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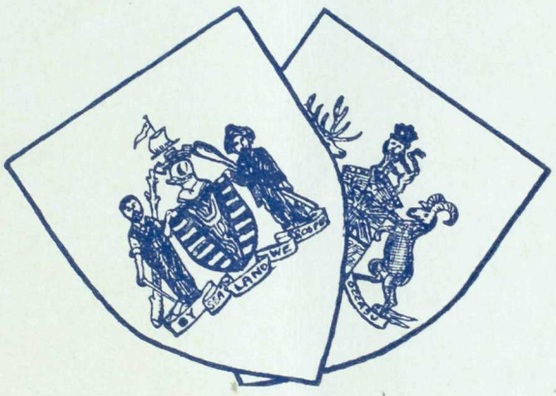
The BULLETIN
OF THE
VANCOUVER MEDICAL ASSOCIATION

Vol. XI NOVEMBER, 1934 No. 2



In This Issue:

HEALTH SERVICE FROM THE VIEWPOINT OF THE GENERAL PRACTITIONER

TUBERCULOSIS :: PREVENTION OF DISEASE

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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

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VOL. XI NOVEMBER, 1934 No. 2

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—SEPTEMBER, 1934

Total Population (Estimated)	243,711
Japanese Population (Estimated)	7,866
Chinese Population (Estimated)	8,315
Hindu Population (Estimated)	251

	Number	Rate per 1,000 Population
Total Deaths	163	8.1
Japanese Deaths	10	15.0
Chinese Deaths	6	8.8
Deaths—Residents only	141	7.0
Birth Registrations— Male, 138; Female, 143	281	14.8

INFANTILE MORTALITY—	September, 1934	September, 1933
Deaths under one year of age	6	4
Death rate—per 1,000 births	21.4	16.5
Stillbirths (not included in above)	5	7

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	August, 1934		September, 1934		October 1st to 15th, 1934	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	0	0	0	0	0	0
Scarlet Fever	34	1	31	1	22	0
Diphtheria	2	0	1	0	0	0
Chicken Pox	6	0	8	0	10	0
Measles	2	0	0	0	0	0
Rubella	0	0	0	0	0	0
Mumps	3	0	12	0	16	0
Whooping-couph	13	0	11	0	5	0
Typhoid Fever	2	0	0	0	2*	0
Undulant Fever	0	0	0	0	0	0
Poliomyelitis	3	0	0	0	0	0
Tuberculosis	34	11	35	7	25	--
Meningitis (Epidemic)	0	0	0	0	0	0
Erysipelas	1	0	2	0	0	0
Encephalitis Lethargica	0	0	0	0	0	0
Paratyphoid	0	0	0	0	0	0

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VANCOUVER MEDICAL ASSOCIATION

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Programme of the 37th Annual Session

GENERAL MEETINGS will be held on the first Tuesday of the month at 8 p.m.

CLINICAL MEETINGS will be held on the third Tuesday of the month at 8 p.m.

Place of meeting will appear on Agenda.

General meetings will conform to the following order:

8:00 p.m.—Business as per Agenda.

9:00 p.m.—Paper of the evening.

1934.

October 2nd—GENERAL MEETING.

DR. G. F. AMYOT: "Infection, Its Spread and Control."

Discussion: DR. E. D. CARDER
DR. H. A. SPOHN.

October 16th—CLINICAL MEETING.

November 6th—GENERAL MEETING.

DR. C. E. BROWN: "Some Secretory Disturbances of the Stomach."

Discussion: DR. H. A. DESBRISAY.
DR. A. Y. MCNAIR.

November 20th—CLINICAL MEETING.

December 4th—GENERAL MEETING.

DR. A. B. SCHINBEIN: "Tumours of the Breast."

Discussion: DR. J. J. MASON
DR. B. J. HARRISON
DR. H. H. PITTS.

December 18th—CLINICAL MEETING.

1935.

January 8th—GENERAL MEETING.

DR. W. E. AINLEY: "The Relation of the Retina to Cardio-Vascular and Renal Disease."

Discussion: DR. W. D. KEITH
DR. WALLACE WILSON.

January 22nd—CLINICAL MEETING.

February 5th—GENERAL MEETING.

DR. MURRAY BLAIR: "Physiological Observations in Obstetrics."

Discussion: DR. W. S. BAIRD.

February 19th—CLINICAL MEETING.

March 5th—GENERAL MEETING.

THE OSLER LECTURE—DR. WALLACE WILSON.

March 19th—CLINICAL MEETING.

April 2nd—GENERAL MEETING.

DR. F. W. EMMONS: "The Surgery of the Presacral Nerve."

Discussion: DR. J. J. MASON
DR. F. TURNBULL.

April 16th—CLINICAL MEETING.

April 23rd—ANNUAL MEETING.

EDITOR'S PAGE

The recent meeting of the B. C. Medical Association was marked by what is an innovation as far as British Columbia is concerned, in the fact that at the end of the programme there was a meeting of the College of Physicians and Surgeons of B. C. All the medical men present took part in this meeting as members of the College, and the President of the Council of the College, Dr. T. McPherson of Victoria, took the chair.

Reports were given of the year's work in connection with the affairs of the College, and for the first time in the history of the B. C. Medical Council, members of that body had the opportunity to meet their constituents and discuss Council matters with them.

This is not only an innovation, it is distinctly, we think, a forward step and we are sure that the Council, as well as the members at large of the College, will agree with us in this. Our readers will remember the reasons why the Council and the B. C. Medical Association adopted a new *modus vivendi* whereby the latter resigned to the Council the economic and other functions which it had undertaken to perform and limited its own activities to the scientific side of medicine. The reasons were largely financial, but they were also reasons of convenience and expediency, and the promoters of this change were also actuated by the desire to have the medical profession wholly included in the organization thus brought about, rather than go on with the former arrangement whereby a minority paid an unduly large amount towards medical organization. It was felt, and is still felt, that much waste and overlapping could be prevented.

It is quite probable, however, that finality of organization has not yet been reached. Finality is perhaps not the word, stability might be better. There is still a lack of flexibility and the machinery creaks somewhat in places. We know that nobody is more anxious than the members of Council to remove these disabilities and we cannot, perhaps, expect that everything can be so ordered as once, that all contingencies will be met. The tragic and deeply regretted loss of Dr. Procter, the efficient and long-experienced Registrar of the College, has further complicated things. We have now neither a Secretary of the B. C. Medical Association nor a Registrar of the College, and we are in a state of flux. Ordinarily, this would matter little, we could take plenty of time over decision as to the best step to be taken next, but unfortunately we are faced with a situation which is rather urgent, and demands our most serious consideration.

We are assured that at the next session of the B. C. Legislature steps will be taken to inaugurate some form of Health Insurance. What are we doing and what should we do, to safeguard our legitimate interest in this matter? It will not be enough, not nearly enough, at the last minute to hurriedly organize some form of lobby. This will get us nowhere.

We know that the Council is seeking the wisest and best way of solution and we would not embarrass them in any way, but we should all welcome any statement by them, or any step which would show that this matter is in train. And we feel strongly that the first and most important step for us to take is to organize solidly the medical profession of B. C. and that includes all of them.

This organization cannot, we submit with all due respect, be done properly unless we have a definite liaison officer to meet all the men on one side and the Council on the other. We feel that since the Council has to face the prospect of appointing a new official sooner or later it should

take the step now, as the time between now and the session is all too short to organize the profession, to obtain its pledges and support, and, indeed, to keep the profession in touch with the developments that will certainly arise.

This is a matter vitally affecting every medical man in the province; indeed, it vitally affects the whole of the profession in Canada, and we know that the Canadian Medical Association is watching the situation closely. But in the nature of things it cannot take any step until it is invited by us to do so, and the initiative is with the provincial organization.

We understand that in Alberta there is a trend back to the state of things where the Council attends to the legal duties which are imposed on it by Act of Parliament, while the Provincial Association resumes the economic activities formerly surrendered by it to the College. Might this not be a step in the right direction? The Council cannot be expected, with its limited number, and scattered membership, to do everything, and we have no right to unload all our burdens on to its shoulders.

Lastly, there is the question of co-operation with our sister professions, dentistry and nursing, not to mention the pharmaceutical profession. We should, we feel strongly, be kept aware of each other's activities and should discuss amongst ourselves very freely the whole question of Health Insurance in order that we may be capable of a reasonable and united effort and not find ourselves faced with a situation which we cannot adequately meet.

These ideas are offered not in any spirit of criticism whatever. The Council has proved beyond question the sincerity of its desire to do the best possible for everyone, but we feel that this is a case where time is of very essential importance, and we must not simply adopt an easy optimism, and trust that it "will all come out right on the night," but must be ready to drop ceremony and do what is in the best interests of all concerned.

NEWS AND NOTES

A very important meeting will be held at the Auditorium of the Vancouver General Hospital on Monday, November 5th, 1934, at 8 p.m. The guest speaker will be Dame Janet Campbell, D.B.E., M.D., M.S., of England. Dame Campbell is an internationally known authority on maternal and child welfare and is touring Canada, speaking in many important centres.

Her object is to arouse a greater interest in the problems of Maternal Welfare and her qualifications for this task are unique. Since 1908 she has been associated with national bodies dealing with Health and Education and in 1919 she joined the Ministry of Health as Senior Medical Officer for maternity and child welfare. Space will not permit of details about this very able woman, but it will be of interest to say that she has been closely associated with the Health Committee of the League of Nations, both as the woman member of this committee and as President of the International Committee on Infant Mortality. We are very fortunate to have her to speak to us.

The meeting is being sponsored by several bodies, the Vancouver Medical Association, the Greater Vancouver Health League, the Graduate Nurses' Association and the Health and Welfare Educational Group, of which Dr. Amyot is President.

Dr. A. C. Frost, our President, will be in the chair, and Dr. Amyot will introduce the speaker.

We invite a full attendance by members of the Association.

The Radiological Society of North America will hold its next Annual Meeting at the Hotel Peabody, Memphis, Tennessee, from December 3rd to 7th, 1934, inclusive. The medical profession is cordially invited to attend. Further information can be obtained from the Secretary-Treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syrcause, N.Y., U.S.A.

* * * *

Dr. R. A. Seymour has left for Toronto to take a year's postgraduate work in psychiatry.

* * * *

The internes at the Vancouver General Hospital are rejoicing in the possession of a new, comfortably furnished internes' room immediately adjoining the Records Office. Dr. Haywood, Medical Superintendent of the Hospital, has been kind enough to offer the use of this room to any member of the profession who may have to wait for an operating-room time, or may wish to consult records and take notes, or may for any other reason need a quiet room for a while. Books and journals will be available.

* * * *

Our Librarian, Miss Firmin, is enjoying a holiday at the moment, which everyone will agree is more than well-earned. THE BULLETIN is missing her keenly, and if this month's issue is full of defects, we ask our readers to attribute this to the loss of her guiding hand, and to possess their souls in patience till next month.

SUMMARY

We are printing herewith a brief summary of the minutes of the annual meeting of the B. C. Medical Association. The important point is the resolution that was passed looking towards a closer organic union with the Canadian Medical Association with a view to adding strength to both the national and provincial bodies. Another significant event was that at the close of this meeting Dr. T. McPherson of Victoria, President of the B. C. Medical Council, called a meeting of the College of Physicians and Surgeons and after a brief address called for reports from certain Committees that had been appointed by the Council during the year. It is impossible to report at any length the minutes of this meeting, but the subject chiefly dealt with was health insurance. Unfortunately the meeting began rather late and, as many members had to catch their train home, there was not as long a discussion as many would have wished.

The annual meeting of the B. C. Medical Association was held in the Elks' Hall, Kamloops, at 8 p.m. on September 18th, 1934, following two days of scientific sessions. Most of those doctors who registered, eighty-five in all, were present at this meeting.

The President, Dr. W. S. Turnbull, was in the Chair.

The minutes of the last annual meeting in Vancouver were read and adopted.

Reports were heard from the following Chairmen of Committees: Dr. H. H. Milburn on Ethics and Discipline; Dr. J. H. MacDermot on Health; Dr. D. E. H. Cleveland on Publicity and Educational; Dr. G. F. Strong on Programme and Budget. Dr. C. H. Bastin's Editorial Report, in his absence, was read by the Secretary-Treasurer and ordered filed. The Secretary-Treasurer's report and that of the Auditors were read and adopted.

New Business: Dr. MacDermot proposed the following resolution:

"That this Association goes on record as endorsing the principle that the B. C. Medical Association should become an integral part

of the Canadian Medical Association instead of being merely an affiliated body if and when the Executive of the Associations of other provinces take the same step. Further, that the election to the Council of the Canadian Medical Association be carried out in such a way that a better attendance may be secured and that these members of Council become automatically members of the Executive of the Provincial Association."

This was seconded by Dr. Milburn and unanimously carried.

Dr. T. McPherson, Chairmna of the Nominating Committee, presented the following nominations for the consideration of the meeting:

President, Dr. A. D. Lapp; Vice-President, Dr. H. H. Milburn; Secretary-Treasurer, Dr. Ethlyn Trapp.

There being no further nominations from the floor, the Secretary-Treasurer was instructed to cast a ballot for these nominees.

It was moved by Dr. H. Carson Graham and seconded by Dr. McPherson that the time and place of the next annual meeting be left to the incoming Executive. Carried.

Moved by Dr. C. H. Vrooman, seconded by Dr. Cameron McEwen, that the usual banking resolution be passed. Carried.

Then followed the address of the President, Dr. W. S. Turnbull.

Following this address, Dr. W. J. Knox, the immediate past president, presented to Dr. Turnbull the badge of the B. C. Medical Association in recognition of his presidential year, a ceremony initiated two years ago by the late Dr. A. S. Monro.

Dr. Knox moved a vote of thanks and appreciation to the President of the Canadian Medical Association, Dr. J. S. McEachern, for his presence and assistance at this annual meeting. This vote of thanks was seconded by Dr. Lapp and unanimously and enthusiastically carried by the meeting.

Dr. A. D. Lapp was then installed as the new president, and took the Chair. His first duty was to present to Dr. McEachern the vote of thanks of the meeting, to which Dr. McEachern replied. It was then moved by Dr. H. H. Milburn and seconded by Dr. W. S. Turnbull that Dr. McEachern be made an honorary member of the B. C. Medical Association. Carried unanimously.

The meeting then adjourned.

BOOK REVIEW

THE LIFE OF SIR ROBERT JONES. By Frederick Watson.

To those of us who have had the privilege of working at his clinic in the Royal Southern Hospital in Liverpool, the memory of the late Sir Robert Jones is chiefly one of a kindly gentleman of great charm, wholly unpretentious, and with a marked sense of humour.

The story of his life as told by his son-in-law is also the story of the early development of orthopædic surgery. The pioneer in this work was, however, Owen Thomas, the uncle by marriage of Jones, and with whom he served his surgical apprenticeship. Thomas was the son of a bonesetter, himself the eighth in direct descent of a line of bonesetters—"well-to-do farmers and highly respected throughout Anglesey." Sensing that the day of the bonesetter was past young Thomas was sent to medical school, and standing as he did between past and present, he could apply to the inherited lore and empirical skill of his forefathers, the wider learning of medical

science. Adjoining his office Thomas had a blacksmith shop where he fashioned splints to suit each individual case. He is quoted as saying, "A man who understands my principles will do better with a bandage and broomstick than another with an instrument maker's arsenal."

Jones was schooled in these principles and carried them on, soon drawing patients from all over industrial Central England to his clinic; which became, too, a mecca for visiting surgeons, notably Americans. He had his great opportunity during the war and the years of reconstruction work following. The story is known to all of how he preached the virtues of the Thomas leg splint, until it came to form part of the front line equipment, and reduced the mortality rate for compound fracture of the femur from 80 to 20 per cent.

The writer once asked Sir Robert Jones why he had not written a text book on orthopædic surgery, and he replied that he never seemed to be able to find the time. It was only during the last years of his life that, in conjunction with Lovett, he produced a work to make permanent and available to all, the information he had gathered through his long years of experience.

His biography is written by one who is not a member of the profession, but this tends to add to its charm, since the author's relationship gives to it an intimate touch, and it may be seen throughout the book that he makes use of material available to him because of family ties. This volume is a valuable addition to the library. G. E. K.

THE ROLE OF THE GENERAL PRACTITIONER IN THE EARLY DIAGNOSIS OF TUBERCULOSIS

Abstract of an address by Dr. F. M. Pottenger
Monrovia, Cal.

Dr. Pottenger's address was probably one of the most interesting of the entire programme. He has a gift for epigrammatic statement, and this always makes a speaker "easy" to listen to.

His address was, too, very encouraging to the general practitioner. He shewed the immense importance, if tuberculosis is to be brought under complete control, of the role of the physician in general practice, who sees most tuberculous patients and sees them first. He stressed the obligation that is on every one of us to see that these cases are recognised early; and the fact that any competent physician can recognise early T.B.

Tuberculosis must be recognised early, if we are to eliminate it, or bring it into complete control. Thirty years ago, deaths from T.B. were 200 per 100,000; today they are 65 per 100,000 of population, a reduction of two-thirds.

This is almost entirely due to better diagnosis and treatment *of early cases.*

Every patient with T.B. is a sick person, and *an open case,* for 4-5 years.

Therefore he is a source of infection for 4-5 years.

T.B. is not a virulent disease, only mildly infectious.

The curability of tuberculosis depends upon early diagnosis. Hence the role of the general practitioner is of tremendous importance.

How early can a diagnosis of T.B. be made?

Any time after infection has occurred, i.e., after the first sensitization

of body cells has occurred, i.e., four to five weeks after infection. This, of course, is ascertained by the tuberculin test, which can be applied by any general practitioner.

If we are going to do our best for the prevention of T.B. we must bear in mind not only the cases that come to us, but the contacts. They have been infected by someone else, and they have passed it on to others, hence we must hunt for the contacts.

Tuberculin test. If this is positive, there is a focus somewhere in the body. Early foci are not particularly dangerous, while small, in fact, they give a certain immunity. As long as these early foci heal, we need not worry.

Next, take *x*-ray of chest. 80 to 85 per cent of T.B. appears first in the lung.

One *x*-ray will not do.

A negative *x*-ray, or simply a calcified node, does not mean that we are safe.

The suspected child must be watched. If there is normal growth, well and good; if not to normal degree, or if child is listless and irritable, look out.

If we find a shadow in the lung-field, the child should be put under proper care. Up to fifteen, T.B. heals very readily.

Unfortunately, we too often miss the primary infection, and generally our first diagnosis is of secondary, not primary, infection.

The first infection leaves a focus in glands. The centre of these caseates, and does not always heal. Then secondary infections occur. There are T.B. bacilli present in these glands.

If we have a large dose of bacilli coming into the body of one who has already been infected, that patient very readily becomes very ill with a secondary infection.

N.B. *The primary infection may not be accompanied by cough or temperature,* and unless routine *x*-rays are taken of the chest, nothing may be suspected. It is with the secondary infection that we have temperature, cough, "repeated colds"; sometimes gastro-intestinal symptoms; sometimes dyspnoea on exertion.

Tuberculosis masquerades under many guises. When the symptoms become definite, they fall into three groups mainly:

1. *Toxic.* Patient is tired, listless, lacks energy and appetite. There is *tachycardia* on slight exertion, or none at all.

These symptoms are not pathognomonic of T.B.; they show merely a nerve imbalance.

A slight rise in temperature is very common—and there are two types: (a) Where temperature rises for a few days to 99^0 or 99^4, subsides for a few days, then rises again and so on. These are due to *reinfections.* (b) Where temperature rises and remains at the higher level for quite a long time. Here we have a *focus* present, for which we must search.

2. *Associated with other parts of the body.* There is here a visceral-neurological upset.

"You cannot have a chronic injury of any viscus, without involving neurons, and without its being reflected in other parts of the corresponding segment of the body."

A considerable readjustment is necessitated by the chronic infection, and the neurons "don't adjust."

The condition is apt to recur with fatigue or strain, and to be seasonal to some extent.

Reflex pains are of great value; and referred pains too. Thus pain in the area of the shoulder-girdle is of great value, especially when accompanied by a lagging of muscles in that side, of reflex origin.

Hoarseness is frequently due to reflexes, is aggravated by strain, sometimes evanescent, always revealing. Similarly, flushing of the face, especially on the affected side, gives us a clue.

3. *Definite local symptoms.* These are chiefly:
   Hæmorrhage;
   Pleurisy and pleuritic pains;
   Expectoration.

If a patient comes with *hæmorrhage,* in the vast majority of cases this will be from the lung.

Think *first* of tuberculosis.

So with *pleuritic pain.* Do not think of intercostal neuralgia, etc.—think of T.B.

Pleurisy with effusion—most commonly tuberculous in origin.

If hæmorrhage or pleurisy are combined with tiredness, or a little cough, or limited excursion of one side, be very suspicious.

Expectoration. Never take the patient's word for it, when he says he does not have any. This is especially the case in children.

Give the patient a bottle, and ask for a 3-day specimen.

Rules to follow:

1. Careful history.
2. X-ray.
3. Examine sputum.

Do not depend too much on this last. It takes 100,000 bacilli to the cc. to be sure of seeing them. This is where laboratory work is important. The sputum should be concentrated, as by centrifuging, then even 1000 per cc. will be seen.

4. Always examine *the chest bare.* Watch the patient breathe.

The general practitioner should know the following (here Dr. Pottenger became epigrammatic):

1. The general practitioner *can* make a diagnosis, as early as anyone. Therefore he *should.*

2. If he fails, there is a lack of accuracy in his technique.

3. Nothing gives a patient greater confidence than a *thorough* examination; nothing is so destructive of confidence as a superficial one. We must not fail through carelessness, through poor history-taking, through improper examination, etc.

4. Do chest work, not as a specialist in chest diseases, but *as an internist.* Be an internist, and practise the line you like best, but as an internist.

5. It's an individual that has the lung, not a lung that has the individual.

6. The day of specialism is on the wane. (Yes, he said that.)

7. Do not be overshadowed by machinery or by mechanical methods.

8. The patient is a book that we can read.

THE GENERAL PRACTITIONER AS PART OF THE NATIONAL HEALTH SERVICE

Following is a condensed report of the addresses made by Drs. Vaughan and Gordon of Detroit at a special meeting of the Vancouver Medical Association held on August 25th, 1934, with regard to the practicability of including the general medical profession in the work of the health department, thus utilizing the medical man both as a preventive and curative force in disease.

DR. HENRY F. VAUGHAN

Dr. Stuart Pritchard, a Canadian, now president of the board of the Kellogg Foundation, holds the view that the family physician should function in preventive medicine in a fully organized way, as well as in the treatment of disease. It is to the advantage of the patient, the doctor, and the state.

In Michigan, the study of health problems has been developed separately from the state and municipal health departments. There they are fighting for fully-developed health service in all counties. Their objective is to have the family physician active in all diseases, including cancer, not alone diphtheria, the one disease which was chosen as the first to be attacked.

An effort has been made to integrate the general practitioner into the health programme in three ways:

1. Reach the public by a programme of education.
2. Secure the co-operation of the doctor in private practice through a programme of education in methods, technique, etc., for members of the profession.
3. A study of the factors of treatment, including hospitalization.

This programme takes time. Since 1928 they have striven to have all doctors who are interested give both preventive and curative treatment in diphtheria. There has been no free clinic. All the work has been done by the doctors in private practice. Eighty-five per cent of all school children are now protected against diphtheria, and among the pre-school children, 50 per cent. Diphtheria is now a rare disease. In the last eight years much progress has been made. The doctor is now a co-worker with the health authorities.

The steps necessary to bring this about are:

1. Reach the doctor, who should be prepared, and taught the use and application of toxoid, the Schick test, etc.
2. The doctor should learn the technique.

The group plan is used in co-operation with the health department. Sixty public health committees have been formed, comprising at the present time about 1200 doctors in Wayne County Medcial Society. The central committee is in contact with all general practitioners, including those who are not members of the Medical Society. The methods used were:

A. A medical conference was held to interest all doctors. The tuberculin test in childhood was also studied. The doctor was prepared by giving him a demonstration of the technique of inoculation, etc.

B. Next there was education of the public: (1), by urging the parents to go to the Health Department; (2) by the use of popular lectures, radio, pamphlets, billboards, street cars, church announcements, etc; this brings about 20 per cent returns; (3) home

visitation; public health nurses visit homes (50 to 70 per cent). The children are found by a follow-up of the birth records.

The mechanics of the programme of protection against diphtheria must be worked out. The doctor agrees to do a certain work, say the application of toxoid, at a stated price, say $1.00, with the understanding that the patient pays the fee, and if the patient is unable to pay the fee, it is arranged that the health department pays 50c. The use of the Schick test has been dropped since July 1, 1934. Vaccination against smallpox is also arranged for. There are also prepared lists of doctors willing to act in a curative way. It is arranged that the mother sends the child to the doctor. Following up birth records, when a child is six months old, public health nurses visit it, the treatment is given, and follow-up methods instituted. One difficulty is that a diphtheria patient may owe the doctor a bill. It was also difficult to interest all doctors in the work. The entire cost of the programme is less than the cost of treating diphtheria formerly. It is found that the disease is reported earlier under this system, and further, the doctor receives his pay, if only a small fee. Preventive medicine pays the physician better than curative measures. Loss in three years has been $60,000, but the doctors have received $300,000 for preventive procedures. This plan has spread to smaller counties, and the doctors are now doing all the work, under a full plan as outlined by the public health department. The Kellogg Foundation enables doctors to go to some medical centre and take a post-graduate course, and in some counties the majority of the doctors have taken this course.

1. The local profession must be well-organized in general public health measures.
2. The plan must not only include diphtheria, but other communicable diseases, and ultimately cancer.
3. There must be a basic charge in medical service.

Dr. Gordon: The Control of Communicable Diseases

Dr. Gordon has recently spent twelve months in Europe studying the above problem. The organization of the public health services are much the same as here, with federal, state, and municipal bureaus.

In other countries public health laboratories are attached to the universities, and the service is of a high order. There is also excellent control in hygiene, etc., in the rural areas. In Jugo-Slavia there is a full-time health department in every important district. In Poland the health and relief departments are in direct association with each other. The isolation procedures are much less rigorous than on this continent. In most cases the head of the family may go out to earn his living, and the mother is considered more as the nurse in this country, and is also allowed to go out. Placarding the house in contagious diseases is unknown in Germany. In some others, children are excluded from school, and not rigorously quarantined. There is more hospitalization. The methods in use in the fever hospitals in London are of a very high order, as they attain much more centralization, while here the communicable disease department is a part of the general hospital. Terminal disinfection is more thorough and complete there.

Essential Features of Various Communicable Diseases:

Diphtheria is active in winter in Europe. They had a relatively severe

form of diphtheria of the laryngeal type, but this is becoming less and less as control methods have developed.

Methods of Management in European Clinics:

Tracheotomy is rare, intubation more common. However, direct aspiration by suction, done through a bronchoscope, is practised extensively and gives excellent results. It is interesting to note that the Von Boki Clinic has a building dedicated to O'Dwyer. In the use of antitoxin, medium-sized doses are given. In Germany as many as 2000 units may be given. In Copenhagen, 200,000 to 600,000 units are often given. In Germany 20,000 to 60,000 units is the usual dose. If the case is very toxic, half the antitoxin is given intravenously and half intramuscularly.

Prevention:

In some countries, particularly Austria and Germany, there is not much enthusiasm shown for antitoxin, chiefly, no doubt, because of the Lubeck disaster. They did not use toxin-antitoxin, nor toxoid, but used toxoid antitoxin. In the U.S.A. much progress has been made. Toxoid is preferred. It is being used even for adults; 2/10 of 1 cc. and increase gradually up to 3 doses, for immunization for adults. In most places two injections of toxoid are used.

Scarlet Fever. In Europe Dr. Gordon learned much about ætiology. There they are not so sure that the hæmolytic streptococcus is the cause of scarlet fever. Most men in Europe and in this country believe that there is a group of streptococci, some of which cause scarlet fever. In some countries, viz. Roumania, they have a 22 per cent mortality. In England scarlet fever streptococcus antitoxin is used much more, 85 per cent of all cases being treated. In Roumania they use the convalescent serum, not the stock serum. It is important to determine what kind of case one is dealing with, whether severe or moderate. The toxic case is difficult. The rash is bluish-red, there is cyanosis, the patient is much depressed, temperature is high, often 105; a fulminating disease, with little sore throat, slight glandular involvement, much toxæmia. Next is the severe septic type, with mottled skin, much invasion of the tissues, the glands of the neck much enlarged. A membrane is sometimes present in the throat, sinusitis may be present. The toxic type is treated by streptococcus antitoxin. The septic variety, most common here, does not yield results from the use of serum. In Detroit they have adopted the method of whole blood transfusion from recovered cases. In some European countries this method is rather commonly adopted. Isolation in some Scandinavian cities is practised, in others none at all. A study has been made of the incidence of the disease under these two conditions, and the curve of the chart is found to be the same. The isolation period in Detroit is two weeks, in Chicago three.

Infantile Paralysis. In Europe they look to America for the lead in the lines of treatment. In an attack the probable diagnosis is the most important point, and this depends upon two things. There are two phases of the illness. The patient develops acute symptoms from which he appears to recover, when the symptoms reappear. This second appearance may be followed by paralysis. If in the summer months, it is probably poliomyelitis. There may be joint intestinal upset, if associated with vomiting and fever.

A. In tetanus, etc., the neck is definitely rigid, but in poliomyelitis, while definite stiffness is present, if you pick up the child by the shoulders, its head drops backwards. This definitely suggests poliomyelitis.

B. Stiffness in the spine. If the child is placed in a sitting position, with the chin between the knees, and then is picked up by the knees, the back remains rigid, but in poliomyelitis it becomes rounded. Tremors are found by having the child hold out the hands with the fingers spread. Spinal puncture is necessary. The cells are increased in number from 30 or 40 to 700. A few cases may show no increase; i.e., those where bulbar involvement is present, or in the mild abortive type.

Treatment. There is much difference of opinion concerning the use of convalescent serum. Dr. Gordon feels that there is a place for serum if given before paralysis appears. Serum was formerly given intraspinously, but not at the present time, if meningeal symptoms are present. Three cc. may be given intramuscularly or intravenously. Other measures may be used, such as protection by splinting for four or five weeks. No physical therapy is used till after six weeks. Use heat early, e.g., electric light under the cradle. Orthopædic repair treatment may be used later.

In the question period, Dr. Vaughan stated that the method being so successfully developed in Detroit was originated by twenty physicians in one medical society, that is, the idea started there, and they began co-operative study with the health department. They used subtle methods to interest the medical men, and the public, in the work.

1. They sent out a postcard calling all the men together to attend a meeting held at a place at some distance from the district.
2. A question was included asking each medical man if he had any complaint against the health department, for example, if the nurse had taken any case away from him.

About 450 attended the meeting. The question was also asked on this card: "Are you willing to co-operate with the health department?"

Other modifications of this Detroit plan could easily be applied.

Dr. Gordon also answered some questions. One as follows, concerning sub-clinical cases of poliomyelitis.

A. Symptoms of general infection, such as fever, vomiting, etc. Many terminate there, probably 75 per cent of all cases.

B. Those in which there is some slight involvement of the nervous system, probably 15 per cent.

C. Some with marked paralysis present.

Pooled serum of adults who had no poliomyelitis may be used. Poliomyelitis is probably not directly infective, as few double cases occur in one family. The cases are probably not infective after one week from the appearance of the paralysis. The incubation period is ten to twelve days. The disease spreads by carriers, or from sub-clinical cases.

Scarlet Fever. Transmission of scarlet fever is more marked in the winter months, and more in some cases than others. A shorter isolation period is becoming more common, with no higher return of infected cases. Three weeks isolation is as good as four. It is definitely proven workable to allow two weeks period for adults.

Measles. There is a distinct value in convalescent serum. If used before the third or fourth day it may prevent the development of the disease. Encephalitis may occur on the eighth or ninth day after the appearance of the rash, with drowsiness, headache, etc. The spinal puncture will show an increased cell count and high sugar content.

Whooping Cough. In the Faroe Islands, vaccine in whooping cough has been helpful, in lessening the severity of the disease, and in immunization, but it does not give complete protection against it. Iittle is to be expected from vaccine if the disease is established, that is in the treatment of the disease.

MALIGNANCY OF THE LARGE BOWEL*

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With the exception of similar tumours in the body of the uterus, malignant tumours of the colon are the most satisfactory from the standpoint of surgical treatment of all internal malignant growths. With this fact in mind, physicians should be encouraged to try, more and more, to make early diagnosis of such lesions; radical operation will cure a relatively large number of otherwise doomed patients. Radium and roentgen rays, in the hands of specialists, exert a wonderful influence for good on many malignant tumours, especially epitheliomas and sarcomas of high grades of malignancy. Most of the colonic growths are, however, slowly growing adenocarcinomas which tend to metastasize late, and which are of a relatively low grade of malignancy (according to Broder's classification). As a result, relatively few cures can be expected from irradiation. Surgical removal should be advised in all cases in which operation of any type is not contraindicated after adequate preparation. Such preparation includes relief of obstruction, protection against peritonitis by intraperitoneal injection of vaccine prepared from streptococci and colon bacilli as advised by Bargen, thorough emptying of the bowel, and keeping the patient on a diet low in residue for four or five days before operating. It includes, also, proper treatment for any existing anæmia, dehydration, renal insufficiency, and so forth. This brings up an important further point. What one man will consider a legitimate surgical risk, another man will not. If only patients whose condition is diagnosed early, and who constitute good surgical risks, are operated on, a most satisfactory showing, both as regards five-year cures and low mortality, would result. On the other hand, in a series of cases in which operation is performed by equally good surgeons, but which includes all cases in which there is any hope of cure, and many in which palliation alone can be expected, the death rate will be higher, but the number of five-year cures, and the number of patients definitely helped, will be much larger.

In considering diseases of the colon, it is rational to divide the organ into a right half, that develops from the mid-gut and in which absorption is a most important function, and a left half, which develops from the hind-gut, and of which storage of fœces is the important function. The symptoms of tumour in the proximal or right half of the colon, which includes the cecum, ascending colon, hepatic flexure and half of the transverse colon, are different from the symptoms of tumor in the terminal or left half, which includes the distal half of the transverse colon, the splenic flexure, the descending colon and the sigmoid. New growth in the anal canal again produces other symptoms.

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* Read before the meeting of the British Columbia Medical Association, Kamloops, British Columbia, September 17 to 18, 1934.

Dixon, in a review of the histories of sixty patients operated on at The Mayo Clinic from 1907 to 1928 inclusive, and who lived five years or more after operations on the right half of the colon, found that they had practically all lost weight, most of them many pounds; that they were all anæmic, and that a tumour could be felt in the right iliac fossa. Patients who have carcinoma of the right half of the colon have anæmia that is much more marked than that of patients who have carcinoma of any other part of the body. Anæmia that accompanies carcinoma of the right half of the colon is to be definitely distinguished from the cachexia that develops late in the course of extensive malignant disease, with multiple metastasis. This anæmia is probably caused, as Alvarez and his co-workers have shewn, and as Dixon believes, by the free absorption of products of bacteria, and by the gradual loss of blood from the ulcerating surface. Occult blood is almost a constant finding on examination of stools, but hæmorrhages or gross evidence of blood are rare. These malignant growths frequently become of relatively large size, without causing any obstruction, on account of the content of this part of the bowel being fluid. That the growth alone is not responsible for the anæmia is well shown by the marked improvement in the blood picture following ileocolostomy. Besides anæmia, marked loss of weight, and a tumour, these patients have, as a rule, marked loss of strength and more or less marked gastro-intestinal disturbances, often suggesting appendicitis, cholecystitis, pancreatitis, or even peptic ulcer. It is generally on account of these two common symptoms that the patient first consults a physician, and it is most unfortunate, as Jones has stated, that the individual "is too often given a tonic and sent on his way." Adequate examination of most of these patients at the time of their first visit to a physician would disclose the presence of a new growth.

The marked improvement in roentgenography in recent years has been a great help in localizing pathologic conditions of the gastro-intestinal tract. In spite of the fact that obstruction rarely occurs in the cæcum or ascending colon, a positive diagnosis, as a rule, is possible early in the disease. The most difficult tumours to localize are those in the cæcal cap. Carcinoma of the colon develops on the basis of pre-existing polyps, or from the normal secreting glands in the wall of the intestines. A causative factor of growths in the cæcum is no doubt irritation from the alkaline stream that passes through the ileocæcal valve.

Fortunately, the right half of the colon lends itself well to radical removal, not only of the involved bowel but also of the regional lymph nodes. Because most of the malignant growths are slowly growing adenocarcinomas, a high percentage of cures can be expected, in spite of the unfortunate delay so often experienced. Dixon, in the review previously mentioned, showed that of 187 cases, in 123 there was no demonstrable involvement of lymph nodes at the time of operation and that 66 per cent of the patients lived five or more years. Furthermore, in 64 cases in which lymph nodes were involved at the time of resection, 39 per cent of the patients lived five or more years. In one case in which lymph nodes were involved and malignancy of the lesion was graded 4, the patient lived more than twenty-two years. As Dixon wrote, "it is an established fact that malignant growths may be present in the colon for a considerable length of time, remaining operable and not metastasizing."

The only prospect for cure of patients who have carcinoma of the right half of the colon lies in radical removal. The surgeon is justified in assuming considerable risk, for the outlook is hopeless unless the growth and the

regional lymph nodes can be thoroughly removed. If the patient is in good condition, it is generally advisable to remove the right half of the colon in one stage, making end-to-side or side-to-side anastomosis between the terminal portion of the ileum and the middle portion of the transverse colon, at the same time inserting a male catheter of large size into the ileum, a few inches above the line of anastomosis, to allow adequate escape of gas. On the other hand, if the patient is in poor condition, or such an operation seems too hazardous, it is advisable to perform it in two stages; first, ileocolostomy should be performed, and two to four weeks later, the portion of the bowel that has been isolated should be removed.

During passage from the cæcum onward, the intestinal content gradually changes from a fluid to a mass of some firmness of consistency; this change results from rapid absorption of fluid by the wall of the right half of the colon, through its entire length. The symptoms of malignant growths in the left half of the colon, therefore, are very different from those of growths in the right half. The contents of the left half of the colon, as I said before, are more solid than those of the right half of the colon. The lumen of the left half of the colon is smaller than that of the right half, and the walls are more muscular. As a result, and projection into, or narrowing of, the lumen will predispose to symptoms of obstruction.

Carcinoma of two distinct types occurs in the descending colon and sigmoid. Probably the greater number of carcinomas in this region start from polyps, and grow into the lumen considerably before the growth extends back into the intestinal wall. Other growths start in the mucous glands of the bowel and tend to encircle it, causing definite constriction of the lumen; this is the so-called nakpin-ring growth. Of this latter growth especially, symptoms of obstruction generally are the first intimation the patient has that anything is wrong. In many cases, on account of back pressure, patients often have general abdominal distress and frequently tenderness in the right iliac fossa. In a review of 100 cases of carcinoma of the left half of the colon, Bargen found pain was a complaint in 40 cases and that in 15 of them the appendix had been removed shortly before they came to the clinic. Frequently the history is that the patient has periodic spells of partial obstruction, with intervals of weeks, or even of months, when he is fairly free of symptoms; sometimes he has attacks of diarrhœa and passes considerable mucus and some blood. Anæmia is seldom a symptom of carcinoma of the left half of the colon. Gross blood in the stools is much more characteristic of a lesion of the terminal half of the colon than it is of one of the proximal half.

Any irregularity in movements of the bowels should suggest to the physician the need of thorough examination of the colon. Irregularities which require attention are constipation of a type that suggests obstruction, and diarrhœa, especially if mucus and blood occasionally are seen. Anæmia that is not accounted for, and any indefinite abdominal pain should be thoroughly investigated. Thorough rectal examination will demonstrate any lesion in the anal canal, rectum, or rectosigmoid, and in this short section of bowel more than 20 per cent of all carcinomas of the gastrointestinal tract, and more than 50 per cent of all carcinomas of the large bowel are found. It is to be regretted that so many patients are under medical care for long periods, and complain of indefinite abdominal symptoms, yet never receive thorough rectal examination. Proctoscopic examination

should be made in all suspected cases. Lesions as high up as the middle of the sigmoid are, as a rule, easily visualised.

If nothing is noted on digital or proctoscopic examination, roentgenographic examination following a barium enema should be made, and under modern methods, applied by well trained roentgenologists, any deformity in the large bowel, above the level of the pelvic brim, can, as a rule, be recognised. Not only can the roentgenologist say that there is a deformity, but usually he can express a very definite opinion as to whether it is malignant or not.

In contrast to carcinoma, sarcoma may grow to large size and cause no obstruction. In fact, the lumen of the involved portion is likely to be larger than normal.

Treatment of malignant growths in the left half of the colon naturally varies with the condition of the patient, the part of the bowel involved, and the presence or absence of obstruction as a complicating factor. When resection of the left half of the colon is advisable, except in rare instances it is probably advisable to perform it in two stages. This is especially indicated if there is any obstruction, or if the bowel has not been well emptied. The first operation consists in a colostomy or cæcostomy, and in thorough examination of the abdomen for evidences of metastasis. At the second operation the growth is removed with a sufficient section of bowel and the attached mesentery. Also the regional lymph nodes are removed, and end-to-end or end-to-side anastomosis is performed. Many surgeons of large experience utilise the Mikulicz principle of exteriorization of the growth in many cases in which the sigmoid is involved. Rankin's modification consisted in using a three-bladed clamp and removing the isolated section of bowel at the first operation; also the upper half of the clamp is opened in about 72 hours to allow escape of gas and relieve obstruction. At a later date the spur between the two loops of bowel is crushed with a long bladed clamp, and if the stoma does not close in due time, plastic closure is made. The method has met with general favor. The main objection to any type of operation in which exteriorization is employed is that only a limited amount of the mesentery and of the tissue that contains lymph nodes can be removed; in such freely movable growths a classical resection is not a very difficult procedure.

Many more malignant growths occur in the anus, rectum and recto-sigmoid than in all the rest of the large bowel. On account of their situation, a diagnosis should be mare readily made, and treatment, as a result, should be more satisfactory. Unforeunately, about 65 per cent of the cases are inoperable when the patients are first seen at The Mayo Clinic.

The situation, size, and degree of malignancy, as well as the patient's condition, must be taken into consideration in deciding on the type of operation best suited to any individual case. Local excision and posterior resection, with a resulting sacral anus, occasionally are justifiable, but more radical operation, such as combined abdominal and perineal resection, or posterior resection and colostemy, are more rational procedures. Either of these major operations can be completed at one time, or divided into two stages, depending on the condition of the patient and on the familiarity of the surgeon with the special technic required for thorough, safe and rapid execution of such operations.

I will discuss the technique as I show a few slides and a motion picture

made for Dr. Claude F. Dixon, who is in charge of the surgical aspect of the colonic service at The Mayo Clinic.

BIBLIOGRAPHY

[1] Bargen, J. A.: Quoted by Dixon: Malignant growths of the left half of the colon: surgical treatment. Kansas City Southwest Clin. Soc. Monthly Bull. 10:4-7; 11 (March) 1934.

[2] Dixon, C. F.: Unpublished data.

[3] Jones, T. E.: Cancer of the colon and rectum: its diagnosis and treatment. *Northwest Med.* 32:326-331 (Aug.) 1931.

INFECTION: ITS SPREAD AND CONTROL

By Dr. G. F. Amyot

Read before Vancouver Medical Association, October 2, 1934

The story of infection, its spread and control, is not a new subject, but tonight it is my purpose to give you a new and personal interpretation of it. At the outset, may I say that I shall not burden you with pithy quotations and statistics ad infinitum.

The germ theory of infection was brought into being and proved to be a fact by the introduction of the microscope by Kircher in 1759 and Leeuwenhock in 1775, and by the work of Pasteur, Koch and their disciples during the last 40 years of the 19th century.

In discussing infection I think it is wise to have some idea of just how extensive a field this covers. Some years ago Dr. H. W. Hill, director of the provincial laboratories in Vancouver, made a survey of a million deaths registered in the U.S.A. He found that 61 per cent of all these deaths were due to some form of infection—not necessarily the acute communicable diseases, but some form of micro-organism infection. He went further and found that if he excluded all deaths where the cause was unclassified, those from old age, accidents and malformations, that 86 per cent of the remaining deaths were due to some form of infection. As infection is an external cause of illness and death, then we are justified in stating that theoretically 61 per cent of all deaths and 86 per cent of a group of three-fourths of a million deaths where the cause is definitely a disease, are preventable.

From the above figures we realize that infection is not confined to the acute communicable diseases but covers a long list of common illnesses not usually thought of in this light. We have in this category such diseases as tuberculosis, all forms; syphilis, all forms; gonorrhœa; bronchitis; rheumatic fever; endocarditis; endarteritis; boils; carbuncles; many skin infections; discharging wounds; typhoid; paratyphoid; undulant fever; Rocky Mountain spotted fever; influenza, mild and otherwise; common colds; pneumonia; tonsillitis; quinsy; infantile diarrhœa; dysentery, amœbic and bacillary; puerperal fever; most heart conditions; nephritis; cholecystitis; diabetes, and a long list of others.

Since we can accept the germ theory of infection as fact, we can readily understand the causative agent of infection. Therefore the first consideration in the study of infection is the cause, and the cause in this case we shall call micro-organism (I am not going into the different types, as we are all well versed on that topic, but will group them all as micro-organisms). All the micro-organisms causing infection have not been differentiated and isolated, but the general principles hold just the same. These micro-organisms must exist in some definite place. It has been found that these are parasites; that is, that they live and multiply only in living human or animal bodies. When they are removed from their natural en-

vironment, the living body, they do not live in the majority of cases for any great length of time, except a few micro-organisms which have particular characteristics, as the spore-formers of tetanus and anthrax. Spores may live for long periods of time away from the body and will not multiply until they again take on the vegetative form when they infect a new host. Parasitic pathogenic micro-organisms do not increase or multiply in dirt, filth, decaying vegetable matter, sewage or smells. They die quickly in any unsuitable environment. The tubercle bacillus, although not a spore-former, has a special structure which enables it to live in some places away from the body for a longer period of time than most organisms. Even here there is a gradual destruction of the bacilli.

Therefore we must conclude that the source of the mciro-organisms which cause disease in man exists in man or animals only. Then, if man or animal be the source or reservoir of these organisms—the soil where they regenerate and multiply in millions—we must, if we are going to control these diseases, find what particular living bodies are the source. We know from experience that the most easily recognized source of these pathogenic organisms is the typical case suffering from the particular infection; the mild, atypical, missed case and carrier also come into the picture and will be mentioned later.

These micro-organisms, to infect someone else, must leave the source in some manner and be conveyed to the well population. These organisms cannot walk, crawl, or fly, so depend on being carried by some other agency in some fluid. This fluid we call a vehicle. The vehicle in the spread of respiratory diseases is the discharge from the nose and mouth of the source. In typhoid, dysentery, ets., the vehicles are the discharges from the bowel and bladder of the source. In venereal disease, the discharges of the genetourinary tract and the mucous membranes. Wounds, abscesses, etc., have as vehicles the discharges, and so on through the list. In malaria the blood acts as a vehicle.

There must be some mode of transmission of these vehicles containing the causative agent, from the source to the well population, before we can have a spread of the infection. The following are the main modes:

1. *Contact.* (a) Droplet infection, loud talking, sneezing, and coughing. (b) Articles recently soiled with vehicles; dishes, bed linen, nursing articles.
   nursing articles. (c) Hands and person.
2. *Foods.* Milk and milk products, water, ice, meat and shell fish and other foods.
3. *Insects.* (a) Biological; example, mosquitoes in malaria. (b) Mechanical, flies.
4. *Soil.* As containing the spores of tetanus.
5. *Fomites.* This last group is considered to be of very little importance today. It refers to articles soiled with discharges and retaining living organisms for long periods of time.

The bacteriologist by his exacting studies has shown us that certain micro-organisms or groups of organisms follow a definite course of procedure in infecting any individual, and that if we know the habits of these groups we are aware of many weak points in the sequence of events through which they must pass. To control or prevent the spread of these diseases we must break this sequence of events as early and in as many places as possible. This can be done in a variety of ways.

The first essential in controlling infection is to know the existence and location of the case in its earliest possible stage. This also assumes that an attempt will be made to diagnose the disease so the proper procedure can be carried out from the beginning. It is wise to remember that practically all persons having fever are suffering from some infection and therefore that every fever is potentially infectious or communicable from the earliest onset. If the army method of diagnosis of P.U.O. were applied to these cases until such a time that it was possible to make a definite diagnosis, and if P.U.O. were considered as always communicable until proved otherwise, then control could be much more complete and effective.

As I have stated, the first essential is to know the source before action can be taken. The public have placed in the hands of the health department by law certain powers and duties to enable these departments to control, as far as possible, the further spread of disease and establish methods of protecting the public from infection. These departments are also required to promote health to the best of their abilities in their respective communities.

If these departments are to carry out their duties to the public it is necessary that they know immediately the location of all sources of infection; that is, the case, the mild case, the missed case, and the carrier. This is a big problem and can only be done by the complete and wholehearted

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co-operation of every individual in the community. In other words, every infection must be reported. One often hears the statement that the medical practitioner is responsible for poor reporting. I do not think that this is fair. I have found that the medical doctors on the North Shore are as close to 100 per cent in this respect as it is possible to get and yet we do not have all cases brought to our attention. The physician is only called to a few of the cases. He will often see the first few cases of measles, for example, and after that the neighbours treat their new cases in the same manner as Mrs. Brown was told to treat hers by the doctor. I think that when cases are reported to a health department that department should do more than record the name, address, etc., in a book and forget about it. The health department is in duty bound to try to instruct the parents and the patient in proper methods of care to prevent the disease spreading to other members of the family and the friends. If each case, when reported by the physician, was first immediately reported as a fever or P.U.O., and then the proper diagnosis supplied when available, much could be done in control. I shall go farther and ask that each case be instructed immediately by the physician and be told what precautions to take to protect others.

Following the discovery of a case of infection, we know we have a definite source and must try to confine that disease to the one person. In some cases we can actually start our control by destroying the micro-organism in the source by the use of some special agent. This is done in syphilis by the use of certain drugs; in malaria by the use of quinine, etc. Unfortunately this is not possible in most of the common infections.

(To be continued)

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This is a very clear-cut statement regarding the nutritional efficiency of raw and of pasteurized milk. In this connection it might be well to point out that he is not concerned here with problems of disease but rather those of nutrition. The germs of tuberculosis and of undulant fever have been repeatedly demonstrated in raw milk through the use of animals.

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"The actual changes in milk caused by pasteurization are an increase in insoluble calcium of about 6 per cent, a reduction of iodine content by 20 per cent, and considerable destruction of Vitamin C.

"Certain animals have a higher need for calcium than do infants and it may be that raw milk would be better for them than pasteurized milk, but there is no evidence that this is true for children.

"There is no convincing evidence that raw milk, even if it were safe, is superior to pasteurized milk in infant feeding. Pasteurized milk is probably better since it is more easily digested. The growing practice by pediatricians of boiling milk or of feeding evaporated milk to infants, shows that it is certainly satisfactory.

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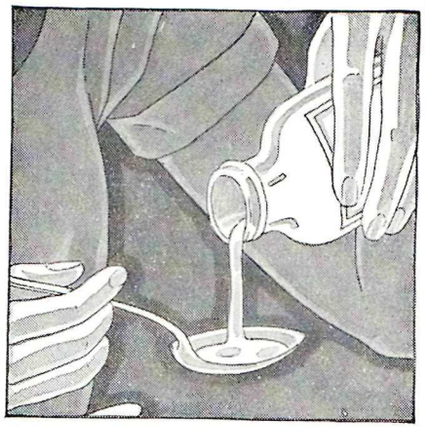

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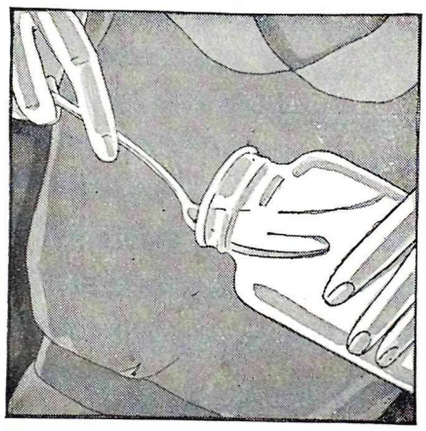

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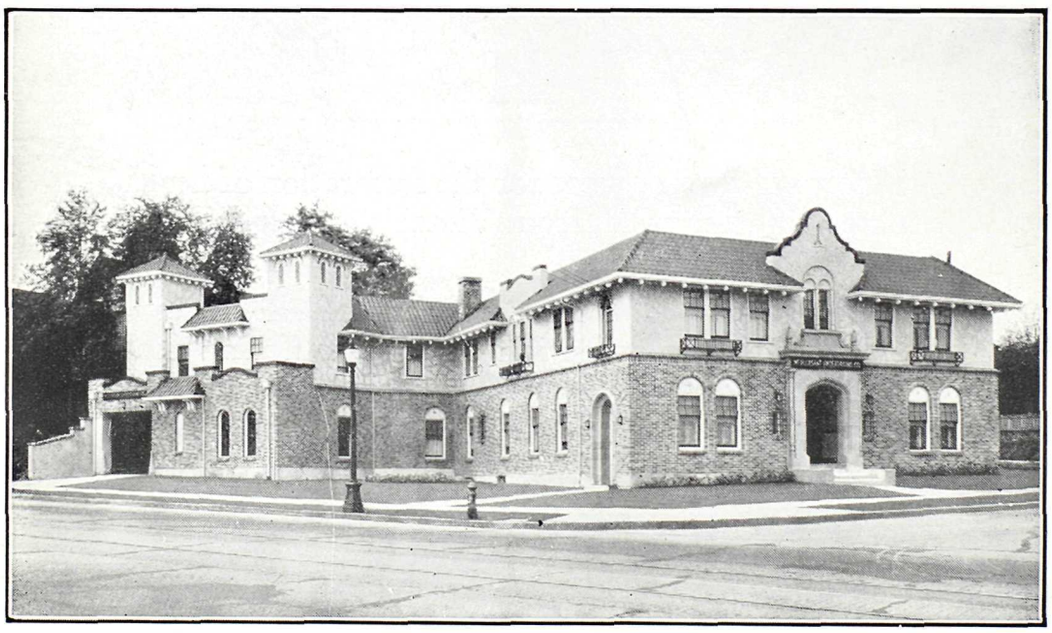

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Relative Values of Carbohydrates Employed in Infant Feeding

Continued down from 1911

1915

"The infant with diarrhea and vomiting is given nothing but tea for from twelve to twenty-four hours, no longer, and then the albumin milk is commenced, not over 5 gm. ten times a day, with 3 per cent. of a maltose-dextrin mixture. The amount of albumin milk is increased by 50 gm. each day until the daily ration totals 300 gm. After the weight has become stationary, carbohydrates can be added up to 5 per cent. of the maltose-dextrin mixture."

"Albumin milk is not so uniformly effectual in dysenteriform diarrhea as in cholera infantum. Whey seems to act better, diluted half and half with oatmeal gruel. After the starvation period he gives 50 gm. of the whey and increases by 50 gm. daily with equal amounts of oatmeal gruel. As improvement sets in 3 per cent. of a dextrin-maltose preparation can be added."—*L. Langstein: Cholera infantum and other severe diarrheas in infants, Therap. Monatsh., V. 29, August, 1915; Abst. J.A.M.A., 65:1314, Oct., 7, 1915.*

1916

"Dextri-maltose, having a higher absorption tolerance than the other sugars, is less likely to cause intestinal disturbances when large amounts of it are given."—*H. R. Mixsell: A brief résumé of the role of carbohydrates in infant feeding, Arch. Pediat., 33:31-36, Jan., 1916.*

1916

In cases of malnutrition and indigestion in infancy, "The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used the preparation known as 'dextri-maltose, for the extra carbohydrates; . . ."—*M. Ladd: Further experience with homogenized olive oil mixtures, Arch. Pediat., 33:501-512, July, 1916.*

1916

"For the addition of sugar, I usually use dextri-maltose, which does not easily cause fermentation."—*L. L. Meininger: Use of Eiweissmilch, Arch. Pediat., 33:529-532, July, 1916.*

1916

In the treatment of marasmus, "Three per cent of malt sugar should be administered from the first, afterwards running up to as high a per cent as the child will take." —*L. T. Royster: A Handbook of Infant Feeding, C. V. Mosby Co., St. Louis, 1916, p. 100.*

1916

"Least irritating of all sugars, and more readily digested and quickly absorbed, is maltose."—*H. Lowenburg: A Practical Treatise on Infant Feeding and Allied Topics, F. A. Davis Co., Phila., 1916, p. 73.*

1916

"Dextrin-maltose is valuable in cases where intestinal disturbances are due to fermentation of milk sugar."

"Treatment (of sugar intoxication) consists in eliminating the latter (whey salts) as well as the sugars from the diet temporarily, and when the symptoms have subsided, a different sugar in proper proportion should be cautiously added; maltose and dextrin are preferable, because they are not apt to produce fermentation, while milk sugar is prone to set up fever and diarrhea."—*E. E. Graham: Diseases of Children, Lea & Febiger, Phila., 1916, pp. 179-201.*

1917

"For children who are not gaining on a normal formula with a sufficient amount of sugar of milk, or children who vomit when sugar of milk is fed, or who are constipated, the use of maltose instead of lactose often gives most satisfactory results. This is readily accomplished by substituting for the 4 or 5 per cent. of added sugar of milk an equal amount of dextri-maltose or malted milk, which latter gives, in addition to the maltose, some protein food and an insignificant amount of fat. In many cases children who have failed to gain on other food will immediately show a marked gain as soon as this change is made." —*R. G. Freeman: Elements of Pediatrics, Macmillan Co., New York, 1917, pp. 191 and 192.*

1917

"The carbohydrates most used in infant feeding are the three soluble sugars and starch. The three soluble sugars are lactose, or milk sugar, maltose, or malt sugar, and saccharose, or cane sugar. Maltose is not used in its pure form, on account of its cost. The various commercial preparations of maltose are combinations of maltose with various dextrins, but as in digestion dextrin is converted into maltose, the chemistry is practically the same."

"The sugar which is not absorbed is broken down by the bacteria of the intestine into a great variety of fermentation products, among them being lactic, butyric, acetic, and succinic acids."

"Another effect of the excessive fermentation which results from a relative excess of carbohydrate in the food, is the formation of an excessive amount of gas. This may cause abdominal distention, and, extending backward, it may carry irritating acid products into the stomach, and thus cause vomiting."

"Lactose is the sugar most likely to produce acute symptoms. The stools are practically always green and very irritating. Flatulence and colic are less prominent."

"The maltose-dextrin preparations rarely produce acute exacerbations."—*C. H. Dunn: The Hygienic and Medical Treatment of Children, Southworth Co., Troy, New York, 1917, pp. 423, 424, 425, 428.*

1918

"The sugars in the foods are milk sugar which is found in mother's milk as well as in cow's milk, cane sugar and malt sugar. Though milk sugar is a natural ingredient of milk it is not well borne by babies when added to their food; they digest cane sugar, the ordinary granulated sugar, much better; malt sugar is the easiest digested by babies."—*C. G. Leo-Wolf: Nursing in Diseases of Children, C. V. Mosby Co., St. Louis, 1918, p. 24.*

1918

"Maltose (malt sugar) has the advantage of being very easily digested; when part of the sugar given is maltose, many children gain more rapidly in weight than when only milk sugar or cane sugar is used."—*L. E. Holt: The Care and Feeding of Children, D. Appleton & Co., New York, 1918, p. 66.*

1919

"In the administration of protein milk with its large protein content, by adding to it sugar which is not easily fermented (dextri-maltose), we produce, instead of pathologic fermentation, a condition of putrefaction which changes the acidity of the intestinal contents to alkalinity, the peristalsis is decreased, the intestinal contents pass slowly through the large intestines with absorption of fluid and excretion of calcium and magnesium salts. These minerals unite with fatty acids to form the typical fat-soap-clay-coloured constipated stools characteristic of protein milk feeding, and it is at this point that dextri-maltose should be added to the food."

"The majority of the cases were kept on protein milk for a period varying from three to four weeks, and, in many instances, contrary to the usual opinion, we were able to keep the children on protein milk plus starch and dextri-maltose, sufficient for their caloric needs for a period of several months, in each instance accompanied by a substantial gain in weight and normal increase in vigor and tissue turgor with comparative freedom from digestive symptoms."—*A. Brown and I. F. MacLachlan: Protein milk powder, Canad. M. A. J., 9:528-537, June, 1919.*

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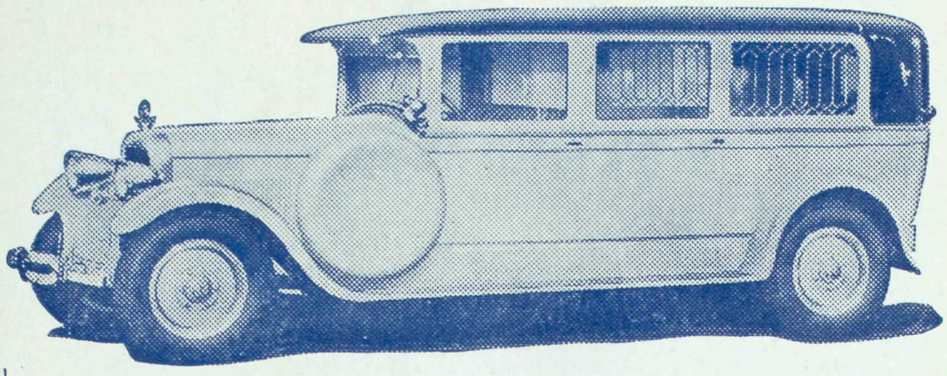

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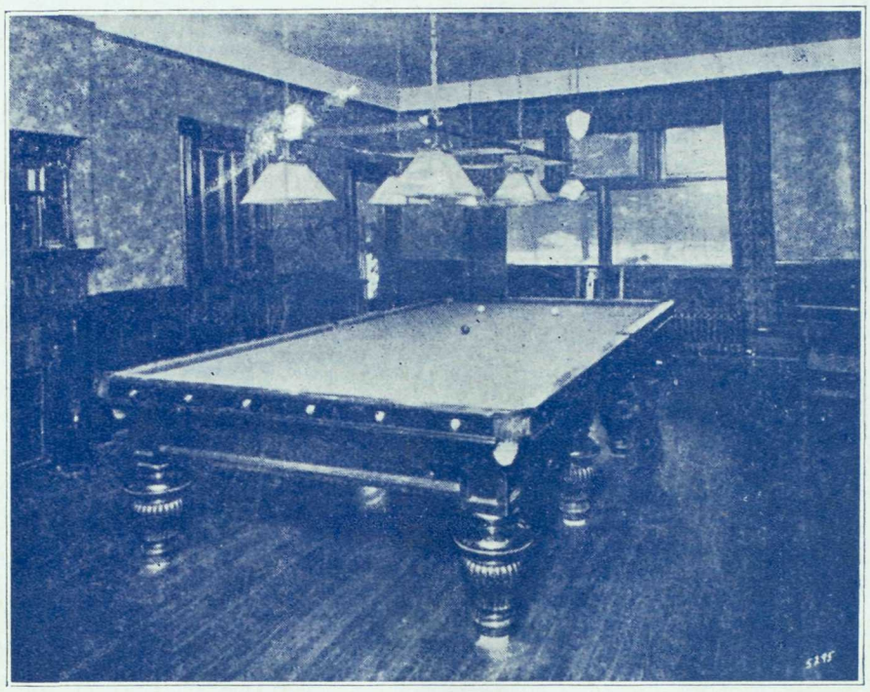

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