, injured in the Cleveland Clinic disaster is discouraging. Even at this late date the prospect of his recovery appears still uncertain.

* * *

GANGLIONECTOMY FOR AVASCULAR CONDITIONS

Lyon H. Appleby, Vancouver, B. C.

Some years ago when Royle and Hunter first introduced their operation of ramisection much stress was laid on the effect upon muscle tone and spasticity and it was for the relief of certain spastic states that the operation was really performed. A wave of disappointment was succeeded by an intense interest in what was originally merely a by-product of the operation, namely its effect on the vascular supply of the part. Now the by-product is of infinitely greater value than the original conception. The marked rise of temperature following a ramisection where *all* of the controlling rami are cut has led to its experimental use in states of known vaso-spasticity such as Raynaud's

and Buerger's diseases. Its effect on Raynaud's disease would appear to be due to a "release" from overactive constrictor control, while in Buerger's disease the effect seems to be an increased vascularization of the part due to the opening up of the smaller arterioles.

Adson, of the Mayo Clinic, Rochester, attributing certain failures to incomplete sections of the rami started removing the whole lumbar sympathetic chain of ganglia for lower extremity conditions and the inferior cervical and superior thoracic ganglia (by a dorsal route) for upper extremity lesions.

G. E. Brown of the Mayo Clinic is responsible for the introduction of a test which he has described as the vascular index. It is devised to ascertain what effect ramisection or ganglionectomy would probably have. He introduces a known quantity of a foreign protein intravenously (using typhoid vaccine) and measures the change in surface temperature as compared to changes in mouth temperature. This vascular index is described by the formula:—

$$\frac{\text{Rise in surface temperature—less rise in blood temperature}}{\text{Rise in blood temperature}}$$

The higher the index the more favourable the reaction to ganglionectomy. For instance, a Buerger's giving a zero or low index would not give as good a result as would one giving an index of 2 or 3—in fact such an index would militate against ganglionectomy.

There are roughly four types of Buerger's disease or thrombo-angeitis obliterans:—

1. Extensive gangrene, with or without pain. The treatment here is amputation.

2. Mild trophic changes, with severe rest pain. Use medical measures for relief of ulcers or as a prophylactic. If rest pains cannot be relieved do an amputation instead of a ganglionectomy.

3. Mild trophic changes without rest pain or with mild controllable rest pain—treatment ganglionectomy.

4. Severe rest pain without trophic changes. Treatment as in group 2.

Although ganglionectomy has revolutionized the surgery of thrombo-angeitis obliterans and has brought relief to a large percentage of otherwise hopeless cases, it is in Raynaud's disease that the results are so dramatic and nearly 100% in properly performed ganglionectomies and for those people there had hitherto been no relief.

Some difficulty seems to be apparent in the differentiation of these two conditions. The following tables (after Adson) may be of value in clarifying these conditions, which are really not easily confused:—

BUERGER'S DISEASE
Thrombo-angeitis obliterans

Race Hebrews 80%				
Age 25-45	Sex Male 99%			
Type of rest pain, Sharp, stinging	Claudication. Present.	Oedema. Frequent.		
Temp. of legs Low.	X-ray of Arteries. No sclerosis	Phlebitis 30%	Gangrene Common	
Rubor on dependence. Present.	Pallor on elevation. Present.	Colour changes on exposure. 30%.	Pulsation. Absent: 50% Dimin.: 45% Norm.: 5.2	Ulcers. Moist, inflamed, discharging.

RAYNAUD'S DISEASE

Race Any.				
Age 17-35	Sex Female 95%			
Rest pain. Absent.	Claudication. Absent.	Oedema. Absent.		
Temp. of legs Low.	X-ray of Arteries. Normal	Phlebitis Absent	Gangrene Rare	
Rubor on dependence. Absent.	Pallor on elevation. Absent.	Colour changes on exposure. Always.	Pulsation. Normal.	Ulcers. Small-pinched out.

RECENT ADDITIONS TO THE LIBRARY

Transactions of the Ophthalmological Society of United Kingdom, 1928
What is Eugenics? Leonard Darwin, 1928.
World War Casualties from Gas and Other Weapons, Gilchrist.
Medical Clinics of North America, Philadelphia Number, 1929.
Dermatergoses, Prosser White, 1928.
Transactions of the American Otological Society for 1928.
Transactions of American Saryngalogical, Rinol & Otol Society for 1928.
United States Medical Dept. in the World War, Vol. IV., 1928.
Chronic (non-tuberculous) Arthritis, Timbrell Fisher, 1929.
Surgical Clinics North America, Mayo Clinical Number, Feb., 1929.
International Clinics, December, 1928.
Report of 4th International Congress Military Medicine, Warsaw.
Report of the Henry Phipps Institute, 1928.
Gynaecology, Graves, 4th Edition, 1928.
Propaganda for Reform, A. M. A., vols. 1 and 2.

New and Non-Official Remedies, 1928.
Section of Ophthalmology of the A. M. A., 1928.
Medical Clinics North America, March, 1929.
Erythema Nodosum, Oddery Symes, 1928.
Organic Inheritance in Man, Crew.
Consecratio Medici, Harvey Cushing, 1929.
Transactions of the American Proctologic Society, 1929.
Clinical Medicine, Bethea, 1929.
Transactions of the American Ophthalmological Society, 1928.
Obstetrics, de Lee, 5th edition, 1928.
Surgical Clinics of North America, Chicago Number, April, 1929.
Technique of Contraception, J. F. Cooper, 1928.
Medical Clinics of North America, Mayo Clinic Number, May, 1929
Transactions of Section of Laryngology Rhinology & Otology, A. M. A. 1928
Modern Ophthalmology, Ball, 2 vols., 6th edition revised.
Lectures on Conditional Reflexes, Ivan Pavlov, Trans. Gantt, 1929.
Medical Annual, 1929.
International Clinics, March, 1929.

* * *

MALARIAL THERAPY IN THE TREATMENT OF NEUROSYPHILIS

Based on a paper read before the Osler Society, Vancouver B. C.

By Dr. W. L. G. Middleton

In choosing this as the subject of my paper, I am able to give something that is comparatively recent in the big subject of the treatment of syphilis, and also something in which I have a particular interest. Lately I have had the opportunity to treat a group of neurosyphilitics—twelve in number—kindly sent to me by Dr. J. A. E. Campbell—by this method and to study their reactions to and the results of, this form of treatment. Though all my cases are too recent to be able to tell how far they have progressed towards a complete and lasting remission, the results obtained are encouraging.

The originator of this mode of treatment was Wagner von Jauregg who, in 1887, began his experimental study of the influence of intercurrent febrile disease upon the course of psychoses. Using Koch's old tuberculin, he reported favourably on his work in 1909. He later employed anti-typhoid vaccine for non-specific effect but finally came to the conclusion that the actual presence of an infectious disease was required for the best therapeutic results and accordingly took up systematically the inoculation of paretic patients with tertian malaria in 1917. In 1922, he reported on 200 cases, 25% of whom had gone into such complete remission as to be able to resume their former occupations. Since that time various observers, with series of two or three hundred cases, have reported complete remissions in as high as 40% and over and a large number of the remainder improved and able to fill positions though more menial and with less responsibility than those they had formerly occupied. The basis for appraising a clinical remission is the economic status following treatment by malaria.

The malarial *Plasmodium Vivax* is used for inoculation. The primary attacks of the tertian parasite respond very rapidly to treatment.

The plasmodium is in an asexual form, so in quinine we have a sure means of control.

From 2½ to 8 c.c. of blood is taken from the donor host, preferably just before a chill, and injected either intravenously or sub-cuttaneously into the patient. The blood, if citrated and defibrinated may be kept for several days and transported to another place, if need be, without greatly endangering the virulence of the parasite.

The inoculation period, when the injection is intravenous, averages seven days; when subcutaneously or intramuscularly, about thirteen days. Occasionally no fever results or, if started, it may be aborted. An effort can be made to re-activate the malaria by a second intravenous inoculation or by injections of milk or sodium nucleinate intramuscularly or typhoid vaccine intravenously.

The passage of the plasmodium through a series of hosts seems not to decrease its virulence.

The belief that the effect of the malarial infection is largely due to the induced fever, is supported by the general opinion of observers, the good results seeming to be proportionate to the height reached by the fever paroxysms. Though this is the rule, a few of my cases whose temperature rarely rose above 103° showed a greater improvement than a number whose temperature reached 105° and 106°. The patient is allowed to have, if possible, from 8 to 12 fever paroxysms before terminating the infection. Many cases with vascular, myocardial or kidney degeneration may have to have the malaria terminated much before this, usually owing to unfavourable complications appearing early in the fever course. It is due to the many complications that may arise that hospital control is essential during the treatment. Many of the patients are broken-down, physically as well as mentally, and complications, especially in those well on in years, have to be watched for and promptly met when they appear.

One of my patients, a man 65 years of age, who had been suffering from lightning pains for the past one to two years, urinary troubles and, for the past few months before treatment, some ataxia and signs of mental deterioration, developed in the space of eight days in which he had five chills, many of the complications one would meet in a number of cases. The fever ranged from a subnormal temperature of 95° and 96° up to 103°. During the first two chills he appeared to have a cardiac collapse ,his pulse became weak and thready, well over 200 to the minute, and his skin, cold and clammy, took on a blueish-grey pallor. He rapidly became weakened and jaundiced, lost weight and occasionally became delirious, had involuntary defaecation and micturition and developed bed sores. His blood N.P.N. began to rise rapidly and the blood hemoglobin to decrease in amount. On December 11th, 1928, the spinal fluid examination gave the Wasserman as plus 4 in both antigens, the cell count as 2 (lymphocytes), and the colloidal gold reaction as 555555 3200 (paretic curve). The low cell count with the first zone colloidal gold curve usually carries an unfavorable prognosis.

The patient had his first chill on February 6th, 1929 and his last on February 14th, 1929. On March 27th, the spinal fluid examination

gave the Wasserman as negative in both antigents, the cell count as one—and the colloidal gold reaction as 1243311000, verging in a second zone or luetic curve. The patient soon began to improve when the malaria was terminated, mentally as well as physically. Up to now there has been no recurrence of the lightning pains, he walks quite well and quoting his friend with whom he has stayed for a number of years, "he is so much better than he has been for several years that he does not appear to be the same man."

The chief complications met with are, delirium, from a mild muttering to excitement requiring restraint, progressive weakness, loss of weight, nausea, vomiting and diarrhoea, rectal incontinence, vesical incontinence and retention, oedema of the ankles or face, jaundice, anaemia, herpes and bed sores. For the weakness, rectal and intravenous glucosalines are useful, also in some measure as a preventative, a high carbohydrate diet may be given for a few days previous to the inoculation.

A close check must be kept on the patient's blood N.P.N. A rise to or above 100 mgs. per 100 c.c. of blood is a sign that the malaria must be aborted regardless of clinical symptoms. The haemoglobin estimation is of value. Daily examination of blood smears can be made and when it is found that more than 10% of the red blood corpuscles are infected the patient is in danger of toxic symptoms.

Most of the complications disappear rapidly when the malaria is controlled. If a quicker action than quinine by mouth is desired, quinine and urea hydrochloride intramuscularly or quinine dehydrochloride intravenously, may be given. The ordinary procedure I follow is 10 grs. of quinine sulphate t.i.d. for three days, then 3 grs. t.i.d. for 10 days.

The beneficial effects of the malarial infection may appear during the series of paroxysms. Full judgment upon the degree of benefit, however, cannot be made until from one to several months after the treatment. Character changes develop early and are often the outstanding result of the treatment. Objective signs of the disease after the malarial course cannot be expected to disappear as regeneration in the central nervous system does not occur even though the somatic symptoms are materially improved.

The patient with the least amount of parenchymatous degeneration is the one in whom the most favourable result may be expected; i.e. in cases of paresis, asymptomatic or symptomatic neurosyphilis and those with gastric crises and lightning pains. The results in frank cases of tabes dorsalis are not encouraging. Markedly advanced cases that have been living a vegetative existence in an asylum, are invariably made worse by this type of treatment.

The true nature of the mechanism involved in malarial therapy is unknown. It is believed that the beneficial effects are the result of a non-specific stimulation by the malarial infection with accompanying tissue response. The latter is characterized by hyperaemia and an increased permeability of the capillaries of the brain. The amount and

(*Continued on Page* 211)

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COMPARISON OF KAHN AND WASSERMANN TESTS, MAY, 1929, VANCOUVER GENERAL HOSPITAL LABORATORIES.

MABEL M. MALCOLM

Head, Bacteriology Division

In accordance with our announcement in The Bulletin of the Vancouver Medical Association for last month we started a series of Kahn Precipitation Tests, running them parallel with the regular Wassermann Tests. During the month, from May 13, 1929 until June 12, 1929, we ran 913 Kahn Tests and 991 Wassermann reactions. We were unable to run the full series of Kahns owing to material in 78 cases being insufficient for both tests; this was especially true with spinal fluids. In such instances only the Wassermann was done.

The following table gives a general idea of our results:

Number of Kahn Tests	913
Number of Kahn and Wassermann Agreements	730
Number of Kahn and Wassermann Disagreements	183

This shows an agreement of 80%.

The other 20% of the cases, showing disagreement, in every instance showed the Kahn Test to be positive and the Wassermann Test negative, i.e., the Kahn to be more sensitive than the Wassermann.

We have asked physicians for their co-operation in collecting our information, and from the above 183 disagreements we have been able, with their help, to get the following data on 46 cases.

The Kahn Test showed a positive reaction (plus 2, plus 3, or plus 4) and the Wassermann a negative reaction in—

28 clinically positive cases.

5 old cases, which show no symptoms at present.

6 new cases (typical chancre etc.)

7 cases where the physician suspected syphilis, either from symptoms or history obtained.

Total 46 cases missed entirely by the Wassermann reaction.

The above, although representing not quite a thousand cases, shows the tendency of the Kahn Test to be quicker than the Wassermann in picking up a new case, and also to remain positive for a greater length of time after treatment has been received.

Twenty-seven of the above forty-six cases have at some time had a positive Wassermann reaction and have, since treatment, become negative. The other nineteen have never had a positive Wassermann, thirteen having always shown negative Wassermanns in spite of suggestive clinical evidence, and six being of too recent origin to even expect a reaction with the latter test.

It is a well known fact that the Wassermann at its best gives many false negative reactions, and in our opinion the Kahn Precipitation Test overcomes this problem to a great extent; in our Laboratory so far, showing no tendency to give false positive reactions.

The following authorities are quoted to show the shortcomings of the negative Wassermann despite its undoubted reliability when positive. (See Stitt—Practical Bacteriology, Blood work and Parasitology—P. Blakiston's Son, 1927, p. 283.)

"According to Stokes the highest peak of the Wassermann Test efficiency is reached in a period extending from about three weeks after the appearance of the chancre to the height of secondary manifestations, covering roughly about six months. From the pinnacle of efficiency the proportion of positive Wassermann results obtained from the blood gradually declines.

In the primary stage Stokes states that the proportion of positive blood Wassermann reactions at the beginning of the second week averages about 35 to 50%, from which point it increases steadily to 80% or more at the end of the eighth week.

McDonagh states that in the primary stage of syphilis the blood Wassermann is positive in 40% of cases. Noguchi gives 69.8% as the average determined by various serologists.

Craig gives the following summary of positive blood Wassermanns: First week 36.3%, second week 59.3%, third week 68.9%, fourth week 77.2%, fifth week 81.3%.

In frank secondary syphilis Stokes found that taking all cases as they came, treated and untreated, 92% were positive, while in the untreated cases 98.5% gave the positive reaction.

In untreated secondary cases McDonagh states that 97% give positive results, while Noguchi's average, as determined by various serologists is 89.4% positive.

Stokes and McFarland in early secondary syphilis found the following: blood positive and spinal fluid negative 40%; blood positive and spinal fluid positive 36%, blood negative and spinal fluid positive 8% and blood and spinal fluid negative 16%.

Fordyce and Rosen give the following percentages in late secondary syphilis: blood positive and spinal fluid negative 26%; blood positive and spinal fluid positive 21%; blood negative and spinal fluid positive 5%; and blood and spinal fluid negative 47%.

Late syphilis. In the experience of Stokes, the blood is negative in as high as 59% of the neurosyphilitics in general. In tabes Nonne found the blood negative 30 to 40%, and Gennerich in 50 to 60%.

In paresis it is generally accepted as positive in 90 to 100%, although Kafka has reported as high as 18.7% negative blood Wassermanns in this disease.

In the tertiary stage McDonagh states that the blood Wassermann is positive in about 70%. Noguchi's averages, as determined by various serologists for positive blood Wassermann reactions are: Tertiary syphilis 78.1%, cerebrospinal syphilis 47.6%, paresis 88.1%, tabes 62.6% and for cerebrospinal fluid; cerebro-spinal syphilis 19%, paresis 90% and tabes 56.2%.

Nonne obtains from 85 to 90% positive Wassermann reactions on 0.2 c.c. of spinal fluid in paresis as against 20% in tabes and 29 to 30% in cerebro-spinal syphilis. On the other hand, with 1 c.c. of spinal fluid almost all tabetics yield positive Wassermann reactions; paretics and taboparetics are invariably positive, and patients with cerebrospinal syphilis yield almost 100% positives.

In regard to both blood and spinal fluid findings in late syphilis Stokes and Brown give the following figures: blood positive and spinal fluid negative 23%; blood and spinal fluid positive 18%; blood negative and spinal fluid positive 41%; blood and spinal fluid negative 18%. In the same stage of the disease Fordyce and Rosen report: blood positive and spinal fluid negative 22%; blood and spinal positive 48%; blood negative and spinal fluid positive 14%; and blood and spinal fluid negative 16%."

It is our intention to run this parallel series of Wassermanns and Kahns (on blood and spinal fluid, whenever at least 5 c.c. of the former and 10 c.c. of the latter are received) for several months at least, and we now undertake to report the Kahn Test result as a routine, in conjunction with the Wassermann reaction, to begin June 21, 1929.

Owing to shortage of workers during the summer months we may have to discontinue the routine of Kahn series for a period of six weeks or two months but anticipate being able to do all Kahn Tests *individually requisitioned for.*

* * *

CONVALESCENT SERUM IN POLIOMYELITIS

Summary of Local Results.

A. M. MENZIES, M.D.

Administrative Medical Assistant, Vancouver General Hospital Laboratories.

During 1928, convalescent serum was sent out from the Vancouver General Hospital Laboratories, and used for treatment of acute Anterior Poliomyelitis in 19 cases of this disease.

Recently, questionnaires were sent out to the nineteen doctors who had treated these patients, and answers were received from eleven of them.

While the series is too small to be of any great value, it will nevertheless be of some assistance, when considered along with reports on other cases which may be received from various parts of the country from time to time.

In this series there were four cases between 18 and 27 years of age, four between 9 and 14, and three between 2 and 5.

Three were males and eight females.

There were four deaths; two females, ages 9 and 11, and two males, ages 5 and 19 years.

Early symptoms were variable, most patients, complaining of headache, stiffness of the neck, and pains or weakness of certain muscular areas. Some also complained of nausea and vomiting, anorexia, insomnia, drowsiness, convulsions; and practically all had some rise in temperature.

Some early paralysis appeared in eight cases, usually two to five days after first symptoms; but one patient showed paralysis the day after the onset, and one not until the twentieth day.

In all but four cases there was later paralysis of varying degree, bladder and rectum being involved in two patients; and three showed paralysis of the respiratory muscles.

These eleven patients were each given from one to three 15 c.c. doses of convalescent serum, the intraspinous route being used for at least one dose in the majority of cases, the rest being given intramuscularly or intravenously. The first dose was given before the onset of paralysis in three cases only, while in others it was given soon after paralysis appeared, which was usually two to five days after onset of symptoms—one being twenty days.

RESULTS AND CONCLUSIONS:

For the most part, results might be considered satisfactory. Although there were four deaths; one of these was due to an intervening Broncho-pneumonia, and the other three fatalities were cases in which there was paralysis of the respiratory muscles. There were three cases in which serum was given before onset of paralysis, and these all showed early improvement, leading to complete recovery.

Two of the others recovered almost completely, even though definite paralysis had been present, and the remaining two were cases in which there was paralysis of lower limbs, bladder and rectum. These latter have shown some slight improvement to date, bladder and rectal function having returned.

In such a small series of cases, one can arrive at no very definite conclusions; but convalescent serum seems to have been of definite value when given early in the disease, especially before the onset of paralysis. The serum used was mostly from persons who had recovered from the disease within the previous two years, but one dose was from a case of many years previously, and immediate improvement resulted, so that possibly serum from those who have had the disease several years previously, is fully as potent as that from recently recovered cases.

An expression of thanks is due to those physicians who replied to the questionnaires, details from which were used in compiling this series.

NOTE: The Vancouver General Hospital Laboratories will be glad to hear from physicians, of cases of up to 25 years standing, willing to supply blood for convalescent serum ($25.00 for 600 c.c. and pro rata for smaller amounts). Cases not treated with convalescent serum are preferred.

(*Continued from Page* 206)

type of medication given previous to the malarial course does not greatly influence the results in a comparable group of cases. There has been, however, a higher percentage of remissions in the group in which previous treatment has *not* been given over a long period.

O'Leary of the Mayo Clinic is of the opinion that previous anti-syphilitic treatment has little or no effect on the malarial course. Perhaps the patients do better without it. There should be a rest period of six months between the termination of the malarial attack and the beginning of any further anti-syphilitic treatment. Many of the European observers differ from this opinion and give arsphenamin immediately before and after the malarial course.

In all my cases there was a reduction in the number of cells in the spinal fluid after treatment and in one case this was most pronounced. Upon admission to the hospital, this patient had a spinal cell count of 1680 (72% lymphocytes), a plus 4 spinal Wasserman with both antigens and a gold soluble curve of the tabetic type (3,555,555,555)—evidently a syphilitic basilar meningitis of the secondary period. About a month after treatment the spinal fluid examination showed a cell count of 30 (lymphocytes), a spinal Wasserman of plus 4 with the cholesterinized antigen and of plus 3 with the acetone insoluble antigen; and a gold soluble curve of the paretic type (5,555,555,210), showing in the three tests an improvement over the examination taken on admission. His mental involvement was such that he required light restraint for several days, and his chief complaint, as with a large proportion of the cases treated, was a severe and persistent headache. The headaches disappeared after the second chill and there was no apparent mental deviation from the normal by the end of his fever course.

Most of the patients evidenced a desire to return to work soon after treatment and in these cases the general improvement in tone and behaviour was outstanding. Ataxia present in one case, was improved. Facial paralysis that developed in one patient shortly before the malarial treatment was commenced was not improved, nor has any improvement been noticed in an optic atrophy of some months' standing in another patient, though I am inclined to think that its progress has been checked.

One patient, a tabetic, died two months after the malarial inoculation. The mental deterioration was marked upon admittance. During the fever course, the fevers being particularly satisfactory in this patient, mental excitement with delusions and hallucinations at times required physical restraint. For the last two weeks, all food was refused and attempts to feed the patient met with resistance, so that rectal, intravenous and subcutaneous methods had to be employed as a last resort. On autopsy, sections were taken from the pancreas, adrenals, liver, heart and brain and stained by the Levaditi method, careful search being made under oil immersion for spirochaetes; in no instance was any found. The autopsy diagnosis was neurosyphilis, leptomeningitis with an area of encephalomalacia in the left occipito-parietal region, purulent pyelitis and cystitis and myocardial degeneration.

Though subsequent examination of the spinal fluid is not as accurate a guide to the patient's improvement as the clinical signs and symptoms, a great deal of valuable information can be obtained from the spinal fluid, especially before treatment, for differentiation of types and prognosis.

Stokes, as a help in understanding the serological findings one often meets in cases of neurosyphilis, explains a number as follows:

The cell count is an index of meningitis.

The Wasserman reaction is some measure of the amount of parenchymatous involvement.

The gold soluble reaction assists in the differentiation of paresis and other forms of syphilis (the reaction is divided into three zones, the first zone or paretic curve, the second zone or luetic curve, and the third zone or tabetic curve).

A low cell count, in combination with a first zone curve, carries an unfavorable prognosis. Patients with a second zone or luetic curve have a much more favourable prognosis. High cell counts occur in the basiliar meningitis of the secondary period and in the meningeal recurrences during latency or after inadequate treatment.

Malarial therapy has not been established as a means of curing patients with general paresis but accumulated experience affords indisputable evidence that it produces a higher percentage of economic remissions than other methods. The full clinical effect of malarial infection seems to be slower in manifesting itself and to be quite lasting, so that on this score if on no other, it surpasses tryparsemide therapy in ultimate efficiency.

The Mayos give the percentage of their patients with syphilis as 4 and of these cases 65% to 75% have a neurosyphilitic aspect. With the percentage running that high, the addition of malarial therapy to our armamentarium in treating these cases is a most important one.

* * *

B. C. MEDICAL ASSOCIATION NEWS

The Annual Spring Post Graduate Tour is now in progress. Our readers will remember that this tour is made possible by the gift of the Sun Life Assurance Company of Montreal of a large annual sum to the Canadian Medical Association and are proving of great value to the medical profession throughout Canada. The following are the speakers supplied by the Canadian Medical Association:

For the Kootenays and Okanagan:

Dr. Norman Gwyn, Toronto—Internal Medicine.
Dr. T. McPherson, Victoria—Surgery.
Dr. D. E. H. Cleveland, Vancouver—Dermatologist.

For Prince Rupert, Prince George, Nanaimo and New Westminster:

Dr. Norman Gwyn.
Dr. D. E. H. Cleveland.
Dr. H. E. Ridewood, Victoria—Surgery.

Our Executive Secretary, Mr. Fletcher ,accompanies the tour as usual.

* * *

The Executive of the B. C. Medical Association is keeping in close touch with the question of Health Insurance, a special committee having been appointed to deal with the matter and keep the central Executive informed of developments. The Commission appointed by the B. C. Legislature has taken up its work, and has already held meetings in Trail and Vancouver—these being o fa preliminary nature and confined to the investigation of welfare work being done by various large organizations such as the C. P. R., the B. C. Telephone, etc. Later on, we understand, public meetings will be held, and opportunity given to our representatives to present the views of the profession. The various branches of the B. C. Medical Association have been asked to discuss at their annual meetings the whole question of Health nsurance, and to make any suggestions or recommendation that may occur to them as a result of their local conditions and special needs.

* * *

Dr. J. M. McDiarmid of Abbotsford is taking a month's holiday, leaving his practice in the care of Dr. F. G. Logie.

* * *

Dr. A. W. McCordick is relieving Dr. Lougheed of Blubber Bay for a two weeks' vacation.

* * *

"SPEED"

Dr. Winifred Cullis, M.A., D.Sc., O.B.E., Professor of Physiology at the University of London, speaking at the Triennial Conference on Education and Leisure held in Vancouver in April last, said the subjects chosen for her, "Speed" and "Noise," while both of great practical importance, were very hard ones to tackle. She proposed to speak of them from the only angle from which she felt herself qualified to deal with then, namely, from the angle of the physiologist, and not from a popular angle. "I am going to speak to you" she said, "as a scientist who is much more able to express herself in the Laboratory than in words.

In that very great book, The Nature of the Physical Universe, a book which, I think, we shall look back upon as one of the great books of the century, Eddington describes the movements of the earth and the speed of those movements. From a perusal of that book I find that we ourselves are moving through space at an infinitely greater speed than the wonderful record recently attained by Major Seagrave.

I think it is perfectly justifiable for a physiologist to talk about speed, speed relatively to ourselves, not absolute speed. I wish people would realize that the attainment of speed is not in itself a very high ideal. We do not want to think of speed as an end in itself. I am afraid there are numbers of people who err in that way and who feel that there is some inherent virtue and value in speed. From a physiological point of view there is no value in speed as such. It is speed made use of that may be valuable. Therefore I want to consider speed from the angle of the physiologist, speed as it affects the human organism, the most wonderful organism in the world. It is so wonderful that we ought to do

everything we can to enable it to have every opportunity of using itself to the very highest and fullest extent. In other words, I am here to plead for an intelligent use of speed.

We do not think it intelligent of people to rush around the country in motor cars just for the sake of rushing. You would not think it intelligent for a man to mount a bicycle and cycle through the length of the National Gallery. He would certainly move more quickly, but should we think he was an intelligent person? Should we think he was making the best use of his opportunities? When I see people speeding through the country in motors, I think they are like a man cycling through the National Gallery. I feel they are getting very little from life when they might be getting a great deal. On the other hand it is a very intelligent use of speed for a doctor to use it to get to an urgent case, or a fire-engine to dash to a fire. It is again a question of what is an intelligent use of speed, and a question of using speed as a servant, and using it at the right time and in the right manner.

If we use speed as we might use it it would certainly increase our leisure time and we are here to discuss the use of leisure. If we use speed properly we may actually increase our time of leisure by doing our work more intelligently and therefore more profitably and we shall be less tired and we shall have very much more time for the *intelligent* use of leisure.

As a physiologist I know what an enormous interest we have in the human body. There is nothing like it in the world, with its possibilities of spiritual, mental and physical reactions, and because many of the problems of modern life are pressing on us it is high time we studied the effect of these conditions on the human body.

The last century was undoubtedly an age of machinery. Machinery was glorified as a god. May this century be looked upon as the century of humanity, a century in which we give the right proportion of thought and care to humanity. We must study the effect of modern conditions on human individuals and I would like to see established in the universities in my country, and in your own wonderful University of British Columbia, a Chair which will definitely set out to study the relationship of modern conditions, not on the pathological individual but on the normal, physiological individual, to decide what are the best conditions for that particular person's health. I am speaking now as a member of two bodies in England which have to some extent tackled this subject. The first is the Industrial Fatigue Research Board. We set out to consider the conditions which were bad for the human worker in various industries in England—and the other body (the name is a very bad one) "The National Institute for Industrial Psychology." We want to study the industry and we want to study the reaction of the human individual to that industry, and we want to alter the conditions of the industry so that they may be most favourable to the individual. We have achieved some very startling results, particularly in the direction of the elimination of fatigue, and I am going to speak of one or two of the results obtained, especially in connection with this question of speed.

Speed and noise are very difficult subjects to tackle, so I wrote up some headings under which I thought I might speak on speed. The first heading is "More haste less speed." This is extraordinarily true. And it is also true to say "Less haste, more speed."

We found in factories in cases where the job was a mechanical one that it was just as bad to have one person working too fast as one working too slow. In both cases the individual was irritated and the efficiency and correctness of the work were interfered with.

We investigated conditions in the sweet making industry, chocolate making, and chocolate packing. All the workers were girls, and their job was to put the centres in the chocolates. We wanted to get exactly the right speed for the individual. We found the machines were set—sometimes too quick and sometimes too slow. We have been able to help the girls greatly by suggesting there should be a certain rate of speed of the machine. A very stupendous result was obtained in one case, where the girl was able to get an output of over 80% higher than she could before by the simple adjustment of the rate of the machine she was working. At the end of the day the girls were so much less tired that they almost feared to adopt the method because it might be said they had not done the right amount of work. At the end of the day, though, they were fit to take up and make an intelligent use of their leisure.

During the war an officer who had been one of the research workers in the National Institute of Industrial Psychology introduced the custom of rest periods. In England we completely adopted the habit of having a rest pause in the middle of the morning. Little girls were seen rushing about with teapots carrying round tea to the people in the various offices and we did the same at our Laboratories in the Medical School.

Two officers who had been working on the question of Industrial Fatigue took a number of men and divided them into two groups in an endeavour to find out which group would dig the greatest amount of trenches in a certain time. The conditions were different. In one group the men were allowed to dig as hard as they pleased; in the other group the men were divided into three squads and were allowed to dig for ten minutes at a time and each squad then had to rest for ten minutes. One-third of the men in this group were always resting. The men who were working like this got terribly impatient. In the other group the men dug as hard as they could and until they were exhausted. At the end of the day the group with the rest periods were many yards ahead of those who had worked as hard as they could. This is an illustration of the old story of the Hare and the Tortoise.

Another point—our observations did not seem to agree always with the old adage "Slow but Sure." In ordinary industry that does not seem to hold. If you take 25% of the people who work most speedily you will find their mistakes are very much less than the mistakes of the remaining 75%. Here there seems to be a direct connection between speed and correct work.

Another of our investigations was an enquiry into the question of the desirability, when teaching people new methods, of stressing speed or accuracy. Should you stress speed or accuracy. Typewriting was taken as the occupation to be studied. Typewriting seems to be an occupation which lends itself to study and certain groups of students

were trained in two ways. In one group they were taught to attain speed; the other group was taught to express accuracy. At the end of six weeks both groups were pushed in the other direction, those who had been trained along the lines of accuracy were now trained in speed and those who had been trained to be speedy were now trained in accuracy. There was no difference, both groups seemed to attain the same standard. The only thing in favour of the accuracy group was that they made very few mistakes as they accelerated their speed. The other group who had been taught speed made many more mistakes.

Another point which emerges in our study is the extreme significance for the human individual of rhythm. Rhythm seems to be the source of the speed of movement. We must do the movement with rhythm. Have you watched the swing of the perfect golfer? Have you noticed the perfect rhythm of the movement? No effort at all, the ball just goes.

But I am going back to industry. I will tell you of an investigation made for Lyons, the teashop people in London, a very shrewd, hard-headed firm who realized the great value of the work being done by the National Institute. They came to the Institute and asked us if we could help them in the matter of breakages, having regard to this question of rhythm and speed. We investigated thoroughly and finally our investigator came to the place where most of the breakages occurred. He found it was in the actual service, and one of the biggest items was cups and the cups got broken when tea and coffee were being served at the rush hour. We found three girls working together. It was the duty of one to pick up the cup and pass it to the girl in the middle who turned a tap, filled the cup and passed it on to the girl on the other side. The girls on either side had a job which took only the fraction of a second, the girl in the middle had to take the cup from the girl on one side, turn the tap and pass it to the girl on the other side, and it was just here that the trouble was found, just here was where the want of rhythm counted. Here there was a large series of jerky movements with the result that the cups got broken. The investigator did something so simple as to be hardly noticeable. He had a board made grooved in such a way it would just catch the cup. The girl on one side put the cup in the grooved board and slid it under the tap, the girl in the centre turned the tap and slid the cup to the next girl. In that way perfect rhythm was established. All three girls had a job which took exactly the same amount of time. Result, the breakages went down by 70%. That just shows what we can do by a study of this question of speed and rhythm. If we can make people use large, free curving motions the whole body works better. No jerks, no speeding up of the muscles once they are started.

Speed may be a great enemy. I think the difference between a good performer and a very good performer, between a good singer and a very good singer is often just a matter of the refinements of motion; a matter of hard, hard work in mastering the intricacies of movement. I think if you try to reach perfection quickly then you will never reach the very best standard. Speed is a great lure, it is a great danger. In all our daily work it matters more that we should do it in the right way. Speed is a most undesirable factor in our lives when we turn to some of the

greater activities of the human individual; our relations with other people for example. One of the very greatest things in the world is friendship. You cannot have friendship unless you are prepared to give time and trouble to your friendships. Friendship is not a thing that just happens. It has to be worked for like everything else in the world. You have got to build up friendships, you have got to use your very finest movements if you are going to make an ideal friendship. And this is one of the things I should like to suggest as one of the proper uses of leisure. How few of us really stop to think; we just go on from day to day and fritter away a great deal of our lives. And it is in our relations with other human beings that we cannot afford to do that kind of thing. There is a physiological law which states quite definitely that to be appreciated a stimulus must bear a certain relation to the whole impulse. If you are going to have fine shades of feeling you must see to it that the mass of impulses is not sufficiently great to raise the scale at which we cease to be appreciative of the finer shades of feeling.

These are the places where we cannot afford to think of speed as an aid to leisure. It is an impulse we may make use of but I do think you will realize what I mean when I say I think it necessary we should begin to study the effect of the conditions of modern life upon the healthy, normal individual. It may be we can adapt ourselves to all these conditions, it may be we can not adjust ourselves to these conditions without the loss of some of the finest things of life.

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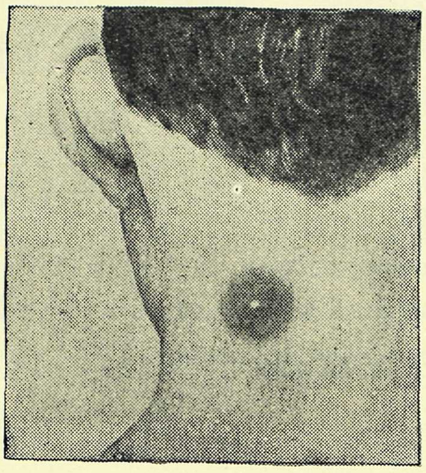

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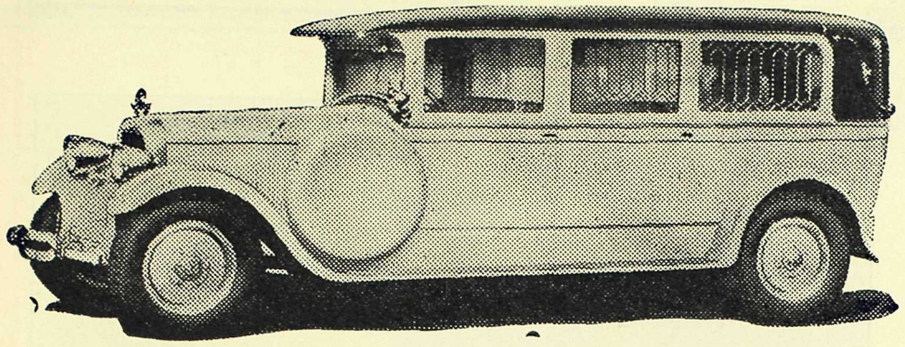

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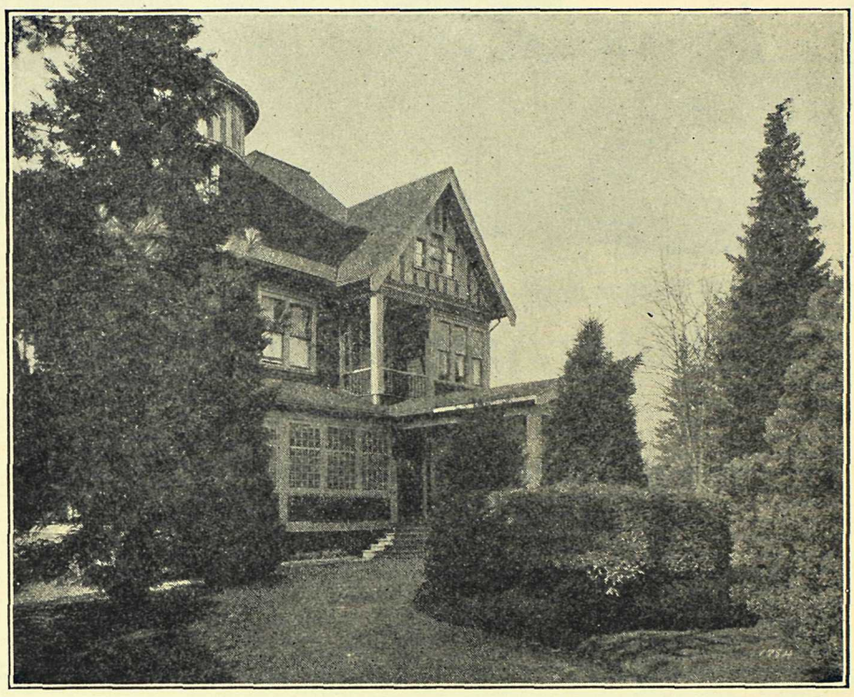

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