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The BULLETIN

of the

VANCOUVER MEDICAL ASSOCIATION

Vol. XVIII. JUNE, 1942 No. 9

With Which Is Incorporated
Transactions of the

Victoria Medical Society

the

Vancouver General Hospital

and

St. Paul's Hospital

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C. M. A. MEETING - JASPER - JUNE 15-19

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**Watson M. C. Academy of Medicine Bulletin, Toronto, March, 1940, p. 127.*

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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VOL. XVIII. JUNE, 1942 No. 9

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—APRIL, 1942

Total Population—estimated	272,352
Japanese Population—estimated	8,769
Chinese Population—estimated	8,558
Hindu Population—estimated	360

	Number	Rate per 1,000 Population
Total deaths	280	12.5
Japanese deaths	3	4.0
Chinese deaths	16	22.2
Deaths—residents only	241	10.8
BIRTH REGISTRATIONS:		
Male, 278; Female, 240	518	23.2

INFANTILE MORTALITY:	April, 1942	April, 1941
Deaths under one year of age	13	10
Death rate—per 1,000 births	25.1	20.2
Stillbirths (not included in above)	8	11

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	March, 1942		April, 1942		May 1-15, 1942	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Scarlet Fever	28	0	47	0	37	0
Diphtheria	2	0	0	0	1	0
Diphtheria Carrier	6	0	4	0	2	0
Chicken Pox	348	0	177	0	55	0
Measles	45	0	23	0	11	0
Rubella	54	0	34	0	17	0
Mumps	803	0	795	0	406	0
Whooping Cough	45	0	97	1	68	0
Typhoid Carrier	0	0	0	0	0	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	41	17	50	20	25	--
Erysipelas	3	0	4	0	2	0
Meningococcus Meningitis	4	0	5	0	2	1

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

	Burnaby	West Vancr.	Richmond	North Vancr.	Vanc. Clinic	Hospitals & Private Drs.	Totals
Syphilis	0	0	2	1	15	27	45
Gonorrhoea	0	0	0	0	61	12	73

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In most of its applications Carbachol B. D. H. is effective when administered orally; in consequence this is the route normally employed. When a more rapid action is required Carbachol B. D. H. may be administered subcutaneously or intramuscularly or even (slowly and in diluted solution) intravenously.

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THE EDITOR'S PAGE

One of the results of this war, and it may be one of the few good things that will come out of it, will be to teach us that there are very many things which we have come to regard almost as necessities, which are not really necessities at all. Under the grim compulsion of war's stranglehold on our sources of supply, we shall have to learn to "do without." Perhaps it will be a blessing in disguise. We hav ebeen getitng too soft and lazy, too prone to let someone else do it; we may have to learn to stand on our own feet, do our own work, and it will od us no harm. It may even teach us to be a little more considerate of others than we have been.

At a recent meeting called by Dr. A. Haywood, Medical Superintendent of the Vancouver General Hospital, Miss Fairley, Director of the Nursing School, spoke frankly and quite seriously about the grave problem that is confronting the hospital, in the matter of nursing service. We recommend to our readers that they give careful study to her remarks, published elsewhere in this issue of the BULLETIN. They deserve and demand our most careful attention. Dr. Seymour's remarks, also published, merely underline Miss Fairley's most reasonable appeal.

We medical men have perhaps become rather spoiled of late years. The increasing excellence of nursing service has accustomed us to taking too much for granted. We order, perhaps a thought too casually, all sorts of treatments: intravenous, hourly fomentations, etc., and because they are always carried out to the minute and with a degree of perfection that is amazing, we feel that it is quite a natural hing. Yet it means, and for years has increasingly meant, a greater strain on the uncomplaining nurses who do it all so well.

Long before we had to face the extra strain imposed by the war, some of us had been feeling that there was something not quite right. When one sees nurses unazle to take their legitimate and badly needed "hours off" and hears of them regularly having to stay on overtime, even missing meals, one feels disquieted and uneasy. Yet we have heard no complaints; perhaps it would have been better if we had. It behooves all of us to try to look at this thing through the eyes of "party of the other part" and the modest and most reasonable requests of the hospital authorities should receive from us, not merely an academic agreement, but an immediate response. We are under this compulsion here, of our own conscience in this matter. We *must* make things easier and better for these nurses, our most loyal and indispensable aides. Otherwise, quite apart from any sentimental considerations of fair play, we are going to find that an over-worked and overstrained machine may break down badly, and then we shall all suffer very severely. It is for us to welcome these suggestions and act on them willingly and to the fullest extent possible, and immediately.

Nor is this the first time we have been asked to co-operate with the hospital authorities. For many years we have been asked to see that patients come in early the day before operation, that we avoid meal hours for the visits we have to make, etc. Yet we see these requests continually disregarded—and we fail to realize that when we disregard them, though our patients do not suffer, and we do not suffer, someone doe ssuffe, and this is always the same person, the unfortunate nurse, who has to lose her precious privileges of rest and leisure (and these are very hard to come by anyway) because we were a bit thoughtless. Well, if we go on disregarding warnings, we may find that we ourselves may lose a privilege or two.

We are sure that for most medical men, all that will be necessary will be to have this matter placed before them clearly and in a friendly spirit. Miss Fairley's courteous, kindly remarks on the subject challenge us to do our part, as her nurses have more than done theirs.

NEWS AND NOTES

The regular meeting of the Board of Directors of the British Columbia Medical Association was held following dinner at the Devonshire Hotel on Wednesday, May 20th, 1942.

Dr. A. H. Spohn, Chairman of the Board, presided.

Present: Doctors G. F. Amyot of Victoria, Murray Blair, D. F. Busteed, W. A. Clarke of New Westminster, P. A. C. Cousland of Victoria, Arnold Francis of New Denver, R. W. Garner and C. T. Hilton of Port Alberni, H. McGregor of Penticton, A. H. Meneely of Nanaimo, H. H. Milburn, K. D. Panton, Stanley Paulin, R. A. Seymour, G. F. Strong, Wallace Wilson, A. Y. McNair, Honorary Secretary-Treasurer, and M. W. Thomas, Executive Secretary.

A letter from the Honourable John Hart, Premier of British Columbia, thanked the Association for its support and for the appointment of Drs. Spohn and McNair as representative and alternate respectively on the Advisory Council of the Provincial Protection Committee, of which Mr. W. C. Mainwaring is Chairman.

A letter from Dr. W. B. Burnett thanked the Board of Directors for the honour which it had done him in placing his name in nomination for Senior Membership of the Canadian Medical Association. This honour will be conferred upon Dr. Burnett at the Jasper meeting.

Medical Boards under the Department of National War Services have been appointed at Vancouver, Victoria, Nanaimo, Prince George, Prince Rupert, Trail, Cranbrook, New Westminster, Kamloops and Penticton. In the preparation of the nominations submitted the district medical associations had an opportunity to select the names. The Canadian Medical Association passed the nominations as collected to the Department of National War Services, by whom appointments were made.

A committee was appointed to investigate the question of health and accident insurance on a group basis. The company, which had enrolled over 50% of the Vancouver Medical Association, presented a similar plan to the Board of Directors, with a view to extending such privileges to the general membership of the British Columbia Medical Association.

It was reported that the final response of Health Insurance Questionnaires as from British Columbia reached 70%. A letter from Dr. Routley thanked British Columbia for its effort in support of the Committee of Seven of the Canadian Medical Association.

A statement from Dr. Routley showed total contributions at April 27th to the War Benevolent Fund for British Doctors to be $4,925.71.

Dr. Fred W. Routley, National Commissioner of the Canadian Red Cross Society, thanked the British Columbia Division for the splendid response made to the appeal for instruments and medical equipment for Britain.

The Board was advised that Dr. Colin McDiarmid had been appointed as representative from the Vancouver Medical Association to the Board of Directors of the British Columbia Medical Association for its next association year. Dr. McDiarmid will become a member of the Board following the Annual Meeting.

The resolution passed by the Vancouver Medical Association, bearing on the question of narcotic prescriptions, was presented to the Board of Directors, and the resolution was endorsed and forwarded to the Executive of the Canadian Medical Association, suggesting that some action be taken towards modification of the present regulations.

Copies of communications from Colonel J. L. Ralston, Minister of National Defense, to Dr. Routley, were read, telling of the arrangements for assistance to medical students made necessary by the acceleration of medical training leading to early graduation and the provision of more medical officers for War Services. This correspondence was being published in the BULLETIN.

The results of the first year final examinations of the University of British Columbia show Bert A. Auld with the highest standing and winner of the Royal Institution scholarship in arts and science. Bert is the son of Dr. and Mrs. F. M. Auld of Nelson. Congratulations to all three of them.

* * * *

Dr. M. G. Archibald of Kamloops is visiting in Eastern Canada and his old home in the Maritimes. He will go to Montreal where his son is finishing his medical course at McGill.

* * * *

Dr. Robert MacKenzie of Grantham's Landing is relieving Dr. F. A. Olocke of Ashcroft during the month of May.

* * * *

Dr. H. L. Burris of Kamloops visited Vancouver the other day.

* * * *

Dr. H. F. P. Grafton and Mrs. Grafton of Kamloops were in Vancouver. Dr. Grafton attended the meeting of the Committee on Maternal Welfare. When Dr. and Mrs. Grafton visited the office we were surprised to find that Mrs. Grafton's right forearm was in a splint and carried in a sling, she having suffered a fractured forearm. Dr. Grafton has his left forearm in a splint, and had it supported in a sling, he having suffered a fracture of the left wrist. We trust that they will recover before Ripley hears of it.

* * * *

A daughter was born to Dr. and Mrs. R. H. Irish of Tranquille at the Royal Inland Hospital, Kamloops, on May 11th.

* * * *

Flight-Lieut. D. B. Ryall, R.C.A.F., and Mrs. Ryall, are receiving congratulations on the birth of a son on May 8th, at St. Joseph's Hospital, Victoria.

* * * *

A son was born to Dr. and Mrs. Douglas Telford on May 18th.

* * * *

Major Gordon Large, R.C.A.M.C., and Mrs. Large left for Eastern Canada after spending leave in Vancouver.

* * * *

Capt. L. G. Wood, urologist from Vancouver, is now stationed at the Debert Military Hospital and has been at the Coast on leave. Capt. Wood reports that this is a very busy unit. Several officers of No. 16 General Hospital are stationed there, among them: Captains E. F. Christopherson, W. H. Fahrni, E. F. Raynor, W. M. Toone formerly of Nelson, and W. S. Huckvale formerly of Kimberley.

* * * *

Capt. J. A. Wright, formerly of Vancouver, is the secretary-treasurer of the 3rd Canadian Division Medical Society, in the 3rd Canadian Division, which was sponsored by Colonel Lavell H. Leeson, A.D.M.S. in that Division. It is a thriving organization and holds regular meetigs, which are largely attended.

* * * *

The sympathy of the profession is extended to Dr. and Mrs. O. O. Lyons of Powell River in the loss of their daughter, Norma Joan, on May 14th.

* * * *

Dr. Gordon Richard Blott, an interne at the Vancouver General Hospital, was married on May 22nd to Miss Eleanor Mae Stewart.

* * * *

We are glad to announce that Dr. Roger G. Knipe has successfully passed the examinations of the Medical Council of Canada. Dr. Knipe is the son of the late Dr. G. W. Knipe.

* * * *

Capt. W. H. White, R.C.A.M.C., has been in Penticton on a short visit.

Dr. George H. McKee, son of Dr. Josiah McKee of Courtenay, also obtained his L.M.C.C. Both these young doctors are serving as internes at the Vancouver General Hospital and are accorded our congratulations.

* * * *

Dr. Frank L. Wilson of Trail is at Trout Lake in the Lardeau District and we hope is catching his full complement of big fish. Lucky Frank!

* * * *

The practising profession in Nanaimo is deeply appreciative of the courtesy extended by Lieut.-Col. F. W. Lees, O.C., and the officers of Nanaimo Military Hospital, who have welcomed the local doctors to their regular bi-monthly clinical meetings. A considerable amount of interesting and valuable material is being regularly accumulated and presented. At the last meeting on May 15th the following subjects were discussed: "Knee Joint Injuries"—Capt. K. H. Haig, "Phlebitis—Post Scarlet Fever"—Major S. A. Wallace, "Bronchiectasis"—Major J. E. Walker, "Laboratory Diagnosis—Typhoid"—Capt. J. D. Balfour, "Polypus of Stomach"—Major M. R. Dickie, "Virus Pneumonia" and "Post Diphtheritic Neuritis." These meetings are under the chairmanship of Major J. E. Walker.

* * * *

Capt. A. G. Naismith of Kamloops, who is Medical Officer to the 2nd Battalion Rocky Mountain Rangers (Reserve) and Lieut. W. F. Anderson of Kelowna, Medical Officer to the 9th Armoured Regiment, B.C.D. (Reserve), have been away at camp.

* * * *

During May two meetings of the Prince Rupert Medical Association were held, at which films from Davis and Geck were shown, and at the second meeting, very interesting coloured films of Hawaii, Manila, Hongkong were shown by Captain Cash of the U. S. Transport Section.

* * * *

We learn with deep regret of the recent death in Edmonton of Dr. W. A. McConkey, whom many of us remember very well, since he practised in Vancouver for a good many years.

Dr. McConkey was a graduate of the University of Manitoba, and came to Vancouver before the first Great War. He was Chief Anæsthetist at St. Paul's Hospital for some years. He had a friendly, candid personality, and was very popular with his medical colleagues, so that we were all sorry to see him leave Vancouver.

His death was sudden, but we rather envy him the manner of it. He was called to see a colleague who was dying, and eagerly responded. His own heart gave way suddenly and he died "on the job"—the happiest end any medical man can have.

* * * *

The following have left for Air Force training in Eastern Canada: Doctors B. F. Bryson, formerly on the staff at Essondale; H. L. Dobson, formerly an interne at the Royal Jubilee Hospital, Victoria; T. J. Durkin, formerly an interne at St. Joseph's Hospital, Victoria; M. R. Earle, formerly an interne at Vancouver General Hospital; G. R. F. Elliot, formerly Medical Officer at Quarantine Station, William Head; A. Herbert, formerly an interne at St. Paul's Hospital, Vancouver; F. L. Skinner, formerly in practice in Vancouver; J. F. Sparling, of Haney; W. D. Sharpe, formerly at Zeballos; R. C. Talmey, formerly an interne at St. Paul's Hospital, Vancouver, and N. Woywitka, formerly an interne at St. Joseph's Hospital, Victoria.

DONATIONS TO BULLETIN WAR RELIEF FUND

Buller, F. J., Vancouver	$15.00
Hilton, C. T., Port Alberni (additional)	20.00
Weldon, R. C., Vancouver	10.00

British Columbia Medical Association

(CANADIAN MEDICAL ASSOCIATION, BRITISH COLUMBIA DIVISION)

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Second Vice-President	Dr. P. A. C. Cousland, Victoria
Honorary Secretary-Treasurer	Dr. A. Y. McNair, Vancouver
Immediate Past President	Dr. Murray Blair, Vancouver
Executive Secretary	Dr. M. W. Thomas, Vancouver

ANNUAL BUSINESS MEETING

* * * *

GENERAL PROGRAMME

Friday and Saturday, June 12th and 13th, Executive Committee Sessions

MONDAY, JUNE 15th

9.00 a.m.—Registration.
9.30 a.m.—Meeting of General Council.
12.30 p.m.—Luncheon.
2.00 p.m.—Meeting of General Council.
6.00 p.m.—Meeting of Nominating Committee.
7.30 p.m.—Barbecue for members of General Council and their ladies as guests of the Alberta Division.
9.00 p.m.—Medical Secretaries' Conference.

TUESDAY, JUNE 16th

9.00 a.m.—Registration.
9.30 a.m.—Meeting of General Council.
All Day—Golf Tournament.
12.30 p.m.—Luncheon.
2.30 p.m.—Business Meeting of Saskatchewan Division.
8.00 p.m.—Business Meeting of Alberta Division.
8.00 p.m.—Business Meetings of: College of Physicians and Surgeons, Followed by British Columbia Medical Association.

WEDNESDAY, JUNE 17th

8.30 a.m.—Registration.
9.00 a.m.—Round-Table Conference.
10.15 a.m.—General Session.
12.30 p.m.—Luncheon.
2.00 p.m.—Sectional Meetings.
3.45 p.m.—Annual Meeting Canadian Medical Protective Association.
8.30 p.m.—Annual General Meeting, to which are invited all members and their ladies, guest speakers, official delegates and official guests.
Presentation of medals and awards.
Installation of President.
Reception by the President and Mrs. Archer.
10.30 p.m.—Dance.

THURSDAY, JUNE 18th

8.30 a.m.—Registration.
9.00 a.m.—Round-Table Conference.
10.15 a.m.—General Session.
12.30 p.m.—Luncheon.
2.00 p.m.—Sectional Meetings.
2.15 p.m.—Meeting of Incoming Executive Committee.
8.45 p.m.—Presentation of Golf Prizes.
9.00 p.m.—Medical Economics Programme under the Chairmanship of Dr. Wallace Wilson of Vancouver.

Federation of Medical Women of Canada

7.45 a.m.—Breakfast.
Executive Meeting.
12.00 noon—Reception—Luncheon.
Annual Meeting.
Guest Speakers:
Dr. Edna Guest, O.B.E., National Chairman, War Services Committee.
Dr. Lillian Chase, Vice-president, Saskatchewan.
Dr. Eleanor Percival, Convener, Maude Abbott Memorial Scholarship Fund.
Dr. Mildred Newell, Edmonton, President.
Dr. Katherine Ketchum, Toronto, Secretary.
Dr. Agnes Moffatt-Magee, Peterborough, Treasurer.

FRIDAY, JUNE 19th

8.30 a.m.—Registration.
9.00 a.m.—Round-Table Conference.
10.15 a.m.—General Session.
12.30 p.m.—Luncheon.
2.00 p.m.—Sectional Meetings.

SCIENTIFIC PROGRAMME

ROUND TABLE CONFERENCES

WEDNESDAY MORNING, JUNE 17th

Section of Anæsthesia

Problems of respiration and anoxæmia.
Dr. D. C. Aikenhead (*Chairman*), Winnipeg
Dr. Digby Leigh, Montreal
Dr. E. H. Watts, Edmonton

Section of Dermatology

Syphilis.
Dr. Donald H. Williams *(Chairman)*, Vancouver
Dr. D. E. H. Cleveland, Vancouver
Dr. J. F. Burgess, Montreal

Section of Medicine

The selection of sulfanilamide and related compounds in medical treatment.
Dr. Duncan Graham (*Chairman*), Toronto
Dr. H. K. Detweiler, Toronto
Dr. Irving Bell, Edmonton

Section of Obstetrics and Gynæcology

Rational endocrine therapy in obstetrics and gynæcology.
Dr. Ross Mitchell (*Chairman*), Winnipeg
Dr. Allan Day, Edmonton
Dr. H. B. VanWyck, Toronto

Section of Pædiatrics

Adolescent problems.
Dr. A. H. Spohn *(Chairman)*, Vancouver
Dr. U. J. Gareau, Regina
Dr. G. E. Swallow, Edmonton

Section of Radiology

Radiotherapy of non-malignant diseases.
Dr. B. J. Harrison *(Chairman)*, Vancouver

Section of Surgery

Problems in bile tract surgery.
Dr. Roscoe R. Graham (*Chairman*), Toronto
Dr. P. H. T. Thorlakson, Winnipeg

THURSDAY MORNING, JUNE 18th

Joint Conference Including All Sections

The use and abuse of vitamins.
Dr. F. F. Tisdall (*Chairman*), Toronto

FRIDAY MORNING, JUNE 19th

Section of Dermatology and Radiology

Cutaneous cancer.
Dr. Harold Orr (*Chairman*), Edmonton
Dr. Norman Wrong, Toronto
Dr. B. R. Mooney, Winnipeg

Section of Medicine

Recognition and treatment of poliomyelitis in general practice.
Dr. J. D. Adamson (*Chairman*), Winnipeg
Dr. O. J. Day, Winnipeg
Dr. F. H. Mewburn, Edmonton

Section of Obstetrics and Gynæcology

The treatment of prolapse.
Dr. J. R. Vant (*Chairman*), Edmonton
Dr. T. E. Clarke, Edmonton
Dr. Edwin M. Robertson, Kingston

Section of Pædiatrics

Pædiatric prevention of future foot disorders.
Dr. Graham Huckell (*Chairman*), Edmonton
Dr. R. P. Kinsman, Vancouver
Dr. R. G. Townsend, Calgary

Section of Radiology

Presentation and discussion of interesting films.
Dr. W. H. McGuffin (*Chairman*), Calgary

Section of Surgery

Principles and practice in wound treatment.
Dr. C. W. Burns (*Chairman*), Winnipeg
Dr. F. I. Lewis, Toronto

Section of Urology

Urinary complications following rectal surgery.
Dr. Frank S. Patch (*Chairman*), Montreal

GENERAL SESSIONS

WEDNESDAY MORNING, JUNE 17th

History-taking.
Dr. George S. Young, Toronto.
Amputations and after-care.
Dr. H. K. MacDonald, Halifax
The Presidential Address
Dr. Gordon S. Fahrni, Winnipeg
The Osler Lecture
Dr. C. D. Parfitt, Toronto

THURSDAY MORNING, JUNE 18th

Industrial medicine.
Dr. J. G. Cunningham, Toronto
National health as a post-war problem.
Dr. R. E. Wodehouse, Ottawa
The treatment of psoriasis (illustrated with coloured motion pictures)
Dr. Paul O'Leary, Rochester, Minn.
Iodized oil in the diagnosis of non-tuberculous pulmonary diseases by means of bronchography.
Dr. Carleton B. Peirce, Montreal.

FRIDAY MORNING, JUNE 19th

Essential features concerning the proper nutrition of the infant and child.
Dr. Alan Brown, Toronto.
Head injuries in war.
Dr. W. G. Penfield, and
Dr. William Cone, Montreal.
Common eye diseases, diagnosis and treatment (illustrated by kodachrome slides).
Dr. Lloyd Morgan, Toronto
Radiological interpretation in gynæcology.
Dr. Léon Gérin-Lajoie, Montreal

SECTIONAL MEETINGS

Section of Anæsthesia

WEDNESDAY AFTERNOON, JUNE 17th

Intravenous anæsthesia.
Dr. S. W. Johns, Calgary
Mortality and morbidity following surgery in a large general hospital.
Dr. D. C. Aikenhead, Winnipeg
Oxygen therapy and resuscitation.
Dr. Digby Leigh, Montreal
Continuous spinal anæsthesia.
Dr. E. H. Watts, Edmonton

Section of Dermatology

WEDNESDAY AFTERNOON, JUNE 17th

Lupus erythematosus.
Dr. A. G. Duncan, Calgary
Sarcoidosis; systemic and cutaneous manifestations.
Dr. G. S. Williamson, Ottawa
Dermatoscleroses (illustrated with coloured motion pictures).
Dr. Paul O'Leary, Rochester, Minn.
Ointment bases.
Dr. L. P. Ereaux, Montreal

FRIDAY AFTERNOON, JUNE 19th

Recurring vesicular eruptions of the hands.
Dr. A. M. Davidson, Winnipeg
The weather and the patient's skin.
Dr. Norman Wrong, Toronto
Vitamins in dermatology.
Dr. J. F. Burgess, Montreal.
The role of the medical profession in venereal disease control in British Columbia.
Dr. Donald H. Williams, Vancouver

Section of Historical Medicine

THURSDAY AFTERNOON, JUNE 18th

The social history of medicine—a commentary on newer trends.
Dr. M. M. Cantor, Edmonton
William Smellie.
Dr. Ross Mitchell, Winnipeg
The medical sources of Dr. Jekyll and Mr. Hyde.
Dr. E. P. Scarlett, Calgary

FRIDAY AFTERNOON, JUNE 19th

Dr. Michael Clark.
Dr. G. D. Stanley, Calgary.
Jerome Cardan.
Dr. H. E. MacDermot, Montreal
Baron Larrey—Surgeon General to the Army of Napoleon.
Dr. A. R. Munroe, Edmonton
The trails of the early doctors in the central prairies.
Dr. J. A. Valens, Saskatoon.

Section of Medicine

WEDNESDAY AFTERNOON, JUNE 17th

The recognition and management of the early apical lesion.
Dr. A. H. Baker, Calgary
Silicosis.
Dr. E. P. Scarlett, Calgary
Facts on rheumatoid arthritis.
Dr. L. DeWitt Wilcox, London
Vocational guidance, occupational adjustment and medicine.
Dr. Donat Voghel, Montreal

THURSDAY AFTERNOON, JUNE 18th

Some common functional diseases of the intestines and their management.
Dr. P. H. Sprague, Edmonton.
Lipæmic hyperthyroidism.
Dr. Eldon M. Boyd, and
Dr. W. Ford Connell, Kingston
Oedema.
Dr. George C. Hale, London
Bromide intoxication.
Dr. H. K. Detweiler, Toronto

FRIDAY AFTERNOON, JUNE 19th

Some obscure pains in the chest, back or limbs.
Dr. Gerard Allison, Winnipeg
Cardiac pain.
Dr. G. F. Strong, Vancouver
The interpretation of faint heart sounds.
Dr. Harold N. Segall, Montreal
Climatic factors in disease.
Dr. J. W. Scott, Edmonton

Section of Obstetrics and Gynæcology

THURSDAY AFTERNOON, JUNE 18th

Sterility in the female.
Dr. J. E. Harrison, Vancouver
The management of the third stage.
Dr. W. S. Holmes, Saskatoon
Breech presentation.
Dr. Arthur B. Nash, Victoria

FRIDAY AFTERNOON, JUNE 19th

The treatment of fibroids of the uterus.
Dr. J. D. McQueen, Winnipeg
Vaginal discharge; diagnosis and treatment.
Dr. E. M. Robertson, Kingston
Antepartum hæmorrhage.
Dr. H. B. VanWyck, Toronto
A five year summary of maternal deaths in Alberta.
Dr. J. R. Vant, Edmonton

Section of Ophthalmology

FRIDAY AFTERNOON, JUNE 19th

Recent advances in medical therapy of the eye.
Dr. A. E. Shore, Calgary
Difficulties and complications in the senile cataract operation.
Dr. R. J. P. McCulloch, Toronto.
One of the phases of plastic surgery of the eyelids.
Dr. Fulton Risdon, Toronto
Vertical phorias, operative and non-operative.
Dr. Charles E. Davies, Vancouver

Section of Otolaryngology

WEDNESDAY AFTERNOON, JUNE 17th

Surgery of the mastoid.
Dr. Joseph A. Sullivan, Toronto
Headache of nasal origin.
Dr. G. Edward Tremble, Montreal
The sinus problem.
Dr. Keith Hutchison, Montreal
Recent advances in medical therapy in diseases of the ear, nose and throat.
Dr. F. D. McKenty, Winnipeg
Sudden deafness.
Dr. A. L. Yates, Calgary

Section of Pædiatrics

THURSDAY AFTERNOON, JUNE 18th

Anorexia of childhood.
Dr. G. E. Swallow, Edmonton
Second year anæmias.
Dr. A. E. M. Cairns, Lethbridge
Allergic problems.
Dr. Gordon Chown, Winnipeg
Prevention of bullous impetigo in hospital nurseries.
Dr. R. P. Kinsman, Vancouver

FRIDAY AFTERNOON, JUNE 19th

Convulsions.
Dr. H. W. Price, Calgary
Meningitis in childhood.
Dr. Nelles Silverthorne, Toronto
Progress in poliomyelitis.
Dr. O. J. Day, Winnipeg
Clinical study of western variety encephalitis occurring in young infants.
Dr. Harry Medovy, Winnipeg

Section of Radiology

WEDNESDAY AFTERNOON, JUNE 17th

Luetic disease of the bone.
Dr. S. M. Rose, Lethbridge
Primary tumours of the bone.
Dr. M. C. Morrison, London
(Subject of choice.)
Dr. J. E. Perron, Quebec
Inherent filtration of x-ray tubes.
Mr. Dale Trout, Chicago

THURSDAY AFTERNOON, JUNE 18th

An analysis of carcinoma of the colon, commenting on the accuracy of radiological diagnosis.
Dr. M. M. R. Hall, Toronto
Remarks on the nature of cancer.
Dr. B. J. Harrison, Vancouver
Tomographic studies of the thoracic viscera.
Dr. Carleton B. Peirce, Montreal

Section of Surgery

WEDNESDAY AFTERNOON, JUNE 17th

Surgical principles in compound fractures.
Dr. R. G. Townsend, Calgary.
The management of un-united fractures of the neck of the femur.
Dr. F. I. Lewis, Toronto
Surgical care of poliomyelitis.
Dr. F. H. H. Mewburn, Edmonton
Spondylolisthesis.
Dr. R. I. Harris, Toronto

THURSDAY AFTERNOON, JUNE 18th

Failures in inguinal hernia.
Dr. R. L. Anderson, Edmonton
Present status of duodenal ulcer surgery.
Dr. M. A. R. Young, Lamont
The early diagnosis of cancer.
Dr. M. R. MacCharles, Winnipeg
Surgical problems of the navy.
Surgeon Lieutenant Commander Walter C. MacKenzie, R.C.N.V.R., St. John's, Nfld.

FRIDAY AFTERNOON, JUNE 19th

Indications for thyroidectomy in the presence of a normal basal metabolic rate.
Dr. J. K. Fife, Edmonton
Clinical application of present-day knowledge of surgical shock.
Dr. H. V. Morgan, Calgary
Physiological problems in intestinal obstruction.
Dr. Norman B. Taylor, Toronto
The surgical treatment of congenital hydrocephalus.
Dr. H. H. Hepburn, Edmonton

Section of Urology

WEDNESDAY AFTERNOON, JUNE 17th

Retroperitoneal tumours in children.
Dr. Frederick Pilcher, Calgary
Strictures of the ureter.
Dr. H. D. Morse, and
Dr. C. B. Stewart, Winnipeg
Carcinoma of the prostate.
Dr. Frank S. Patch, Montreal

FRIDAY AFTERNOON, JUNE 19th

Treatment of urinary infections.
Dr. A. W. Hunter, Vancouver
Management of vesical neck obstruction.
Dr. N. E. Berry, Kingston
Further results in uretero-intestinal anastomosis.
Dr. R. A. McComb, Toronto
Renal tuberculosis, presentation of two interesting cases.
Dr. Gordon Ellis, Edmonton

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The Canadian National Railway will provide for your accommodation on the train on any leaving date. Where a large number of reservations are made in one car the railway officials have agreed to hold that car for doctors only.

Advice has been received that the Government has found it necessary, in harmony with its conservation policy with regard to gasoline and tires, to prohibit sight-seeing drives and motor service this coming summer. This means that there will be no sight-

seeing drives in Jasper Park, nor motor service between Jasper and Lake Louise via the Columbia Icefield. *Motor service, however, will be available between Jasper station and Jasper Park Lodge.*

All double rooms are equipped with twin beds. In order to accommodate the entire party at the Lodge, it will be necessary for most of the delegates to go two-to-a-room.

The golf tournament of the Canadian Medical Association will be held on Tuesday, June 16th, and will continue throughout the day. Special green fees to registrants at the Convention, $1.50 per day.

Note: The Golf Tournament of the British Columbia Medical Association will be held on *Tuesday afternoon.*

Dress informal. All functions of the Convention are to be strictly informal. You do not need to bring evening dress or dinner jackets.

SUMMER SCHOOL

Owing to the fact that the Canadian Medical Association and the British Columbia Medical Association are holding their Annual Meetings at Jasper in June, the annual Summer School will be held September 15th to 18th, inclusive, at the Hotel Vancouver.

LIBRARY NOTES

RECENT ACCESSIONS TO LIBRARY

Surgical Clinics of North America, Symposium on Surgical Infections, New York Number, April, 1942.

Vaginal Hysterectomy, by Kennedy, James William, and Campbell, Archibald Donald, 1942—F. A. Davis Company, Publishers—for review.

Annual Report of the Surgeon General of the Public Health Service of the United States, 1941.

Resuscitation: Equipment, Organization, Training and Procedures, The War Office, 1941. This is a 56-page booklet.

STATE JOURNALS

In an effort to acquaint members with some of the valuable State Journals received in the Library, it is proposed that a sample index of one of them be given in succeeding numbers of the BULLETIN for the next few months. Following is an index of original articles which appear in the May issue of *The Journal of the Missouri State Medical Association*:

Intraspinal Protrusion of Intervertebral Disks. Observations on Diagnosis. Roland M. Klemme, M.D., Weldell Scott, M.D., and R. Dean Woolsey, M.D., St. Louis.

Strangulated Hernia. Successful Reduction and Repair After Thirteen Days. Herman F. Burkwall, St. Joseph, Mo.

Diverticula of the Duodenum, J. H. Hershey, M.D., St. Louis.

Volvulus of the Stomach. Report of a Case. C. A. W. Zimmerman, M.D., Cape Girardeau, Mo.

Fifty Years Ago. Surgery at the Time the St. Louis Surgical Society Was Founded. Robert E. Schlueter, St. Louis.

ANNUAL REPORTS FOR 1941-1942

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REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

Since the adoption of our new Constitution and By-laws in 1938, when the British Columbia Medical Association became a Division of the Canadian Medical Association, no amendments have been offered. The business of the Association has been conducted without difficulty, and it was considered wise to carry on until a change was indicated. It seems advisable when a new Constitution has been adopted to allow it to operate for a time provided that the full range of activities of the body concerned is adequately covered. Fortunately, we are in that position. However, in making the above statement, one does not imply that the document is perfect, and it is felt that in the near future a careful study should be undertaken, and if any changes seem desirable they should be noted and the necessary amendments presented.

I would recommend to the new committee that this be done, particularly since the new consolidated Constitution and By-laws of the Canadian Medical Association come up for ratification at the Annual Meeting of that body this year. It is just possible that some changes in our own By-laws may be necessary in order to maintain our proper relationship with the C.M.A., but these, probably, wiuld be very minor in character. I think one is safe in stating that our present Constitution and By-laws are satisfactory and workable and comprehensive enough to cover the various activities of our Association.

All of which is respectfully submitted.

H. H. MILBURN, *Chairman.*

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REPORT OF THE COMMITTEE ON PROGRAMME AND FINANCE

1. *Programme*: The Committe has limited tours in conformity with our recent practice. During the past fall the Executive Secretary, Doctor M. W. Thomas, attended the annual meeting of the West Kootenay Medical Association held at Trail on October 8th. Speakers were provided for the annual meeting of the Upper Island Medical Association held at Parksville on October 29th. Doctors J. R. Neilson and Lee Smith contributed to the programme, and Doctor Thomas also attended. It is to be hoped that a regular plan of post-graduate tours may be resumed in the near future.

2. *Finance*: The requests made to the Council of the College of Physicians and Surgeons for funds have been kept at a very minimum. It is a pleasure to report that during 1941 we were able to carry on our activities with the small sum of $1,000.00.

All of which is respectfully submitted.

G. F. STRONG, *Chairman.*

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REPORT OF THE COMMITTEE ON MEDICAL EDUCATION

Dear Sir:

As Chairman of the Committee on Medical Education I would submit the following report, covering the work of the committee for the current year.

Up to the present time it has been very difficult for students from British Columbia wishing to study medicine at Eastern Canadian Universities to take any part of their course here. The pre-medical subjects are taught here, but it has been difficult to arrange a curriculum which would meet the requirements of Eastern Universities. Students must take the First Year at the University of British Columbia, or Senior Matriculation, to obtain entrance to Eastern colleges. The Second Year would correspond to the First Year Medicine, and students who have taken it have found that it did not fully meet the requirements of Eastern Universities, and the First Year Medicine had to be taken over again.

The problem was discussed with President Klinck. He was very willing to co-operate, and a pre-medical second year course is now on the curriculum of the University of British Columbia which meets the requirements of the University of Toronto, and almost certainly of the other Eastern Medical colleges as well. This was facilitated by a simplification of the Toronto curriculum, and it is thought that the new arrangement will prove a boon to the British Columbia students.

The curriculum is now being submitted to the Deans of the various Eastern Universities to ascertain if it meets their requirements, and whether British Columbia students who have taken it will be allowed their first year at Eastern Universities.

Yours very truly,

K. D. PANTON, *Chairman.*

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REPORT OF THE COMMITTEE ON MATERNAL WELFARE

Dear Sir:

Since the last annual meeting of the British Columbia Medical Association your Committee on Maternal Welfare has completed the revision of the Maternal Record Card, and it has now been issued by the Provincial Board of Health. An addition for recording maternal and neo-natal deaths has also been added, and it has been so arranged that this can be easily removed, if not required, making the card less bulky for filing.

The committee has begun to make a study of maternal deaths in British Columbia with the view of being able, when enough cases have been reviewed, to suggest the safest procedures to be adopted to help eliminate avoidable maternal deaths. As soon as enough neo-natal death records have been received they will also be reviewed.

The committee strongly urges that all doctors doing maternity work fill in these cards, especially in cases of maternal or neo-natal deaths, and send them to the Provincial Board of Health for abstracting. By doing so they will greatly help the committee in its study and save a lot of correspondence.

These cards have been arranged so that they can be filled in with the minimum of time and trouble, and the examinations asked to be recorded are the least that constitute adequate prenatal care. They will also provide information for statistical purposes in a convenient and easily recorded form.

The committee also hopes to be able to publish more short articles on maternal welfare subjects.

All of which is respectfully submitted. C. T. HILTON, *Chairman.*

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REPORT OF THE COMMITTEE ON PUBLIC HEALTH

The Public Health Committee is composed of the following members: Doctors H. H. Caple, W. W. Simpson, J. R. Davies, Donald H. Williams, H. Carson Graham, and G. O. Matthews, Chairman.

At present, this Committee has under organization a joint Committee to be formed from our own Committee with the addition of representatives from all other Public Health Provincial bodies, namely, The Canadian Red Cross Society, The St. John Ambulance Society, The Nursing Association, The Hospital Association, The Provincial Health Department and the Department of Pensions and National Health.

The duties of this enlarged and representative committee will be to study the problem of a possible virus epidemic which may be expected to occur towards the end or shortly after the present war.

This Committee is to be guided and directed by its representatives from the British Columbia Medical Association. As soon as all the appointments to this joint committee are made by the provincial organizations concerned it will be convened by your committee.

Similar committees are being set up in each Canadian province and it is hoped that from them suggestions will be organized into active measures, not only to protect but also to combat any such national disaster as the 1918-1919 Influenza epidemic.

G. O. MATTHEWS, *Chairman.*

REPORT OF THE COMMITTEE ON THE STUDY OF ECONOMICS

The Committee on the Study of Economics reports on certain questions that have engaged its attention since the last Annual Meeting.

During the past several years Medical Economics has been given a prominent place on the programme of the Annual Meetings. In September, 1941, an evening was devoted to the subject. This session was largely attended and the papers presented by Doctor T. C. Routley, Doctor S. Cameron MacEwen and Doctor Wallace Wilson were valued contributions.

During the winter, two plans were passed upon by the Board of Directors,—that of the British Columbia Teachers' Federation Medical Services Association and the other of the Cunningham-Western Drug Sick Benefit Association—the latter affecting only the Lower Coastal Mainland and Vancouver Island.

The British Columbia Medical Association and this Committee lent its support in the distribution and completion of the Questionnaire on Health Insurance. The interest displayed by our members in this whole question was most encouraging, and the nature of the comments showed a very thorough knowledge of the principles involved. The thought given to the subject produced opinions which will no doubt prove of great value and help to the Committee of the Canadian Medical Association, which will discuss these matters with representatives of the Dominion Government.

The attention of our members is directed to the Conference on Economics to be held on Thursday evening, June 18th, at Jasper, under the ægis of the Committee of the Canadian Medical Association. It is hoped that all will attend. Papers will be presented by Dr. Frank S. Patch of Montreal and Dr. J. H. MacDermot of Vancouver, on the subject, "The Relationship of the Specialist and the Consultant to the General Practitioner and the Public." The discussion will be led by Dr. A. E. Archer, President of the Canadian Medical Association and Dr. A. H. Spohn. This subject should attract a large attendance and lead to free discussion.

The experience with the Medical Services Association has proven that medical care by prepayment under modern conditions is possible with adequate contributions and with the cooperation of those receiving the services as well as those who provide them.

Respectfully submitted.

W. A. CLARKE, *Chairman.*

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REPORT OF THE COMMITTEE ON PHARMACY

The work of the Committee during the year has been in conjunction with the committee of the Pharmaceutical Association in preparing the B. C. Formulary, which has now been published and has been presented to every medical man in the Province, with the compliments of the B. C. Pharmaceutical Association.

A great many of the hospitals have already adopted this Formulary and report it being used quite extensively. We think that eventually all the hospitals in the Province will adopt it, as they will find it much to their advantage in a saving in the cost of medicine to the patient. It is urged on every medical man to make as much use of the Formulary as possible. By using it he will find that his prescribing will be much more scientific, the use of expensive proprietary preparations can be eliminated, and there will be a very considerable saving in the cost of the medicine to the patient.

A permanent committee on revisions has been appointed which is prepared to receive suggestions for extension and correction. The secretary of the Pharmaceutical Association will be glad at any time to receive these suggestions.

Your Committee trusts the medical profession of British Columbia will find this Formulary increasingly useful in their practice.

Respectfully submitted.

C. H. VROOMAN, *Chairman.*

REPORT OF THE COMMITTEE ON HOSPITAL SERVICE

Dear Sir:

This brief report is submitted prior to the Annual Meeting in June, 1942.

This Provincial-wide Committee met at the Annual Meeting in September, 1941, and since then no new problems have been submitted to it for consideration and report. However, the Chairman wishes to draw attention that the shortage of internes continues but it has not yet become embarrassing. In this connection it should also be noted that medical staffs employed by hospitals such as anæsthetics, radiologists and pathologists, etc., as well as internes are needed to carry on the functions of the hospital in spite of demands of the armed forces for medical officers. In the Lower Mainland the civilian population will be subject to casualties as well as the armed forces in the event of enemy attack and that being so the hospitals serving these areas are a vital need. Such being the case the demands of the armed forces for medical personnel should not be permitted to weaken the services of the Lower Mainland Hospitals.

This problem might be referred to your Divisional Advisory Committee for their serious consideration.

Respectfully submitted,

R. A. SEYMOUR, *Chairman.*

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REPORT OF THE COMMITTEE ON THE STUDY OF CANCER

The Committee on the Study of Cancer, which comprises representatives from all districts throughout the province has to report:

1. The introduction in January, 1942, of the new Provincial Cancer Reporting Form, upon which all practising doctors and institutions are asked to report cases. The forms are distributed and collected by the Provincial Board of Health. In the Greater Vancouver area the completed forms are sent to the Metropolitan Health Board. We are pleased to learn that the response by all concerned has been very good and that we shall soon have a report from the Provincial Government on the information so obtained.

2. At the present time the Cancer Committee is applying itself to the development of Cancer Study Groups. A Sub-committee, under the chairmanship of Doctor F. J. Hebb, has laid down a plan for building this feature of the programme, and we anticipate good results.

The Honorary Attending Staff of the British Columbia Cancer Institute has formed one of the most active study groups in the province and is working on several clinical research problems. We hope in time to have every part of the province engaged in such work through the active cooperation of the various study groups.

3. Short articles have been published in the BULLETIN at regular intervals. Speakers have been supplied for radio addresses, and in conjunction with the Canadian Society for the Control of Cancer, films have been shown and talks given to lay audiences.

4. Dr. C. K. P. Henry of Montreal came to the Annual Meeting in September, 1941, under the ægis of the Department of Cancer Control of the Canadian Medical Association. His contributions to the scientific programme and his address at the Public Meeting were very helpful and much appreciated.

The Committee on the Study of Cancer is grateful to the BULLETIN for the publication of reports and other subject matter on Cancer. It is the ambition of this Committee to keep interest alive during these difficult war years and to have a definite programme developed upon which the work can be built when normality returns to this world.

Respectfully submitted.

ETHLYN TRAPP, *Chairman.*

ASSISTANCE TO MEDICAL STUDENTS

Statement by the Minister of Defence, Hon. J. H. Ralston, in the House of Commons, March 19, 1942

1. It is estimated that the Armed Services will, during the ensuing fiscal year, require 800 Medical Officers, of which 50 will be needed by the Navy, 600 by the Army and 150 by the Air Force. As a matter of fact, the Army could take on almost at once probably 150 Medical Officers, and the Air Force, I am informed, probably 75 to 100. These requirements are being brought to the attention of the medical profession throughout Canada and the Canadian Medical Association is co-operating by sending out a questionnaire to all members of the profession.

2. In order to assist in increasing the future supply of Medical Officers for the Armed Forces the Medical Services of the Navy, Army and Air are co-operating in a scheme designed to aid worthy students of Medicine who propose to enlist.

3. This arrangement is the result of a thorough study of the medical needs of the Armed Forces and has been proposed after consultation with the Medical Faculties of the Universities throughout Canada. Briefly the scheme is as follows:

(a) The Universities will be asked to accelerate their courses, while maintaining the same standard of training, by reducing the normal summer vacation periods to a minimum.

(b) In this way a student will be able to cover his full course in a considerably shorter period.

(c) By this acceleration of courses students will be debarred from earning in the long summer vacation. This plan is designed to make up for this loss of income.

(d) It is proposed that the Armed Services will enlist students at any time during the two final years before they qualify for a licence to practice. They will thus, during this period, become members of the Armed Forces and will then be granted leave with pay and subsistence allowance which will enable them to complete their courses and to obtain a licence to practice.

4. This assistance to medical students who intend to join the Armed Forces will be supplemented by the Department of Labour (in co-operation with the Provincial Governments) by extending the present system of scholarships. These scholarships (up to a maximum of perhaps $300) will also be open to other worthy students who because of the acceleration of the courses will be deprived of the opportunity to earn during what would be the normal vacation period.

5. The students who will be eligible for these scholarships will be those who are in need of such assistance, who possess good academic standing and who give satisfactory assurance to serve in the national war effort in the capacity in which they have been trained.

6. There will also be some expenditure involved in connection with additional costs to Universities on account of the accelerated courses.

7. The Department of Labour is now in correspondence with the Provincial Governments with a view to enlisting their co-operation in implementing this extended plan.

8. In the result, medical students who intend to join the Armed Forces will (after the first year) receive assistance from the Department of Labour, in co-operation with the Provincial Governments, by way of scholarships, during the earlier years of their courses, and during the last two years they will receive pay and subsistence allowance as duly enlisted members of the Armed Forces.

COMMITTEE ON THE STUDY OF CANCER

The Committee on Tumour Clinics and Cancer Study Groups in meeting decided to adopt the following plan, as outlined by Doctor F. J. Hebb, Chairman of the Sub-committee, in an attempt to build throughout British Columbia a complete system of study, diagnosis and treatment of Cancer, and work towards this goal as far as possible throughout the war period, so that eventually the scheme may be accepted in its entirety.

Cancer Study Groups

Definition: A group of medical men vitally interested in the study of the diagnosis, treatment and subsequent history of cancer patients, and including one or more of the following specialists: pathologist, surgeon, internist, radiologist.

Objects:

1. To encourage all physicians to be cancer conscious when examining patients.
2. To stimulate the interest of the general practitioner in the treatment of his own cancer patients by having him:
   (a) Examine his own patients in consultation with the group and when practicable perform the necessary tests to make a correct diagnosis.
   (b) Be present at and, when possible, assist in the treatment of his cancer patients.
   (c) Carry out follow-up examinations on his own patients and report results to the Study Group.
3. To improve the facilities for the diagnosis and treatment of Cancer in its own area, and work towards formation of a tumour clinic.
4. To have such a study group in all hospitals of 100 beds or over.
5. Travelling Cancer Clinic.

Activities:

1. The formation of a diagnosis and consultation centre in its area, centred around the hospital staff.
2. The provision for such treatment as can be given with local facilities.
3. Initiation of clinical research problems related to local patients.
4. Regular meetings and arrangement for an occasional visiting speaker.
5. Abstracting of current cancer literature for the benefit of the group.
6. Reporting of cases.
7. Co-operation with the local branch of the Canadian Society for the Control of Cancer by stimulating a demand for cancer education by providing lectures and literature on cancer to various lay organizations and suggesting that each different group have one cancer meeting a year.

RE APPOINTMENT AND RANK OF MEDICAL OFFICERS

An order affecting rank of Medical Officers, R.C.A.M.C., (Active) C.A., provides that officers who held rank not below that of Captain in the Reserve Army will be appointed with that rank in the Active Force.

Medical Officers recommended for special employment upon authority may be granted acting higher rank with pay and allowances.

Candidates, who for more than two years have held a licence to practise in a Province of Canada, or are licentiates of the Medical Council of Canada, will be appointed to the R.C.A.M.C. (Active) C.A., with the rank of Lieutenant (A/Captain), and may be confirmed in the rank of Captain immediately upon qualification.

This order was effective the 1st of February, 1942.

Note: It is our information that the same rule applies to appointments in the R.C.A.F.

HOSPITAL PROBLEMS—NURSING SERVICE

Notes of a Brief Address by Miss Grace M. Fairley, R.N.

Diretor of Nursing, Vancouver General Hospital

Presented to the Medical Staff, May 21, 1942, when shortage of nurses was really serious.

I was tremendously interested in the announcement in the press last week by the College of Physicians and Surgeons of British Columbia regarding the problems imposed by war conditions on medical practice.

This is my method of announcing to the world that we are faced with just such problems as yours, only you are the cause of some of my problems—*I* cannot blame them on gasoline!

No one is more conscious than we of the heavy load you (the members of the medical profession) are all carrying, but during the past year we have been equally conscious that the shortage of doctors has daily incraesed the nursing load.

Now the shortage of nurses has reached a point when it is quite serious. I am endeavouring to conserve nursing energy by employing lay help and V.A.D.'s, but there is much that can only be covered by nursing personnel, and it is in the interests of the hospital and the nursing staff (many of whom are working too hard for too long hours at the present time) that I asked Dr. Haywood for an opportunity of placing the picture before you.

I fear that we may come to the point when we may have to limit admissions and that would be regrettable. We are anxious also to maintain existing standards, but there is a limit to the load the average nurse can carry.

All Government services are making inroads on our staff. Shaughnessy has taken its toll, and now ten of our senior staff have been called, eight of them for No. 16—two executive assistants—with only a few days' notice.

I am wanting your help. I think we should now develop a war-time policy and face it frankly. We should be remiss indeed if we waited until some serious situation developed and I had not acquainted you with the situation as it is at present, when I know that as far as nursing personnel is concerned it is likely to become much worse. This is not a local situation, it is Dominion-wide, only our local situation is particularly serious. There are a few points that I think if drawn to your attention might help.

1. *Late admissions for operation on the following morning.* This is one of the most disrupting of our problems. Not only do patients not get the desired rest because of history taking, preparation, tests, etc., but these late evening admissions are the most frequent cause of nurses, both graduate and student, being anything from 1 to 2½ hours late in getting off duty—and this at the end of a long tiring day.

2. *Frequency of treatments such as hourly fomentations*—this refers of course to the less serious cases.

3. *The great increase in emergency operations* cannot be avoided, but added to this are the late afternoon cases which are not always booked as early as they might be—this in no way refers to emergency cases.

4. I should like to think that as a result of this conference you would help us by handing on this information to Visiting Staff and internes.

5. The time-consuming process of sending patients to physiotherapy department for massage, etc.

6. Visiting doctors doing a dressing when it has already been done by an interne or nurse. If the patient's doctor could let the head nurse know he wishes to do the dressing it would be left for him and thus save time and supplies.

7. Tonsillectomy cases coming in too late and disrupting the operating room schedule. This does not allow sufficient time for examination, specimens, etc.

8. Hæmorrhoidectomy cases if possible should be admitted at least 24 hours prior to operation.

9. Repeated ward rounds by several doctors who are interested in the same cases.

10. Ward rounds by Junior interne, then by Senior interne, possibly later by staff doctor (this is a fairly frequent picture).

11. May I make the suggestion that doctors present summary notes for cases with long continued and unchanged treatment.

12. Lastly, it would be a time-saving plan if we could find a way of obtaining standing orders for Staff Surgical cases.

[The above is brief and to the point. We must all be grateful to Miss Fairley for her frank presentation of this very difficult problem.—EDITOR.]

HOW PHYSICIANS CAN CONSERVE NURSING HOURS

[Below we publish a brief list of suggestions by Dr. R. A. Seymour, Assistant Superintendent of the Vancouver General Hospital. They serve to emphasize the points made by Miss Fairley, Director of Nursing.—EDITOR.]

Conservation is the order of the day and it can be usefully applied in many ways. Because of the shortage of nurses available for hospital duty and the need for preserving the present nursing standards, it is incumbent upon all of us to seek ways and means of saving nurses' time. This is urgent because we cannot expect nurses to rush and hurry all day long, maintain their poise, and also work several hours' overtime and still keep their health. If they become sick or resign because of overwork and fatigue, we shall be that much shorter of nursing staff. Therefore the following suggestions are listed for your thoughtful consideration.

1. Instruct your patients to be admitted as early as possible in the day and certainly before 5.00 p.m. A day's rest in bed before operation is good treatment and should take a hospital day off at the other end.

2. Notify the ward a day or two in advance when you think your patient may be discharged and tell your patient to plan to leave soon after lunch.

3. Do not visit wards during meal hours as this delays the meals for patients and nurses. This request has been made before and we hope your excellent co-operation in this will be continued.

4. Avoid unnecessary changes of dressings. Tell the nurse if you wish to be present when the dressing is changed.

5. Cancel or reduce treatment orders such as fomentations, etc., as soon as practical. Use infra-red lamps in place of fomentations if advisable. Keep intravenous saline injections down to minimum.

6. Instruct nurses to reduce standard daily nursing notes on case record to nursing summary notes as soon as possible.

Vancouver General Hospital

MASSIVE HEMORRHAGE INTO ADRENALS

A Clinical-pathological Case Report

DR. W. J. HOLLEY, *by kind permission of* DR. A. W. BAGNALL

The following case of massive hemorrhage into both adrenals complicated an extensive erysipelas-like cellulitis of the tissues of the face, forehead and neck.

The patient was an elderly white male who had previously been quite well, working as a night watchman in a sash and door factory using cedar wood. About four or five days previous to admission it was noticed that he had a slight reddening and swelling of the right side of his neck, in the parotid region. There was no previous injury or break in the skin at this site. This reddening and swelling, however, rapidly spread up the right side of his face to involve his right eye, the eyelids of which became so swollen he could not open his eye. The swelling had a dusky red color, was indurated, and rapidly extending over his forehead and scalp and down the left side of the face to involve the eyelids of the left eye in a similar manner. No treatment was given and no doctor called until Saturday March 21, 1942, when Dr. Bagnall saw the patient. At this time the swelling involved the face, forehead and neck. The skin over the area presented a dark red blush, with small areas which were greyish-purple, with almost a macerated appearance as if ready to slough, and the whole area oozed a great deal of reddish serum. The swelling closed both eyes and entirely disfigured the face. There was no involvement of the mucous membranes of the nose or mouth, and the conjunctive, although reddened and covered with mucus, did not appear ulcerated. The patient appeared in a critical condition. His mind was clear and there was no evidence of any intracranial lesion and no stiff neck.

Past History.

Patient is suspected of having had hypertension with a fairly high blood pressure.

Physical Examination. T. 102^3 — P. 85 — R. 24.

On admission, the patient's face is swollen beyond recognition. Swelling extends back beyond the ears, down over the clavicles. The swollen area is purplish-red, indurated, and there are areas of a slough with resultant hemorrhage. The pulse is rapid, weak and irregular. The heart sounds are faint, with an irregular rate and fibrillating. The blood pressure is surprisingly low—90/50—in view of a previous history of hypertension. There is no pain in the chest and no clinical evidence of coronary occlusion. The lungs show rales in both bases. The abdomen is negative.

Progress and Treatment.

March 22, 1942—Condition poor. Pulse rapid. Appears to have areas with purulent discharge under the skin, with areas of slough tissue over face and around the eyes. He was given intravenous glucose and saline, with boracic acid compresses and sodium sulphathiazol 3 grms. intravenously. Patient died March 23, 1942, of circulatory collapse.

Cultures taken from the sloughed areas around the eyes and nose, at post mortem, show hemolytic streptococci, staphylococcus aureus (hemolytic) and non-hemolytic streptococci. Hæmoculture (post mortem)—no growth.

AUTOPSY REPORT

The body is that of a 70-year-old white male who shows an extensive, diffuse, reddened swelling of the face, forehead and neck. There is a slight localized swelling in

both parotid regions. The skin in places has a purplish-grey appearance and, upon separating the bandages from the face, areas of skin around the inner canthus of both eyes and along the left side of the nose slough away, leaving ragged ulcerated areas covered with yellowish exudate. The skin of the forehead and left temple over an area 16 x 6 x 7 cms. is covered with a brownish-red scab. There appears to be no definite heaped-up reddened edge to the swelling which merges indefinitely with the surrounding tissue. The gross appearance is that of an edematous cellulitis of the subcutaneous tissues, with areas of purplish-red discoloration of the overlying skin which in patchy areas has become necrotic. Both eyes are closed shut from the edema, but the conjunctivæ, which are slightly reddened and covered with mucus, do not appear involved in the process. Dissection of the subcutaneous tissues of the neck shows a diffuse, edematous thickening of the subcutaneous tissues and fat, which ooze a great deal of red serous fluid. The subcutaneous fat and fibrous tissue, in areas, is very soft and friable, suggesting gangrenous change. The parotid glands are reddened and edematous but on section contain no purulent material.

The heart is moderately enlarged and shows concentric left ventricular hypertrophy. The valves show no vengetations. The other viscera are soft, showing toxic changes but no abscess. The adrenals both present a swollen, hemorrhagic mass which on the right side measures 5 x 2.5 x 3 cms. and on the left side 5.5 x 3 x 3 cms. On section there is massive hemorrhage into the medulla of both adrenals, with almost complete destruction and necrosis of both medulla and cortex. There are only a few thin patches of yellow, cortical tissue remaining. The hemorrhage has broken through the capsule of both adrenals, producing a mass of blood clot at the upper pole of each kidney.

Microscopic sections through the adrenals show a massive hemorrhage which has completely destroyed the medulla and is tearing and destroying all but a few isolated strands and islands of cortical cells.

Comment

Massive hæmorrhage into both adrenals is not infrequently found in new-born infants, due to the trauma of labor or the excessive degeneration of the inner layers of the cortex occurring at this time.

In older children and adults, however, the condition is rare. It has been described in diphtheria and in fulminating cases of meningococcic septicemia and is probably due to the toxic action on the capillary walls. Massive hemorrhage into both adrenals is likely to cause death within 12 hours, the onset being sudden, with abdominal pain and, occasionally, large purpuric patches of the skin and hæmorrhage from mucous membranes. The final state is one of collapse, complete relaxation, heart failure and hyperpyrexia.

The interesting features of this case are:

(1) the rapid spreading and extensive cellulitis which resembles erysipelas in location but appears to extend to the deeper subcutaneous tissues, with more edema and with a less well defined elevated red margin.

(2) the terminal low blood pressure shown with little clinical evidence of shock, in a patient with previous hypertension.

Cases of acute spreading gangrene of the skin, caused by an ærobic hemolytic streptococcus, have been described by F. Meleny. A chronic gangrene involving the superficial skin, due to the synergistic action of an anærobic, non-hemolytic streptococcus together with a hæmolytic staphylococcus aureus, has also been described by the same writer. Two cases of a spreading cellulitis with gangrene of the skin of the face, both in diabetics, have been reported recently, which closely resemble our case. The organism recovered in both these cases was a hemolytic staphylococcus aureus. Whether the main causative organism in this case was the hemolytic streptococcus or the staphyloccus aureus, remains undetermined. The aerobic non-hemolytic streptococcus found appears to be a contaminant.

ACUTE APPENDICITIS IN THE VANCOUVER GENERAL HOSPITAL IN 1940

From Surgical Service, The Vancouver General Hospital

By L. B. HARVILLE, M.D.

Senior Resident in Surgery, The Vancouver General Hospital

This paper is an analysis of the group of patients who had acute appendicitis in The Vancouver General Hospital during 1940. It includes only those proved at operation to have had acute appendicitis. Two cases proved at autopsy to have had ruptured appendices with generalized peritonitis are excluded. They are classified as:

1. Non-perforated.
2. Perforated with peritonitis.
3. Perforated with abscess.

The histories gave insufficient data to analyze the following: relative frequency of site of incision, previous history concerning laxatives, technique of operations, effect of chemotherapy, the cause for the two known cases of fæcal fistula which occurred in children, and the relative incidence of localized and generalized peritonitis. Table I shows the classification of the two hundred and seventy-three cases.

TABLE I.

Number of Cases Analyzed:

Staff	68	
Private	205	
Total	273	(55% females)

Classification of Cases (Condition at Operation):

1. Acute Non-perforated Appendicitis

Staff	53	cases or 77.9%
Private	155	cases or 75.6%
Total	208	

2. Perforated, with Peritonitis

Staff	10	cases or 14.7%
Private	32	cases or 15.6%
Total	42	

3. Perforated, with Abscess

Staff	5	cases or 7.3%
Private	17	cases or 8.3%
Total	22	

Total Cases in which drains were used 163 (59.7%)

Morbidity, Average Hospital Days:

Acute	Total Days 3,031	Average	14.15/Pt.
Abscess	Total Days 738	Average	39.40/Pt.
Peritonitis	Total Days 1,026	Average	23.83/Pt.

Total Hospital Days 4,726

Average stay per patient 17.9

Chemotherapy (Sulfa derivatives by mouth or intramuscularly):

Staff:

Simple Acute	used in	45.3%
Perforated with Peritonitis		100.0%
Perforated with Abscess	of cases	60.0%

Private:

Simple Non-perforated	used in	24.5%
Perforated with Peritonitis		67.6%
Perforated with Abscess	of cases	41.2%

Wound Infections

Staff:

Simple Acute—Total Cases 53
Infected ..... 17, or 32.1%. Of these 12 had drains in.

Private:

Simple Total Cases 155
Infected ..... 27, or 17.4%. Of these 16 had drains in.

The longest stay in hospital was ninety-one days. This was due to a ruptured appendix with an abscess, which was drained but the appendix was not removed. This was a male patient, aged twenty-eight, admitted under the "Private" service. He came in with a history of abdominal pain for seventy-two hours. The operation was delayed for six hours. He received sulphanilamide by mouth. The wound became infected too.

The shortest stay in hospital was five days. This was due to simple acute appendicitis with a history of twelve hours' duration. The operation was performed immediately. No drains were used and there was no infection of the wound. This was a female patient, aged three and one-half years, admitted under the "Private" service.

In eighteen patients (nine staff, nine private) the operation was "delayed" for one reason or another. Only three of these died, and in two the diagnosis was only made post mortem. These results appear in Table II. The total mortality rate appears in Table III.

TABLE II.

DELAYED OPERATIONS (18).

Acute Non-perforated:

Staff—3 cases—lived.
Private—2 cases—lived.

Perforated with Peritonitis:

Staff — 2 cases—One for 20 hours resulted in death but due to other causes, and one in a seventy-five year old man who died on the twenty-fourth day.

Private—1 case —lived.

Perforated with Abscess:

Staff — 4 cases—One on the seventh day with recovery.
One in thirty-six hours with recovery.
One in fifty-six hours with recovery.
One in eighty-four hours with recovery.

Private—6 cases—One in six hours with recovery.
One in fifteen hours with recovery.
One in twenty-six hours with recovery.
One in twenty-six hours with death nine days later.
One in twenty-four hours with recovery.
One in eight days with recovery.

TABLE III.

MORTALITY RATE

General:

Staff		*Private*		*Combined Staff and Private*	
Total Cases	68	Total Cases	205	Total Cases	273
Deaths	4	Deaths	5	Deaths	9
				(Excluding 2 not operated on.)	
Mortality	5.88%	Mortality	2.48%	Mortality	3.29%

Classified:

	Staff	*Private*
Acute Non-perforated	7.55% (4)	0.00% (0)
Perforated with Peritonitis	10.00% (1)	6.25% (2)
Perforated with Abscess	0.00% (0)	11.85% (2)

Analysis of Deaths:

Staff:

1. Cerebral embolus.
2. Death due to anæsthesia.
3. Seventy-five year old male, died in shock suddenly on the twenty-fourth post-operative day.
4. Pulmonary embolus.

Private:

1. Abdominal abscess with two operations.
2. General peritonitis with septicemia.
3. Peritonitis with pneumonia.
4. Appendiceal abscess.
5. Appendiceal abscess.

This general mortality rate (3.3%) is not excessively high, but still is higher than that reported from several other hospitals and also higher than the mortality rate for the Vancouver General Hospital during the years 1936-1940. This is illustrated in Table IV.

TABLE IV.

Comparison of the Vancouver General Hospital with Other Hospitals

	Beth Israel New York	Mt. Sinai New York	University of Nebraska	Roosevelt New York	Vancouver General
No. of Cases	635	212	958	741	273
Acute	292*—.68%†	142— .7%	784— .3%	566—.53%	208—1.9%
Abscess	91—.66%	40— 0%	50— 8%	59—.78%	22—9.1%
Peritonitis	252—2.8%	30— 10%	124—13.8%	116—2.7%	42—7.1%
Total Mortality	2.2%	1.8%	2.6%	2.7%	3.29%

*Indicates the number of cases.
†Indicates the mortality rate.

Mortality Rates, Vancouver General Hospital

	1936		1937		1938		1939		1940	
	Ops.	D.	Ops.	D.	Ops.	D.	Ops.	D.	Ops.	D.
Chronic Subacute and Acute	403	3	480	2	445	1	497	2	501	5
		.74%		.41%		.22%		.4%		.99%
Acute with Abscess	22	1	22	0	23	0	21	3	17	2
		4.5%		0%		0%		14.2%		11.8%
Acute with Perforation and General Peritonitis	69	5	70	2	56	6	39	6	46	2
		7.24%		2.85%		10.71%		15.4%		4.35%
Combined, All Operated On	494	8	572	4	524	7	557	11	564	9
		1.62%		.69%		1.33%		1.98%		1.58%

Analysis of Deaths

Staff Cases:

Case I: On admission, the patient gave a history of complaints of twenty-four hours' duration. Operation was delayed eighteen hours. The appendix was of the acute, exudative necrotic type and was ruptured in removal. The patient died on the ninth post-operative day, two days after the sudden onset of symptoms which were thought due to cerebral embolus or thrombosis.

Case II: This patient, a seventeen-year-old male, gave a history of acute abdominal pain of three days' duration. Operation for acute non-perforated appendix was carried out at once. The patient died in convulsions on the operating table. The autopsy report showed a final diagnosis of cerebral infarction, œdema of the brain, acute necrotic appendicitis, œdema of the lungs, fatty metamorphosis of the liver and cholangitis.

Case III: This patient, a seventy-five year old male, gave a history of complaints of sixty hours' duration. At operation twenty-four hours after admission, the appendix was removed in pieces. On the seventeenth post-operative day, the patient was able to be up in a chair. Five days later, he suddenly became cold and clammy, with acute pain in the chest and shortness of breath and showed signs of shock. Autopsy was not carried out and cause of death is not recorded.

Case IV: This patient gave a history of symptoms of twenty-four hours' duration. Operation for acute gangrenous appendix was carried out at once. The patient died

suddenly on the eleventh post-operative day following pulmonary embolus apparently sustained on the sixth post-operative day. Autopsy was not performed.

Private Cases:

Case I: This patient gave a history of symptoms of forty-eight hours' duration. Operation carried out immediately after admission revealed acute gangrenous appendix, but no mention of peritonitis is made in the operation report. Appendectomy and drainage tubes were used. On the seventh post-operative day, laparotomy for intra-abdominal abscess was performed. The patient died twelve hours later.

Case II: The patient was admitted forty-eight hours after onset of symptoms. At operation immediately following admission, the appendix was removed in pieces. Appendectomy and drainage tubes were used. The post-operative course was stormy and death due to generalized peritonitis and septicemia occurred on the sixth post-operative day.

Case III: This patient gave a history of complaints of twelve hours' duration. Operation, carried out immediately following admission, revealed a ruptured appendix with peritonitis. During a stormy post-operative course, the temperature mounted daily. Soludagenan was administered. Death occurred on the fifth post-operative day. The chart records a final diagnosis of pneumonia and acute appendicitis, but respirations were never above twenty-eight per minute. Autopsy was not carried out.

Case IV: This patient, a thirty-nine year old female, gave a history of symptoms of six days' duration. Operation for gangrenous appendix with abscess was delayed twenty-six hours after admission. Incision and drainage only were carried out. Though the chart makes no mention of peritonitis in the progress notes or the final diagnosis, death, apparently due to generalized peritonitis, occurred on the sixth post-operative day. Autopsy was not performed.

Case V: The duration of the complaints was not recorded. Operation for appendiceal abscess was delayed twelve hours after admission. Drainage only was carried out. Death occurred two days later.

Conclusions

1. Two hundred and seventy-three patients with acute appendicitis received surgical treatment in The Vancouvre General Hospital in 1940.

2. The general mortality rate was 3.29 per cent. This is compared to other years in the same institution, and to that in other institutions.

AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION

R. G. D. McNeely, M.D.

Resident in Pathology, Vancouver General Hospital.

(Pathological Conference—Vancouver General Hospital. H. H. Pitts, Pathologist.)

A sixty-eight-year-old housewife was admitted to the Vancouver General Hospital complaining of severe abdominal pain and vomiting.

For several months she had had vague "dyspepsia" which caused her no real discomfort. Four days before admission she suddenly developed a very severe colicky pain which involved the entire abdomen. She began to vomit frequently and persistently until the day of admission, when she was seen for the first time by her doctor. Nausea and vomiting of brown fæcal-appearing fluid with the same colicky pain were her chief complaints. She was unable to eat anything. An enema was given and the patient passed a moderate amount of soft stool on two occasions.

On examination, she was an obese and extremely ill patient. The temperature was 99.0° F., the pulse 115, the respirations 20. The tongue was swollen. The heart and lungs were normal. The abdomen was distended and was tympanitic to percussion with much pain on palpation especially about the umbilicus. There were no masses and no muscular spasm nor rigidity. On auscultation high-pitched peristalsis was heard. The liver and spleen were not palpable. A cutaneous ulceration, 4 cm. in diameter, was

present over the lateral aspect of the right ankle-joint. The lateral aspect of the left ankle-joint showed a whitish fibrotic scar, an old varicose ulcer.

Examination of the urine showed a specific gravity of 1030, +2 albumen, +2 white blood cells, and +1 granular casts. The leucocyte count was 11,700, with 55% polymorphonuclears, 32% lymphocytes and 12% staff cells.

Early the next morning a Millar-Abbott tube was passed and shown by X-ray examination to be in the duodenum. This lessened the distention and the pain was easier.

By the third day in hospital 47 ounces of fluid had been suctioned off and the tube was in the jejunum. She was still very ill but the pain was less. The same evening, however, a sharp pain developed about the umbilicus and the abdomen became distended and generally tender. The temperature was 100° F., the pulse 100, and respirations 30. The extremities were cold and the pulse weak. She became restless, then unconscious, and died at 2:15 a.m. on the fourth day.

The essential features of the post-mortem examination were present in the abdomen. On opening the peritoneal cavity about 100 c.c. of brownish-red serous fluid was present. There was marked distention of the stomach and of the small bowel to the junction of the jejunum and the ileum where a hard nodular mass was found obstructing the bowel. This on removal was seen to be a gall-stone, 6.5 x 4.0 x 3.5 cm. in size. Proximal to the point of obstruction 10 cm. of the jejunum was seen to be purplish-black in colour and appeared gangrenous. This was confirmed microscopically. The gall-bladder was found to be small and fibrotic and densely bound down to the anterior wall of the third part of the duodenum where ulceration had produced an artificial cholecystenteric fistula.

The anatomical diagnoses were:

1. Chronic cholecystitis and cholelithiasis with adhesions to the duodenum.
2. Ulceration of gall-bladder and duodenum causing artificial cholecystenteric fistula.
3. Intestinal obstruction due to impaction of gall-stone in terminal jejunum.
4. Toxic degeneration of myocardium, liver, spleen and kidneys.

Impaction of a gall-stone is neither a common nor a rare cause of intestinal obstruction. In 136 cases of the latter from 1935 to 1939 at the Mayo Clinic, 2 were due to gall-stone impaction[1]. Moore has estimated that 1 to 2% of all intestinal obstructions is due to gall-stones[2]. Nine cases have been reported with two episodes of acute intestinal obstruction due to gall-stones each time.

This condition occurs chiefly in women. The average age is sixty-six years and the mortality rate is about 50%. Practically all stones make their way into the intestine through a cholecystenteric fistula[3]. The usual site of lodgement of the stone is the lower ileum but occasionally it is found in the jejunum or even the sigmoid flexure of the colon. Enlargement of the gall-stone may occur in passage[4].

Round stones are much more likely to cause obstruction than stones of equal weight but greater length.

The obstruction may be caused by the stone itself being too large to pass onward, by producing an intussusception of the bowel or by becoming embedded in the wall of the gut and secondarily closing the lumen[1].

There is usually no history until the acute obstruction and the condition is rarely diagnosed before operation although X-ray examination occasionally reveals an opaque shadow in the bowel area.

Treatment is that of intestinal obstruction. An enterotomy without enterostomy or drainage of the abdomen is the operation of choice[3].

I would like to thank Dr. L. W. McNutt for permission to present this case.

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THE BODY WATER IN HEALTH AND DISEASE

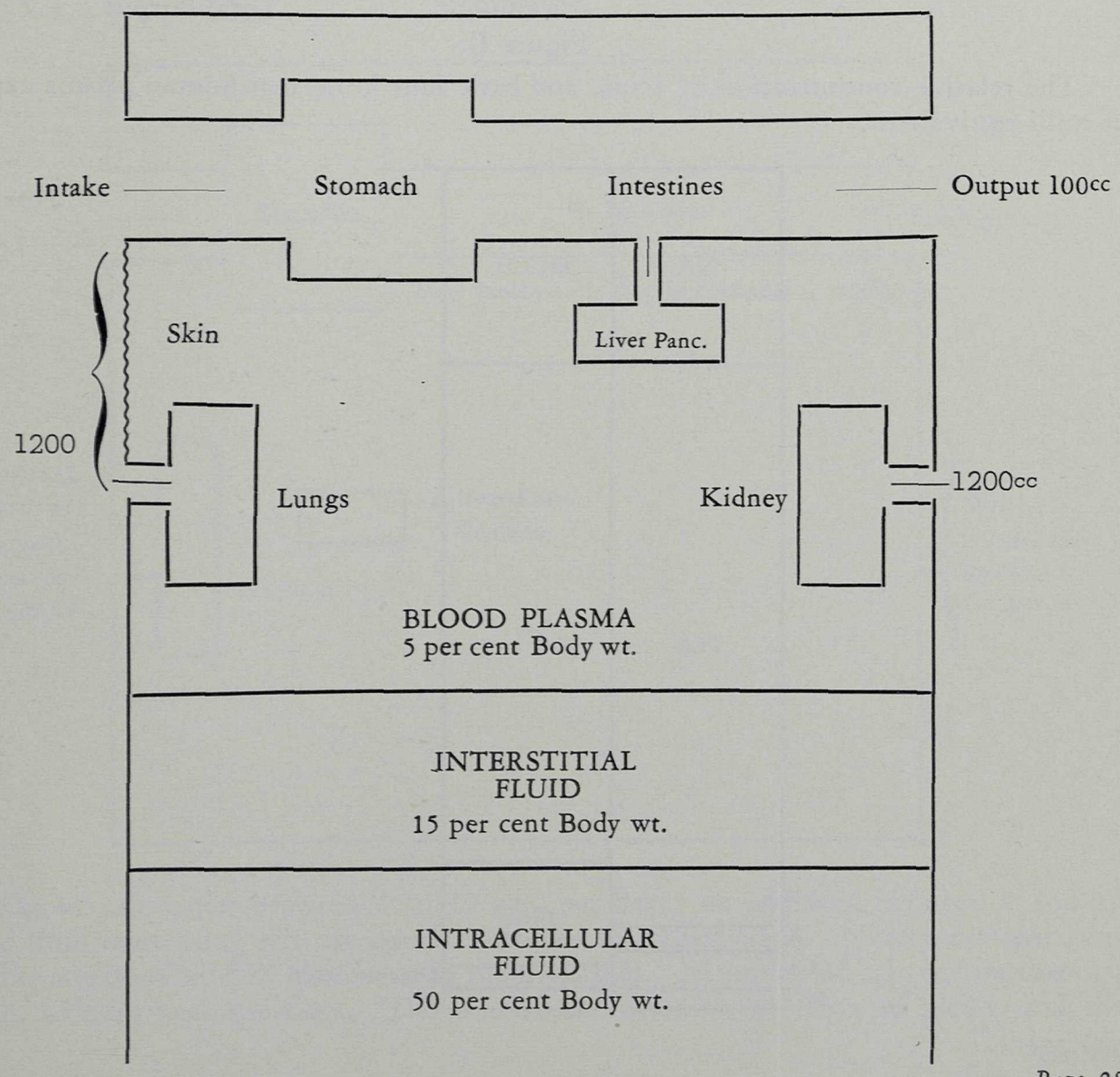
By Dr. B. L. Newton
of the Royal Jubilee Hospital, Victoria

Given before the Victoria Medical Society on February 2, 1942.

A proper understanding of the physiology of the body water in both health and disease is essential before intelligent therapy can be carried out. It is my purpose to discuss water balance under the following headings:

1. Distribution of fluids in the body.
   (a) Intake
   (b) Output
   (c) Maintenance of equilibrium.
2. Alteration of body fluids in disease.
   (a) Alterations in intake.
   (b) Alterations in output.
   (c) Alterations in equilibrium of body water.

Figure 1.



3. Laboratory aids in the diagnosis and treatment of hydrated and dehydrated states.

Water is necessary for the assimilation and elimination of metabolic products; in the regulation of body temperature; and in building body tissues. It is thought that water exists in two forms, free water which can react chemically, and bound water which is linked with cell protoplasm.

The new-born is approximately 70% water, while the adult's tissues are 60% water. Weight for weight, the child needs more water than the adult, due to its relatively greater metabolism and food intake.

The distribution of water in the body tissues may be represented in Figure I.

A. The daily intake of water and dissolved elcetrolytes into the body in the healthy adult may be subdivided as follows:

1. Water as such—and as present in other fluids	1200 cc.
2. Water present in food and that which may be available in the body tissues	1000 cc.
3. Water of oxidation of foodstuffs or of tissue metabolism	300 cc.
Total intake	2500 cc.

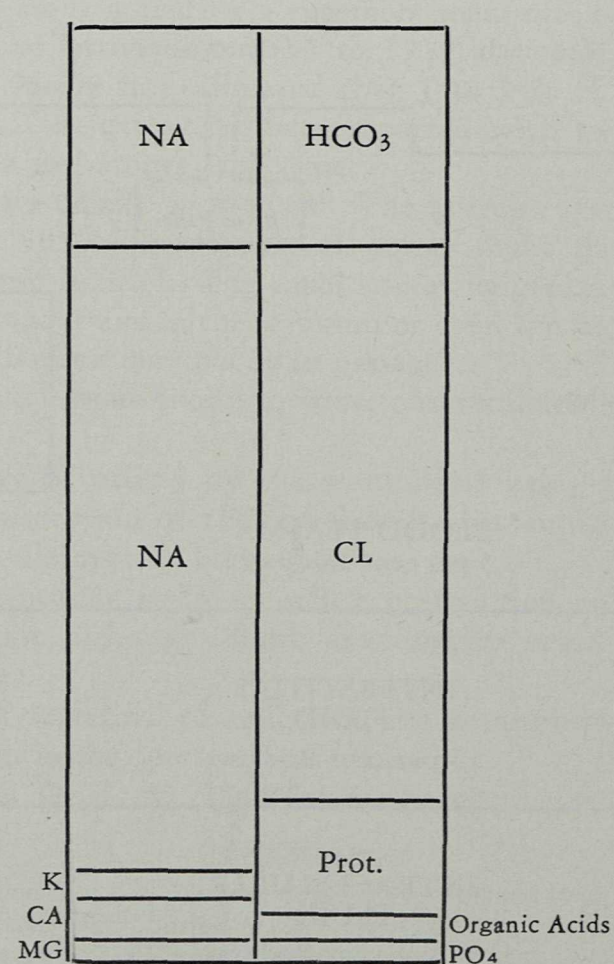
The excretion of fluid into, and the reabsorption of fluid from the intestinal tract is an example of conservation of body fluids. The daily total of this fluid, all derived from the blood plasma, which is in turn in equilibrium with interstitial and intracellular fluids, varies between 7,000 cc. and 10,000 cc., and of this amount 95% is reabsorbed.

B. The daily output of body fluid may be broken down into the following components:

1. Vaporization through skin and lungs	1200 cc.
2. Urinary water	1200 cc.
3. Water lost in the stool	100 cc.
Total output	2500 cc.

Figure II.

The relative concentration of acidic and basic ions in normal human plasma expressed in milli-equivalents.



Under normal, average conditions, the kidneys are the keystone of excretion. Vaporization may assume an important role, however, under various conditions and climates.

C. The maintenance of equilibrium of the body water is dependent on many factors, namely, electrolyte balance of plasma, interstitial spaces and tissue cells, plasma proteins, permeability of capillary and cell membranes, capillary blood pressure, lymphatic drainage, tissue tension, and on the secretions of the pituitary, adrenal and sex glands.

The body electrolytes consist of the basic ions, sodium, potassium, calcium, and magnesium, and the acid HCO-3, Cl, PO-4, SO-4 radicals. The bases also combine with protein, lactic acid, etc.

Actually, sodium, potassium, chloride and bicarbonate, along with lactate comprise most of the electrolytes of the body. Thus, by determining the total plasma base, we have an index of osmotically active ions in the body.

The relative concentration of acidic and basic ions in the blood plasma may be represented by Figure II.

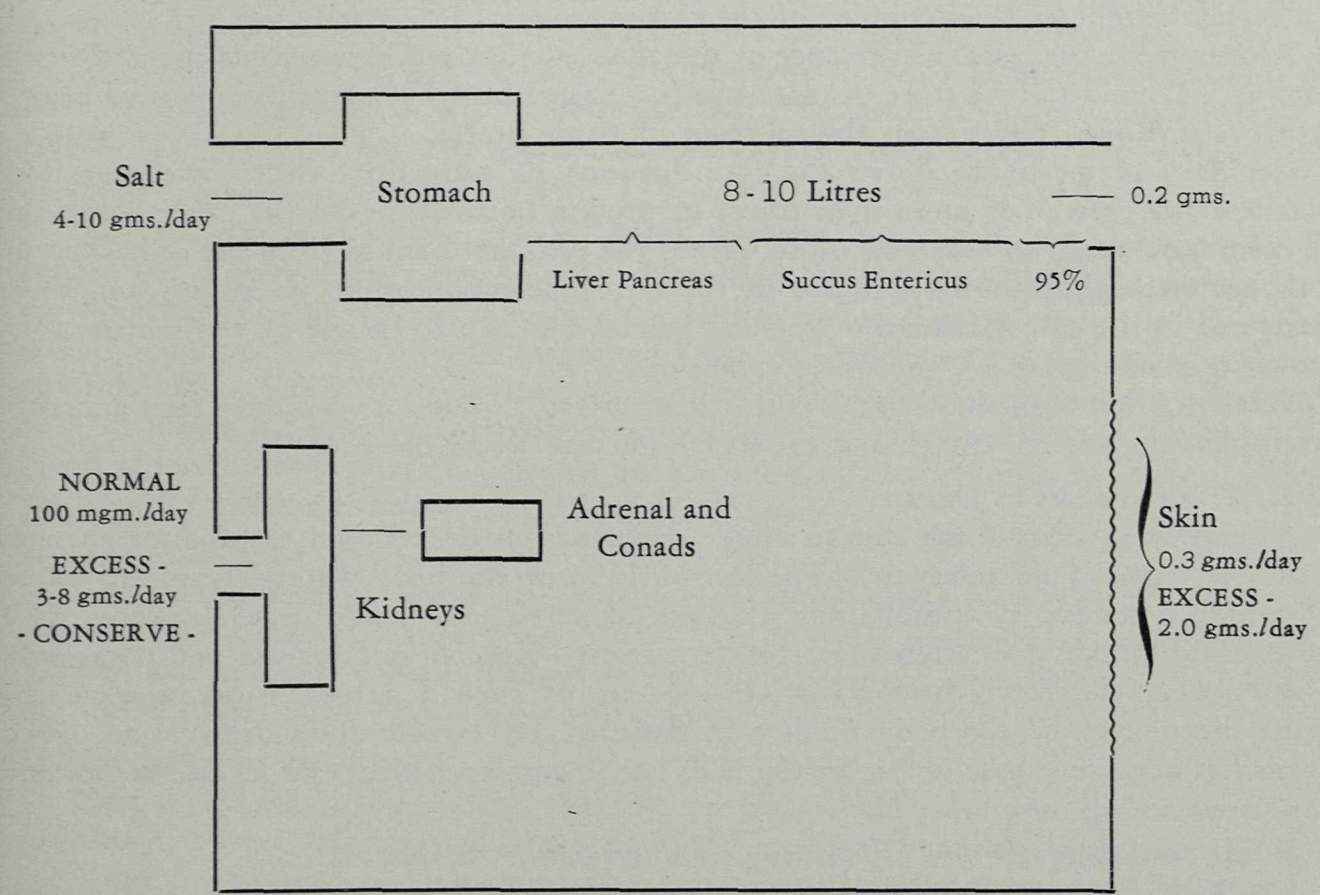
The base combined as bicarbonate is designated as the alkali reserve, which is an index of the reserve base available in the body. The ratio of carbonic acid to bicarbonate is important in controlling the pH of body fluids. If the bicarbonate is decreased, or the carbonic acid increased, there is a tendency to acidosis. Conversely, with increase in bicarbonate and decrease in carbonic acid, alkalosis ensues.

Te metabolism of sodium may be represented by Figure III.

Figure III.

NaC1

Metabolism.



Intake of salt varies between 4 to 10 gm. per day. In addition, between 8 and 10 litres of fluid containing salt are poured into the intestinal tract. Ninety-five per cent of all this salt is reabsorbed low down in the intestines. Excretion of salt occurs through the skin, kidneys and intestines. The role of the adrenals, the thyroid gland, and the

sex hormones in regulating sodium metabolism is as yet improperly understood.

Sodium is inseparably linked with water metabolism. Renewed interest in this relationship resulted from the fact that in adrenal insufficiency, sodium and chloride decreased along with the body water. Much subsequent work has shown that where sodium goes in the body—so goes water.

Let us now consider briefly the body chlorides. This radical is the most important acid radical in the body. The chloride content of the plasma is twice that of the cells, being 370 and 190 mgm. per cent respectively. The chloride ion and the bicarbonate ion are interdependent. If the chloride ion decreases—e.g. during early digestion, bicarbonate increases. Depending on salt intake, the plasma chlorides may be either elevated or decreased, to a certain point—above which the kidneys rapidly excrete chlorides and below which they conserve it.

The plasma proteins, consisting of albumin, the globulin complex and fibrinogen, play an important role in maintaining the balance between plasma and interstitial fluid. They exert an osmotic pressure of approximately 25 mm. Hg within the capillaries—mostly due to the albumin fraction—tending to retain fluid within, or draw fluid into the vascular system. This force is opposed by the blood pressure—especially that within the capillaries. At the arteriolar end of the capillary, the blood pressure is between 30 and 35 mm. of Hg—and thus fluid tends to pass from the vessel into the tissues. As the blood flows towards the venous end of the capillary, the blood pressure falls and the osmotic pressure exerted by the plasma proteins is the greater. Thus fluid tends to flow from the tissues into the blood.

The amount of fluid within the lymphatic vessels has been estimated at between 1500-2500 cc., very similar in composition to tissue fluid. Lymphatic drainage is an important factor in maintaining the normal fluid balance of the body. The ability of the tissues to resist changes in their anatomical structure, their tissue tension, depends to a certain extent on fluid content of the tissues.

Recent work suggests the presence of dynamic equilibrium between plasma and tissue proteins. Thus, a reserve store of materials for plasma proteins is available if need arises; or this reserve may come from the splitting of tissue protein.

Capillary permeability allows the free diffusion of water and electrolytes but does not allow the passege of more than traces of protein normally. On the other hand, the cell membrane tends to keep potassium within the cell, and sodium from the cells. Recent work has established the importance of the cell impermeability to potassium ion, since alterations in the concentration of this ion has been shown to be one of the factors concerned in secondary shock and other conditions.

Finally, it has been shown that both the pituitary through its posterior lobe and pars intermedia, the adrenal cortex and the liver influence water balance.

2. A. *Alteration in Disease.*

Alteration of body fluids due to intake deficiency or excess tend to produce changes in the interstitial fluid reservoir. The loss of 10% of the body water—from any cause will produce serious symptoms, and the loss of 20% may cause death. Along with altered fluid intake, goes altered electrolyte pattern—especially of sodium and potassium. In starvation, electrolyte and water changes are of such a nature as to preserve the normal isotonicity of the body fluids. In diabetes and carbohydrate deprivation, when ketosis has occurred, base is lost to the body, as it combines with the ketone bodies and is excreted.

B. *Alteration of the body fluid due to abnormalities of output.*

The body fluid and electrolyte balance may be altered due to abnormalities in output. The sources are many, consisting of skin loss, loss from gastro-intestinal tract through vomiting or diarrhoea, loss through fistulæ, unusual loss through urine, and loss from surgical wounds. An idea of electrolyte losses may be gained from the following table, which indicates the average sodium chloride content in grams per litre of the excretions listed.

Average NaC1	gm/L
Vomitus	3.3
G-I drainage	5.7
Hepatic bile	5.1
G-1 fistulæ	5.2
Diarrhœa, stool	4.3

In pyloric obstruction, the loss of chlorides, which is replaced by phosphates, sulphates and bicarbonate, is much greater than the loss of base; thus, the bicarbonate rises markedly. Corresponding to loss of chloride, is marked loss of water. Similar changes occur in other intestinal diseases, all with decrease in chlorides but with different losses of base depending on the site of the lesion.

Marked loss of chlorides occurs also in starvation, diabetic acidosis, pneumonia and emphysema.

C. This brings up the question of alterations in the water balance in the body. I have mentioned that there is a ready exchange of fluid between the blood plasma and interstitial spaces—but that little electrolyte transfer occurs between interstitial fluid and cell fluid—because of the relative impermeability of the cell membrane to sodium.

Space does not permit a complete discussion of the water exchanges in œdema, and I only intend to touch briefly on the subject. Oedema is the abnormal collection of fluid and electrolytes in the skin, subcutaneous tissues and serous cavities. The principal factors involved in œdema formation are: increased capillary pressure, decreased plasma proteins, permeability of the capillaries, alterations in tissue tension, as well as the state of the lymphatic radicles in the tissues. These factors may be brought into operation by a great variety of conditions, among which are the following: malnutrition, intestinal disorders, cardiac and renal diseases, toxæmias of pregnancy, etc.

The problem of fluid and elctrolyte changes in shock are complex and I do not intend to consider them in this paper. This aspect of the problem has been dealt with in a paper by Dr. G. A. McCurdy published in a previous issue of this journal.

3. The clinician, in order to treat his problems in fluid balance successfully, must have an understanding of the value of certain diagnostic laboratory procedures. The following procedures are of value in determining the state of the body water.

1. *Blood Chlorides*

The normal level of the plasma chloride is 270 mgm. % with a range of + 20 mgm. %. I have already mentioned the common diseases in which the blood chlorides are lowered. Owing to the chloride shift, which follows any escape of carbon dioxide which occurs even when blood is poured from one container to the other, the plasma chloride rises. Similarly, when any factor is present which increases the blood CO-2, such as prolonged standing at room temperature, the chloride decreases. Actually, the blood chloride concentration depends on the ratio of cell chloride to plasma chloride, and any interpretation must take this into account.

2. *Co-2 Combining power.*

The normal level of the carbon dioxide combining power is 55-75 Vols. %. Values found in mild acidosis range from 55-40 Vol. %. In moderate acidosis from 40-30 Vol. % and in severe acidosis, below 30 Vol. %. Values of over 100 Vol. % are found in cases of alkalosis due to pyloric obstruction.

3. *Estimation of total base.*

This is arrived at by adding the sum of plasma chlorides and the carbon dioxide combining power and then adding a constant for the remaining acid ions. Since the total number of acid ions is quantitatively equal to the total number of basic ions, the value for total base is arrived at. Total base gives a fair index of the total osmotically active ions, and hence its determination in fluid balance is of definite value.

4. *Urinary Volume.*

It is well to remember that in the absence of renal disease a low urinary volume of high specific gravity signifies that the patient is not hydrated.

5. *Evidences of Hæmoconcentration.*

The red blood cell count, hæmoglobin and hæmatocrit determinations are reliable measures of hæmoconcentration, unless previous complicating factors such as anæmia or hæmorrhage are present, when they are individually fallacious. Taken together, they are reliable, especially when the specific gravity of plasma or blood is also determined.

In acute water loss, the packed cell volume increases, as it does to a lesser extent in water and protein loss. In acute blood loss, water loss with anæmia, and in anæmia with œdema, the packed cell volume is decreased.

5. (b) *Specific Gravity of Blood and Plasma.*

The determination of these values constitutes another aid in detecting hæmoconcentration. The specific gravity of body fluids can be accurately and simply determined by the use of the Falling Drop apparatus. As calculated by this technique, normal values for whole blood specific gravity in adults are 1.0566 in the male and 1.0533 in the female; for plasma, the normal is 1.0270.

An example of the use of these determinations is in impending shock, where specific gravity changes in body fluids occur hours before the blood pressure falls. This value is increased in shock, acute obstruction, adrenal insufficiency, among other conditions.

(c) *Plasma Proteins.*

The normal functions of the plasma proteins are well known and numerous. Hence, their maintenance at normal level is important. The normal value for total plasma proteins is 5.9 to 7.9 gms. %. By use of a simple mathematical formula, this value may be calculated from the specific gravity estimation. Calculation of total proteins is of definite value as a guide to the state of the osmotic pressure within the capillaries.

Finally, I would like to emphasize that these different determinations must be considered together, rather than individually, and that repeated estimations are the only known way to accurate diagnosis and successful therapy in problems of fluid balance.

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