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The BULLETIN

of the

VANCOUVER MEDICAL ASSOCIATION

Vol. XVI SEPTEMBER, 1940 No. 12

With Which Is Incorporated
Transactions of the

Victoria Medical Society

the

Vancouver General Hospital

and

St. Paul's Hospital

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ANNUAL MEETING—NELSON—SEPT. 9, 10, 11.

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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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VOL. XVI SEPTEMBER, 1940 NO. 12

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—JULY, 1940

Total Population—estimated	269,454
Japanese Population—estimated	9,094
Chinese Population—estimated	8,467
Hindu Population—estimated	339

	Number	Rate per 1,000 Population
Total deaths	266	11.7
Japanese deaths	5	6.5
Chinese Deaths	11	15.3
Deaths—residents only	236	10.3
BIRTH REGISTRATIONS:		
Male, 250; Female, 218	468	20.5

INFANTILE MORTALITY:	July, 1940	July, 1939
Deaths under one year of age	12	6
Death rate—per 1,000 births	25.6	17.0
Stillbirths (not included in above)	5	6

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	June, 1940		July, 1940		Aug. 1-16, 1940	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Scarlet Fever	5	0	4	0	0	0
Diphtheria	0	0	0	0	0	0
Chicken Pox	157	0	17	0	8	0
Measles	181	0	45	0	8	0
Rubella	0	0	0	0	1	0
Mumps	3	0	1	0	1	0
Whooping Cough	4	0	4	0	2	0
Typhoid Fever	0	0	0	0	0	0
Undulant Fever	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0
Tuberculosis	32	15	24	18	8	--
Erysipelas	3	0	2	0	1	0
Meningococcus Meningitis	0	0	0	0	0	0
Paratyphoid Fever	1	0	1	0	0	0

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

	Burnaby	West Vancr.	Richmond	North Vancr.	Vancr. Clinic	Hospitals, Private Drs.	Totals
Syphilis	0	0	1	1	14	34	50
Gonorrhœa	0	0	0	0	42	22	64

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THE EDITOR'S PAGE

Dear Doctor:

We have in the Editorial Office papers presented at the Summer School held in June last. Many Members of the Profession have asked for printed copies. If sufficient funds for this purpose are secured, a Supplement containing the following lectures will be printed.

Dr. Magner
"Pathogenesis of Jaundice"
"Clinical Aspects of Jaundice"
"Pathogenesis of Anaemia"
"Some Clinical Aspects of Anaemia"

Dr. Reichert
"Lymphoedema in Man"
"Neuralgias of the Head and Face"
"Anterior Scalenus Syndrome"
"Regional Ileitis and Other Localized Lesions of the Small Bowel"

Dr. W. S. Middleton
"Some Lay Contributions to Medicine"
"Idiopathic Hypertension"
"Protection of the Circulation in Surgery"
"Post-operative Pulmonary Complications"
"Clinic on Internal Medicine"

Dr. P. C. Jeans
"Paediatric Clinic"
"Nutritional Requirements of the Growing Child"
"Congenital Syphilis"

Dr. Farmer - "Burns and their Treatment"
"Emergency Abdominal Surgery in Childhood"
"Acute Osteomyelitis"

If you desire a copy, you will greatly assist us by returning the following information to: "The Library, 204 Medical Dental Bldg., Vancouver, B.C."

Please mail me a copy of the Summer School Supplement, together with an invoice for $1.00 to cover cost of printing.

Name.....

Address.....

In this number of the BULLETIN we wish to pay tribute to an institution which is one of the oldest and most valuable, speaking from a civic point of view, of all the institutions of Vancouver. For some forty years or more, St. Paul's Hospital has been a landmark. It has been much more than this: it has been a haven of refuge, a centre of healing and mercy for the sick and afflicted of this Province. Unobtrusively, with no tuck of drum or flourish of trumpets, the Sisters of Providence have maintained and developed a hospital which at all times has been well up to the standards of its day, and is now an outstanding example of what a really good hospital can be.

One looks back over some thirty-five years or so to the day when we first saw St. Paul's Hospital—a small wooden building, which did a land-office business in the care of

the sick—but with not a very great pecuniary reward. The loggers and miners of that day, up and down the B. C. Coast, had no hospital of their own, no hospital ships, no doctors and nurses. If sick or hurt, they had only one thing between them and worse trouble, a long trip to town, in a slow tub of a boat, in weather often very prejudicial to the future of an acute appendix, or a broken leg—and most of them went to St. Paul's. It was near the docks, and most of them had a hospital ticket for that institution, peddled by agents in the camps and woods: costing ten dollars a year, and entitling them to hospital care. This constituted a form of health insurance that has since fallen into disuse—but was a godsend to these men, who found sanctuary and the best of care in St. Paul's Hospital.

From a doctor's point of view it lacked some conveniences: and there was a certain pessimism about the place. A large text, "Nearer, my God, to Thee," hanging at the foot of the main stairway, hardly seemed any more encouraging to the new inmate than the "Abandon hope, all ye who enter here" of Dante. And if one arrived late at night for a maternity case (for some reason best known to hospital authorities, the case room is always on the top floor), there was a long climb to the top—but we were young then, and a maternity case was worth a long climb.

But St. Paul's filled a real want in the community, and filled it well: and, as it has always done since, it developed and grew and kept pace with the needs of the city, with the advances in scientific treatment, and modern equipment, and so came to its own in late years as an A1 hospital. And the opening of the new south wing this summer, with its magnificent equipment, and its last-word arrangement and construction, is merely the logical last step of a steady upward progress by a hospital that has never been content to be anything but the best of its kind and size. As one has watched the patient but steady accretion of one department after another, planned far ahead, each designed with thorough care by experts in its line, one cannot but be proud of St. Paul's Hospital. Its X-ray department is the equal of any—its laboratory facilities are compact, complete, and would meet the needs of an institution twice its size—its surgical suites are models of convenience—and now a new pædiatric department, a new physiotherapy department, new private wards, have been added—with many other minor departments—so that we have now a complete hospital under one roof: a masterly piece of work, only made possible by the vision of its administrative heads, who have built to a plan which in its conception was of surpassing excellence.

We present in this number some brief descriptions of the new wing, and a short historical sketch of the hospital. These are of interest, too; but one cannot but regret that so many of the old-timers that were so loyal and faithful to St. Paul's, and did so much for it, are not here today to see this culmination of their unselfish work. Dr. F. J. McPhillips, for instance, who was the head and front of the old St. Paul's, and whose surgical skill meant so much to its work; Dr. Robert Boyle, another surgeon who did so much work here; old "Jerry" Curtin, one of its earliest anæsthetists, an unforgettable figure in the hospital's history, a trusted and loyal member of its staff; Neil McDougall, whose wise, calm counsel was always so helpful and valuable; and many other names flit down the corridor of memory: men who "builded better than they knew" as they worked day by day in St. Paul's. Many of these old-timers are still with us, and take their place as leaders in the new, complete Hospital. W. D. Keith, W. D. Kennedy, E. J. Gray, H. H. Milburn, are only a few of the men who have given many years of devotion to the hospital that has served them so well.

There are many things one could say about St. Paul's, all favourable and all true. But there is one thing chiefly that, as we look back over the years, has marked St. Paul's more than anything else. Up-to-date equipment, scientific thoroughness, magnificent X-ray laboratories and operating rooms are all very well—but they are not all, or nearly all. But above and beyond all of these, there is the atmosphere of kindliness and friendliness, of solicitude for the comfort and happiness of its patients, that all who know St. Paul's will agree is the unfailing characteristic of this hospital. Its patients are its children, its wards, its friends: and their welfare is its first consideration. Its nurses reflect

this tone, and give kindly and generous service to those in their care. The closing sentence of one of the paragraphs written about the opening of its new wing could hardly have been written except by those who add to science and skill the love and affection which are as potent in healing as "all the poppies and mandragora" of the most highly skilled healer.

We wish St. Paul's Hospital the success and prosperity it has deserved in the past and will always, we know, deserve in the future.

NEWS AND NOTES

Dr. A. W. Hunter of Vancouver was elected to the Executive of the American Urological Association at the recent meeting of the Association in Buffalo, N. Y.

* * * *

Congratulations are extended to Dr. and Mrs. R. D. A. Bisson on the birth on August 6th of a daughter.

* * * *

Dr. and Mrs. R. H. Fraser are receiving congratulations on the birth on August 3rd of a daughter.

* * * *

We offer congratulations to Captain A. C. Gardner Frost upon his marriage to Miss Gertrude Griffin of Vancouver. The wedding took place on August 12th at Brandon, Man.

* * * *

The marriage took place at Shilo, Man., on August 13th of Lieut. John A. MacMillan and Miss Beatrice Merritt of Vancouver. Congratulations are extended to them.

* * * *

Dr. William Leonard of Trail again distinguished himself in the field of skeet and trap shooting, when he carried off four trophies at the recent Kimberley meet.

* * * *

Dr. and Mrs. E. S. Hoare of Trail have returned from a holiday spent at Banff, Calgary and the Big Bend country.

* * * *

Major Fred Wrigglesworth, 2nd Canadian Base Hospital Unit, Montreal, paid a short visit to his parents in Penticton before going overseas.

* * * *

Dr. H. B. Wright of Calgary has been visiting at Summerland and Penticton.

* * * *

Dr. R. B. White of Penticton has been away on a fishing trip.

* * * *

Dr. and Mrs. R. J. Wride of Princeton attended the Kelowna Regatta.

* * * *

Dr. and Mrs. J. R. Parmley and family of Penticton returned recently from a motor trip over the Big Bend to Banff.

* * * *

Dr. R. W. Irving of Kamloops travelled by motor to Lethbridge to meet an old college mate, Dr. Dave Smith of Stratford, Ontario, who arrived by Trans-Canada Plane. They intend to motor to Vancouver over the Big Bend Highway.

* * * *

It is reported Dr. A. N. Johanson has left Salmon Arm to join the C.A.S.F.

We regret to record that Dr. C. M. Bennett of Nelson was accidentally drowned in Kootenay Lake on July 29th.

* * * *

Dr. W. M. Toone, late of Kimberley, has taken over Dr. Bennett's practice.

* * * *

Dr. R. B. Shaw of Nelson has returned from holiday at the coast.

* * * *

Dr. J. M. Crawford of Trail is at present on holiday.

* * * *

Dr. and Mrs. G. L. Watson of Revelstoke are receiving congratulations on the birth on August 14th of a daughter.

* * * *

Dr. C. A. Armstrong of Port Simpson has moved to Ocean Falls and will be associated with Dr. G. D. Saxton in the practice there.

* * * *

Dr. J. E. Whiting of Hazelton is moving to Port Simpson.

* * * *

Dr. and Mrs. R. Geddes Large of Prince Rupert are motoring to Nelson.

* * * *

Dr. Carl Ewert of Prince George is holidaying in Vancouver.

* * * *

Dr. E. J. Lyon of Prince George is leaving for Vancouver, September 1st, to attend his daughter's wedding.

* * * *

Dr. John C. Poole and Mrs. Poole (formerly Dr. Lois F. Stephens) are now in Revelstoke, having recently moved from Wells. Doctor Poole is associated with Dr. G. L. Watson.

* * * *

Dr. Donald M. Black will be remembered by graduates of the University of Manitoba. He graduated in 1924. During the fifteen years since 1925 Doctor Black has served with the United Church in Northern Manchuria. He was stationed for some years at Lungchintsun. He has returned to the Province and is now commencing practice in Kelowna.

* * * *

Dr. and Mrs. W. R. Patten have returned to Chilliwack after spending a two weeks' vacation up Coast.

* * * *

We offer congratulations to Dr. J. B. Roberts of Victoria upon his marriage to Miss Bertha Margaret Lind on August 10th .

* * * *

Doctors E. H. W. Elkington, S. G. Kenning, of Victoria; G. W. C. Bissett of Duncan; A. B. Nash, L. W. Bassett, N. C. Cook, W. H. Moore, O. C. Lucas, G. B. Buffam and D. E. Alcorn of Victoria have become medical officers of the newly-formed N.P. A.M. Unit, No. 13 Field Ambulance, R.C.A.M.C., which is under the command of Lt. Col. G. C. Kenning. A Duncan company, under the command of Capt. G. W. C. Bissett, has been formed, the other officers being Doctors D. S. McHaffie and C. H. Beevor-Potts.

* * * *

Present indications are to the effect that Victoria will be well represented at the Nelson meeting of the British Columbia Medical Association. At least a dozen local men have expressed their intention of attending. Others who would like to go are likely to be prevented by military duties. The importance and value of this annual event is fully appreciated by members of the Victoria Medical Society .

Major W. M. Carr and Capt. A. Turnbull, Radiologists of Victoria, both have recently left for overseas on service with the R.C.A.M.C.

* * * *

Dr. T. M. Jones, until recently of Vancouver, has opened offices in Victoria, with practice limited to surgery.

* * * *

Dr. S. Janowsky, who has for two years been on the Resident Staff of St. Joseph's Hospital, Victoria, has entered general practice with offices in the Scollard Building, 1209 Douglas Street.

* * * *

The addition to the Royal Jubilee Hospital is rapidly approaching completion and will represent a most necessary and valuable adjunct to the hospital facilities of the Lower Island. The directors plan a campaign to augment the building fund shortly and have announced the forthcoming opening of a new and completely modern Isolation Unit, the plan of which conforms to the most recently accepted authoritative opinions regarding the disposition and treatment of all forms of Infectious Disease.

* * * *

Dr. Christina Fraser of the Department of Radiology of the Vancouver General Hospital spent a short holiday on the Island.

* * * *

Dr. N. H. Jones of Port Alberni returned from his holiday in the Okanagan and at Banff and Jasper.

* * * *

Dr. B. T. H. Marteinsson of Port Alberni is now on holiday—a hiking trip from Great Central Lake west to the Coast.

* * * *

Dr. John A. McLean of Vancouver spent a holiday at Qualicum and Campbell River.

* * * *

Dr. and Mrs. Alan Hall of Nanaimo spent a fortnight's holiday at the new summer camp at Ratrever Beach.

* * * *

Dr. and Mrs. E. D. Emery of Nanaimo left for Jasper and Edmonton on vacation at the end of August.

* * * *

Dr. C. E. Davies of Vancouver is now getting a nice sunburn on a week's cruise in Island waters. He stopped off en route to pay Nanaimo a visit.

* * * *

Dr. H. A. W. Brown of Fort St. John is holidaying at the Coast following a trip over the Big Bend. He called in at the office and looks unusually well.

SPECIAL LIBRARY NOTICE

Following is a list of books which have been taken from the Library, and for which the Librarian has no Doctors' signatures:

Index of Differential Diagnosis, 5th ed. Edited by Herbert French, (Reading Room Copy.)
Cæsarian Section (25-A-31), Marshall, C. McI.
Alcohol (36-Z-4), Strecker & Chambers.
Lancet, vol. I, 1939.
Journal of the American Medical Association, v. 113, Sept.-Dec., 1939.
American Journal of Obstetrics and Gynæcology, v. 37, 1939.
American Journal of Surgery, v. 44, April to June, 1939.
Annals of Internal Medicine, v. 12, Jan. to June, 1939.
Journal of Infectious Diseases, Nov.-Dec. number, 1939.
Canadian Medical Association Journal, v. 36, 1937.
Lancet, Jan. 6th and Feb. 3rd, 1940.

As these books have been out for some length of time, varying from a month to a year, it is requested that they be returned to the Library at once.

DR. C. M. BENNETT

An Appreciation

The profession in British Columbia has lost one of its younger members in the person of Dr. Clare M. Bennett of Nelson, by a tragic drowning accident which occurred July 29th.

Dr. Bennett was born at Creighton Mine in the Algoma district of Ontario, where his father, the late Dr. J. H. Bennett, was in practice. Later, the family moved to Copper Cliff, where Clare received his elementary education, his father being with the International Nickel Company as a surgeon.

In 1923 Dr. Bennett removed again, this time bringing his family to Nelson, B.C., where he continued in practice until his decease some three and one-half years ago.

Clare pursued his high school education in Nelson, where he passed his junior and senior matriculation. Under the stimulus of the strong influence which the father exerted, who to the youth was the ideal practitioner, Clare chose a career in medicine. He entered the University of Toronto, his father's school, and after the completion of a very successful undergraduate course received his degree in 1933. He then interned in the Toronto General Hospital for a year.

On conclusion of his interne year, he came West to join his father as junior partner. After the demise of Dr. Bennett, Senior, Clare continued the practice as sole partner except for a period when Dr. W. K. Blair was associated with him.

Dr. Clare Bennett's untimely death leaves a grief-stricken mother, a young widow and two small children, to whom the profession extends its sincere sympathy.

Dr. Bennett had a definite leaning towards surgery, and was gifted with the manual dexterity which is such an important asset to one who follows this branch of medical practice.

Dr. Bennett's capacity for making friends was very definitely evidenced by the large numbers who assembled on the day of the funeral to pay their last token of respect.

British Columbia Medical Association

(Canadian Medical Association, British Columbia Division)

President.....Dr. F. M. Auld, Nelson
First Vice-President.....Dr. E. Murray Blair, Vancouver
Second Vice-President.....Dr. C. H. Hankinson, Prince Rupert
Honorary Secretary-Treasurer.....Dr. A. H. Spohn, Vancouver
Immediate Past President.....Dr. D. E. H. Cleveland, Vancouver
Executive Secretary.....Dr. M. W. Thomas, Vancouver

REPORTS OF STANDING COMMITTEES

Please note: It is requested that all members read these reports, and thus expedite the proceedings of the Annual Meeting in Nelson.

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

During the past year there was no occasion for much activity of our Committee. Although there are some very minor changes that might be made in our present Constitution and By-laws, it was not deemed wise to make them at this time. Our present Constitution and By-laws is sufficiently comprehensive and elastic to make it comparatively easy to conduct all the business of the Association without difficuty. It was, therefore, our opinion that no amlendments be submitted this year.

All of which is respectfully submitted.

H. H. Milburn, *Chairman*,
Committee on Constitution and By-laws.

* * * *

REPORT OF THE COMMITTEE ON PROGRAMME AND FINANCE

Programme:

The work of your Programme Committee falls into two main divisions:

1. The arrangements for the Annual Meeting are started six months or more before the date of the meeting, and entail a considerable volume of correspondence and a number of meetings of the Committee to settle details of arrangement. Your Committee is happy to be able to report that the programme for this meeting is well up to the standard maintained at previous meetings, and we feel satisfied that the lectures should prove of value to every man attending the meeting.

2. Tours throughout the Province were arranged during the past year as follows:

(a) October 5th, 1939—Drs. D. E. H. Cleveland and S. A. McFetridge addressed the Annual Meeting of District No. 4 Medical Association in Kamloops. It was arranged that Drs. D. H. Williams and E. R. Hall would also attend the meeting, but through inadvertence they were forced to make a last-minute cancellation.

(b) November 30th, 1939—Drs. D. E. H. Cleveland and S. G. Baldwin addressed the Annual Meeting of the Upper Island Medical Association, held at the Casa del Mar Hotel.

(c) June 20th, 1940—Dr. W. Norman Kemp addressed the Spring Meeting of the Upper Island Medical Association at the Qualicum Beach Hotel.

Finance:

Your Association continues to operate on a budget of approximately $2500.00, which is granted to us as required by the Council of the College of Physicians and Surgeons.

During the past twelve months we have succeeded in carrying on our activities with only $2250.00. The detailed expenditures are included in the Auditor's Report.

In concluding this report, I wish to take this occasion to thank the members of my Committee, and particularly Dr. Auld and Dr. Daly and the members of the local group in Nelson, for their very excellent assistance in arranging for this Annual Meeting. I should also like to point out that our Executive Secretary, Dr. Thomas, is of inestimable value to our Committee in the constant assistance that he is able to give us.

All of which is respectfully submitted.

Committee on Programme and Finance.
G. F. STRONG, *Chairman,*

* * * *

COMMITTEE ON MATERNAL WELFARE

The Nucleus Committee has met regularly in Vancouver during the past year and has also received valuable advice from some of the outside members.

The Maternal Record Card, which was approved by the last Annual Meeting of the British Columbia Medical Association, was put into operation at the beginning of the year with the help and co-operation of the B. C. Provincial Board of Health.

The assistance of the Board, without which the scheme could not have been put into effect, and which has been freely and cheerfuly given, is acknowledged with grateful thanks.

The response from the Doctors in the Province has not been all that the Committee had hoped for, up to date. It may be that some Doctors are holding their records until the end of the year and then intend to send in a number at one time. If so, we would ask them to please send in a few at a time as it is easier for the Statistical Department to handle them, and they will be returned sooner. Some Doctors, notably those of the Trail Clinic, have responded 100%, and the late Dr. J. P. Bilodeau was one of the first and most regular in his records.

The maternal death rate for the Province, which has always been one of the best in Canada, showed decline in 1939. The breakdown into causes has not yet been received, but before 1939 the greater number of cases were due to sepsis in some form and it is probable that the improvement shown is due to the new chemo-therapy. But there are still some other causes that may be improved by more careful pre-natal work and less unnecessary interference.

It had been hoped to start the publication in the BULLETIN of short articles on Maternal Welfare subjects, but the authors have not yet supplied them. It is hoped that the next Committee will soon be able to get enough articles on hand to start with regular monthly articles.

It is recommended to the incoming committee that they consider the causes of maternal deaths with a view to making a recommendation *re* the computing of the maternal death rate, which is at present on a very unsatisfactory basis.

It is expected that they will shortly be in a position to investigate, with the help of he Provincial Board of Health, all maternal deaths in the Province with a view to being in a position to give some advice in what manner the mortality may be lowered.

All of which is respectfully submitted.

C. T. HILTON, *Chairman,*
Committee on Maternal Welfare.

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REPORT OF THE COMMITTEE ON PUBLIC HEALTH

Your Committee on Public Health and Nutrition has been active throughout the year, although not many meetings have been held.

General matters of Public Health have come before the Committee and the endeavaurs towards uniform pasteurization of milk have been continued. This year the Com-

mittee co-operated with the Greater Vancouver Health League in an effort to have universal pasteurization of milk receive the endorsation of the Metropolitan Board of Health for Greater Vancouver. The fight for pasteurization still continues, although progress will be slow both with the lay public and important legislative bodies.

Certain features of Well Baby Clinics as conducted in Greater Vancouver by the Metropolitan Board of Health have not met with universal medical approval. The Pædiatric Section of the British Columbia Medical Association has held several conferences with the Committee and conferences have taken place between the Greater Vancouver Medical group and the Pædiatric Section. Several points of difference exist and no satisfactory solution has yet been reached.

This year, matters concerning Nutrition were referred to the Committee on Public Health. The New Canadian Medical Association Committee on Nutrition has been very active and your Committee has co-operated with this Committee in furnishing information and suggestions. The book, "Food and Health" was published and distributed during the year by the Canadian Medical Association Committee on Nutrition and this publication met with universal approval. It is expected that matters of great national importance will be considered by the National Committee on Nutrition throughout the War and duties of the Committee on Public Health and Nutrition will be greatly increased.

All of which is respectfully submitted.

A. H. SPOHN, *Chairman,*
Committee on Public Health.

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COMMITTEE ON THE STUDY OF ECONOMICS

During the past year the principal question before the Committee of the British Columbia Medical Association revolved around the development of a pre-payment Medical Service Plan, the outline of which was presented at the Annual Meeting of the College of Physicians and Surgeons in 1939. Instruction was given that the Committee on Economics of the Council proceed with a view to placing the plan in operation.

Incorporation of the Medical Services Association was completed in April, 1940. Mr. A. L. McLellan has done much valuable work in introducing the Plan to employee groups. Much interest has been shown by employees and at this time the Medical Services Association is preparing to enroll membership. Our members have been informed from time to time of the nature and extent of the service offered under this Plan. It is felt that the service should be comprehensive and free from those restrictions which only lead to controversy and embarrassment.

Under this Plan small groups of employees may join co-operatively as members of the Medical Services Association and avail themselves of privileges otherwise only possible with larger groups of employees. At the present time the British Columbia Telephone Employees' Sick Benefit Association, the British Columbia Electric Railway Company Office Employees' Medical Aid Society and the Vancouver School Teachers' Medical Services Association are operating similar plans which provide for two fundamental principles in medical practice; namely, free choice of doctor, and payment for services rendered on the basis of the Schedule of Fees of the College of Physicians and Surgeons. Under these plans all doctors are included and enjoy equal privilege.

The Medical Services Association has its own Board of Directors consisting of representatives of employees, employers and the medical profession. Dr. S. Cameron MacEwen, well known to us all, has been appointed Director of Medical Services, and we bespeak for him the confidence and support of the profession.

I may say that a growing interest has been shown by employees in the development of some plan whereby they may budget against the expense of illness or accident, especially for the protection of their family. Under this Plan they are allowed to contribute, by deduction from their payroll for their own membership in the Association, $1.00 per

month for medical and surgical care. Where hospitalization is included, $1.50 per month would be required.

Among groups of employees, in order that families may be included, a census would be taken so that a flat rate might be applied to the man with the greater number of dependants. In some groups the employer would contribute and in this way a lower rate could be arranged for the man with the larger family.

If there is a demand for a system of medical practice, which permits employees to make regular monthly payment for medical services, your Committee feels that the medical profession should give direction, in that it is best fitted to give leadership in the development of any satisfactory plan.

W. A. CLARKE, *Chairman,*
Committee on the Study of Economics.

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COMMITTEE ON THE STUDY OF CANCER

This Committee has carried on under the enthusiastic Chairmanship of Major Roy Huggard for the past two years. In May of this year, owing to military duties, Major Huggard resigned and I was asked to complete his term of office. The following report is the result of his very efficient stewardship. Since the Annual Meeting in September, 1939, seven regular meetings of the Committee have been held, all of which were largely attended.

Major Huggard travelled through the northern part of the Povince last Fall as one of a lecture team and was able to enlist greater interest by presenting the question of Cancer to special meetings in such centres as Prince George and Prince Rupert. Previously, in the same manner he visited New Westminster, Chilliwack, Lytton, Kelowna, Penticton, Trail, Nelson, Creston, Cranbrook and Revelstoke, attending the Annual Meetings of the District Associations at Kelowna, Trail and Cranbrook. While on these tours Major Huggard addressed evening and luncheon meetings at the various centres, speaking on behalf of the Canadian Society for the Control of Cancer. Public meetings were held at both Prince Rupert and Prince George.

Major Huggard represented the Committee on a Cancer Council for British Columbia, the objective of which is to correlate Cancer activities within the Province.

The Committee has supported strongly the Department of Cancer Control of the Canadian Medical Association in encouraging the use of Cancer Record Forms. The development of this service was placed in the hands of a sub-committee of which Surgeon-Lieutenant H. H. Caple has been the Chairman. Record Forms were distributed to seventeen reporting centres and follow-up work has been done to stimulate their widespread use. A report submitted by this Committee stated that 794 cases had been reported. These were for the most part hospital patients. It is hoped that this work will be further developed in the ensuing year.

The Committee has attempted to establish a Biopsy Service using existing laboratories, in an effort to serve all sections of the Province. This has been studied by a sub-committee composed of Drs. H. H. Pitts and A. Y. McNair. A questionnaire has been circulated to the whole profession to which there has been a large response, indicating that the profession wishes such a service. A conference of the sub-committee was arranged and the question discussed with Dr. G. F. Amyot, Deputy Minister of Health in British Columbia. Subsequently a large meeting of the Committee was attended by Dr. Amyot, and his attitude would suggest his willingness to co-operate in developing a Biopsy Service. While a universal biopsy service has not yet been obtained, it is felt that a lot of useful spade work has been accomplished and one hopes that another year will see the fruition of our efforts.

The Committee studied the question propounded by the Department of Cancer Control of the Canadian Medical Association regarding the principle of centralization for treatment of cancer and placed itsef on record in favour of this principle. Arising out

of this discussion, the Committee asked the Department of Cancer Control, Canadian Medical Association, to set up minimum requirements for "well-equipped institutions."

An Editorial Committee has been appointed to prepare and supervise material for publication on the question of Cancer.

An effort has been made to secure presentation of cases of Cancer on the programme at clinical meetings throughout the Province.

The Committee has been supported by the Committee on Programme of the Provincial Association by the inclusion in post-graduate tour courses of a speaker on Cancer.

The Library Committee of the Vancouver Medical Association has provided the *American Journal of Cancer* at the request of the Committee.

The Committee hs strongly supported the British Columbia Branch of the Canadian Society for the Control of Cancer in its development and programme. The Speakers' Bureau, under the aegis of the Committee and with Dr. M. W. Thomas as Chairman, has successfully undertaken to provide medical speakers for lay audiences on fifty-seven occasions.

The acquisition recently of Cancer films by the British Columbia Branch of the Canadian Society for the Control of Cancer will assist materially in creating greater interest in public meetings and will also be very helpful in placing this question of Cancer before the members of the profession. Those of the films suitable for lay audiences are to be shown at several public meetings in September and together with the scientific ones will be shown to members of the Association at their Annual Meeting in Nelson.

Respectfully submitted on behalf of the Committee.

ETHLYN TRAPP, *Chairman,*
Committee on the Study of Cancer.

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EDITORIAL BOARD

September, 1940.

After the Annual Meeting of the British Columbia Medical Association in September, 1939, this Committee collected the papers read at that meeting, and published them in a Supplement which was sent to all members of the profession throughout B. C. In view of the cost of such a supplement, somewhere between $350.00 and $400.00, we do not know whether the Association will see fit to authorize the publication this year of the papers read at the 1940 Annual Meeting, but we propose to secure them if possible for future disposal.

The Greater Vancouver Health League approached us recently with a view to securing the co-operation and endorsation of the British Columbia Medical Association in regard to a Health Supplement which the *Vancouver Daily Province* proposes to publish at an early date. The Greater Vancouver Health League would be co-sponsor with us, and the keynote of the number would be preventive medicine.

At a meeting of the Board of Directors of the British Columbia Medical Association, your Committee was instructed to inform the Greater Vancouver Health League that the British Columbia Medical Association would endorse this number, and act as co-sponsor, on the definite understanding that the following steps be taken:—

1. All material for publication to be submitted to the Committee on Publications of the British Columbia Medical Association for censorship and approval.
2. All advertising to be similarly subject to censorship.
3. No articles appearing were to be signed by the writers, if the latter are in any way engaged in private practice.

Dr. M. W. Thomas, Executive Secretary of the British Columbia Medical Association, has kindly consented to act with the Committee as a member of this body.

All of which is respectfully submitted.

J. H. MacDermot, *Chairman,*
Editorial Board.

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SPECIAL COMMITTEE ON BENEVOLENT FUND

The Special Committee appointed by the Board of Directors of the British Columbia Medical Association to study the advisability of developing and maintaining a Benevolent Fund for the benefit of the members, wishes to report that much preliminary work has been done and the Committee is ready to proceed with a very definite educational and collection campaign.

The Committee recommended to the Board of Directors that owing to present unsettled conditions due to the War situation that no further action be taken at this time. When the time appears more opportune ,the Committee will make further representations and will be prepared, under instruction, to proceed with its task.

This report is submitted for the information of the membership.

W. E. Ainley, *Chairman,*
Special Committee on Benevolent Fund.
British Columbia Medical Association.

CANADIAN RED CROSS SOCIETY—B. C. DIVISION

NEWS NOTES

RED CROSS CO-OPERATES WITH WOMEN'S INSTITUTES

The Provincial Red Cross is taking a lead in a food conservation project and is extending a special invitation for co-operation to the Women's Institutes in the agricultural districts, the membership being largely farm women—partners of the men who produce the country's food supply. It is intended that food conserved under this scheme should be donations of surplus food products which might otherwise go to waste. This canned food will be distributed by the Red Cross, as the need arises, to Canadians on Overseas service, refugees in England and evacuees in Canada, and to the needy in any emergency.

NO RED CROSS SUPPLIES GO TO ENEMY-OCCUPIED COUNTRIES

All Canadian Red Cross supplies shipped Overseas are going to Britain as it is impossible for the Canadian or British Red Cross Societies to make shipments to Europe. Blankets collected for suffering refugees and wounded sodiers in France have not been sent to that country as the Red Cross could not take a chance on their falling into German hands. The first shipment authorized before the French armistice was diverted to England, where they will be stored until needed. The remainder, about 60,000, will be held in Canada. Already the Dominion Government has asked for the loan of a quantity of them to equip colonist cars carrying Overseas children to their destinations in Canada.

RED CROSS WILL MEET B. C. GUEST CHILDREN

If British Columbians expecting Overseas children would notify Provincial Red Cross Headquarters, 213 Marine Building, Vancouver, every effort will be made through the Nova Scotia and Quebec Red Cross Divisions to see that these children are met and looked after at the ports of Halifax and Montreal.

A SUMMARY OF THE PROBLEM OF JAUNDICE

By C. E. Gould, M.D.

The study of the liver dates back at least to the sixth century B.C., and earlier. Prognosis, with both the Assyrians and the Babylonians, was largely based upon inspection of the liver, terra cotta models of which, at least three thousand years old, have been found, divided into squares, and studded with prophetic inscriptions. The Book of Ezekiel, chapter 21, verse 21, says: "For the King of Babylon stood at the parting of the ways, at the head of the two ways of divination; he made his arrows bright, he consulted with images, he looked in the liver."

From the clay tablets of King Assurbanipal of Assyria, now in the British Museum, we know that the Assyrians practised hepatoscopy, and that the art of prognosis was largely based upon inspection of the liver. Garrison states that the Babylonian clay models of the liver are better specimens of anatomical illustration than the five-lobed mediæval figures.

Similar models of the liver have been found on ancient Hittite sites in Asia Minor, and Etruscan livers in bronze, dating from the third century B.C. have been found.

The liver, as the source of blood, was regarded by the ancients as the seat of the soul and, as the god identified himself with the sacrificial animal, to inspect the liver was to see into the soul of the animal and the mind of the god. It is safe to say that this is "a consummation devoutedly to be wished" by many a modern internist.

Classification of Jaundice.

While in the past jaundice has been described as an hepatogenous, hæmohepatogenous, extrahepatic, hæmolytic, polycholic, acholuric, pigmentary, infective toxic, and other named forms, the present-day tendency is to simplify the problem and now we have two classifications in general use, those of McNee and Rich, the former more adequate clinically, the latter more accurate scientifically.

McNee's classification has three divisions:

1. Obstructive; 2. Hæmolytic; 3. Toxic-infective;

while Rich's has but two:

1. Retention; 2. Regurgitation.

Since the physiological and biochemical principles of jaundice production have been synthesized by Rich more clearly than by anyone else to date, in his publication in 1930, it is proposed to follow his classification here, and outline the physiological principle that he propounded.

Physiology.

Bile pigment—bilirubin—is made outside the epithelial liver cells, is carried to them by the blood stream, and is excreted by them into the bile canaliculi.

Bile pigment is manufactured mainly within the bone marrow, liver and spleen.

The reticulo-endothelial system is responsible for its production. The only known source is hæmoglobin from broken down red cells.

Hæmoglobin taken from the blood stream by phagocytic reticulo-endothelial cells anchored within the capillaries of the bone marrow, spleen, and liver is split, within these cells, into bilirubin and a colourless iron-containing residue. Both substances are then discharged into the blood stream. Bilirubin, as it passes through the capillaries of the liver, is selectively taken out of the blood by the epithelial hepatic cells, and is secreted, somewhat as a threshold substance, into the bile canaliculi, whence it flows, mixed with the rest of the bile, into the duodenum.

Although bilirubin can be absorbed from the intestine back into the blood stream, most of the pigment reaching the intestine is reduced there to urobilin by the action of bacteria. Some of the urobilin so formed is excreted with the fæces, and some is absorbed into the blood, where it is removed by the liver, to be excreted in the bile, or to be conserved for unknown purposes. Under certain conditions the liver cannot remove it efficiently from the blood stream, and quite large amounts may pass from the blood to the urine.

Considering now the possible mechanics of non-obstructive jaundice, there are several possible causes. Since, to prevent jaundice, the liver cells have to excrete the bilirubin brought to them by the blood streams, jaundice would occur:

1. If the liver threshold for bilirubin became raised.
2. If bilirubin were produced faster than the liver cells could excrete it.
3. If the excretory mechanism of the liver were so disturbed that the amount of bilirubin normally produced could not be satisfactorily removed from the blood.
4. Combinations of the above conditions.

No. 1 is hypothetical and a poor explanation.

No. 2 is rarely the cause of jaundice because the normal excretory power of the liver is far above the necessary. Bollman and Mann have shown that 5 per cent of liver tissue left in a hepatectomized dog will prevent jaundice. Many pathological conditions of liver cells do not cause jaundice. Rich states that there is no known pathological condition which impairs the function of *living* hepatic cells to the point where they are unable to prevent jaundice by excreting the amount of bilirubin normally formed. Necrosis and cellular damage, however, will reduce the excretion capacity of the liver to the point of jaundice, as in acute yellow atrophy, yellow fever, chloroform poisoning, etc. The common cause of non-obstructive jaundice, then, is No. 4—a combination of No. 2 and No. 3—due to the fact that conditions which are responsible for an increased production of bile pigment are almost always associated with conditions which depress the excretory function of the liver.

The analysis of jaundice, then, involves the following three fundamentals:

1. The physical state of bilirubin in the blood.
2. The chemical state of bilirubin in the urine.
3. The quantity of pigment in the stool, blood and urine.

1. The physical state of bilirubin in the blood:

The physical state of bilirubin in the blood is determined by the Van den Bergh reaction, which involves Ehrlich's diazo reaction as a test for bilirubin in the blood. It is both quantitative and qualitative.

Quantitatively it indicates the amount of bilirubin in the plasma.

Qualitatively it indicates whether bilirubin is:

(a) that which the liver has failed to remove from the blood;

(b) that which has passed through the liver cells and into the bile canaliculi, but which has subsequently found its way back into the blood stream because of obstruction of the ducts or necrosis of the liver cells.

Applied to (a), bilirubin which has not yet passed through the liver cells, it gives the indirect reaction.

Applied to (b), bilirubin taken from the bile ducts, gall-bladder, or that regurgitated into the blood from the bile canaliculi, it gives the direct reaction.

The difference in reaction depends upon the medium in which the bilirubin is, and the work of E. S. Barron clarified this. He showed that:

1. pure bilirubin at blood pH = direct reaction.
2. pure bilirubin at blood pH + normal plasma = indirect reaction.

If, however, substances which can lower surface tension are added to the plasma first,

and then bilirubin added, the reaction will be direct, and the reason for this is that substances which lower surface tension are adsorbed by plasma proteins more readily than is bilirubin. Barron then showed that both bile salts and cholesterol are potent in preventing adsorption of bilirubin by plasma proteins. Both these substances are present in whole bile, and occur in increased amounts in the various forms of jaundice in which the blood bilirubin gives the direct reaction.

The direct reaction indicates, therefore, that whole bile, containing bile salts and cholesterol as well as bilirubin, has been regurgitated into the blood stream, either by obstruction of the ducts or by necrosis of liver cells, as these are the conditions which permit whole bile to escape from the canaliculi into the blood.

The indirect reaction indicates that the bilirubin in the examined plasma has not been regurgitated into the blood from the canaliculi, but that it represents bilirubin which the liver has not yet been able to remove from the blood stream.

The diphasic reaction indicates in plasma varying amounts of both direct and indirect reacting types of bilirubin.

In the direct reaction, where there is regurgitation of whole bile into the blood stream, there is also bilirubin and bile salts in the urine.

In the indirect reaction, where there is neither obstruction nor necrosis of liver cells, there is neither bilirubin nor bile salts in the urine, but there is present an excess of the reduced form of bilirubin—urobilin.

The explanation of this is clear in the light of Barron's work, mentioned above. In the indirect reaction, where there has been no regurgitation of whole bile with bile salts and cholesterol back into the blood, the bilirubin has not been displaced by these from the plasma proteins, is still in a state of physical adsorption with them, and, as Boyd has pointed out, the plasma protein—bilirubin molecule is too large to pass the renal filter, so that there is no bilirubin or bile salts in the urine, while in the direct reaction, the bilirubin is split away from the plasma protein molecule by the regurgitated bile salts and cholesterol, which adsorb to the protein, leaving the bilirubin as a free uncombined molecule, and small enough to pass the renal filter, and hence its appearance in the urine.

The urobilin present in the urine, in the indirect Van den Bergh, is due to the fact that the amount of bilirubin excreted into the intestines is greater than normal, and being reduced in the intestines to urobilin, a greater amount of urobilin is available for adsorption into the blood stream, and hence appears in the kidneys, and fæcal urobilin is increased in the same way.

Rich's classification, then, is:

I. *Retention jaundice*: the liver is functionally unable to free the blood from bilirubin produced in excess, usually by hæmolytic processes.

II. *Regurgitation jaundice*: is the result of escape of whole bile from the canaliculi into the blood stream, either because of obstruction to the outflow through the ducts, or because of necrosis of liver cells.

I. Retention Jaundice:

(1) Indirect Van den Bergh—never having passed through the liver cells, and being therefore unmixed with the constituents of the bile.

(2) Stool—increased urobilin, because in the face of the increased production of bilirubin the liver is excreting more of the pigment than normally, even though it cannot excrete enough of the excess to prevent jaundice.

(3) Urine—increased urobilin for the same reason that it is increased in the stool, and the urine is free of bile salts, as these are formed in the liver, and are absent in the urine unless they have been poured into the blood by the escape of whole bile from the canaliculi into the blood stream, and for the same reason bilirubin is still adsorbed on the plasma proteins, and also does not appear in the urine.

The pathology of Retention Jaundice consists of:

(a) The ætiological factor, the commonest of which are: Pernicious anæmia, hæmo-

lytic jaundice, mismatched transfusions, hæmolytic septicæmias, malaria, icterus neonatorum, etc.

(b) The liver cells may show cloudy swelling or atrophy, but

(c) There is no widespread necrosis.

(d) The bile ducts are patent.

II. Regurgitation Jaundice:

(1) Direct Van den Bergh.

(2) Stool—less urobilin than normally, because passage of bilirubin to the intestine is interfered with either by obstruction of the ducts, or by necrosis associated with ruptures of canaliculi which allow bile to leak into the blood stream.

(3) Urine—contains bilirubin, since direct reacting bilirubin escapes into the urine.

The pathology of Regurgitation Jaundice consists of:

(a) The ætiological factors, either those causing necrosis, such as acute or subacute yellow atrophy, from whatever cause, or those causing obstruction of the bile ducts, either by plugging, stricture or pressure from without.

Tests Used in the Diagnosis of Jaundice.

(a) The Icterus index—devised by Meulengracht, is a simple index of the amount of bilirubin in the blood. The index represents the number of times that a given serum has to be diluted to match in color a one-ten-thousandth solution of potassium dichromate. A necessary precaution is that hæmolysis be not allowed to occur during the collection of the blood and prior to separation of cells and serum in the centrifuge. Rarely carotin must be eliminated as a factor in a false reading. The test is simple, efficient and reasonably accurate. Manufacturers put out a device with a graduated scale and coloured slips of glass for the practitioner who wishes to do his own.

(b) The Van den Bergh—consists always of two tests—the quantitative or indirect, and the qualitative or direct. Since all bilirubin, either direct or indirect, is measured in the quantitative indirect Van den Bergh reaction, the result represents the absolute total, and is expressed as milligrams per one hundred cubic centimetres. Next the qualitative or direct is done; this test depends on graded colour changes, and is expressed as: immediate, delayed, biphasic and negative direct reaction. If the reaction is immediate, it signifies that nearly or probably all of the blirubin in the quantitative test was of the direct variety. If the direct test is negative, it signifies that all of the bilirubin in the quantitative test was of the indirect variety. With regard to the intermediate forms—the delayed and the biphasic—it is customary to accept the delayed as equivalent to a negative reaction, and the biphasic as equivalent to an immediate or positive reaction. Some laboratories are now reporting the direct Van den Bergh as being either positive or negative.

As has been pointed out by Boyd, the icterus index and a test for bilirubin in the urine is a clinical substitute for the Van den Bergh. The icterus index is equivalent to the quantitative Van den Bergh, and the test for bilirubin in the urine equivalent to the qualitative Van den Bergh, as only the direct type of bilirubin passes the renal filter.

(c) Bilirubin in the urine—yellow foam on shaking is a gross test, but a more accurate and simple method is the Gmelin test—layering concentrated nitric acid on urine, producing definite colour changes.

(d) Urobilin in urine—Watson test.

(e) Urobilin in stools—Watson test.

Clinical Diagnosis.

With the above armamentarium we now approach the problem of clinical diagnosis. Rather than waste time with the majority of cases, in which the diagnosis can be made clinically on the basis of the history and the physical findings, and any laboratory tests are merely confirmatory, let us approach the smaller group of cases which are the bug-

bear of diagnosis—the so-called "painless jaundice." To postulate the most difficult type of case, a patient within the cancer age group comes to a doctor early in the onset of a deepening jaundice; there may be a little anorexia, there may or not be a slight weight loss. A fruitless history and a negative physical examination have given absolutely no clues. The differential diagnosis narrows down to an important triad—catarrhal jaundice (now known to be due to a variable degree of liver necrosis), silent stone, and malignancy. Too frequently the management of these cases consists of a perfunctionary estimation of the degree of jaundice by an icterus index, an X-ray examination of the gall-bladder region to rule out stone, and then watchful waiting. If the jaundice clears up, the diagnosis was catarrhal jaundice. If it continues to deepen, we wait for the post-mortem, with the fingers crossed in the hope that a stone was not missed by the X-ray.

It is in this type of case, the very type where the most help is needed, that Rich's classification falls down, as all three conditions—catarrhal jaundice, silent stone, and obstruction by malignancy—fall under Rich's Regurgitation type, and all three will have a direct Van den Bergh, bilirubin in the urine, and decreased stool urobilin. But early diagnosis is imperative in this predicament, considering the differences in treatment and prognosis entailed by these three conditions.

The diagnostic attack in this type of case is directed into three channels, none of which are clinical. It is by a carefully planned campaign of laboratory procedures that the earliest possible diagnosis can be reached. The three procedures, in the order of their diagnostic importance, are:

(1) Estimation of the urobilin in the stool.

(2) Estimation of the bilirubin in the blood.

(3) Estimation of the blood cholesterol.

(1) Stool urobilin.—It is well established that obstruction of the biliary tract by catarrhal jaundice is rarely complete, and that, if it is complete, almost never for more than two to three days. It is also established that obstruction by stone is only intermittently complete, almost never continuously complete, whereas the obstruction by neoplasm is progressive, and when it becomes complete, almost never fails to remain so. If one accepts these postulates, it becomes apparent that the study of the fæcal urobilin is of paramount importance. This study, to be of real value, must be continuous. An easy and inexpensive way of doing this is to insert the gloved finger into the rectum daily, and smear a particle of fæcal material on a piece of white paper. Daily comparison by this method affords a reasonably accurate estimation of variations in the amount of fæcal urobilin. More recently C. J. Watson has devised a method far more accurate than the above. Employing an improved quantitative method of determining fæcal urobilin, he found that the average normal daily output varies between 40 and 280 milligrams. He found, however, that the excretion of urobilin in the fæces in patients with obstruction due to stone differed strikingly from those with obstruction due to neoplasm. In the former the level was frequently within normal limits, varying from 10 up to 250 mg. daily, while in the latter the level was usually very low or absent, varying from zero up to 5 mg. daily. The test is done on a four-day stool specimen. His published series consisted of 135 cases.

(2) Blood bilirubin.—The importance of blood bilirubin estimations in these difficult cases is in direct proportion to their frequency. To be of greatest value they should be done daily. The icterus index is the easiest method of doing this. While there is no absolute correlation between the icterus index and the quantitative Van den Bergh, ten units of the former correspond roughly to one milligram of the latter, that is, an icterus index of 25 is equivalent to a Van den Bergh of 2.5 mg. per 100 cc.

(3) Blood cholesterol.—It is becoming increasingly apparent that blood cholesterol estimations can be of great value in the diagnosis of jaundice. Ottenberg and others have pointed out the marked elevation—from 300 to 400 mg. percentage—in the blood cholesterol occurring in complete obstruction of the bile ducts, while with partial or intermittent obstruction the blood cholesterol is only moderately elevated, whereas in

hepatic degenerative processes the blood cholesterol level is depressed, and in severe degenerative processes reaches very low levels.

In emphasizing the above methods of diagnosis, it should be stressed that they are not intended to be used to the exclusion of other procedures. Evidence of stone should be sought by X-ray examination, but since stones are found in about one-third of cases of malignancy of the biliary trust, the established presence of stone does not necessarily rule out malignncy. The bowel should be investigated if there is any question of primary neoplasm arising there.

Treatment.

With the diagnosis established, treatment resolves itself either into the removal of obstruction by surgery, or into the medical management of damaged liver tissue. It is safe to say that this latter therapy is purely empirical, and this includes the less important group of retention jaundices, in which there are instances of more specific, but still empirical, therapy, such as quinine in malaria, splenectomy in congenital hæmolytic jaundice, and others.

Leaving the surgical management in the hands of the surgeon, mention should be made of the use of Vitamin K and bile salts in the reduction of the prothrombin time, and the lessening of the dangers of hæmorrhage during and after operation.

The present trends in medical management are outlined by Ottenberg, and consist of:

(1) Protection of the liver.

(2) Reduction of metabolic work to a minimum.

(a) Diet should be a high carbohydrate diet— 300 to 500 gm. of carbohydrate per twenty-four hours, mainly in the form of fruit juices, lactose, and dextrose. Starches are permitted unless pancreatic insufficiency is suspected—as in obstruction near the papilla of Vater. If the patient does not take food well it is advisable to give intravenous glucose.

The diet should be fat-free. Fat is not necessarily harmful, but is useless. It is not necessary, therefore, to go to the extreme of refusing the patient all butter, cream and eggs.

Since a large part of the work of the liver has to do with protein metabolism, spare the protein as much as possible—give the minimal amount of protein that the body requires—0.7 to 0.1 gm. per kilogram of body weight per day—usually 40 to 50 gm. per day for the average person.

Meat should be avoided because of its suspected toxic effect. Protein is best given as leguminous foods, and milk, cheese and egg white.

Since the liver uses glycine as a detoxicating agent, with a combination of glycine and benzoic acid excreted by the kidney as hippuric acid, Ottenberg suggests the use of glycine containing proteins, such as gelatine. From 5 to 10 gm. of gelatine per day can be given as sweetened desserts or powder.

(b) Drugs.—Give as few drugs as possible. Not recommended (for protective reasons): (i) Catharsis with calomel, Carlsbad or epsom salts; (ii) duodenal lavage with magnesium sulphate to relax the gall-bladder sphincter. Food should be a sufficient stimulus.

(c) General.—Complete mental and physical rest.

THE BLOOD SEDIMENTATION TEST AND THE WELTMANN REACTION

By J. P. Henry, M.B.

In spite of over a thousand publications since the introduction of the sedimentation test by Fahreus in 1918[2], little has been found that fails to confirm the conclusions of this master, and in spite of a dozen complicating modifications, the simple bedside method introduced in 1920 by his colleague Westergren[36] is still considered the most reliable and accurate so far available[8]. It may be used in the attempt to estimate the trend and severity of any disease characterized by tissue destruction for it gives an evaluation of the extent of the morbid process by supplying a measure of the inflammatory reaction with which the body attempts to counter every such injury. On the body surface, the progress of an inflammation can often be estimated by inspection and palpation; but the majority of the viscera cannot be so observed, and the struggle must be followed by the interpretation of symptoms, and of disturbances of temperature, pulse and weight—all of which may be absent in the presence of considerable hidden activity. It is in these apyrexial, asymptomatic cases that the test is most often of value.

In 1920, Whipple[1], in a series of convincing experiments, showed that in response to every inflammation there is an outpouring of fibrinogen from the liver. This is utilized in clot formation, and as a scaffold for repair. This outpouring is closely proportioned to the amount of tissue damage[1]. An index of blood fibrinogen would thus be a measure of the trend and severity of the lesion. It is believed that in the majority of cases this holds true for the sedimentation test. The mechanism by which this may occur can be outlined as follows:

$$V = \frac{2}{9} g \cdot \frac{S - Si}{u} \cdot r^2$$

g — gravity
S — specific gravity, cell
Si — specific gravity, fluid
u — viscosity

(N.B. This hydrodynamic equation applies only to the fall of single spheres through fluid media.)

A single corpuscle falling through plasma would do so at a uniform velocity—*e.g.*, (V). This is dictated by the drag on its surface according to Stokes' law[2]:
It is found that in blood variations in u, S, and Si, are negligible compared with that of r^2, and the equation may therefore be written:

$V = C \cdot r^2$ (where r is radius, and C is a constant)[10].

Thus the rate of sedimentation of a solitary corpuscle is proportional to the square of its radius. This is so small that a suspension of corpuscles in saline will fall only one millimetre (1 mm.) in an hour[5]. The phenomenon responsible for the more rapid fall in blood is aggregation of the cells into irregular clumps or rouleaux. This enormously increases the square of the radius (r^2) and hence the rate of fall. The sedimentation rate of blood is thus largely an expression of the degree of aggregation of the red corpuscles[10, 11, 5]. It is probable that the electronic charge carried by the red cells in the colloidal sol that constitutes blood plasma is a potent factor controlling aggregation. The greater it is, the more strongly they repel each other, and anything decreasing the charge will facilitate their cohesion in irregular clumps. The mass of these varies as r^3, the retarding friction on their surface as r^2, so the bigger the aggregate, the faster the sedimentation rate[3]. Fahreus and other workers have shown that one of the most important factors decreasing cell charge is the fibrinogen content of the plasma[2, 3, 18, 19], and they believe that it is due to this that the sedimentation rate is directly proportional to the fibrinogen content[17]. In congenital absence of fibrinogen the sedimentation rate is practically zero[15]. Where the fibrinogen varies, the blood sedimentation rate will be found to vary with it[39]. It is true that globulin is believed to facilitate aggregation and a fall in the albumin-globulin ratio often results in a raised sedimentation rate, due in part to the increased globulin[16], but in part also to the concident rise in the fibrinogen level itself, for fibrinogen is a protein of globulin type and a rise in fibrinogen is a well

marked feature of the nephrotic syndrome[22]. It is also said that lecithin inhibits aggregation, and that cholesterol promotes it. Therefore before the sedimentation rate is used as an index of fibrinogen content, the possibility of an abnormality of these factors should be considered[21], but this does not often occur in those cases where the sedimentation rate is of most value, namely, the asymptomatic, apyrexial, ambulatory types. Further, in acute infections, the albumin-globulin ratio does not usually change[23], and cholesterol and other lipoids usually decrease[23]. Lipoids are markedly abnormal in conditions such as hypothyroidism, diabetes, and heptic damage, but in these, the sedimentation test is rarely employed[22, 23]. It is worth noting that in pregnancy, the fibrinogen is raised[22, 37], and that with it goes a constant increase in the blood sedimentation rate[2].

The anticoagulant used in the sedimentation test is of great importance. Soluitons often involve diluting the plasma by one-fifth. This results in a decrease in the concentration of the charge reducing factors, and it may be due to this that aggregation is lessened and that, therefore, in spite of dilution, the sedimentation rate is slower[8, 14]. Inorganic salts, such as sodium citrate and fluoride, slow the sedimentation rate. It is believed that they are adsorbed onto the surface of the cells, increasing their charge, and that hence by increasing mutual repulsion, they diminish aggregation[14]. Oxalated blood is most unreliable, especially if kept standing for more than an hour[24], for aggregation then diminishes greatly, and estimation of the sedimentation rate gives readings that are from 50% to 200% too slow. Sodium citrate, 3.8% (0.2 cc. to every 0.8 cc. of blood) will slow the sedimentation rate by two-thirds[24, 3, 14]. However, unlike oxalate, this effect is constant and unaltered by delays of up to five hours in setting up the blood[26]. Studies of aggregation show that, although continuing for some hours, most of it occurs during the first fifteen minutes[5]. It is regarded desirable to end this period of increasing sedimentation rate due to clumping as soon as possible, as the rate at which the clumps form is not so closely related to the fibrinogen level as the final steady velocity of fall. From this point of view, heparin and hirudin are inferior to citrate, since, although they have no effect on the final rate of fall, the time taken to reach it is, with them, more variable and prolonged[14, 18, 13].

A practical test must take minimal amounts of blood, yet the column of blood must be high to avoid packing, which introduces a disturbance varying with the degree of anæmia. This packing of the aggregates decreases the distance between them, and begins to cause deviations from Stokes' law ($V = C \cdot r^2$), when they have fallen half the total length of the tube. Thereafter, the increasing frictional losses rapidly slow the rate of fall to zero. In the 50 mm. Cutler tube, this starts at 25 mm., but in the 200 mm. Westergren, a blood must drop 100 mm. in the first hour to give rise to this effect[8]. As Bannick[4] and others[5, 6, 7, 8] point out, by using this longer tube, the disturbing effect of this variation, which depends on total cell volume, is avoided in almost all cases, and a correcting factor for anæmia is unnecessary. Since only 2 cc. can with reason be taken repeatedly, the column must be a narrow one[3]. In practice, 2.5 mm. is the diameter used. Even with this the sedimentation rate is 20% slower than with 3 mm. tubes, showing that it is important to employ tubes of the same bore in consecutive tests[3]. Below this diameter the aggregates adhere to the walls, making the cell plasma division indefinite. Slight tilting of these narrow tubes gives false high readings by leading to down-streaming of the corpuscles on the lower side and up-streaming of the displaced plasma, on the principle of the angle centrifuge. As little as 3 degrees tilt will make a 30% difference in the result[3, 14]. In this respect, the newly introduced suspended Westergrens may prove an advance, since they cannot be inadvertently placed at a slant[6, 23]. Heating of the sedimenting blood by exposure to sunlight, or standing near a radiator, will increase the rate about 30% for a 10° C. rise.

The Westergren method, using citrate, and taking a single reading at the end of one hour, is now regarded, after twenty years of attempts to improve on it, to be the most practical, as well as the best indicator of fibrinogen content[9, 8]. Hambledon[9], Osgood[27] and others[8, 4, 24] point out that graphic methods do not repay the time consumed by giving any extra information of value. In the first fifteen minutes during which the

aggregates are forming, readings are less reliable than those taken at one hour, when the steady fall of the aggregates formed has been so great as to greatly outweigh the variable initial period of slower fall. If used at all, oxalated blood must be set up at once or the results will be grossly misleading[24].

What is the significance of the results obtained? In cardiac decompensation, in cachexia, and other conditions causing liver damage, fibrinogen production is diminished[15], and the blood sedimentation rate is often low, for fibrinogen production is a liver function[1, 22, 23]. On the first day of acute infections, there is no rise, possibly because the liver has not yet had tmie to react to the sudden drain with an increased output of fibrinogen. In appendicitis, before there is much peritoneal reaction, that is, during the early stages previous to rupture, the sedimentation rate is low. In salpingitis, there is much fibrinous exudation, and Bannick and Gregg[4] point out that this may prove of value in the differential diagnosis of the two conditions. In pulmonary tuberculosis, though usually of great value[28, 11], the sedimentation test may occasionally[29] be of no index as to the patient's progress. Thus, a favourable pneumothorax may have a consistently high sedimentation rate, whilst a sputum-positive, cavitating case may remain deceptively low[30, 31, 32]. It is possible that the reason for this is that a fibrinous pleural reaction, calling for increased fibrin output, may occur even in favourable pneumothoraces. Also, a fibrotic cavity may have around it so little tissue destruction that there is but slight stimulus to fibrinogen production. In rheumatic fever, the sedimentation rate follows the fibrinogen level, and Ernstene[20] considers that it forms a reliable guide to progress. In nephritis, as mentioned, the disturbance of the albumin-globulin ratio is accompanied by a rise in the globulin fraction, including fibrinogen, which is paralleled by the sedimentation rate[22].

Bannick[4], Cutler[5, 11], and others[7, 8], consider that anæmia, associated with a rapid sedimentation rate, has underlying it, in all probability, some tissue destructive process, because in itself it does not materially affect the sedimentation rate. Most authorities[4, 7, 8, 9, 32] agree that there is no need to "correct" sedimentation rates for anæmia. This is because in anæmic, and in normal bloods, the aggregates are not so closely packed that the rate at which the plasma streams through the chinks between them is so high as to interfere with the application of Stokes' law. In polycythæmia, on the other hand, the fibrinogen level is depressed[38], especially when there is little infection. The aggregates are, therefore, small, and the rate may be deceptively slow. This is because the distance between them is reduced to a point where the lines of flow through the chinks are broken by eddies behind each aggregate, and the frictional drag on them considerably increased thereby. In such cases correction factors may have to be applied[9].

The sedimentation test is most valuable as an index of the activity of a hidden disease process in the chronic and asymptomatic stages, but it must be read with discrimination. Only changes of some 30 to 40% can be regarded as significant. It will, on occasion, fail to give a true picture. It may remain raised when, as a matter of fact, the processes are pre-eminently those of repair. It may be deceptively low when, because of liver damage, tissue destruction is unaccompanied by fibrin outpouring[38]. Increase in lipoids, or other substances inhibiting aggregation, may also depress it in spite of considerable disease activity. It is only after following the sedimentation rate for some weeks that an idea can be gained as to whether the processes of repair or those of destruction have the upper hand. Even then, the results are often equivocal. It would be of value to have a test by which the relative predominance of the exudative or fibrotic processes at any particular moment might be estimated. Especially in the gravely ill, the recently developed Weltmann reaction may prove a more reliable index than the sedimentation test.

The basis of the Weltmann test is the empirical observation that the concentration or calcium chloride required to complete heat precipitation of the serum proteins varies with the clinical condition of the subject. Of its intimate mechanism nothing is known, save that it does not appear to follow the fibrinogen, albumin-globulin ratio, hydrogen-ion concentration, or serum calcium. So far no explanation has been advanced.

In carrying out the test, 0.1 cc. of serum is diluted with 5 cc. of calcium chloride solution of strengths varying from 0.1% to 0.01%, and heated at 100° C. for 20 minutes. Ten solutions are used.

CONCENTRATIONS OF CALCIUM CHLORIDE—PERCENT.

	0.1%	0.09%	0.08%	0.07%	0.06%	0.05%	0.04%	0.03%	0.02%	0.01%
Tube No.	1	2	3	4	5	6	7	8	9	10
						Normal				

(left) ← *Exudative*

Lobar pneumonia
Miliary tuberculosis
Tuberculous bronchopneumonia
Acute rheumatic carditis
Exudative pleurisy
Exudative tuberculosis

(right) *Fibrotic* →

Fibrotic tuberculosis
Peritoneal carcinoma
Cirrhosis of the liver
Endocarditis lenta
Fibrotic pleurisy

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According to Levinson[33, 34], Klein, and Rosenblum[35], who have recently published the results of work on over twelve hundred subjects with this test, if flocculation occurs in the first six tubes, the reaction is to be regarded as normal. If in more than six, it is suggested that the changes are likely to be fibrotic. When less than six tubes flocculate, they state that the condition is often of an exudative nature. They regard the amount of shift as a measure of the intensity of the process. Thus, in catarrhal conditions such as bronchitis, they find it normal, but in pneumonia they report it as often greatly shifted to the left, and they feel that this point may prove of value in the differential diagnosis of respiratory tract infection. In fibrotic tuberculosis or pleurisy the shift is often to the right. They admit that the Weltmann is often equivocal[34], and it is suggested that this is because the lesions are, in such cases, partly exudative and extending, and in part healing and fibrotic.

It is claimed by Klein[35] that it follows the patient's condition more closely than the sedimentation test, which may stay elevated in spite of improvement, and remain normal in the very ill. They believe that it also forms a better prognostic guide and that the sedimentation test often gives readings whose significance it is hard to correlate with the other clinical findings. They consider that a shift from the fibrotic to the exudative in rheumatic fever (110 cases examined) may presage carditis, and also that a fibrotic reaction in tuberculosis (100 cases examined) suggests a good prognosis, whilst a shift to the exudative may predict a relapse. It is possible that it may prove of value where the sedimentation rate fails to drop, and the rest of the clinical picture is confused. In the question of liver damage it may prove of value, since cirrhosis gives a strongly fibrotic reaction. Levinson[33] states that in pyrexia of unknown origin, miliary tuberculosis may be regarded as improbable if the reaction is not exudative; if it is, that typhoid fever and malaria are then unlikely. It is also claimed that it is of some value in the distinction between rheumatic carditis and endocarditis lenta, since in the former the reaction is exudative, whilst in the latter it remains normal.

It has found many adherents in Europe during the past ten years, but so far, in spite of the favourable reports of those few who have used it here, it has not yet been given the really extensive and searching appraisal that it merits[34].

SUMMARY:

1. Mechanism of the sedimentation test.
2. Significance of the results obtained.
3. Technique of the Weltmann reaction and the advantages claimed for it.

REFERENCES:

1. G. H. Whipple—*Amer. Jour. Phys.*, 58:391, Jan., 1922.
2. R. Fahreus—*Phys. Rev.*, 9:241, 1929.

3. T. Ham—*Medicine,* 17:447, 1938.
4. E. Bannick and R. Gregg—*J. A. M. A.,* 109:1257, Oct., 1937.
5. T. W. Cutler—*Amer. Jour. Med. Sc.,* 195:734, June, 1938.
6. C. H. Smith—*Amer. Jour. Dis. Child.,* 56:511, Sept., 1938.
7. L. W. Diggs and J. Bibb—*J. A. M. A.,* 112:695, Feb., 1939.
A. A. Hambleton—*Amer. Jour. Med. Sc.,* 198:177, Aug., 1939.
9. D. W. Crombie and A. Hambleton—*Can. Med. Assn. Jour.,* 39:163, Aug., 1938.
10. A. B. Robins—*Amer. Rev. Tub.,* 35:762, June, 1937.
11. J. W. Cutler—*Amer. Rev. Tub.,* 19:544, May, 1929.
12. D. Rourke and A. Ernstene—*Jour. Clin. Invest.,* 8:556, June, 1930.
13. C. R. Walton—*Jour. Lab. & Clin. Med.,* 7:711, April, 1933.
14. D. Rourke and E. Plass—*Jour. Clin. Invest.,* 7:365, Aug., 1929.
15. W. Oakley—*Lancet,* 1:312, Feb., 1938.
16. Struthers—*Can. Med. Assn. Jour.,* 603, Dec., 1934.
17. S. Lucia and T. Blumberg—*Amer. Jour. Med. Sc.,* 192:179, Aug., 1936.
18. W. Payne—*Lancet,* 1:75, Jan., 1932.
19. E. Gresheimer and J. A. Myers—*Amer. Rev. Tub.,* 16:344, Sept., 1927.
20. C. Ernstene—*Amer. Jour. Med. Sc.,* 180:12, Jan., 1935.
21. T. H. Ham—*Jour. Clin. Invest.,* 16:681, July, 1937.
22. Peters and Van Slyke—*Quant. Clin. Chem.,* Vol. 1, 1932: Balliere, London.
23. Canterow—*Clin Biochemistry*s Saunders, 1939.
24. S. Berg—*Jour. Lab. & Clin. Med.,* 24:757, April, 1939.
25. H. D. Furniss—*Jour. A. M. A.,* 114:756, March, 1940.
26. F. Boerner and H. Flippin—*Jour. Lab. & Clin. Med.,* 20:583, March, 1935.
27. E. Osgood and H. Haskins—*Jour. Lab. & Clin Med.,* 5:486, Feb., 1931.
28. Beaumont and Dodds—*Recent Advances in Medicine*: Churchill, London, 1936.
29. T. Cecio and B. Elwood—*Amer. Rev. Tub.,* 39:748, June, 1939.
30. H. Pesser and A. Hurst—*Amer. Rev. Tub.,* 38:491, Oct., 1938.
31. L. E. Houghton—*Tubercle,* 17:51, Nov., 1935.
32. H. Bunting—*Amer. Jour. Med. Sc.,* 198:191, Aug., 1939.
33. S. A. Levinson—*Jour. Lab. & Clin. Med.,* 23:53, Oct., 1927.
34. S. A. Levinson—*Amer. Rev. Tub.,* 200:37, Feb., 1938.
35. B. I. Klein and P. Rosenblum—*Amer. Jour. Dis. Child.,* 59:49, Jan., 1940.
36. A. Westergren—*Amer. Rev. Tub.,* 14:94, July, 1926.
37. D. P. Foster—*Arch. Int. Med.,* 34:301, 1924.
38. T. H. Ham—*Medicine,* 17:413, Dec., 1938.

RED CROSS RAFFLES

All Red Cross Branches have been instructed that no individual has the right to sponsor a Red Cros raffle in his or her own name—with part proceeds going to the Red Cross. All Red Cross raffes must be under complete control of the branches, with full proceeds going to the local branch. Branches have also been advised to consult and get permission from local police authorities before starting them.

* * * *

RED CROSS HELPS PRISONERS OF WAR

Families or next of kin of Canadians serving with the Royal Air Force or other units of British Forces are asked to communicate particulars to Canadian Red Cross Headquarters, Toronto. The Canadian Red Cross is now receiving from the International Red Cross names of Canadians who, serving with the Imperial Forces, are now prisoners of war in Germany. If men are not on Red Cross lists it is impossible to advise relatives of receipt of parcels or convey Red Cross information concerning them.

St. Paul's Hospital

NEW WING ADDED TO ST. PAUL'S HOSPITAL

Invitations were extended to representatives of the Provincial Government, the City Council, and a number of officials and friends for the opening of the new wing of St. Paul's Hospital, which was blessed by His Excellency, Archbishop Duke, and formally opened by Hon. George Weir, Minister of Education, on Sunday, June 30th, the Feast of the Commemoration of St. Paul, at 2:30 p.m.

The new wing completes the large and splendidly equipped modern St. Paul's Hospital fronting on Burrard Street and occupying one block on Comox Street and one on Pendrell, nad now having a capacity of over 600 beds. The main building stands on the original site purchased by the Sisters of Charity of Providence in 1894. From then until 1907 there were no nurses but the Sisters. Now there is an accredited School of Nursing for 220 student nurses.

The present imposing edifice is the result of hard work and far sightedness, and the amount of sacrifice and thought entailed in its gradual rise to its present imposing dimensions will never be calculated. As one Superior succeeded another some characteristic of each has been woven into the glorious structure which now stands.

The new wing, facing on Pendrell Street, has a total frontage of 246 feet by 45 feet in width, and in design, so far as the exterior is concerned only, very similar to the North wing.

On entering, the visitor will immediately be impressed with the cheerful atmosphere that is noticeable on all floors, the spaciousness of all the wards, together with the modern decorative scheme and homelike furnishings.

One of the important features adopted in this new wing, so far as it affects the patients' comfort, is the type of sound deadening suspended ceilings installed throughout, to eliminate as much as possible all noise and sound travel.

The new wing contains seven floors, the first floor being given over to maintenance departments, Ladies' Auxiliary, Pharmacy storage, store rooms, etc., and in addition will be found the splendidly equipped cafeteria for the male and female help, apart from the nursing staff.

This cafeteria measures 79 feet by 42 feet, and is fitted out with the very latest in cafeteria design and equipment, all finished in stainless steel, together with kitchen, wash up rooms, etc., making this department one that will be greatly appreciated by the Hospital employees.

The main floor is entered from an imposing entrance on Pendrell Street, opposite the Comox Street entrance. On this floor is placed the new Physio-Therapy Department, which is considerably enlarged and moved over from the centre wing. This department has been given very careful study and is strictly modern in every respect for the treatment of patients.

Special provision has been provided for the Internes on this floor, having their own individual rooms, together with large lounge and library, the balance of this floor being taken up with Pharmacy storage, guests' rooms apart from the Hospital floors, and in addition will be found the Sisters' dining room, measuring 40 feet by 42 feet, with large pantry, kitchen, etc., adjoining.

The second, fourth and fifth floors are typical. These floors contain single, double and four-bed wards, each ward having its own individual locker room, lavatory and bath accommodation, all fitted with the latest nurses' call system, lighting, etc., each ward having a different scheme of wall decoration.

At both the East and West elevation on each floor is provided a large solarium for the use of convalescent patients.

"Surgical Shots"

The third floor is given over entirely to the Pædiatric or Children's Department. Special care has been taken in the designing of this unit to provide ample light, ventilation, and to take full advantage of sunshine. Here the visitor and nurses have complete vision and supervision over each ward and patient, the corridor walls being provided with large plate glass windows, with glass panel in each cubicle partition, and each cubicle is a complete unit, having hot water service to each, with special ventilation, lighting, sun and violet ray equipment.

A special Children's Separating Unit is also provided on this floor, which is completely shut off from the rest of the patients. This Isolation Department is practically a small Hospital in itself, complete with all necessary facilities for the safe and proper care of any suspected case.

Provision for the accommodation of older children is also provided, together with special rooms where the parent of any patient may live in the Hospital, if necessary.

Two large play rooms, one at each end of this third floor, are provided for, where full advantage can be taken of fresh air and sunshine.

The sixth floor is given over entirely to the Sisters' quarters, and is a complete dormitory.

Provision has been made in this new wing to take full advantage of the roof space for patients. The passenger elevator lands right up at this roof level, where an uninterrupted view of the city can be had and the patient can take full advantage of the fresh air and sunshine.

It can safely by stated that this new South wing is as complete and up-to-date a Hospital wing as can be found anywhere. There are no unnecessary expensive frills to be found, the interior is finished off in complete good taste, the one thought being to provide complete efficiency for the care and treatment of the sick first, and in this regard a complete co-ordination between the other departments in the older part of the Hospital has been carefully considered, to enable the St. Paul's Hospital to work smoothly on as a complete unit.

New car parking facility has been provided on the Hospital property for the doctors' use, which will be greatly appreciated.

St. Paul's Hospital until now had a bed capacity of 357 with 48 bassinettes. The present Superior, the Rev. Sister Mary Philip, f.c.s.p., R.N., came to Vancouver in September, 1938, having been formerly Superior at Olympia, Wash., and at Mount St. Vincent, Seattle.

Historical Sketch of St. Paul's Hospital.

May 16th, 1894—A wooden building comprising 20 rooms with a bed capacity of 25. It was situated on the corner of Burrard and Pendrell. Sister Fredric was the first Superior, replaced by Mother Praxedes in 1900, who is at present the Superior general of the institute. The Sisters personally took care of the patients. During the first year of its existence 120 patients were admitted to the hospital.

1904—Addition of a new south wing on Pendrell street took place while Mother Praxedes was still here as Superior. The bed capacity was raised to 120, consisting of 33 private rooms, 7 semi-private and 11 wards, also two surgeries and an X-ray. From 1894 to 1904, 5823 patients had been admitted.

Dec. 8, 1913, marked the opening, under Mother Wenceslaus, of the modern fireproof unit, constituting the main section of the present hospital. It had accommodation for 200 patients. A new surgical department and an X-ray were installed on the fifth floor. The south wing of 1904 remained as an annex to this structure but the original foundation was destroyed.

October, 1931—Opening of the North Wing. It faces Comox Street and has a frontage of 233 feet with a depth of 45. It provides for 200 beds—is 6 storeys in height with full basement as well. It is fireproof throughout—has terrazzo floors everywhere and special sterilizing, heating, ventilating and signal systems installed. The whole top floor comprises the surgical department with 11 operating rooms and adjoining modern scrub rooms and work rooms. The first floor is reserved entirely for the X-ray and laboratory departments, which are destined to accommodate a growing institution.

The south wing built in 1904 remained as an annex until this date, when it was transferred to the rear on Pendrell Street and is now being used as accommodation for the male employees.

New South Wing—June 14th, 1939 (a) Blessing of the grounds by Archbishop Duke, D.D. (b) Building commenced—Architects: Gardiner, F. G., & Mercer; Contractors: Armstrong & Monteith.

The new wing of St. Paul's Hospital will fill a long-felt want for more hospital bed accommodation in Vancouver and the Sisters of Charity are to be congratulated for their courage in providing for its citizens this splendid and up-to-date addition.

[For a large amount of this information, we are indebted to the columns of the *B. C. Catholic*, and make grateful acknowledgment therefor.—ED.]

An exterior view of the new wing recently added to St. Paul's Hospital.

THE DIAGNOSIS OF SYPHILIS BY THE GENERAL PRACTITIONER

By Joseph Earle Moore, M.D.

From the Syphilis Division of the Medical Clinic, the Johns Hopkins Medical School and Hospital.
Reprinted from Supplement No. 5, United States Public Health Service.

(*Continued from August issue*)

Ocular Lesions

The common ocular lesions of secondary syphilis are iritis (incidence about 5 per cent) and neuroretinitis (incidence about 1 per cent). Except in the case of iritis papulosa, there is nothing distinctively syphilitic about the appearance of either of these. The most expert ophthalmologist cannot differentiate them clinically from iritis (fig. 12) or neuroretinitis due to other causes.

Since syphilis is responsible for from 10 to 70 per cent of all cases of iritis (depending on the type of clientele) and about 30 per cent of all cases of neuroretinitis, the only safe rules for the family physician and ophthalmologist are, in all such cases:

Figure 12.

THE IRITIS OF EARLY SYPHILIS

Cannot be Clinically Distinguished from Iritis due to Four Other Causes, as Follows:

Focal infection	Tuberculosis
Gonorrhœa	Rheumatic fever

EXAMINE SKIN AND MUCOUS MEMBRANES

DO A BLOOD SEROLOGIC TEST

1. Suspect syphilis.
2. Examine immediately the skin and mucosae for other lesions of early syphilis.
3. Whether or not such lesions are present, do a blood serologic test at once.

These steps should be the first, not the last part of the diagnostic study. When they are omitted, many an unfortunate syphilitic patient has been subjected to useless removal of teeth and tonsils, to prostatic massage, gall-bladder drainage, even to brain operations without benefit, but with possible detriment to his eyes, and with danger to the operator and the community.

Lesions of Bones and Joints

Involvement of the bones and joints in early syphilis is far more common than is generally supposed. Symptoms are more important than signs. The usual manifestations are:

1. Osteocopic pains, often nocturnal, involving the shafts of all the long bones. Localized tender area may be present on palpation though no other abnormalities are obvious.
2. Arthralgia. Dull aching and stiffness of the joints, large and small, worse at night or in the morning. There are no objective or X-ray changes.
3. Hydroarthrosis, usually involving the knees and ankles. No X-ray changes.
4. Actual acute periostitis (commonest in the tibia) in which, owing to its acuteness, X-ray changes are at first absent.

There is nothing about the first three of these manifestations to differentiate them from a variety of other conditions, and in fact the mistaken diagnosis of "neuritis," "rheumatism," and "infectious arthritis" (acute, subacute, or chronic) are commonly

made. These mistakes can be avoided only if the family physician and the orthopædist will, in all cases:

1. Suspect syphilis.
2. As the first step in checking suspicion, strip the patient and look for other lesions of secondary syphilis on skin and mucosae.
3. Whether or not such lesions are present, do a serologic test, since the bone and joint symptoms may be the sole clinical evidence of early syphilis.

As in ocular syphilis, these steps should be the first, not the last of the diagnostic procedures adopted. Only in this way will grave error be avoided and some patients spared the useless extirpation of foci of infection.

Summary of Diagnosis in Early Syphilis

The above description is conspicuous for its lack of clinical detail. No stress whatever has been laid on a history of syphilis, since this is often either lacking or confusing. Nothing has been said of generalized lymphadenopathy, or of the "*tout ensemble*" of the clinical picture. No attempt has been made to describe or to illustrate the differential diagnostic points of lesions. These are matters for the expert—for the syphilologist, dermatologist, urologist, gynæcologist, laryngologist, ophthalmologist, and orthopædist—and are not to be learned by reading textbook descriptions or studying photographs.

Instead, every stress has been laid on the facts that primary syphilis causes genital or extragenital sores; that secondary syphilis causes generalized skin eruptions, mucosal lesions, loss of hair, iritis and neuroretinitis, and bone and joint symptoms; that these syphilitic lesions are readily confused with many other diseases, often by the general practitioner, sometimes even by the appropriate specialist; that in the presence of any of the diseases with which syphilis might be confused, syphilis should be suspected; and that this suspicion may be at once and accurately checked by a dark-field and serologic test.

If every medical student and every physician learns so much and no more of the diagnosis of early syphilis, 95 per cent of delayed and missed diagnoses will disappear.

Diagnosis vs. Case-Finding in Early Syphilis

Both from the public health standpoint and from that of the individual patient, however, it does not suffice that the physician recognize the lesions of early syphilis when he is consulted. Too many freshly infected patients do not consult the physician at all, because of ignorance or negligence, or because infection may either be actually symptomless or the symptoms so trivial that the patient is unaware of his disease. These patients must be sought out; they must be found instead of diagnosed.

(To Be Continued)

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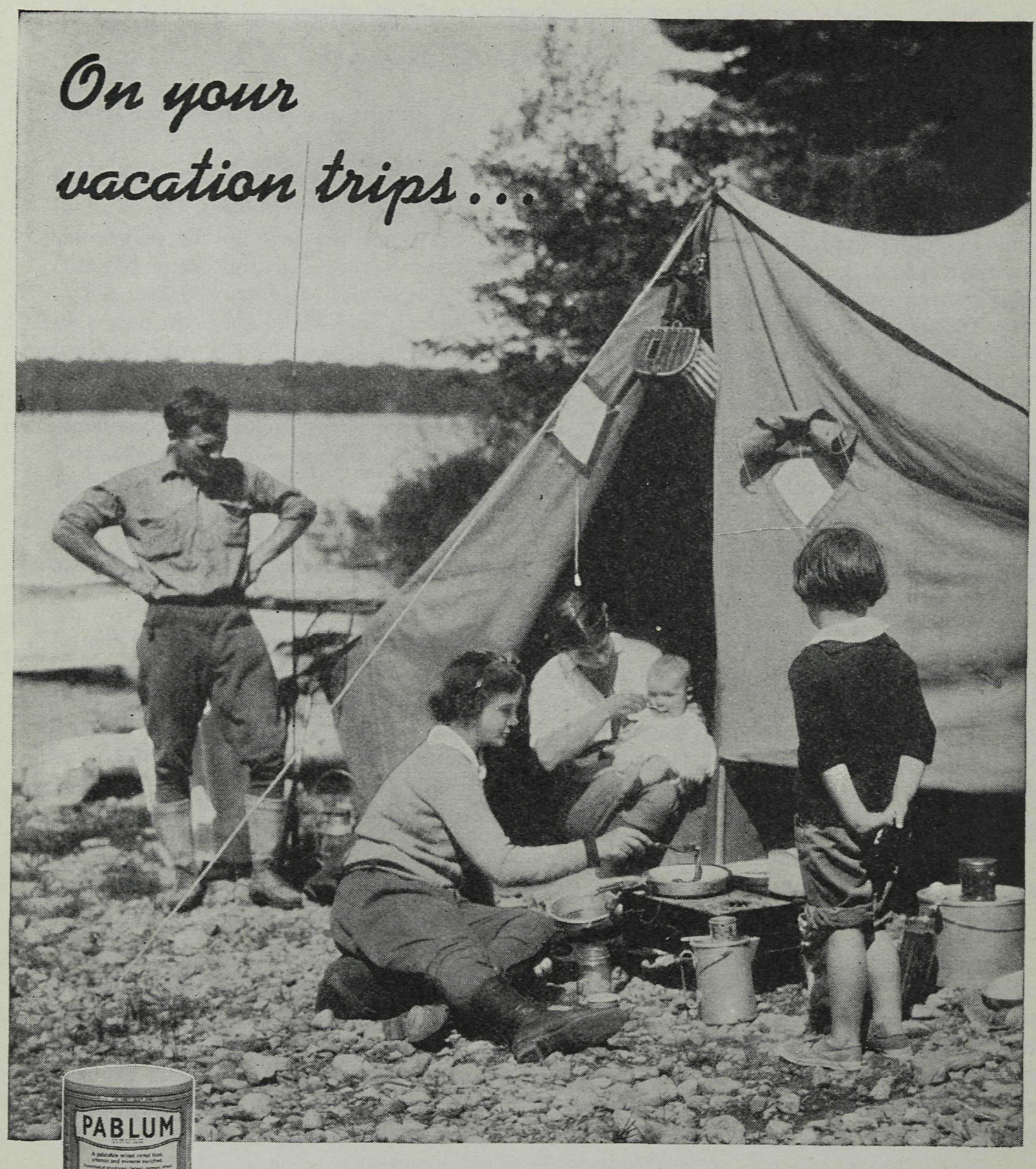

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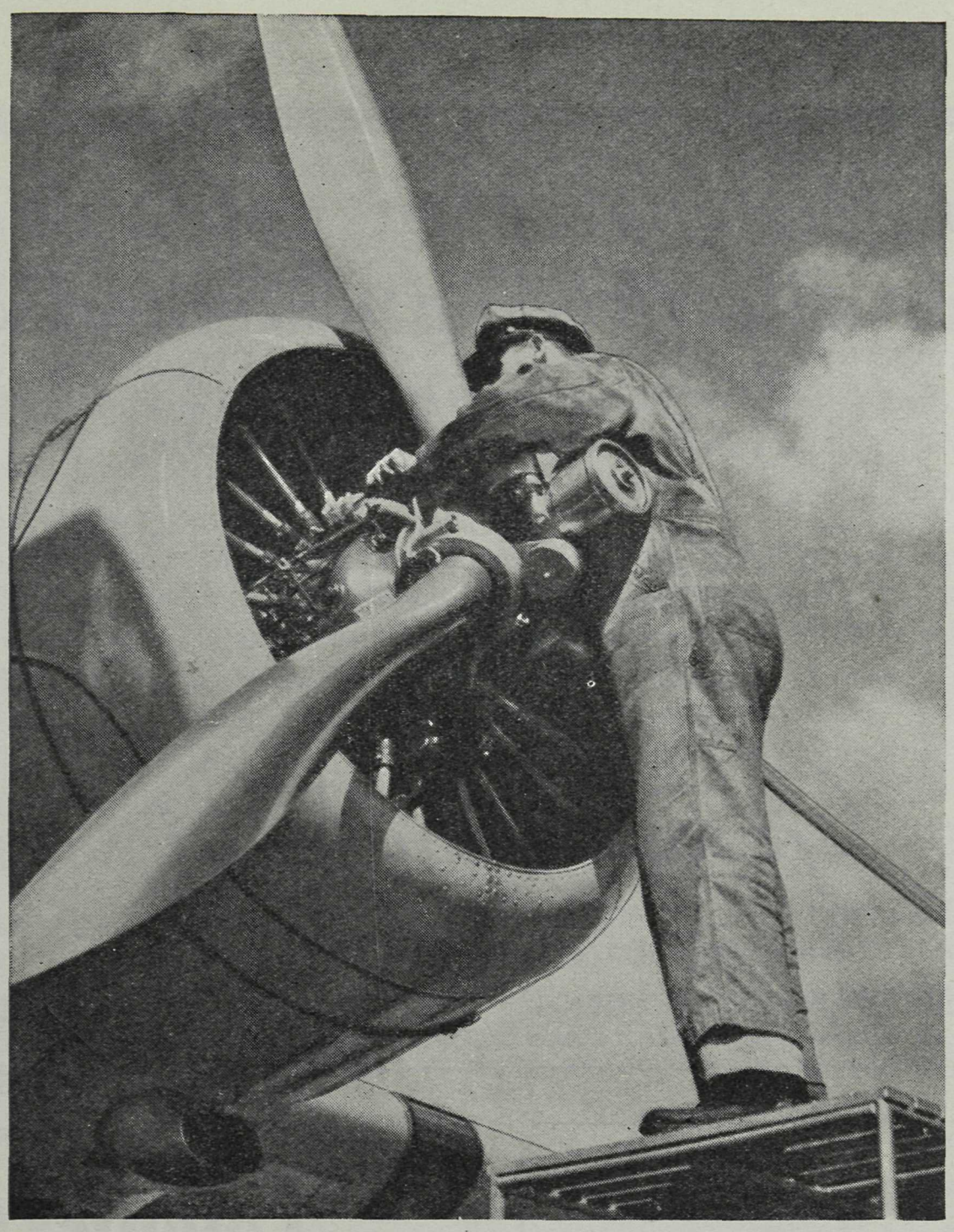

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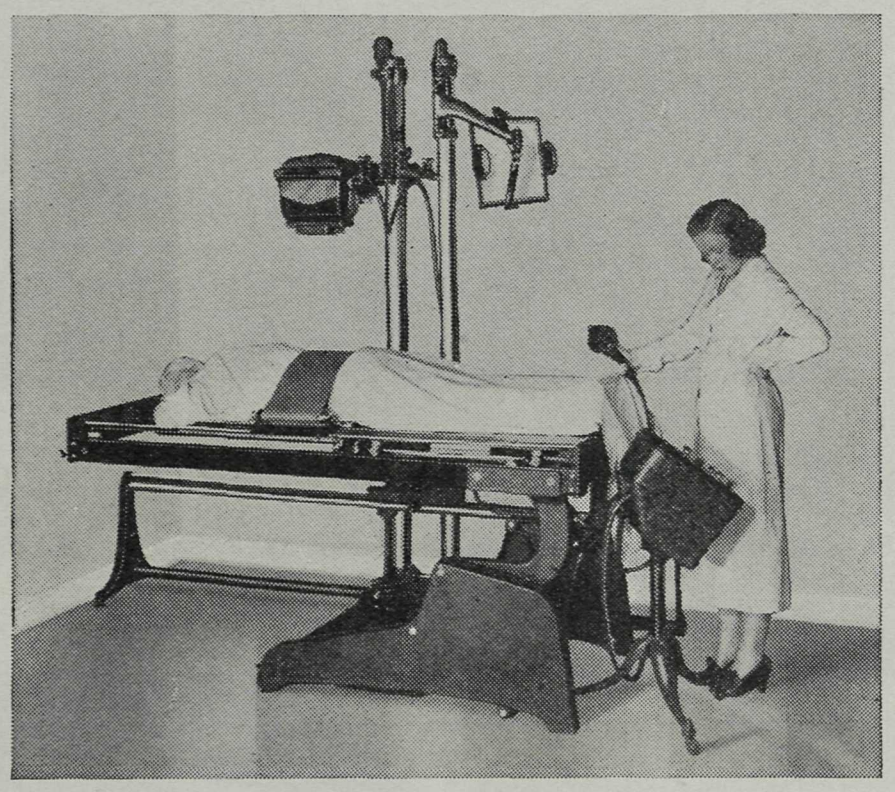

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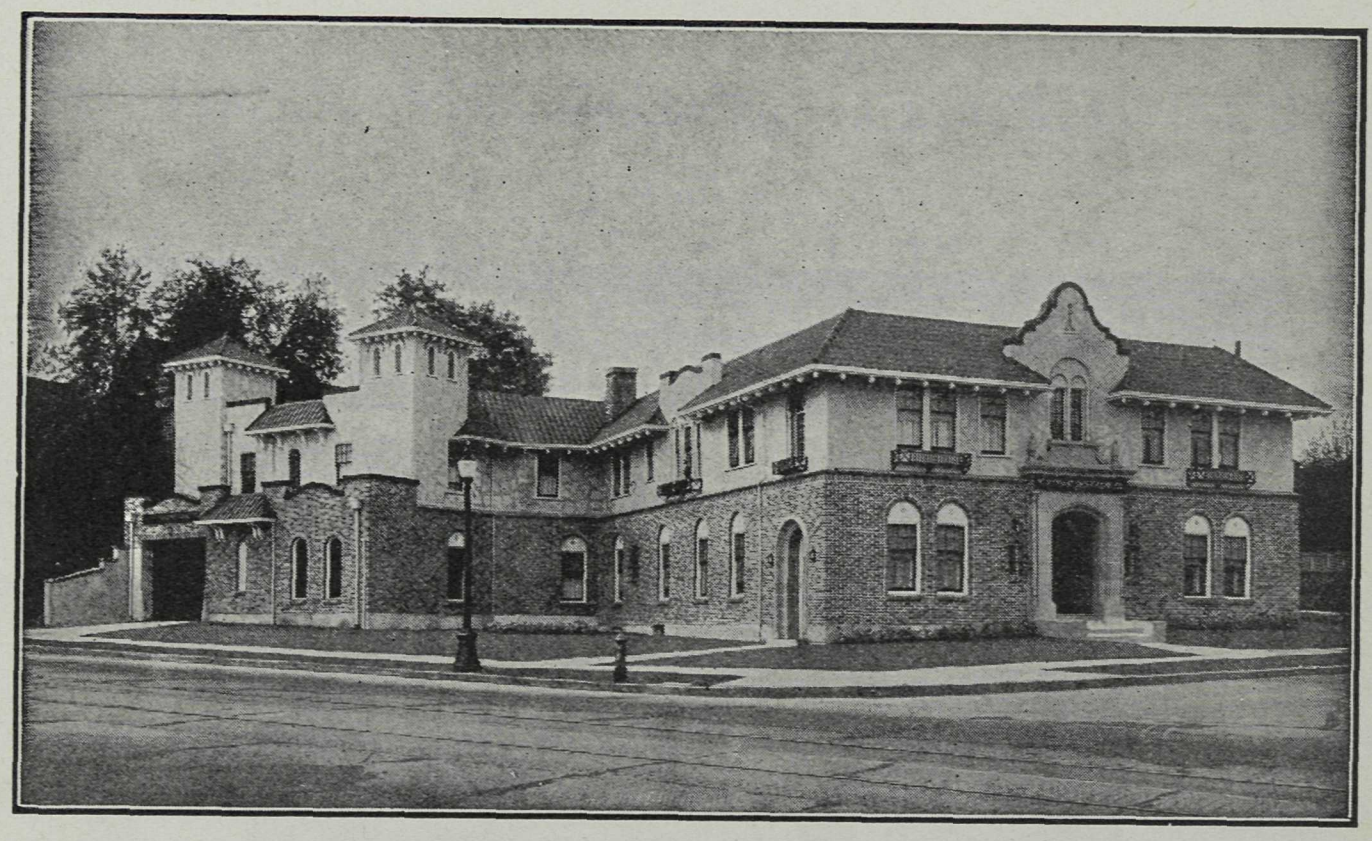

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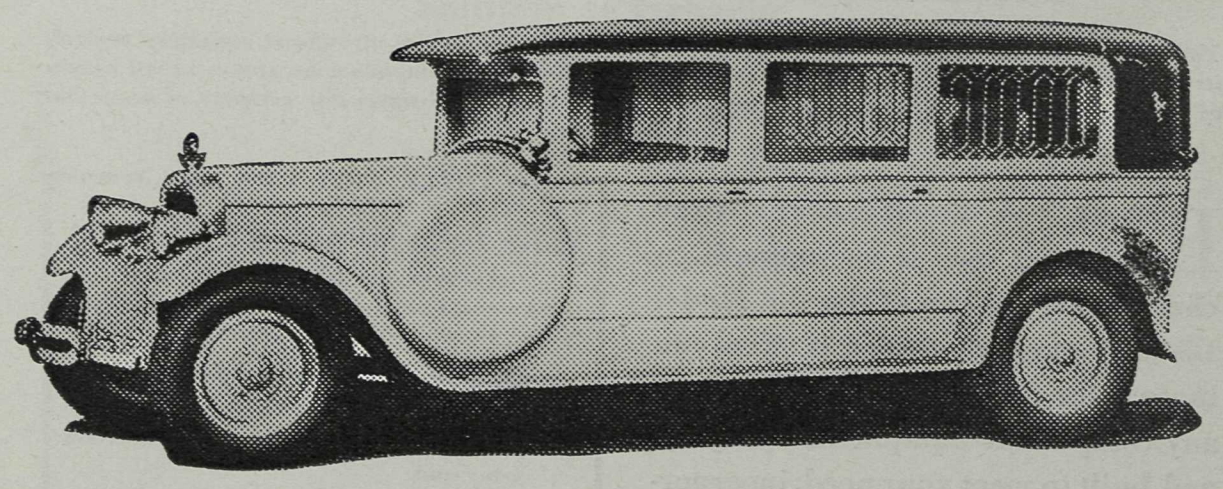

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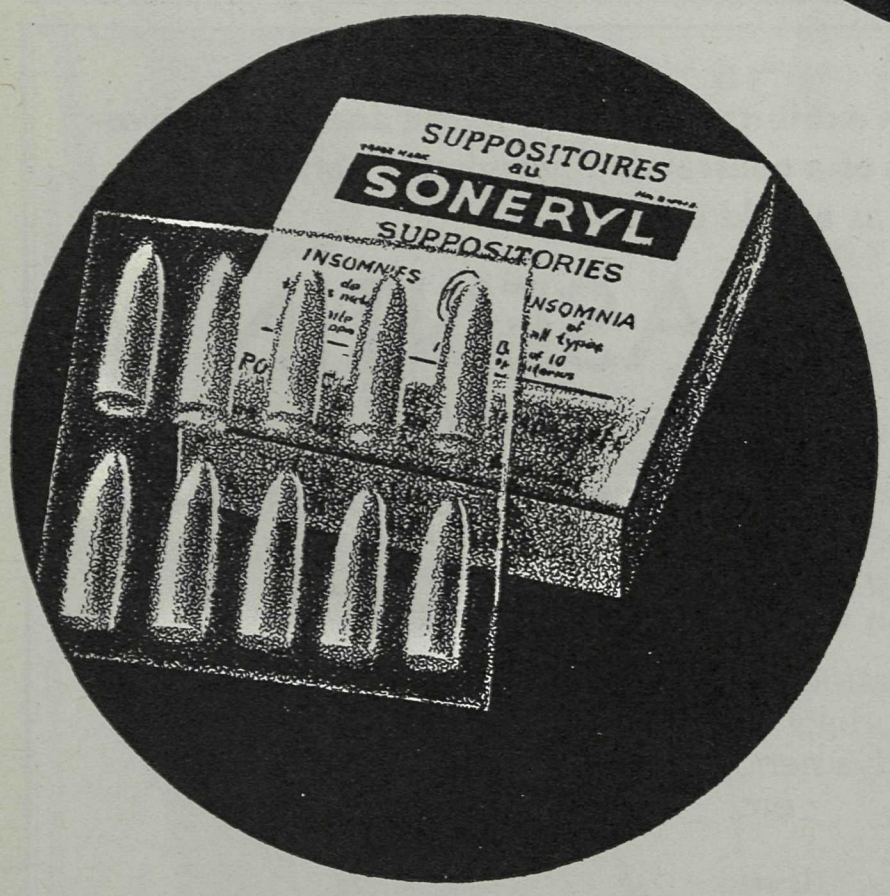

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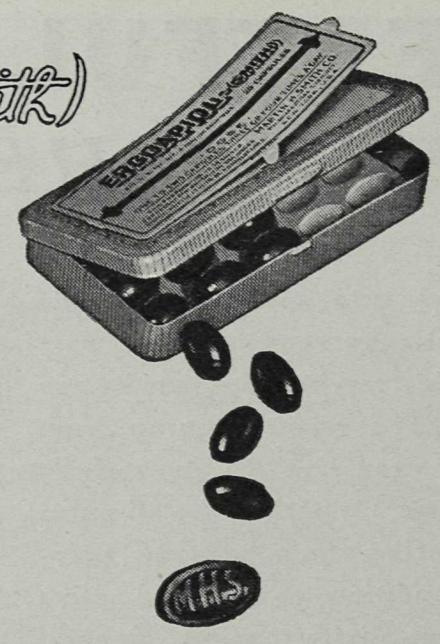

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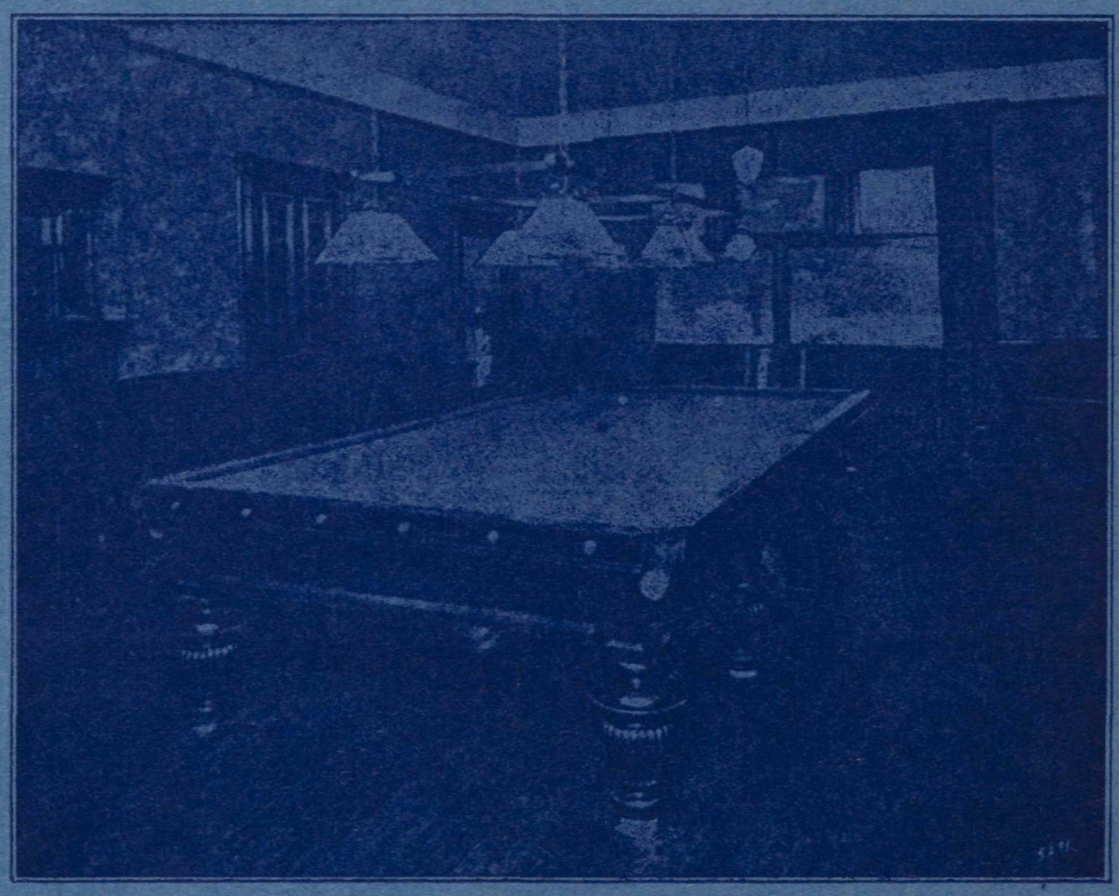

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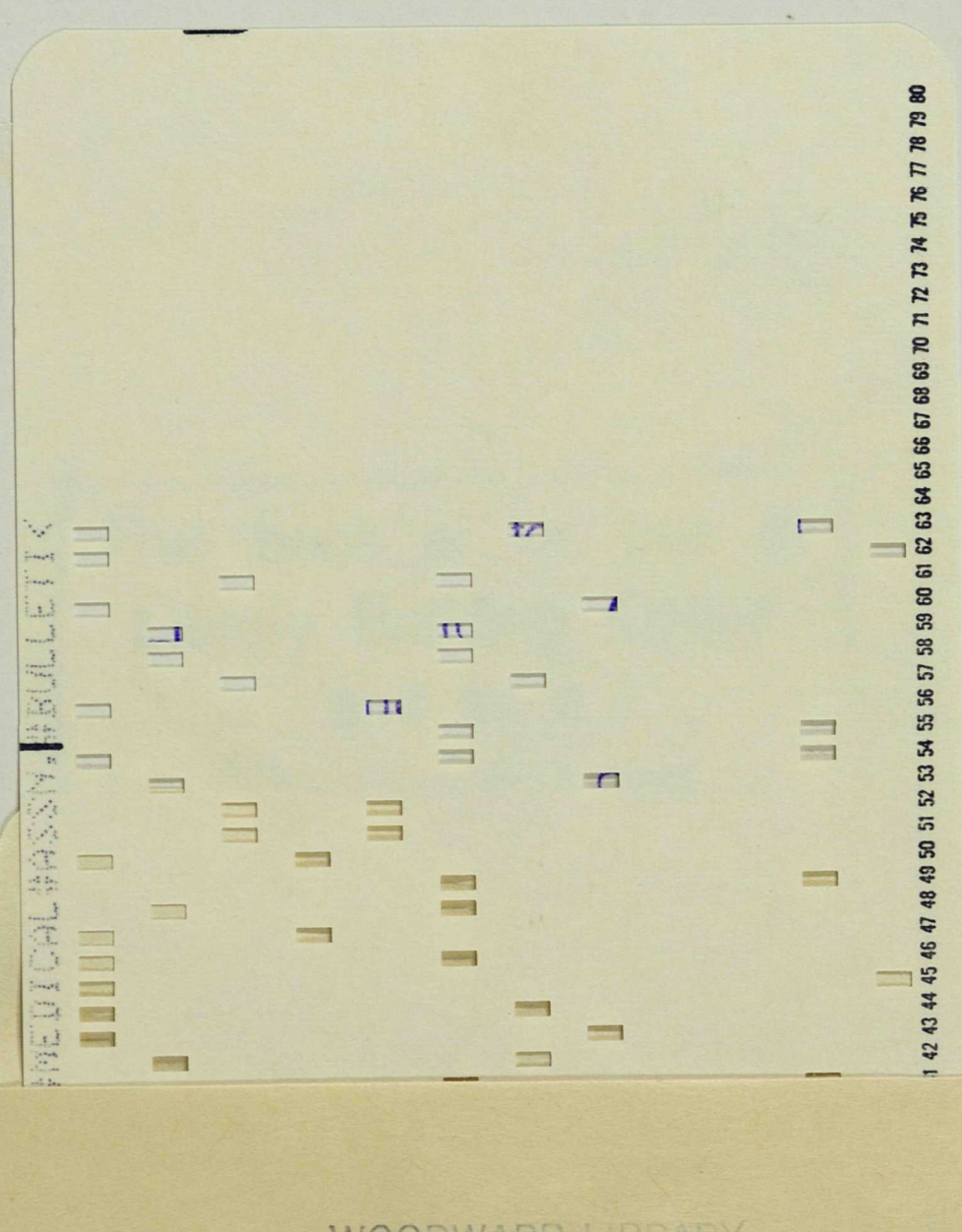

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