The BULLETIN

OF THE

VANCOUVER MEDICAL ASSOCIATION

Vol. XIII. APRIL, 1937 No. 7

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SOME PHYSIOLOGIC CONCEPTS OF THE STOMACH AND DUODENUM

NEWS AND NOTES

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

Published Monthly under the Auspices of the Vancouver Medical Association in the interests of the Medical Profession.

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—FEBRUARY, 1937

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

	Number	Rate per 1,000 Population
Total deaths	342	17.6
Japanese deaths	8	12.2
Chinese deaths	11	18.5
Deaths—residents only	299	15.4
BIRTH REGISTRATIONS—		
Male, 151; Female, 131	282	14.5

INFANTILE MORTALITY—	February 1937	February 1936
Deaths under one year of age	17	12
Death rate—per 1,000 births	60.3	44.8
Stillbirths (not included in above)	6	8

CASES OF COMMUNICABLE DISEASES REPORTED IN CITY

	January, 1937		February, 1937		March 1st to 15th, 1937	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	0	0	0	0	0	0
Scarlet Fever	25	1	37	0	14	0
Diphtheria	3	0	3	0	0	0
Chicken Pox	80	0	23	0	16	0
Measles	1543	2	253	0	72	0
Rubella	0	0	0	0	1	0
Mumps	200	0	118	0	49	0
Whooping Cough	9	0	5	1	7	0
Typhoid Fever	3	0	1	0	0	0
Undulant Fever	0	0	1	0	0	0
Poliomyelitis	0	0	0	0	0	0
Tuberculosis	19	5	22	12	20	--
Meningitis (Epidemic)	1	0	1	0	0	0
Erysipelas	7	0	10	1	4	0
Encephalitis Lethargica	0	0	0	0	0	0
Paratyphoid Fever	0	0	0	0	0	0

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Excellent results are obtained in cases of essential hypertension or benign hyperpiesia. Hypotensyl is also efficacious in treatment of high blood pressure accompanying pregnancy or due to fibrotic kidney. The benefit obtained from careful control of diet, as well as mental and physical rest, is accentuated by Hypotensyl.

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TENTATIVE PROGRAMME

Summer School Lectures

Tuesday, June 22nd, 1937

9:00 a.m.—Dr. Rowntree: Endocrine Diseases.
10:00 a.m.—Dr. Trueblood: Tumours of the Uterus.
11:00 a.m.—Dr. Magnuson: Fracture of the Neck of the Femur.
12:30 p.m.—LUNCHEON.
2:30 p.m.—*Clinic*—Dr. Brunn: Appendicitis.—St. Paul's Hospital.
3:30 p.m.—*Clinic*—Dr. Rowntree: Endocrine Disorders.—St. Paul's Hospital.
8:00 p.m.—Dr. Brunn: Lung Abscess.
9:00 p.m.—Dr. Boyd: Tumours of the Neck.

Wednesday, June 23rd, 1937

9:00 a.m.—Dr. Brunn: Emypema and Interlobar Empyema.
10:00 a.m.—Dr. Boyd: Bronchogenic Carcinoma.
11:00 a.m.—Dr. Trueblood: Intraoral Tumours.
3:00 p.m.—*Clinic*—Dr. Boyd: Tumours.—Vancouver General Hospital.
8:00 p.m.—SYMPOSIUM ON ARTHRITIS.
Dr. Rowntree: Chronic Arthritis and its management.
Dr. Magnuson: Surgical Treatment of Arthritis.

Note.—Following these lectures Dr. Magnuson will show a 1400-foot reel of moving pictures on research work on the cause of symptoms in otherwise cured patients.

Thursday, June 24th, 1937

9:00 a.m.—Dr. Trueblood: Tumours of the Neck.
10:00 a.m.—Dr. Brunn: Cancer of the Colon.
11:00 a.m.—Dr. Magnuson: Fractures of both bones of forearm.
Afternoon—GOLF TOURNAMENT.
8:00 p.m.—Dr. Rowntree: Hypertension and its management.
9:00 p.m.—Dr. Boyd: Nephritis.

Friday, June 25th, 1937

9:00 a.m.—Dr. Rowntree: Subject yet to be chosen.
10:00 a.m.—Dr. Magnuson: Fracture of Elbow in Children.
11:00 a.m.—Dr. Brunn: Hæmorrhage from Ulcer.
2:30 p.m.—*Clinic*—Dr. Trueblood: Lesions of the Skin. Vancouver General Hospital.
3:30 p.m.—*Clinic*—Dr. Magnuson: Simple Methods with Fractures.—Vancouver General Hospital.
8:00 p.m.—SYMPOSIUM ON CARCINOMA OF THE BREAST.
Dr. Boyd: Pathology.
Dr. Trueblood: Surgical Treatment.
Dr. Bede J. Harrison: From the Standpoint of the Radiologist.

EDITOR'S PAGE

In a recent issue of the *New England Medical Journal* appears an address by no less a man than J. M. T. Finney, of Baltimore, the well-known American surgeon, entitled "Religion and Medicine." This is an address he gave at a special service for Physicians and Medical Students, on St. Luke's Day, October 18, 1936, in the Cathedral Church of St. Paul, in Boston.

We are not going to quote the letter at all; we prefer rather to recommend that anyone who is interested in the subject read what Dr. Finney has to say about it. Our remarks are rather a sort of vocalisation of some reflections on this topic, of the necessity, in the physician's work, of a spiritual factor. Not a religious factor, in the sense of creed or dogma or adherence to any organised group. It is, we think, the false and fatal limiting of the word religion to fit these artificial and sectarian yardsticks that has made us, as a profession, so shy of admitting that there is any room at all for religion in our work. It is a curious fact of history that in the early days of medical history, the priest and the medicine man were one and the same person. Then, a little later, as in the days of Hippocrates, the temples and shrines were centres of medical knowledge, and attached to the religious fane was a species of health centre, where the sick took baths, and were given therapeutic exercises and prescribed for by diets and a regimen of life. To this day, in certain countries, there is a connection still existing between the two things.

For many centuries, of course, the division has been a clear-cut and definite one; and the physician has tended more and more to base his methods of diagnosis and treatment on definite "scientific" lines, and to eschew as misleading and non-provable all other theories of the causation and treatment of disease.

Yet the human being is not satisfied, and somehow, somewhere, there is something lacking to make a complete and coherent system of cure for human ills. Always, behind the physical sufferings, there is a spiritual pathology, and our best methods, our most accurate scientific knowledge, our most rational cures, are thwarted and to a greater or less extent frustrated and baffled by the fact that, while we have treated the body, we have not cured the spiritual or mental illness, nor excised the spiritual cancer which, while it may not have brought on the physical condition, yet is the blacker and the more tragic part of the whole picture. It is a question whether, till we find some way of meeting this need, we shall have done our whole duty.

And the trend is even now toward a new alignment of these two great powers for cure of human ills, the power of the healer of souls, and the power of the healer of the body—and why should they not be combined in the one man? Can we not face the issue squarely, and admit what at our heart's depth we know to be the case, that we must "minister to the mind diseased" as well as to the body, if we are to render our best service?

A book quoted by Finney, and one that we think every medical man would do well to read, is "The Return to Religion," by Henry Link, an eminent psychologist and psychiatrist. This man was for twenty years or so a very critical and very implacable foe of all things religious. As a boy he had been surfeited with the pietism and formalism and humbug that men are now beginning to see is not religion at all, but idolatry merely—till slowly but surely he came to see that "Religion is not the refuge of the weak, but the weapon of those who would be strong. I see religion as an aggressive mode of life, by which the individual becomes the master of his environment, not its complacent victim." And he found that only by giving his patients some such weapon, and so re-arming them for the battle of life, could he help them to health. And Dr. Farrar, who spoke at the Summer School in 1936, said somewhat the same thing.

Physical ills are bad enough—but the real tragedy and torture lie in the deeper woes of sadness, unhappiness, loneliness, and frustration. Our present

day, with its ghastly picture of want and misery, of despair and dumb acceptance of overwhelming defeat, needs, more than ever, such doctors as Finney urges us to be.

We would do well to beware of the intolerance and myopia which, because certain men have misused and mishandled religion, therefore dismiss it all as useless. "A little philosophy," says Francis Bacon, "inclineth man's mind to atheism, but depth in philosophy bringeth men's minds about religion."

NEWS AND NOTES

GOLF TOURNAMENT

Vancouver Medical Association

Medical men who play golf and those who simply go to the Association Golf Tournaments for the fun of an afternoon in God's out-of-doors, followed by a good dinner under the chairmanship of the one-and-only Ned McDougall, are urged to attend the first Spring Tournament at Point Grey Golf and Country Club on Thursday, April 22nd. For information please telephone Dr. W. M. Kemp.

* * * *

Dr. William Boyd, Professor of Pathology, University of Manitoba Faculty of Medicine, Winnipeg, has been appointed Professor of Pathology at the University of Toronto.

* * * *

Subscriptions to the John Mawer Pearson Lecture Fund have been coming in very well since the notices were sent out. To date one hundred and fifty dollars has been subscribed by members. This amount includes a very handsome donation of $25.00 from Dr. W. B. McKechnie, who was President of the Association in 1911-1912.

* * * *

Dr. G. A. Davidson and Dr. S. E. Turvey have recently been elected to membership in the Vancouver Medical Association.

* * * *

Dr. W. L. C. Middleton has returned from a month's holiday in California. Mrs. Middleton, who accompanied the Doctor, will remain in California for a further visit. Mrs. Middleton has quite recovered from her very severe illness.

* * * *

Cupid has been busy among the medical fraternity—possibly inspired by the advent of spring. Dr. Russell Palmer was married to Miss Jeanie Davidson on Wednesday, March 3rd. Miss Davidson was formerly employed in the offices of the Vancouver Properties Ltd., in the Medical-Dental Building.

* * * *

The marriage took place on Monday, March 8th, at Turner Valley, Alberta, of Dr. Henry Scott of this city and Miss E. Ohlson, a former graduate of the Vancouver General Hospital.

* * * *

Miss Mary MacLachlan, daughter of Dr. A. J. MacLachlan, the Registrar of the College of Physicians and Surgeons of B. C., will be married on Easter Monday to Mr. W. K. O'Hara.

* * * *

Dr. Wallace Wilson has been in California for a few weeks. He will return about the first of April.

* * * *

We are glad to see that Dr. R. B. Boucher is again at his office, after an illness of about ten weeks.

* * * *

Dr. C. H. Vrooman was among the 'flu casualties and was ill for some weeks. We are glad to see that he is now able to be at his office.

We extend sympathy to Dr. Leonard B. Wrinch and family, of Hazelton, in the loss recently of his wife.

* * * *

Dr. C. H. Ployart of Lillooet, B. C., has been appointed Medical Health Officer for Lillooet and District, and School Inspector.

* * * *

The Prince Rupert Medical Association, at its Annual Meeting, elected Dr. C. H. Hankinson as President, Dr. R. Geddes Large as Secretary-Treasurer, and Dr. J. H. Carson as representative to the Hospital Board. As Dr. W. T. Kergin was leaving on a world tour, the members presented him with a wrist watch, and Dr. Hankinson passed to him the feeling of appreciation and the well wishes of the group. Dr. W. S. Kergin and wife have left Premier and are accompanying Dr. W. T. Kergin to England.

* * * *

Dr. G. G. Ferguson of McBride, B. C., has been appointed Provincial Medical Health Officer.

* * * *

Dr. J. M. Hershey is reported to have arrived in Pouce Coupe to take over the duties of Provincial Medical Health Officer. Dr. J. S. Cull was formerly in charge of the Health Unit in the Peace River Block with headquarters at Pouce Coupe.

* * * *

Dr. Cull has recently moved to Vancouver and is now associated with Dr. J. W. McIntosh as one of the officers of the Metropolitan Health Board. Dr. A. M. Menzies, who was for several years serving with Dr. H. E. Young as Epidemiologist in the Provincial Board of Health, is now in Vancouver with the Metropolitan Health Board. Other officers of the new Health organization in Vancouver are Dr. A. R. J. Boyd, Dr. K. F. Brandon and Dr. W. G. Saunders, who has charge of the Unit in North Vancouver.

* * * *

Dr. T. W. Sutherland of Wells, B. C., who has been absent from the province during the past eight months. During Dr. Sutherland's absence Dr. George F. Young carried on as *locum tenens.*

* * * *

Dr. J. C. Thomas and wife have returned to Port Alberni following a well-earned vacation in Honolulu. During his absence Dr. A. N. Dobry assisted Dr. R. W. Garner in the practice.

* * * *

Dr. G. B. Helem, formerly of Enderby, has moved to Port Alberni and is now associated in practice with Dr. C. T. Hilton, who has been long-established there.

* * * *

Dr. R. Haugen, formerly in practice at Alexis Creek, has moved to Enderby and has taken over the practice vacated by Dr. G. B. Helem.

* * * *

Dr. D. M. King, who has been doing post-graduate work at the Vancouver General Hospital, has now returned, accompanied by Mrs. King, to his home and practice in Bralorne. During his absence Dr. C. E. Derkson acted as *locum tenens.*

* * * *

Dr. G. E. Hollies has entered practice in Pouce Coupe, in the Peace River Block.

* * * *

Dr. F. O. R. Garner has returned from Princeton, where he has been assisting in the examinations carried on by Dr. R. J. Wride under the new amendments to the Metalliferous Mines Regulation Act and Workmen's Compensation Act bearing on silicosis.

Dr. Hubert Dumont has taken up practice in Victoria.

* * * *

Dr. R. S. Woodsworth is now in Kelowna and temporarily associated in practice with Dr. W. J. Knox.

* * * *

Dr. Gordon E. Stanley is assisting Dr. Leonard B. Wrinch in practice at Hazelton.

* * * *

Dr. Harry Baker has taken up practice at Salmon Arm.

* * * *

Dr. J. P. Gussin is at Salmon Arm assisting Dr. A. Beech in practice during the illness of Dr. S. E. Beech, who, we hope, is rapidly recovering.

* * * *

Dr. C. E. McRae of Williams Lake, B. C., has been appointed Medical Health Officer and School Health Inspector for Williams Lake and district.

* * * *

Dr. L. N. Beckwith has been appointed Medical Health Officer and School Inspector for Castlegar and district.

* * * *

Dr. W. J. Endicott, formerly associated with Doctors G. C. and S. G. Kenning in Victoria, has now joined the staff of the Trail-Rossland group.

* * * *

Dr. L. W. Bassett is now associated with the Doctors Kenning in Victoria.

* * * *

Dr. Hill H. Cheney has joined the staff of the Vancouver General Hospital and is associated with Dr. Bede J. Harrison in the Department of Radiology. Dr. Cheney, after graduation from McGill University in 1913, did special work with Dr. A. H. Pirie at the Royal Victoria Hospital in Montreal. After returning from overseas service Dr. Cheney became director of the department at Ottawa General Hospital and comes to Vancouver with a recognized reputation in his specialty. Mrs. Cheney has already been introduced to the profession as a medical artist, and many men will recall the excellent display of her art as part of the McGill University Exhibit at the Canadian Medical Association meeting in Victoria last June.

* * * *

Dr. W. R. S. Groves, who has been associated with Dr. R. N. Dick in practice at Chemainus, proceeded to Smithers via Prince Rupert, where it will be arranged that he will take on the office and work of the late Dr. F. V. Agnew.

COLLEGE OF PHYSICIANS AND SURGEONS OF B. C.

INCOME TAX RETURNS

The following is an extract from the memorandum regarding Dominion Income Tax returns of members of the medical profession which will be of assistance to doctors in preparing such returns:

"1. An accurate record of income both from practice and other sources must be kept.

"2. Under the item of expenses may be included the following: (a) Supplies; (b) new instruments under $50.00 value; (c) telephone; (d) office rent; (e) postage and stationery; (f) new books and medical journals; (g) office help; (h) assistants' fees; (i) depreciation on instruments over $50.00 value may be charged at the rate of 15% to 25% per year and on a car used in professional practice 20% per year until fully depreciated; (j) auto expenses (restricted to one car) may be charged either as: (1) total cost of license, oil, gas, grease, insurance, garage and repairs, or in lieu of this, (2)

at the rate of eight cents per mile covered in the performance of professional duties; (k) in the case of a doctor practising from his residence when: (1) residence is owned by the doctor, a proportionate amount for running the house not to exceed one-third of total house expense, and (2) in a rented house, total amount of rent may be allowed but not other expenses such as heat, light, etc.; (l) annual fees and registration fees not exceeding $100 per year, business tax, and mal-practice insurance may be charged. No charge may be made for attending conventions or post graduate work; (m) professional men under salary contract will be taxed without any deduction except for actual expenses out of salary necessary to maintain the contractual position, licensing and annual fees may also be charged."

THE LATE DR. FRANCIS VERE AGNEW

Dr. Francis Vere Agnew, who has been in active practice in Smithers, B. C., since 1930, died while writing at his office desk during the afternoon hours on March 19th.

The late Doctor Agnew was well and favourably known to the profession in this province. He not only had an excellent training, but possessed those qualities in a marked degree which made him a valued asset to the community and his patients. He was skilful and carried confidence into the home and hospital.

Having secured his B.A. degree in Dublin in 1907, he graduated in Medicine in 1912, obtaining certificates of M.B., B.Ch., B.A.O., M.D.

The late Doctor Agnew registered in British Columbia in 1912 and has been located in Vancouver, Kamloops and Williams Lake, where he spent several years. Later he took up practice in Telkwa, on the Canadian National Railway, and when in 1930 Dr. C. H. Hankinson moved to Prince Rupert from Smithers, Dr. Agnew succeeded to the practice in the latter place.

The sympathy of the whole profession in British Columbia is extended to his widow and family, and an appreciation of a brother doctor and the loss sustained by this province is regretfully recorded.

RECENT ADDITIONS TO THE LIBRARY

Diseases of the Eye, by Sir J. H. Parsons; 8th ed., 1936.
Operations of Surgery, 2 vols., by E. P. Rowlands and P. Turner; 8th ed., 1936.
Principles of Human Physiology, by E. H. Starling; 7th ed., 1936.
Applied Physiology, by Samson Wright; 6th ed., 1936.
Practice of Medicine, by J. C. Meakins; 1937.
Surgical Clinics of N.A., August, 1936. Contains a symposium on Peptic Ulcer.
Surgical Clinics of N. A., October, 1936. Contains a symposium on Urology.
Surgical Clinics of N. A., December, 1936. Contains a Symposium on Thyroid Diseases.
Nostrums and Quackery, vol. 3, ed. by A. J. Cramp, 1936.
Textbook of Surgery, ed. by Frederick Christopher, 1936.
Heart Disease, 2nd ed., by Paul Dudley White, 1937.
Physiological Basis of Medical Practice, by C. H. Best and N. B. Taylor, 1937.
Diseases of the Nails, by V. Pardo-Costello, 1937.
Yearbook of General Medicine, ed. by G. F. Dick, 1936.
Yearbook of General Therapeutics, ed. by B. Fantus, 1936.

From the Nicholson Fund

American Doctor's Odyssey, by V. Heiser.
William S. Thayer, by Edith G. Reid.

ABSTRACT.

THE CONTROL OF SYPHILIS

A Critical Examination of Some of Its Problems.

JOHN H. STOKES, M.D.

[This lecture, delivered before the St. John's Hospital Dermatological Society, London, as the Prosser White Oration on June 15th, 1936, published in the *British Journal of Dermatology and Syphilis,* vol. 48, p. 527, Nov., 1936, is an excellent example of Stokes' vivid and picturesque phraseology, and also of his original qualities of mind. It furnishes so many arresting and stimulating ideas that we have printed this abstract for the benefit of our readers, but suggest that those interested read the article in full. The author's own wording has been given as much as possible.—ED.]

In his opening remarks the author expresses his belief that nothing could be more profitable than to examine some of the exuberant enthusiasms to which he and perhaps others have yielded in this brief era of extraordinary expansion in our knowledge of syphilis.

Dealing first with the organism of syphilis we are to be reminded of its extraordinary fitness for its human habitat, rated by Warthin as the most exquisite example of symbiosis in the pathogenic field. We have insufficiently realized what is now becoming increasingly apparent—that all our antisyphilitic drugs act, not alone by poisoning the organism direct, but also by arousing the defence mechanism of the body. When no such defence can be effectively aroused by drugs we encounter a treatment-refractory, infectious or relapsing carrier, and the seriousness of the anergic state is apparent.

Raiziss' isolation of a strain of S. *pallida* neurotropic for rabbits from the brains of asymptomatic mice shows experimentally the persistence of the infecting agent indefinitely in full virulence. Dark-field examination has already failed to detect infectiousness in the apparently spirochaete-free but still highly infective lymph-node. Frühwald has demonstrated continued infectiousness of Wassermann-negative blood. Perhaps the spirochaete is merely an end-product of an evolutionary cycle and in itself cannot produce the disease. It may fail to develop under the conditions prevalent in the lymph-node, the testicle and elsewhere. A number of the ablest investigators have found the cultivated organism from the experimental animal avirulent. Is it possible that the immunity to reinfection of the human being with an acquired syphilitic infection that has once reached full secondary stage development is an infection-immunity? There is perhaps an ultra-visible infectious agent, a "virus" accompanying the visible spirochaete, but also persisting after the latter's disappearance. Perhaps suspected instances of failure to become infected under known conditions of infective exposure are examples of virus immunity in individual carriers of an intra-cellular ultra-microscopic phase.

Turning to treatment and first considering the infectious relapse factor, it is stated that 91% of infectious relapse occurs in the first two years; that half of all relapse lesions are infectious, and two-thirds of them occur on the external genitalia; the more arsphenamine the less relapse, and much arsphenamine and much heavy metal gives one-half the relapse that little arsphenamine and much heavy metal gives. Bismuth is more effective than mercury—arsphenamine-mercury therapy gives 9.6% muco-cutaneous relapse as compared with only 3.6% under arsphenamine-bismuth therapy. In *sero-negative* primary syphilis the highest proportion of curative results is obtained with 10 to 19 arsenical injections with a corresponding propor-

tion of heavy metal; in *sero-positive* primary syphilis, with 25-35 injections; in *secondary* syphilis, with 20-29 injections.

The optimum treatment of latent syphilis consists of one year of continuous and a second year of intermittent treatment—a total of 24 arsphenamines and 50-60 doses of bismuth. Continuous treatment the first year is essential.

The pregnant woman should be given a higher proportion of arsphenamine; *at least 10 injections beginning before the fifth month.* Treat *every syphilitic woman* early and adequately in every pregnancy, whether seropositive or negative. The adequately treated syphilitic woman may not be, but the untreated syphilitic woman certainly is, a potential carrier of infection for the fœtus up to 10 or 11 years after she acquires the disease.

Two yellow powders in identical ampoules, with government toxicity tests printed on the box-labels—the one is highly spirillocidal in human syphilis, the other less so or not at all. The failure to suffer some nausea, headache or other reaction demanding post-treatment precautions may mean a drug dangerously below effective therapeutic standards, made so by a manufacturer's response to the practitioner's demand for detoxification. [Italics ours. Ed.]

The author has candid doubts as to the fitness of either doctor or clinic to act as the sole, or even the chief, agency in the ideal control of syphilis. The clinic alone is not enough. It is a fundamental mistake to eliminate the common doctor, to discourage him, or even fail to encourage him sufficiently, in the control of syphilis. He should be given his place and taught to fill it. One of the major problems of the immediate future is, then, the education of the doctor.

There is but one safe stand for a campaign against syphilis based on the control of infectiousness—treatment from the moment the disease is recognized, and to the point indicated by the "30-0-60-3" formula (30 arsphenamine or neoarsphenamine injections, 0 rest intervals, 60 insoluble bismuth injections, 3 years of treatment and observation).

Under the heading of prophylaxis, the following sentences are memorable. "Recognizing human frailty, we should bend our efforts unceasingly toward a better understanding of the disease and its cause, toward a better prevention based on immunobiology, rather than to rest content with the present crude proposals to universalize post-contact prophylaxis that is inevitably against human nature. . . . Over the syringe, and before the syringe, we and human nature meet. As we deal with the total person of the patient, as we project ourselves into his problem, win him, comprehend him as a facet of the curious jewel of life, we come to command the situation. Syphilis is conquered in the end, not by a yellow liquid, not by a white cream, but by the eye, the voice, the understanding, sympathetic mind and heart. . . . The human beings who tend him are the true instruments of the syphilitic patient's cure; his first contact with them, the critical moment of the battle."

SOME PHYSIOLOGIC CONCEPTS OF THE STOMACH AND DUODENUM

Dr. Roy Huggard

Mr. President and fellow members of the Vancouver Medical Association:—I feel that one is greatly honoured in being asked to address this body upon such a subject. It is, however, with some trepidation that I present the

subject matter for discussion this evening, as there may be many points of controversy raised.

During the last decade, remarkable advances have been made in our conception of the physiology and biochemistry of the stomach. A few years ago more stress was laid upon the pathological picture of gastric disease, and we, as a profession, assessed signs and symptoms in pathological terms. The gross and histological appearance of morbid changes were the basis of our conception, and at that time physiology and biochemistry played a very minor part. However, with the steady advance of surgical procedure we began to see earlier phases of disease than are seen at the autopsy table, and increasingly pertinent questions arose that only could be answered by the physiologist. With increasing regularity the clinician turned to the physiologist for aid, and with such stimulus, marked advances began to occur. Today, the gastro-enterologist, be he physician or surgeon, is increasingly thinking of gastric disease in terms of altered physiology and biochemistry. I do not wish to minimize the marked advances that have also occurred in our pathological conceptions, but, nevertheless, we cannot deny the tremendous rôle that modern physiology is now playing in solving many perplexing problems met with in gastric disease.

Should one, during the course of this paper, seem to delve too much into the elementary side of the subject, it is because the subject has been treated as a whole, and it is difficult to break it up into different parts.

Some of the questions that the gastro-enterologists and surgeons ask the physiologist in an attempt to assess the symptoms of gastric disease will be answered—or at least a trial made to do so.

A fundamental fact to remember is that the stomach, physiologically, consists of two parts, with a common cavity. The upper portion holds the food nearly motionless while a little starch is digested. Its lining is mucosa that secretes HCl. and several digestive ferments. This portion is quite analogous to the crop of a bird. The lower portion is where the food is ground and mixed with the digestive ferments. It functions as a mill and by the same token corresponds to the gizzard in a bird.

The cardia is a poor sphincter, both from an anatomical and physiological viewpoint. And upon repeated swallowing it relaxes (according to the researches of W. B. Cannon). It is further interesting to note that the stomach, after swallowing, also tends to relax. An interesting clinical application is noted here. Many fast eaters who bolt their food, as is seen at lunch counters every day, suffer variable distress after their meal, and this, in all probability, is due to the fact that the stomach has had insufficient time to relax—but this is easily remedied by chewing gum and swallowing of saliva, thus enhancing normal relaxation.

Our knowledge of the mechanics of the stomach has been greatly advanced by fluoroscopic studies, and the following observations were, for the most part, made by this method.

In a very irritable stomach, waves of contraction are seen beginning near the cardia and moving slowly to a point near the pylorus. In some cases as many as six or seven are seen at one time, but more commonly they occur in pairs. New ones occur about three to the minute. However, in most normal stomachs the fundus is nearly motionless, and only when we study a series of pictures will there be seen the presence of very shallow waves. In man, and in many animals, it would appear that these waves are quite different from those of the distal end, inasmuch as their rate of occurrence is more rapid and they appear to run forwards and backwards much as do the rhythmic contractions seen in the small bowel. Indeed, in some of the

lower animals there appears to be some considerable dissociation between the contractions of the fundic and pyloric portions: The radiologist usually sees very shallow waves which seem to begin in the mid portion of the stomach, travel downward, and become most pronounced about the incisura, where they enter the thick red muscle zone of the pylorus. It is here that they seem to contract with so much power as to divide the stomach into two portions. However, a small space does exist which allows the escape of food, which is being pushed into the pylorus, back into the body of the stomach. It is here that one sometimes wonders how the food ever gets through the pylorus, as escape so easily occurs backwards into the body cavity.

Such studies as have been made upon gastric rhythmicity suggest two pace-makers—one near the cardia on the lesser surve, and one at the upper end of the pyloric portion. However, their presence is not essential, as all manner of surgical attacks destroying these areas do not seem to alter gastric function greatly.

Here one might pause to suggest a surgical point. Mechanically, the stomach does not tolerate a V-shaped excision of the lesser curve well, and subsequent function is poor as a rule. The reason is quite obvious: as the wave that sweeps down the stomach travels more rapidly upon the greater curve, with the lesser curve shortened, the upper portion reaches the pyloric ring ahead of the lower portion, and sometimes runs back along the greater curvature, uniting with the down-coming wave and forcing food back into the stomach, thus retarding and delaying normal emptying.

It is now an established fact that waves travelling from incisura to pylorus do not all do so the same way. Some physiologists believed that in the pyloric portion the contractions were systolic; others believed that contraction moved as a wave; actually it would appear that both are correct. The contractions of the longitudinal muscle travel to the pylorus as a wave, and those of the circular muscle commonly are systolic, at a variable point from the pyloric ring. In addition to waves of contraction, there are waves of relaxation in the pyloric portion that run orad and caudad, and emptying is probably aided by this mechanism—a wave of relaxation relaxing the sphincter, and a wave of gastric contents pushing food through.

Waves in the stomach appear to stop at the pyloric line, but from animal studies recording these waves graphically, we find that there is many times a relationship between a wave arriving at the pyloric ring, and the appearance of a tonus wave in the duodenum. The pyloric portion often appears to be a pace-maker for the tonus waves in the duodenum, one of these frequently serving as the starting point of a rush wave down the bowel. Indeed, such a wave is often initiated by a swallowing movement. The application of this physiological point is obvious. When active peristaltic activity is desired, the chewing of gum or repeated feedings is a strong stimulus. Further, it would appear that in cases of mild ileus, following surgery, exclusive of mechanical features, enforced fasting would be a contributory cause. In such cases, depending on circumstances, the surgeon might be well advised to give food at an earlier period than is the custom at present. The contra-indication has been the added stress upon suture-lines, but it is a matter of debate whether hunger contractions are not as dangerous as the giving of soft food. In reversed peristalsis, a nausea and vomiting caused by a reversal of the normal gradient forces of the tract, the giving of solid food many times promotes a return to normal physiology. Solid food is much preferred to liquids, as it actually raises the tonus of the stomach and stimulates gastric contractions. In many instances of functional flatulent dyspepsias, dry feedings are to be preferred to soft liquid

feedings on account of this fact. Fluids favour sudden gastric distention and the development of abnormal wave responses. It might further be noted that enemas as a rule stimulate the colon and further enhance the development of reversed peristaltic activity.

Horton has recently demonstrated a thin fibrous barrier between the pyloric ring and the duodenum, bridged by the occasional bundle of muscle fibres, but on the whole very similar to the A. V. septum of the heart. Its function would appear to act as an insulator from the too sudden passage of powerful antral contractions into the duodenum, and to some extent to limit antiperistalsis from invading the stomach.

As there are alterations in the pace-maker of the heart, so do such occur in the gastro-intestinal tract, and they may easily be produced by mechanical stimulus. This readily explains various reversals in the bowel gradient that occur in emotional upsets, fatigue, infections, etc.

Let us now consider some further studies of the pylorus and its control.

As soon as a patient begins eating, the more liquid portion of the food begins to enter the duodenum at once. Some investigators have shown that three to twelve ounces can leave the stomach in 15 minutes. Furthermore, it is well known today that there is in reality no special pyloric ring with specialized functions. In fact it is the thickened lower end of the gastric cylinder, and we are all well aware that its destruction or excision makes little difference upon the emptying of the stomach. We also now know that the sphincter does not stay closed, but is open more of the time, and is relaxed after each wave arrives. We do know, however, that it has a slightly lower threshold and shorter latent period than the adjacent pyloric muscle, and thus, upon occasion, may close ahead of an advancing wave. A gastric ulcer will tend to stimulate it and increase its tendency to contraction.

Studies by Eusterman have shown that even with the sphincter wide open and a gastric wave approaching, no food contents have entered the duodenum, suggesting the presence of a higher duodenal pressure.

It would appear that the most important factor of gastric emptying was to be found in the balance of duodenal and gastric pressures; this has been amply demonstrated experimentally.

For years we believed that the pylorus was controlled by acidity of gastric content; gastric acidity opened the spincter, and duodenal acidity closed it. However, the problem is not so easy. We know the pylorus is open most of the time. The greatest single factor governing gastric emptying is fluidity of contents. The stomach empties as rapidly as the duodenum will receive it; if the material is highly acid or alkaline, or if it irritates the duodenum by too great osmotic pressure, it will throw the duodenum into spasm and delay occurs until further dilution.

Ulcers near the pylorus do not influence stomach-emptying through any change in acidity of the contents, but rather through irritating the pylorus and so producing spasm, presence of œdema, and the formation of cicatrix.

We have now concluded a brief résumé of some of the more salient features of gastric mechanics, and will now proceed with the second function of the stomach, namely, secretion. It is not the speaker's intention to deal at any length with abnormalities of secretion, as the second paper this evening will embrace this subject.

As stated in the beginning of the discussion, the stomach has two main portions. It is the fundic portion that is most concerned in secretion. In this acid secreting portion one finds thousands of small tubules, each consisting of a body, neck, and foveola. These tubules are lined with four main types

of cell, each cell having a specified secretory function. The chief cells are found in the body of the tubule and produce gastric enzymes. In the walls of the tubule usually external to the chief cells are found the oxyntic or acid-secreting cells, which communicate usually with the lumen by a fine tract. In the neck of the tubule is found the mucoid type of cell. It produces an alkaline fluid rich in mucin and sodium chloride. There are further cells lining the foveola that produce a very thick mucus. In the *pars pylorica* the tubules are of much simpler construction and are lined by a mucoid type of cell. They produce a scanty alkaline secretion rich in mucus.

One of the great puzzles to the physiologist is to suggest how a fluid one million times more acid than the blood is produced in cells not destroyed in the process. It is certain that H Cl is formed by a break up of the Na Cl.

Two main theories, however, stand out, and we shall consider them. The first as advanced by Pavlow, who believed that the acid is secreted at a constant maximal strength, and the second by Roseman, who believed that the parietal cells form a precursor of acid, rich in chlorine, which later splits into acid and base. This would seem to explain the fact established by many that the amount of base in gastric juice varies inversely as to the amount of acid.

Pavlow does not believe in true hyperacidity. The purest juice of man obtained with histamine has a concentration of 0.6 per cent H Cl. or a pH of 0.9. The weaker acid found seems to be the product of dilution by the weak alkaline gastric juices. Hollander has recently confirmed Pavlow's belief in that he and other workers have secured juices of high purity from man and animals with the same acid concentration. This is isotonic with blood, and it would seem that the only way a real hyperacidity could occur would be to change the composition of the blood. Any objection to this theory of Pavlow's might be that toward the close of digestion, the concentration of acid seems to fall with the rate of secretion. Actually, there is no constant relation between acidity and rate of secretion when experiments are carefully done. Further, Roseman's theory was abolished when Hollander showed that the purest juice from a fundic pouch contains no fixed base, as it would have to do if some precursor of acid were split into acid and base components. It has further been established that the parietal cell secretion is pure hydrochloric acid and water with a concentration of 170 millimolecular equivalents which is, as stated above, isotonic with blood. Now that this is established, one may obtain, by plotting data from analyses of gastric juice and extrapolating, that the alkaline component must have a chloride concentration of about 100 millimolecular equivalents. Since the total base is about 170 mm., the difference of 70 mm. will represent the combined amount of bicarb, phosphate and protein anion.

It is not necessarily true that the rate of pepsin secretion follows that of H Cl. secretion. These vary considerably, although there is some tendency in a stomach with high acid titre to have a large amount of pepsin.

As stated by Pavlow, when strong acid is secreted an equivalent amount of base enters the blood, and it has been shown that the blood leaving the stomach is more alkaline and a slight decrease in chlorides has been observed. A consequent change in acid base ratio of the blood occurs and resultant changes in CO_2 of alveolar air, etc. But as a matter of fact these changes are rapidly compensated. But when gastric juice is lost in large quantities, as in a high obstruction, a severe alkalosis is the result. If this is not corrected, death, as we all know, rapidly ensues.

For some years it has been shown by Pavlow and his pupils that the quality and quantity of gastric juice varies as to the nature of the stimulus.

It might be of interest here to state the results of the experiments of Hawk and others relative to this fact. Herein lies some facts underlying diet therapy and the conclusions are obvious. High acid values occur after ingestion of beef and beef products, chicken, fish, ice cream, lamb, milk, nuts, pork, turkey, veal, carbonated drinks, cocoa, eggs, salted meats, and bouillon.

Strong pepsin stimulants are found in cabbage, beets, turnips, potatoes, cauliflower and spinach.

Alcohol is a great stimulant to the parietal cells, as is also the smoking of tobacco. I shall not comment upon the obvious deductions and their application in peptic ulcer therapy.

Fats and oils lessen gastric activity, but how does this occur? Hydrocarbon oil has no effect upon secretion. A search of the literature has failed to suggest how fats reduce secretion; they do not act by coating the mucosa and interfering with stimuli—but the secret of the reaction is not definitely known. Upon gastric mechanics, fat slows the emptying time of the stomach apparently by weaking of gastric waves. According to Quigley and Ivy, it appears to be the action of some part of the fat upon the intestinal mucosa and the passage of some substance (not fat) in the blood from intestine to stomach. Hydro-carbon oil has no effect.

It is now known that there are three phases of gastric secretion: (a) Cephalic phase, (b) Gastric phase, (c) Intestinal phase.

The cephalic phase was originally referred to as the psychic phase, but Ivy showed a few years ago that it is present in decerebrate dogs, hence the term "cephalic."

The smelling, seeing or chewing of savoury food causes a stimulus by way of the vagus nerves exciting secretion rich in pepsin. This serves to split off from proteins substances which will maintain a continuous flow of gastric juice. Once digestion has gotten under way it carries on independently, irrespective of the trials of body or mind. Here one would suggest the use of the cocktail, soup and *hors d'oeuvres* as powerful direct gastric stimulants and capable of substituting for deficient or absent psychic juice.

The gastric phase is that one in which secretion is stimulated by the presence of food in the stomach. Balkin states that none of the foods and drinks except alcohol directly stimulate fundic secretion. Ivy and McCarthy, in 1925, demonstrated, however, that the application of raw meat juice B-alanine, and histamine to fundic mucosa, stimulated secretion. Also strong solutions of glucose, sodium chloride and Liebig's meat extract likewise stimulate secretion to a lesser degree. The subject of gastric secretion producing hormones has been extensively reviewed by Ivy. Many experiments have been done but nothing definite found until Ivy succeeded in transplanting a gastric pouch into the anterior wall of a bitch. This pouch secreted when food was placed in the main stomach, thus proving once and for all the presence of some hormone.

The operative removal of the pyloric portion of the stomach in man has been done in the hope of lessening secretion—upon the basis that the pyloric portion was the seat of hormone formation. Actually this does to a degree occur, but is not consistently true. Actually the lowering of acidity after subtotal resection operations is probably due to a variety of factors and not to the removal of the *pars pylorica* alone.

These factors are: (1) Greater tendency for duodenal regurgitation and greater dilution and neutralization of gastric juice; (2) Removal of varying amount of secreting fundic mucosa; (3) Food leaving stomach more rapidly and a shortening of the gastric phase of digestion; (4) Much food

is dumped into the bowel in an undigested condition, tending to lessen gastric secretion as against the greater stimulating effect of normal chyme.

Now let us consider the intestinal phase of gastric secretion. Balkin in 1928 definitely showed that gastric secretion is excited by putting into the bowel water, meat, or meat juice, meat extract and the products of gastric digestion such as peptones. Gastric secretion is inhibited by 0.5 per cent H Cl., fats and oils, gastric juice and concentrated solutions of Na Cl. and various sugars being introduced into the intestine.

Why some foods introduced into the bowel seem to stimulate gastric secretion, and then again inhibit, is not known, and more work will have to be done to answer this point.

It is often assumed that pyloric stenosis increases gastric acidity. That it does so is no doubt due to prolonging the phase of gastric secretion and it commonly results in a high total acidity with a low free acidity due to the accumulation in the stomach of a large amount of food, water, and diluting fluid.

Experimentally, an obstructed pylorus does not cause much change in gastric secretion, hence the futility of surgical attack designed to occlude the pylorus in the presence of ulcer. Owing to this physiological fact the nature of the operation is unsound and it defeats its own purpose.

Let us now briefly consider what the fall in acidity is due to. This question is most pertinent, as it raises the point as to what maintains hyperacidity in certain cases of ulcer.

The main cause is cessation of secretion, and it has been demonstrated histologically that the number of tubules functioning slowly, cease until all have stopped secretion, and acidity falls.

The second explanation seems to be that as less acid is poured out it is diluted by the other alkaline secretions and neutralized.

The last factor is found in the fact that towards the end of the secretion some duodenal content flows back into the stomach, thus causing further neutralization. While this at one time was regarded as the most important factor, we now know this is not true.

In 1929 McCann showed that the curve of fall of gastric acidity was not altered in animals whose duodenal contents had been diverted into the lower ileum via Mann and Williamson's operation.

Only lately have physicians realized this truth and begun to study the highly important alkaline constituents of gastric juice.

The secretion of the *pars pylorica* is usually syrupy and clear and colourless with a few flakes in it. The specific gravity is 1.008 to 1.011; total nitrogen is 0.054 to 0.095 grams per 100 cc. of filtered juice; and the total content of chloride is the same as blood. The pH. is usually from 7.0 to 7.5 and the alkalinity is about 0.04 normal. The amount secreted is small, normally being about .2 to 4 ccs. per hour, and the rôle it plays in neutralization is a minor one. A constituent is mucus. There are two types: one is thready, lumpy and visible; the other is a dissolved or invisible mucus. What protective function this has is little known, but some efforts have been used to get ulcers to heal by giving mucus by mouth. Physiologically, it is difficult to see how mucus by mouth will adhere to mucosa as does mucus formed *in situ*, and as mucus is not a buffer, the rationale of the treatment does not appear evident. Any buffer action mucus might have is usually due to the peptones associated with it. The finding of mucus in gastric contents is not pathognomonic of any disease.

The principal ferments of the stomach are pepsin and rennin.

Pepsin has been isolated in a crystalline form and is a protein. The pH

of optimum peptic activity is 1.7, but Northrop has shown that this is variable and the exact figure depends on the iso-electric point of the protein being broken down.

Peptic activity can take place in a neutral solution but proceeds slowly. Pepsin is killed rapidly when pH. rises above 6.0.

There is some unknown substance in gastric juice that preserves pepsin as artificial gastric juice deteriorates rapidly—but pure gastric juice of an animal can be kept for a year without losing any peptic activity. As is well known, pepsin breaks proteose into the larger fractions, which in turn are broken further by trypsin and later by erepsin.

Rennin has recently been isolated by Klenier and Hauher practically devoid of peptic activity. It tends to disappear from the adult stomach and acts by breaking up the casein membrane of fat droplets and maintains milk as an emulsion. Its chief function is that by coagulating milk it keeps it in semi-solid form so that in the stomach it may undergo gastric digestion. Some of the distress produced by milk in children and adults might be avoided if it was pre-coagulated in the form of junket or thick buttermilk, thus insuring the complete function of gastric digestion.

Why does not the stomach digest itself? There are two chief reasons. The mucosal cells are surrounded by a fatty envelope not subject to protease attack. The other reason seems to be that mucosa of the stomach and bowel is protected by absorbed peptone and perhaps by some substances present in normal gastric juice. These substances can be exhausted by too prolonged contact with unbuffered dilute hydrochloric acid.

It is well known that there is a bactericidal quality in gastric juice that bears a direct ratio to the acidity. The stomach is more often sterile in ulcer patients than normal people.

There is little absorption occurring in the stomach. Alcohol is readily absorbed, however, and it facilitates the absorption of some other substances such as glucose.

We have now completed a résumé of the primary functions of the stomach. Although the speaker has emphasized the physiological aspect, it is done in the hope that some valuable clinical applications may be reached. There are too many questions that as yet have no satisfactory answers. These answers will only be found upon persistence and further study. It is with these few observations in mind that one would suggest we place our therapy increasingly upon a sound physiological basis. It is only in this way that we can hope to master the great problems surrounding gastric disease, which is one of the most common complaints the physician and surgeon hears today.

B. C. MEDICAL ASSOCIATION

Dr. J. H. MacDermot, Secretary of the Health Insurance Committee, and Dr. M. W. Thomas, Executive Secretary of the College of Physicians and Surgeons, motored to Bellingham, Washington, on Monday, March 1st, to attend a meeting of the Whatcom County Medical Society, and were guests at a dinner at the Hotel Bellingham.

The President, Dr. Orville S. Beebe of Bellingham, was chairman, and together with Dr. Walter C. Moren, the energetic Honorary Secretary, greeted the two Canadians and were very successful in assuring your representatives from British Columbia a really enjoyable visit.

After the dinner, which was largely attended, Dr. MacDermot told the members somewhat of the story of Health Insurance in other countries and the introduction of such legislation in this province. The members were very much interested in this subject, as a draft bill will be presented to the State

Legislature this year which is, with necessary changes, a replica of the Act passed in B. C. Dr. MacDermot explained the attitude and action of the profession of the province with regard to the scheme presented.

Dr. Thomas described the organization under which the members of the College practised in British Columbia. The members present showed great interest and inquired regarding the service developed under a full-time executive medical secretary who had first-hand knowledge based on experience in general practice. Both Dr. MacDermot and Dr. Thomas were delighted with this opportunity to fraternize with our brothers in the State of Washington.

"TRIGGER-FINGER"

Contributed by Dr. M. W. Thomas

When Dr. W. J. Knox of Kelowna becomes reminiscent and talks of those earlier days in practice in the Okanagan, he carries you back to 1903 when he joined the now old-timers, who were building Medical History before that date—Dr. Osborne Morris, who took up practice in Vernon in 1893; Dr. B. de F. Boyce of Kelowna, who came to B. C. in 1894, and Dr. R. B. White of Penticton, who arrived and commenced his work in 1897.

These men have all remained in the Interior. This reference to the pioneers of the Nineties would not be complete without inclusion of such arrivals as Dr. George M. Foster in 1898, Dr. G. S. Gordon in 1898, Dr. R. B. Boucher in 1899, all of whom practised in the Boundary country, locating at Greenwood and Phoenix when Camp McKinney was a real place. Dr. Knox could write (and he must be encouraged to do it) of some real experiences of thirty-three years ago when these doctors did what one of them is pleased to describe as a "stud-horse practice",—these were pre-automobile days.

He did tell a story the other day and it has a moral, so we will repeat it. Thirty-odd years ago the hills behind Kelowna provided a paradise for hunters and many men set out for the sport. On one particular day when the deluge of rain drove a party of hunters (with no umbrellas) into a barn for shelter these sportsmen proceeded to test their marksmanship on the bottle-corks—someone had no corkscrew. When they were thoroughly wetted inside the game became more keen—a friendly rivalry for "best shot." One of the party enjoyed a reputation and apparently the confidence of his fellows, for they allowed him to pop corks off their heads with his .30-.30. Finally he took to knocking the spots off the playing cards. As I say, he was trusted, and one brave lad held the five-of-diamonds at arm's length and all went well—the marksman punching out four of the diamonds—until it came to the last of the five spots. He requested the target-holder to shift his thumb and finger that the fifth and last spot might be uncovered and more clearly visible, bu John Barleycorn had set up certain phenomena within the nervous system of the holder of the card and he moved at the wrong time, and he incidentally, or shall we say accidentally, lost the distal phalanges of the thumb and index finger—clumsy beggar the boatswain. Dr. Knox was summoned, and after galloping over ten miles to the barn in the hills he saw the unfortunate sitting on a box in the corner, feeling very groggy, looking stupidly pale, a pool of blood beneath his drooping and dripping hand.

The others were still carrying on with the sport, by this time mostly taking rounds of shots at the contents of the bottles. They had given the victim a large dose of chlorodyne and he was ready to lie down and have his digits trimmed. These were neat but shorter. The whole crew harangued the

stupid card-holder who had so failed their best rifle-shot. He had moved, they charged, and embarrassed a good marksman—and could expect no sympathy; rather he had by wabbling inopportunely let down the crowd on this day of real sport.

CANADIAN MEDICAL ASSOCIATION NOTES

As a member of the Executive of the Canadian Medical Association, I am taking opportunity at this time of reporting rather briefly on some of the activities of the C.M.A. in recent months and hope these items will prove of interest.

First, in reference to Medical Economics, I am pleased to report the appointment of Dr. T. C. Routley, our general secretary, as Economic Secretary of the Association. No man is more conversant with medical affairs across Canada than he is and no man should be better fitted for the position. The Ontario Medical Association has appointed an assistant secretary in the person of Dr. A. D. Kelly, which will relieve Dr. Routley of a lot of detail work in the O.M.A. and allow him much more time for C.M.A. affairs. Dr. Routley is now in England with a busy two months ahead of him. He will study, first hand, state medicine and health insurance along with other medical activities which may be of special interest to the medical profession of Canada. "It is my purpose," he also states, "to contact organizations having as their special object the control of cancer." The British Medical Association has prepared for him a strenuous programme which takes in the British Isles, France, Germany, Norway and Sweden. His study of cancer control activities in European centres has reference largely to another important matter of recent occurrence, namely, the offer by the trustees of the King George V Jubilee Cancer Fund for Canada of a substantial yearly grant of money for the carrying out of a programme which was presented by Dr. J. S. McEachern, Chairman of the Canadian Medical Association Study Committee on Cancer, to the Executive Committee last fall. Dr. McEachern is also one of the trustees of the fund. Dr. A. Y. McNair, Chairman of the B. C. Medical Association Cancer Committee, will comment, I hope, on this matter in this issue of the BULLETIN. He will be ex-officio a director of the new Department of Cancer Control of the C.M.A.

Another matter of considerable importance is the proposed formation of an Associate Committee on Medical Research under the National Research Council, for scientific and industrial research, such committee to be comprehensively representative of the leaders in the various divisions in this field in Canada (universities, public health, etc.). Such a move should stimulate and assist sound medical research across the Dominion. The Canadian Medical Association would occupy a very important place in this, and rightly so, as it is the one body that truly represents the medical profession in a national way.

Dr. Harvey Agnew, our very active and efficient Associate Secretary in charge of hospital affairs, will attend the International Hospital Association meeting in Paris during the month of July, on invitation of the American Hospital Association. It is quite probable that the next meeting of the International Hospital Association, in 1939, will be held in Canada, perhaps in Toronto. Dr. Agnew and his work are too well known to all medical men in Canada to require any comment from me.

In the near future a series of articles on the aims, objects and activities of the C.M.A. will very likely appear in *The Canadian Doctor*, which reaches nearly every medical man in Canada. These should be both interesting and instructive. *The Canadian Doctor* is a very interesting journal, and Dr. James Stevenson of Quebec, its editor, is to be congratulated on his publication.

As to the interest the C.M.A. has taken in our recent troubles in British Columbia, particularly over Health Insurance, I here quote from a letter from our General Secretary on date of February 12, 1937. "We want you all

to know that the medical profession of Canada is behind you and waiting to assist in any way possible." I think I can safely state, as a member of the Health Insurance Committee of the College of Physicians and Surgeons, that we did get valuable support from the C.M.A. and Dr. Routley, also from Dr. Colbeck and the Ontario Medical Association. The editorial comment on Health Insurance in British Columbia in the last issue of the JOURNAL and the leading article in the February issue of the *O. M. A. Bulletin* clearly shows that we have their sympathy and support.

The value of strong medical organization is becoming very apparent. I might say the strongest organization that we can muster is becoming imperative if we are to solve the economic problems that are facing us successfully. This means strong provincial bodies (where should we have been recently if we had not had a strong organization?), and a strong, alert, and active national association which will be able to give the necessary support to any section that needs it, and will be a co-ordinating influence in medical activities across Canada. Should the British North America Act be modified, and this seems necessary, and the Federal Government assume greater jurisdiction over health matters, the C.M.A. will have a considerably heavier task than it has at present. It will be our main standby in Federal health legislation.

This brings up the matter of C.M.A. membership. In numbers there is strength! The C.M.A. should represent at least 60% of the profession of Canada; it is now less than 40%. At the Executive meeting last fall, by reducing the annual fee 20% to allow for a composite fee of $15 for the provincial and national associations, special inducement was given the Maritime Provinces and Ontario to go out after new members. The General Secretary reports that in Nova Scotia one hundred and sixty new members have been brought in in that way. Ontario expects to bring its number up to at least fifteen hundred, which would be an increase of over five hundred. Dr. Nicholls stated that the cost of publication of the *Journal* would decrease considerably if the Association can be brought up to, say, four thousand. The increased revenue would also increase the services that the C.M.A. can render the public and the profession.

Lastly, allow me to quote from Dr. Routley's letter of March 9th last: "Plans for the annual meeting in Ottawa are practically completed, and from every point of view the meeting should be an outstanding success." This will be a joint meeting of the Canadian Medical Association and the Ontario Medical Association and very probably will be a very large one. The men who were fortunate in being able to attend last year in Victoria were very enthusiastic about the success of that meeting.

There are perhaps many other activities of the C.M.A. that should be mentioned here, but my space is limited—the Editor may have to blue-pencil part of what I have already written. I will therefore conclude by urging every member of the profession to support organized medicine as fully as he or she can. Therein lies our strength.

H. H. MILBURN, M.D.

"ORGANIZATION FOR CANCER CONTROL"

TO THE PROFESSION:

During the last year or so the activities of the Committee for the Study of Cancer of the Canadian Medical Association have been much in the limelight. We are indeed fortunate in having Dr. J. S. McEachern as chairman of this committee. It has been largely through his untiring efforts that there is now in the process of formation a Canadian Committee for the Control of Cancer. This will probably be completed and put into effect after the meeting of the

General Council of the C.M.A. in June, 1937. This plan is being worked out with the help of the Board of Trustees of the King George V Silver Jubilee Cancer Fund for Canada. It promises to be something really worth while and Dominion wide in its scope. As a beginning, Dr. McEachern has asked us to try and start the organization of cancer control as soon as possible. This plan has been approved by your committee.

The plan is one of study, and making full use of information available from complete cancer records. It is fully realized that the obtaining of records in any hospital is a difficult one. To do this, there must be full co-operation of the profession, supporting these committees in the various hospitals; the co-operation and help of hospital superintendents and the Department of Health.

A definite history form has not been decided on, but this will soon be done and, we hope, distributed for record purposes. It is desirable that this form be uniform throughout Canada.

To start the organization for cancer control we wish to *establish a Cancer Study Committee in all hospitals of 100 beds or over.*

The purpose of establishing these committees is:

(1) To secure complete and carefully recorded histories of all cancer cases admitted to hospital.

(2) To have available for future study records of treatment and reports of subsequent progress in follow-up notes on every cancer case.

(3) To pool the experience of the staff, and give to every member an opportunity to become familiar with early signs and symptoms of cancer in various sites.

(4) To enlist each member of the staff in a campaign to instruct his own clientele in the early signs and symptoms of cancer whenever opportunity offers.

(5) To give to every hospital the opportunity to contribute its quota to the building up of reliable statistics regarding the number of living cancer cases in Canada in a given year. At present this can only be estimated.

The proposed committee to undertake:

(a) To scrutinize, soon after admission, the history of each cancer case, and if the history is incomplete, point out to the attending physician wherein it is incomplete and ask that the data be secured and recorded.

(b) During the patient's hospitalization, to require of each person responsible, that a description of laboratory investigation, treatment given, and any other relevant data be filed with the history.

(c) After a patient's discharge from hospital, that follow-up notes be entered at intervals at six months.

(d) To arrange that the hospital authorities provide that all cancer records be kept in a special file.

(e) To provide, at each monthly meeting of the staff, a speaker who will give a brief talk on the early signs and symptoms of cancer of some specific site.

(f) To urge constantly upon the members of the staff that each one undertake to inform his clientele regarding early signs and symptoms of cancer, whenever the opportunity presents itself.

(g) To refrain from interfering with the patient, but at all times to hold themselves in readiness to give the attending physician any aid in their power if he should ask for it.

In the near future the various district secretaries will receive direct communications regarding this plan. It is our sincere wish that this be given due consideration. A start, however small, is still a start. I feel that before we can do anything we must organize. This is the nucleus for cancer study. Any future developments can very easily be woven into this provincial and dominion-wide set up. I trust you will receive this favourably. The need of a plan has long been felt; now we have one. Even at a sacrifice of time and effort, let us make a definite start.

A. Y. McNair,
Chairman, Committee on Cancer,
B. C. Medical Association.

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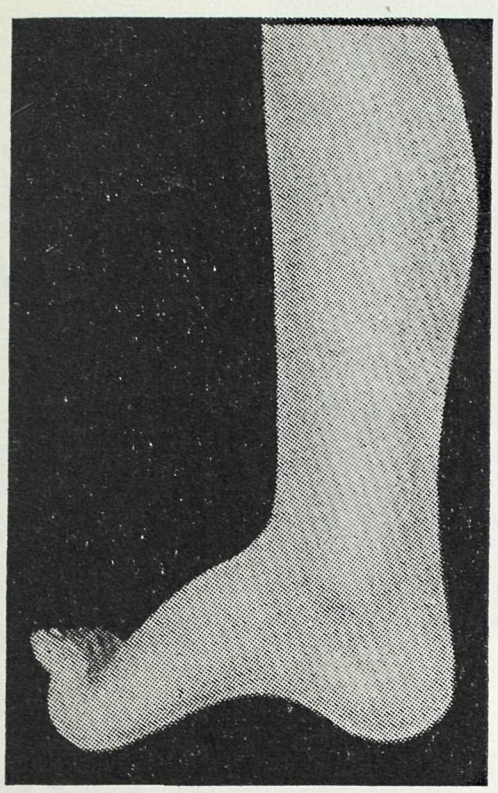

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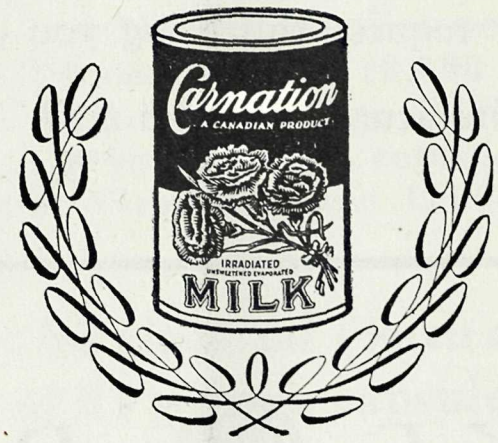

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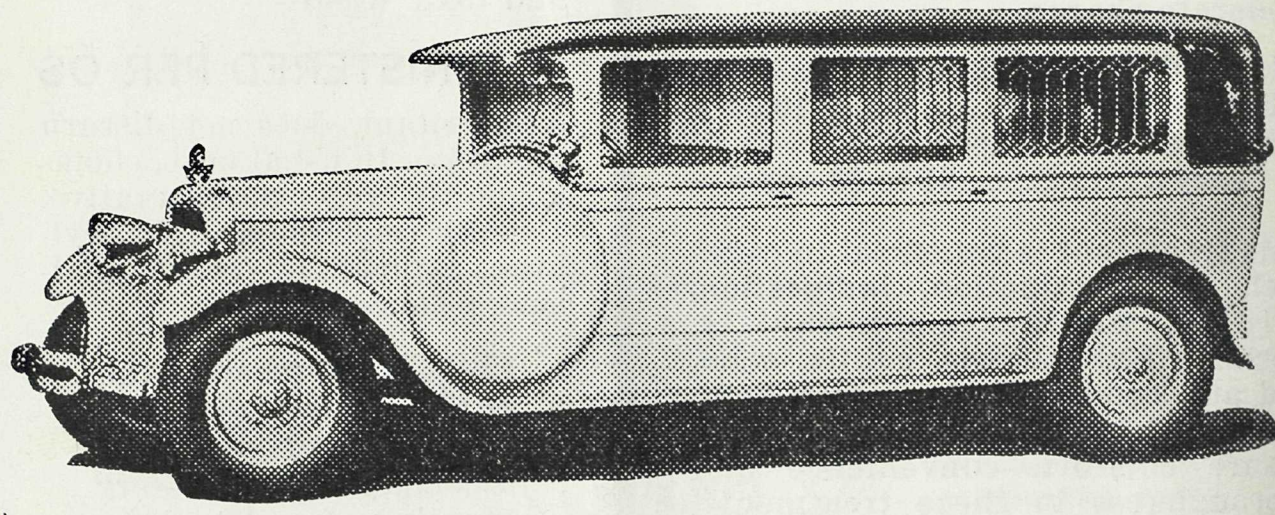

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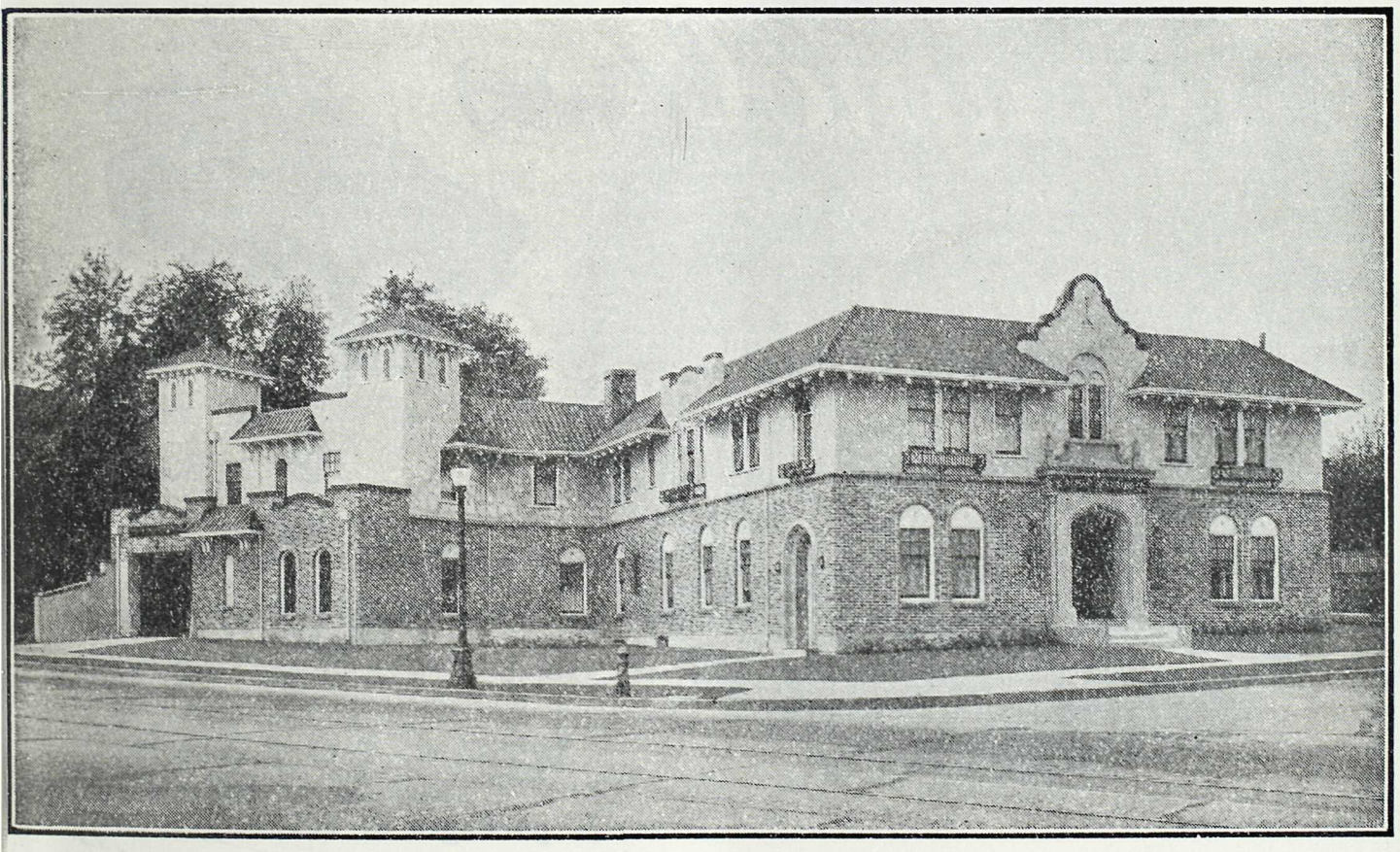

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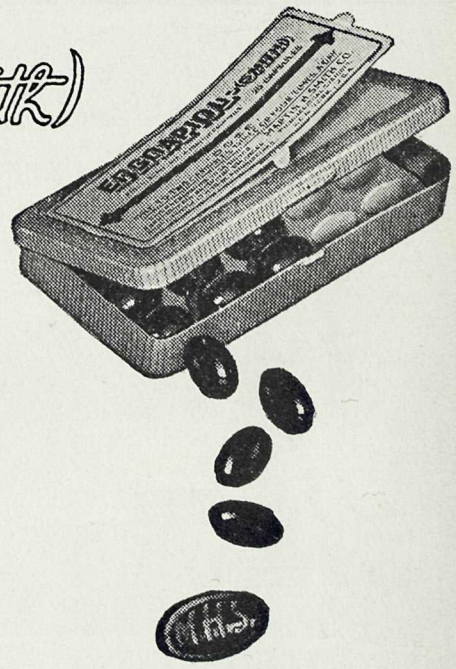

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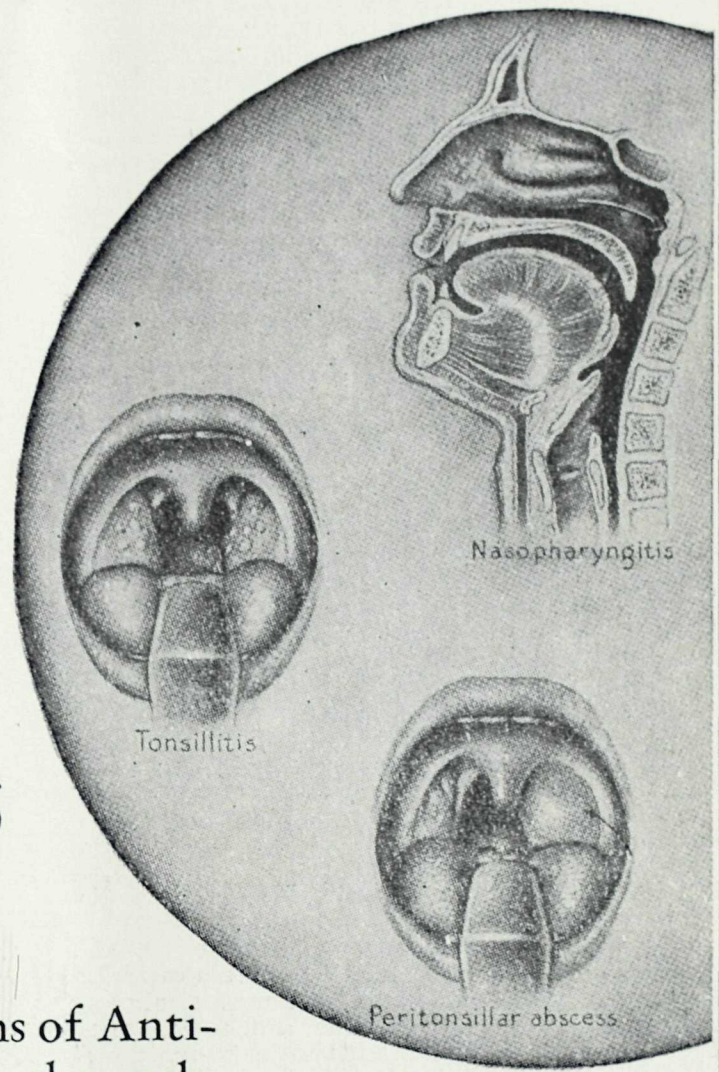

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"The question of carbohydrate is one of individual tolerance. Personally, I like Dextri-Maltose."—*L. Fischer: Pediatric progress during the last fifty years, Arch. Pediat. 51:207-218, April 1934.*

1934

"Cow's milk has a caloric value of 20 calories per ounce. Dextri-Maltose, commonly used, has 120 calories per ounce. As an example let us say that we have a well baby four months of age weighing 14 pounds. According to the rule, he should have 45 calories per pound per day, or 630 calories. Sugar requirements will be 1½ ounces—that is, 180 calories. Then deduct this from the 630 calories needed for the day and this leaves 450 calories to be supplied from the milk. 450 divided by 20 calories makes 22½ ounces of milk needed. The baby will probably take 7 ounces at each feeding and five feedings will be needed or a total of 35 ounces. This will leave 12½ ounces of water to be added and your formula will be:—

22½ ounces of cow's milk
12½ ounces of water
1½ ounces of Dextri-Maltose

Divide into five feedings of 7 ounces each and feed every four hours."—*B. F. Thomas: Infant care and feeding, J. M. A. Alabama 3:348-351, April 1934.*

1934

Within a week it became necessary to place the baby entirely on a milk formula. This was a mixture of milk, water, and dextrimaltose, and he thrived on it."—*J. M. Higgins: Acute lymphatic aleukemic leukemia, Pennsylvania M. J. 37:818-819, July 1934.*

1934

"The dietetic treatment of pylorospasm yields gratifying results, the use of a thick farina formula usually proving successful. This is prepared as follows:

Skimmed milk.....10 ounces
Water.....12 ounces
Farina..... 5 level tablespoonfuls
Dextri-maltose No. 1 3 level tablespoonfuls

"Mix the milk and water together and bring to a boil. Then sprinkle in slowly 5 level tablespoonfuls of farina and boil over a direct flame for five minutes, stirring continually. Transfer to a double boiler and cook for one hour. After the mixture is cooked add the dextri-maltose."—*C. S. Raue: The dietetic treatment of nutritional disorders in infancy, Hahneman. Monthly 69:522-528, July 1934.*

1934

For pyloric stenosis, "He was given atropine sulphate grains 1/1000 before each feeding and this was increased to grains 1/500 before vomiting was controlled. The formula consisted of cow's milk 16 ounces, water 16 ounces, dextri-maltose 2 level tablespoonfuls and uncooked farina 6 tablespoonfuls. He was fed 6 tablespoonfuls every 4 hours, 6 feedings a day. . . . In 5 days time there was a gain of 25 ounces. He was under treatment for a period of 5 months and 26 days during which time there was a gain of 14 pounds and 7 ounces."—*R. D. Hostetter: Pyloric stenosis, Ohio State M. J. 30:505-508, Aug. 1934.*

1934

"The mother's breast feedings were complemented by a mixture of three quarters milk, water and dextrimaltose. After a loss of 5 ounces (175.1 Gm.) during the first three days, the child gained steadily, weighing 7 pounds and 5 ounces (3,316.9 Gm.) by the eighth day."—*S. S. Brown, M. Morrison and D. A. Meyer: Anemia of the new-born without erythroblastosis: Observations at autopsy, Am. J. Dis. Child. 48:335-345, Aug. 1934.*

1934

"A formula of cow's milk, water, and dextri-maltose was given. The feedings were well taken, and the stools were normal."—*J. L. Rothstein: Low calcium tetany in the newborn, J. Pediat. 5:341-351, Sept. 1934.*

1934

"Dextri-Maltose is, of course, the best sugar but expensive.* Cane sugar gives fairly satisfactory results except in very advanced cases, when dextrimaltose must be given."—*K. C. Chaudhuri: Marasmus and its treatment, M. Digest 2:246-249, Oct. 1934.*

1934

"Meads Dextri Maltose is preferred, as it is not advertised to the laity. It contains dextrins and maltose in almost equal amounts, and in the three varieties varies only in the amount of sodium chloride and potassium bicarbonate they carry."—*G. Wiswell: Proprietary foods in infant feeding, Nova Scotia M. Bull. 13:483-485, Oct. 1934.*

1934

"To be sure, one can still raise well infants, using commercial granulated sugar, but one has a distinctly safer feeling, in the presence of disease, when a combination of sugars, such as dextrins and maltose, can be employed."—*L. C. Schroeder: The treatment of pneumonia in infants and children, M. Clin. North America 18:811-826, Nov. 1934.*

1934

In pyloric stenosis, "Finally, if the stools are inclined to be hard and dry and the fluid intake falls below 2.5 to 3 oz. per pound body-weight, additional fluids, preferably in the form of a solution of one of the dextrin-maltose preparations, between feedings, will usually be sufficient."—*C. C. Fischer: Constipation in infancy and childhood, Hahneman. Monthly 69:913-918, Dec. 1934.*

1934

"A sugar of the dextri-maltose type seems to be the most consistently and universally satisfactory."—*H. D. Lynch: Fundamentals of infant feeding, J. Indiana M. A. 27:571-574, Dec. 1934.*

(to be continued)

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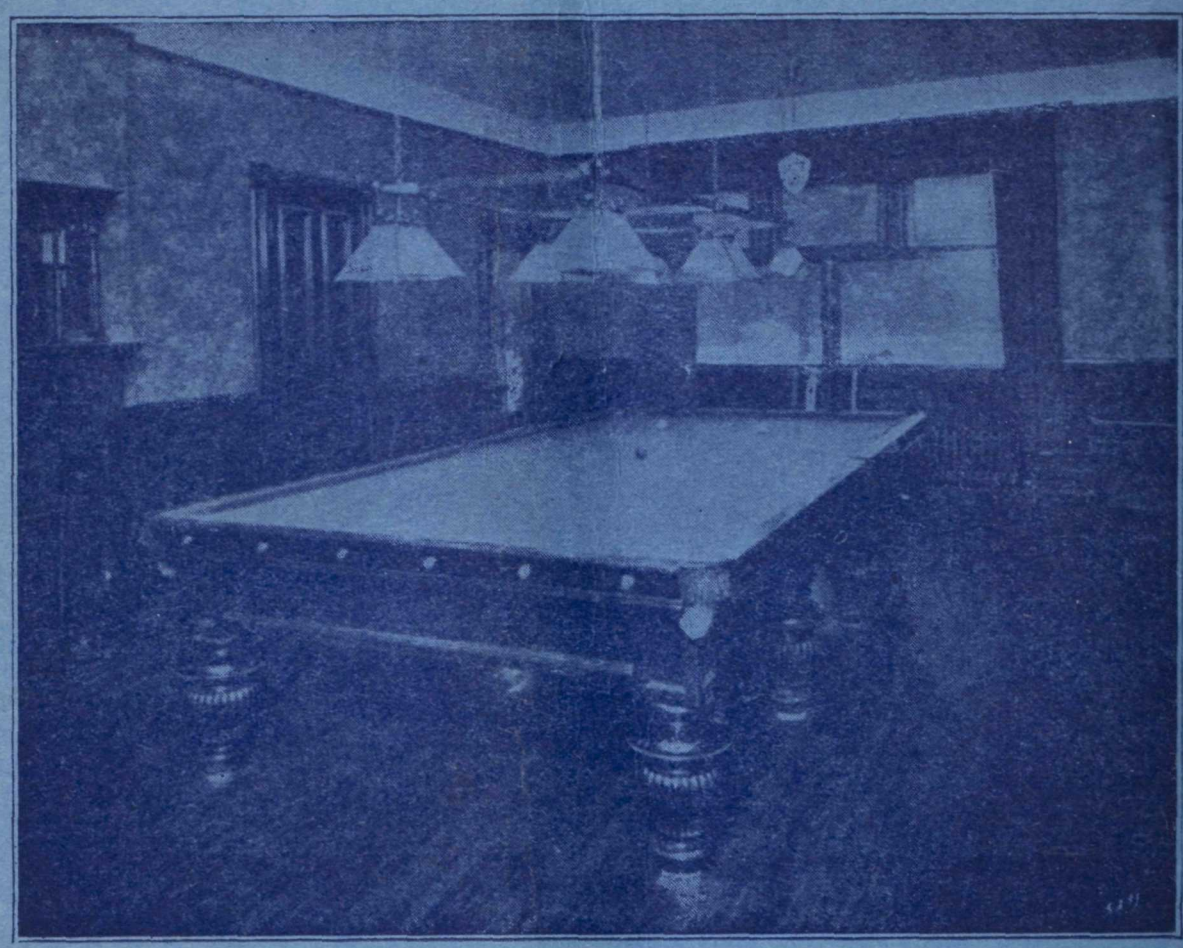

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