The BULLETIN

OF THE

VANCOUVER MEDICAL ASSOCIATION

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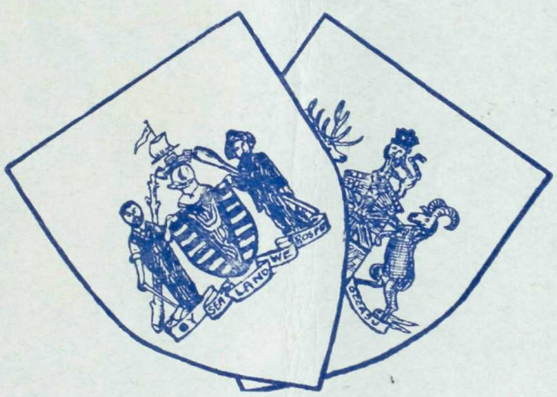

In This Issue:

NEWS AND NOTES

FOCAL INFECTION :: TUMOURS OF THE BREAST

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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Sickness and Benevolent Fund — THE PRESIDENT — THE TRUSTEES

Tuberculosis Spread Through Raw Milk

DOCTOR R. M. PRICE, Department of Pathology and Bacteriology, University of Toronto, had to say in a recent article of his, published in the Canadian Public Health Journal:

"In a study of three hundred tuberculous children in Toronto, it was found that fifteen per cent of the extra-pulmonary tuberculosis (*e.g.*, bone, joint, lymph nodes, kidney and skin) was due to the bovine type of tubercle bacillus.

"Infection with the bovine type occurred most commonly in the region of cervical lymph glands.

"All the cases of infection with the bovine type had used raw milk and came from points outside of Toronto. The clinical investigation indicated the alimentary route of infection.

"The majority of children infected with the human type gave a history of contact with human tuberculosis. The clinical investigation indicated the respiratory route of infection.

"Of two hundred samples of *unpooled* raw milk examined, eight or four per cent yielded tubercle bacilli on direct smear and guinea pig inoculation.

"Of one hundred samples of *pooled* raw milk, twenty-six yielded tubercle bacilli.

"Of one hundred samples of the same milk, pasteurized, none showed tubercle bacilli on guinea pig inoculation.

"This finding is confirmed by the fact that not a single case of bovine tuberculous infection has been encountered in this generation of children raised on pasteurized milk in Toronto, where pasteurization is compulsory and has been rigidly enforced since 1915."

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VANCOUVER HEALTH DEPARTMENT

STATISTICS—NOVEMBER, 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	178	8.8
Japanese Deaths	7	10.8
Chinese Deaths	11	16.1
Deaths—Residents only	160	8.0
Birth Registrations:		
Male, 134; Female, 142	276	13.8

INFANTILE MORTALITY—	November, 1934	November, 1933
Deaths under one year of age	4	10
Death rate—per 1,000 births	14.5	39.5
Stillbirths (not included in above)	10	9

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	October, 1934		November, 1934		December 1st to 15th, 1934	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	0	0	0	0	0	0
Scarlet Fever	53	0	38	0	24	0
Diphtheria	0	0	2	0	3	0
Chicken Pox	54	0	65	0	49	0
Measles	0	0	0	0	0	0
Rubella	1	0	0	0	0	0
Mumps	38	0	43	0	13	0
Whooping-Cough	20	0	24	0	7	0
Typhoid Fever	2*	0	1*	0	1*	0
Undulant Fever	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0
Tuberculosis	63	10	59	16	22	--
Meningitis (Epidemic)	0	0	0	0	0	0
Erysipelas	2	0	0	0	2	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.

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EDITOR'S PAGE

At this time of year, it is our pleasant duty and privilege to wish all our readers what are called the Compliments of the Season. Christmas is by with, and the turkey and hot mince pie have ceased from troubling, and the liver is at rest—but there is still time to wish for a Happy and Prosperous New Year for everyone. After all, the depression has had some redeeming features, though they take looking for. It has taught us that we can live on a lower scale than we had thought possible, and still be reasonably happy; it has made it possible for us to admit to being "broke," without necessarily admitting complete inferiority—indeed, it is getting so that Robert Burns' immortal lines,

> "*Wha's he, for honest poverty*
> *That hings his head, and a' that?*
> *The gowd* (but we're off the gowd standard, so that it is not even) *but the guinea's stamp,*
> *The man's the man for a' that*"

are once more becoming recognised as the truth.

It has done other things. It has brought the day closer when the wealth that medical science has to offer will be available to all who need it, and not only to those who can afford it, and when we may reasonably hope that disease will be nipped in the bud rather than left to reach its fruition of blight and corruption, when all too often all our efforts are useless or merely palliative. We must all hope that this angle of disease prevention will be the one heavily stressed in any measure that our legislators may in their wisdom suggest.

It has brought humanity closer together. Never in the history of man has there been as much honest effort toward peace on earth and goodwill toward men, as we have seen of late. The millennium is probably a few years away, even though our new mayor will doubtless do his best to hurry it along—but it is still perceptibly closer; and it is not only poverty and fear of poison gas that are helping to avert the war that so constantly threatens, but the feeling, born of this terrible cloud of loss and destitution that overhangs the whole world, that we must work, not towards the restoration of the old order, with its selfishness and individualism and *laissez faire* attitude, but towards the establishment of a new order, where the "brotherhood of man," of which Tennyson speaks, will be the keynote, and not the "rights" of man.

So the outlook is not by any means all dark. In fact, we may hope that we are merely undergoing the pangs of a new birth: and birth is always a painful proceeding. We have various able obstetrical specialists to help us —the Telfords and McGeers and Douglases and Stevenses, and even the Bennetts have been taking postgraduate courses and have obtained some new ideas on the subject. So far they seem to have been using oxytocics rather than making any attempt to obtain painless labour—but perhaps we are prejudiced. Anyway, we must hope that they will soon agree on the course to be followed, and give us a "happy issue out of all our afflictions."

* * * *

The excellent example set by Dr. F. J. Nicholson, in his recent donation of $250 to the Vancouver Medical Association, has set us thinking. Why should not those of us who are likely to be able to leave considerable sums of money behind them, when (*absit omen!*) they shuffle off this mortal coil, bequeath some of their wealth to be used in research, and given to some of

Obituary

The death of Dr. James L. Turnbull on Christmas Day removed one of our best-known and most genuinely liked medical men, and cast a shadow over the day for all who knew him. He had been ailing more or less for a long time, and those who knew the intensely active nature of the man cannot feel that death would be altogether a tragedy for one who hated inactivity, and was never really happy unless he was up to his eyes in work.

Dr. Turnbull had been in practice in Vancouver for a long time, nearly thirty years—and he had practised in the East before that. Those of us who came here before the war can remember him as a man who did more work in a day than any other two men would care to tackle. He had a tremendously busy office-practice, and was to be found in his office till all hours of the evening. He was a poor sleeper, and was late to bed, and extremely early to rise—and the writer, who knew and admired his energy (perhaps, too, with a dash of envy) always had the impression that his chief regret in life was that he could not keep office hours between 5 a.m. and 9 a.m., when the more serious business of the day began.

He was of the best type of general practitioner—available to his patients at any hour of the day or night, and keenly interested in his work. He was a competent surgeon, too, and a good all-round man. He was always genial and friendly, and had the complete confidence of all his patients; if he had a weakness, it was that he sometimes allowed them to impose upon his kindness and good nature to far too great an extent. But this is a very forgivable sin—and it is an error that is not any too common after all. We shall all miss "J. L." and wish for him a busy place in whatever Heaven medical men go to when they die; if he is not busy, it will not be Heaven for him. We extend to his widow and family our sincerest sympathy in their loss.

our own members who are able and willing to devote their time to such work? We would not deprecate gifts to universities at all—these are most valuable and important—but the other also deserves our consideration. We have had instances, where excellent research work has been done, which has redounded greatly to the credit of the man who engaged in it, and has brought a reflected glory to Vancouver—yet it meant a considerable out-of-pocket expense to the man himself which he could ill afford, while at the same time financial limitations prevented him from carrying his work to the conclusion which a little help would have enabled him to reach.

So we commend to our readers this idea, and hope they will all be so prosperous that they will be able to put it into practice, and will live so long that, like Dr. Nicholson, they will feel impelled to contribute before the day comes after which they will not be able to see the good results of their donation.

Again, our Sickness and Benevolent Fund is worthy of support, not only by assessment, but by voluntary donation or bequest. We understand that the British Medical Association has contributed several hundred pounds to one of the members of our profession resident in B. C., and while of course we cannot "keep up with the Joneses" to that extent, still we should do what in us lies.

* * * *

We would call the attention of all our readers to the new Vancouver General Hospital *Pharmacopœia,* now on sale at the V.G.H. for $1.25. The actual cost to the hospital, we understand, is about $1.15 per copy, so that the price is very low.

This is an unusually good hospital pharmacopœia; in fact it is rather a valuable little book as it contains a great deal of information which we constantly need, but of which we can never remember where to find it. Such things as weight equivalents, ways to make mustard poultices, quarantine tables, urine standards, various types of enemata, gastric contents standards, how to make fruit laxatives, etc., etc.

A very valuable feature is the section on diets, giving Sippy diet, ketogenic diets, reducing diets, and many others.

Again, the section on treatment of poisoning by various agents is the most complete we have ever seen, and is especially valuable.

On the whole, we have never seen a more complete little volume of its kind. The lists of pharmacopœial preparations are unusually good and numerous. It would pay every doctor to have this volume on his desk and use it constantly. It will do away with a good deal of proprietary advertising; and we should urge the druggist whom we usually patronise to keep a copy too for constant reference. All dosages are given in both apothecaries' and metric systems.

Copies can be obtained by writing or telephoning the Vancouver General Hospital, c/o Dr. Stalker, Asst. Superintendent.

NEWS AND NOTES

At the time of going to press some weddings have taken place, others are impending and still others are rumoured. Lest this seem like a dismal echo of "ancestral voices prophesying war," let us re-echo with immortal Mehitabel: "Wotthehell wotthehell, *tojours gai, cherie.*"

The marriage of Dr. J. Moscovitch, recently a popular member of the

staff of the V.G.H., to Miss Mary Armstrong, a graduate of the same hospital, took place at the home of the bride's aunt, Barclay Street, on November 30th.

Dr. W. J. McKenzie was married on December 15th to Miss Enid Howell. Miss Howell is a St. Paul's graduate.

Dr. J. G. Robertson married Miss Marguerite Heisler on November 29th. Dr. Robertson, who worked with Dr. J. G. McKay for some years and during the past year has been associated with the Burris Clinic at Kamloops, is taking over Dr. A. Schwarzman's practice at Tofino. The doctor and his bride will have to acquire sea-legs of a special model, suitable not only for navigating matrimonial seas, but for the equally hazardous navigation of the waters of the west coast of the Island, as we understand medical practice at Tofino is conducted chiefly in a motor-boat.

We have to congratulate Dr. and Mrs. Carder on the marriage of their only daughter, Jean Margaret, to Mr. G. Bull, which took place at Christ Church Cathedral on Saturday, December 15th.

A baby was recently encountered in a corridor of the Medical-Dental Building loudly proclaiming the paternity of Dr. C. H. C. Bell. We'd know that laugh anywhere, and those eyes, those hair! As much admired as its father by all beholders.

Dr. C. E. Brown has increased his family by twenty-five per cent, and is very justly displaying pride in the acquisition of another son.

Dr. S. Stuart Murray, who specializes in doctoring babies, now has another one of his own to practice on. And it's a boy!

Dr. J. H. B. Grant was presented with a son on November 27th. He already has a daughter, but has decided to keep them both.

We greatly regret to report the death of Dr. J. A. L. McAlpine at his residence on the morning of December 6th at the age of 67. He had been in poor health for some time past, and had an operation about 18 months ago. The late doctor was one of the medical pioneers of Vancouver, being the city's first M.H.O., and one of the original members of the Vancouver Medical Association.

Dr. C. E. Davies left on December 2nd for New York, where he will take a postgraduate course in E., E., N. and T.

Dr. R. D. A. Bisson, a native son of Rossland, has opened offices in the Birks Building.

Dr. Schwarzman, the erstwhile doctor of Tofino, has swallowed the anchor and has left via the Panama for his home in Scotland.

Dr. Bernard Myers, an eminent authority on children's diseases, of London, England, was in the city for a few hours in the middle of November. His visit was unheralded and his stay too brief to permit arrangements for an address to the Vancouver Medical Association.

Dr. D. F. Busteed has opened offices in the Medical-Dental Bldg., and his numerous friends wish him all success in his new venture.

Dr. A. B. Manson, formerly with Drs. Hall in Nanaimo, has moved to Vancouver and is now associated with Drs. B. D. and G. E. Gillies.

Dr. Neil Edward Morrison, lately an interne at the V.G.H., will commence practice at Salmo, B.C., on the first of the year. He will be associated with Drs. Borden and McKay of Nelson.

The vacancy created by Dr. Manson's leaving Nanaimo has been occupied by Dr. L. Giovando, formerly of Ladysmith.

British Columbia was well represented at the recent annual meeting in Seattle of the North Pacific Surgical Association, several men going from Vancouver and Victoria. The visiting speaker was Dr. I. S. Ravdin, Professor of Surgical Research, University of Pennsylvania.

Dr. W. J. Knox of Kelowna spent a few days in Vancouver recently, the guest of his daughter and son-in-law, Dr. and Mrs. H. H. Boucher.

Dr. W. H. Hatfield recently returned from a three months tour abroad, visiting the British Isles, France and Italy, where he studied anti-tuberculosis measures as exemplified in these countries. He also brought back some good stories, which we are contemplating issuing as a special supplement to the BULLETIN, to be mailed in a plain wrapper to paid-up members of the Association.

Dr. J. J. Mason has returned from a brief holiday in San Diego. We understand that he saw some golf being played there, and from being an interested on-looker has been inspired to take up the game seriously himself.

The Library Committee has inclined its ear unto the supplication of some of the elderly members of the Association, and is supplying sloping book-rests on the Reading-room table, to spare them eye-strain. Will users of the Library kindly show appreciation by refraining from burning holes in the Reading-room tables and other furniture?

The four-year-old son of Dr. J. C. Grimson of Ladner suffered severe fractures and internal injuries by an accidental fall from his father's car on December 14th. We hope that his recovery will be well under way by the time the BULLETIN appears.

A binocular loupe and portable carbon-dioxide apparatus were stolen from a doctor's car on Thursday, Dec. 20th. If an attempt is made to dispose of them to a doctor will he please report full particulars to the BULLETIN office. If they are purchased the expenses will promptly be refunded.

* * * *

ANNUAL DUES

Anyone who has not paid may shortly expect to see his name on the green baize notice-board in the Library. This may be legitimate advertising, but it doesn't help the funds of the Association.

TUMOURS OF THE BREAST

Abstract of paper read before the Vancouver Medical Association by DR. A. B. SCHINBEIN, *December 4th, 1934*

Dr. Schinbein opened his address with an explanation. He had, some time ago, formed a resolution that he would not again read a paper on any subject until he had a sufficiently large series of cases of his own. However, he had come to feel that the subject of Tumours of the Breast was so important that it should be dealt with: bearing as it does upon all branches of medicine, surgery, internal medicine, gynæcology and other specialties, and pathology.

He chose, therefore, for a basis of discussion and analysis the breast

cases admitted to the Vancouver General Hospital in the last two years. He acknowledged the help given by Dr. Douglas Telford, chief surgical interne of the V. G. H.

The speaker reminded his audience of a truth too frequently overlooked, and perhaps especially pertinent to any study of cancer: viz., that before we can hope to understand the pathology of an organ, we must have a clear picture in our minds of its physiology, and the natural series of changes, both in the structure and function, that it normally undergoes. This is especially true of the breast, which is subject to a very wide range of physiological changes which reflect on its structure and function. There are five main divisions, based on the chronological divisions of life, viz.: puberty, menstruation, pregnancy, lactation, and the menopause.

Puberty. At this time the ducts and duct acini develop.

Ovulation (the menstrual cycle). The duct acini enlarge, new acini form, there is *hyperplasia.* Secretion appears in the ducts; but these are plugged; later involution occurs.

But during *pregnancy* and *lactation* there is again hyperplasia, abundant and functioning, with secretion, which becomes abundant and remains for some time.

At the *menopause* there is a physiological atrophy. But, and this was the point that the speaker emphasized, all these changes are *orderly*, and follow a definite and orderly course.

We may even have certain variations, which are still within normal, or rather *benign* limits, and are capable of subsidence and return to normal structure and function. Thus we may have:

1. Excessive hyperplasia;
2. Defective absorption;
3. Changes coming at abnormal times;
4. Changes due to abnormal stimuli.

These may occur on one or several occasions. Thus we have:

1. *Premenstrual.* Large painful breast;
2. Diffuse enlargement;
3. Multiple or single areas of absorption.

Dr. Schinbein dealt next with *chronic mastitis* so called. This is in nearly all cases a misnomer. We are dealing, not with an inflammation, but with a *mastoplasia*: it is a most important clinical entity, and one which has led to a vast amount of literature. *It is a common cause or precursor of tumours of the breast,* and many authorities, as we shall see below, look upon it as highly potentially malignant.

In examining these *we must have a pathologist* in consultation. If he finds malignancy, *we must also consult a radiologist.*

Dr. Schinbein here referred to the classification by Dr. Pitts. (Slide 1.)

(Slide 1)

PATHOLOGICAL CLASSIFICATIONS

Gynæcomastia (male breast).
Hypertrophy.
Hypoplasia.

INFLAMMATIONS

Acute and chronic mastitis with or without abscess.
Tuberculous mastitis.
Syphilis (only as chancre) chiefly of nipple.

CYSTIC DISEASE

Single cysts.
Mastoplasia (or chronic mastitis) with or without cyst formation.
Diffuse adenosis (Schimmelbusch's disease).

TUMOURS

Benign—Fibroadenoma { pericanalicular / intracanalicular
Adenoma.
Adenofibroma.
Angioma.
Lipoma.
Papilloma (duct or intracystic).
Paget's disease of nipple.
Carcinoma—simplex, scirrhous, medullary, adenocarcinoma, colloid, papillary.
Sarcoma—chiefly fibrosarcoma, myxosarcoma and adenosarcoma.

Dr. Schinbein then showed another slide dealing with the diseases of the breast. (Slide 2.) *Acute mastitis*: 85% of these occur during lactation; it may be found at puberty, and in the new-born, occasionally where there is a pyæmic condition elsewhere in the body, and as a result of *tuberculous infection*. The speaker had himself had two cases, one of which had been reported on rapid section as carcinoma, but later was found to be tuberculous. *Syphilis* is also a cause of mastitis and we see chancre of the breast, as where a wet-nurse has had a syphilitic child to nurse. *Sarcoma* of the breast is very rare and occurs soon after puberty. It is diagnosed by a biopsy. Dr. Telford reviewed cases of mastoplasia and tumour of the breast of which 155 were admitted into the Vancouver General Hospital within the last two years.

(Slide 2)

REVIEW OF CASES OF MASTOPLASIA AND BREAST TUMOUR
ADMITTED TO V. G. H. JULY 1932—JUNE 1934.

CLINICAL CLASSIFICATION AND INCIDENCE

Inflammations:

Acute and chronic mastitis with or without abscess.
Tuberculous mastitis.
Syphilis (only as chancre) chiefly of nipple.

Mastoplasia:

Mastoplasia without large cysts	28
Mastoplasia with single large cyst	23
Mastoplasia with multiple large cysts	6
Total with mastoplasia	57

Tumours:

Fibroadenoma	24
Duct Papilloma	5
Lipoma	2
Carcinoma	67
Paget's Disease	0
Sarcoma	0
Total with tumour	98

As regards Paget's disease, while Dr. Schinbein has not himself seen a case in his practice, this is one of the important diseases of the breast and must be included in any classification. The age of the patient must be taken into account in the diagnosis of tumours of the breast. Thus, we see fibroadenoma most often in the years following puberty up to twenty-five, whilst after this age we begin to get mastoplasia in the active functioning breast more commonly between the ages of thirty-five and forty-five. Duct

papillomata occur most frequently before the menopause, while the peak age for carcinoma is fifty. Dr. Schinbein showed a chart giving the age incidence. (Slide 3.)

(Slide 3)

AGE INCIDENCE

	Average	Youngest	Oldest
Mastoplasia	42	26	55
Fibroadenoma	33	17	56
Duct Papilloma	54	45	69
Lipoma	44	43	45
Carcinoma	52	29	76

History and Symptomss There are three classical symptoms of tumour of the breast for which we must look. First, a *lump* or lumps; second, *pain*, and third, *discharge* from the nipple. Does the lump increase or vary in size at the menstrual period or is there pain at this time? How long has the lump been present? The examination of a patient is of extreme importance, as is the manner in which it is done. A superficial examination is the cause of many mistakes in diagnosis. The patient should lie down on her back uncovered to the pubis. There are three main methods of examination. First, inspection; second, palpation, and third, transillumination. In inspecting the patient we must note the size and symmetry of the breast, any areas of inflammation, and discharge from the nipple and signs of irritation or excoriation, presence of pigskin, keratosis, acute carcinomatous nipple, early signs of Paget's disease, etc. Next look for retraction of the nipple.

Palpation. Palpate with the flat of the hand, rubbing the breast against the underlying tissues. Both breasts must be examined. Note size of the ducts, whether palpable as cordlike or shotty structures. Note the presence of small cysts or lumps, whether single or multiple, solid or elastic, movable or fixed. As a general rule it may be taken that multiple lumps are not malignant, but this is not an invariable rule. Note where the lump is, whether near the nipple or at some distance, whether in the duct or separate from this. Cysts are more apt to be in the central area of the breast, while carcinoma and mastoplasia may occur in any part. Tenderness is much more common in mastoplasia. We must be sure and examine *the gland fields*, axillary, supraclavicular, and elsewhere, *the liver* as to size and feel, and we must look for *skin nodules*. A safe rule to follow is that all solid tumours must be taken as malignant until proved otherwise by pathological examination. The onus of proof is on the examiner at all times. (Slide 4.)

(Slide 4)

SYMPTOMS

	Duration	Lump	Pain	Nipple Discharge	Local Metastases	Distant Metastases
	Mos.	%	%	%	%	%
Mastoplasia	11	96	61	4	----	----
Fibroadenoma	15	100	35	4	----	----
Duct Papilloma	12	40	20	100	----	----
Lipoma	18	100	0	0	----	----
Carcinoma	15	98	44	3	74	11

Treatment: A slide was shown giving a summary of treatment. (Slide 5.) Dr. Schinbein referred especially to the following points. Mastoplasia gets well or tends to do so with time, but glandular treatment is of very great value in dealing with this form of trouble. Cutler, for instance, found that ovarian residue cures mastoplasia. Whitehouse uses œstrus hormone and cures a number of cases. He sometimes aspirates his cysts. A single tumour firm and tender with sharp edges may or may not be mastoplasia, it may be a carcinoma. We do a biopsy, and while it is safe to do this without further treatment if mastoplasia is the trouble, we must be ready to go ahead with a radical operation if malignancy is found. A single cyst similarly should be excised and examined. If others appear we then know the cause. The patient with scanty flow, menstrual headache and painful breasts is ideal for ovarian residue.

(Slide 5)

TREATMENT

	Operation %	Tumour Excision %	Simple Amputation %	Radical Amputation %	Pre-operative X-ray %	Post-operative X-ray %
Mastoplasia	100	37	58	5	----	----
Fibroadenoma	100	73	27	0	----	----
Duct Papilloma	100	20	60	20	----	----
Lipoma	100	50	50	0	----	----
Carcinoma	87	0	3	84	25	54

With regard to mastoplasia. There is a division of opinion amongst leaders in this field. Bloodgood, Whitehouse and Boyd say that it is not a precancerous condition, while Cheatle, Cutler and Ewing feel that it is precancerous and should lead to removal of the breast. Simple amputation is sufficient if multiple cysts be found. With this division of opinion the patient should be given the benefit of the doubt and we should make sure of avoiding future carcinoma. An encapsulated tumour is always a benign affair. Dr. Schinbein pointed out the importance of biopsy. As he said, it is easy to diagnose a carcinoma where we have a hard immovable lump with retraction of the nipple and dimpling of the skin, and the treatment is quite obvious; but where we find a small tumour, firm and movable, with no retraction, all such must be carefully investigated by biopsy, and again we must be ready to proceed with radical operation if malignancy is found.

As regards results, 74% of carcinoma had local metastasis, 36% were alive in three years, 22% in five years, and 18% in ten years, where operation was done rather late; but where symptoms and signs had been detected early and adequate treatment instituted, 74% were alive at the end of three years, 63% at the end of five years and 44% at the end of ten years. There can be no doubt that radiation pre-operatively and post-operatively does increase our cures. Again, the cells of certain of these growths are very radio-sensitive, and radium has a definite place in the treatment of cancer of the breast provided it is local and there are no secondary metastasis. Anything which will destroy the tumour pre-operatively is of great value. Some clinics use radium needles and seeds and get good results. Dr. Schinbein showed a slide giving the progress of cases and referred to some of the reasons why in his opinion we tend to get these cases late rather than early. The medical profession is frequently blamed for this but in Dr.

Schinbein's opinion this accusation is quite unfounded as a general rule. Women put off going to a doctor through ignorance or fear, and frequently from economic reasons, especially at the present moment, and Dr. Schinbein paid a tribute to the profession for the fact that the treatment of carcinoma of the breast is definitely showing increasingly good results.

In the discussion which followed Dr. Schinbein's paper, Dr. B. J. Harrison referred to a new means of diagnosis by *x*-ray on which he is working, and which depends to some extent upon the interpretation of shadows. This, in his opinion, may prove a very valuable adjunct to our diagnostic methods. Dr. Prowd referred to the experiences of European clinics, especially in Norway, where they have been getting excellent results, and where they feel that pre-operative treatment by radiation is immensely more valuable than post-operative.

FOCAL INFECTION

MURRAY BAIRD, M.R.C.P.

By courtesy of the Osler Club, before which this paper was read.

Focal infection and its effects have been recognised in medicine since ancient times, Hippocrates having recorded good effects from the removal of infected teeth in certain joint maladies. While modern surgery was in the making, long before bacteria were ever heard of, surgeons realised that an infected wound that produced "laudable" pus meant a localised infection and a good prognosis. Following the tremendous strides made by the new science of bacteriology during the 19th century, fresh interest has been taken by the medical profession in the subject, and during the last thirty years much old clinical information has been reinterpreted in the light of new knowledge. Not the least important announcement during this time was that of Poynton and Payne, who stated that they had found a diplococcus in the joints and nodules in cases of rheumatic fever. To this beginning has been added the work of others, until now many authorities are prepared to affirm that nearly all rheumatic diseases are due to streptococcal infection. Then came the work of Rosenow, many of whose results were propounded by Billings in his lectures on focal infection in 1916. Rosenow related to infection in the upper respiratory tract and elsewhere, such conditions as cholecystitis, peptic ulcer, appendicitis, herpes zoster, erythema nodosum, arthritis, endocarditis, and renal calculus. He also developed the idea of elective localisation of organisms in certain situations. For example, streptococci isolated from the human appendix, or from the tonsils of patients with appendicitis, would on injection into animals produce lesions in the appendix resembling those in the human subject. This elective localisation was soon lost on repeated culture, but could be regained by adding the tissue involved to the culture medium. Rosenow also considered that transmutation occurred in the streptococcus-pneumococcus group of organisms, and was able to change one into the other by varying the technique of culture. On this basis all organisms of this group are the same coccus with difference in morphology and in acquired characteristics.

It is self-evident in clinical medicine that different bacteria have elective affinities for certain tissues, as is commonly seen in the case of the gonococcus and the meningococcus. It is probably also well demonstrated by the minor epidemics of upper respiratory infection, which have a way of producing a large number of cases of one type at one time, so that we see the larynx

and trachea, the lungs or the gastro-intestinal tract commonly involved in many patients at the one time. We recognize that this is an example of elective localisation by calling all these cases "influenza." The theoretical basis of elective localization may be:

1. Absence of strongly anti-bacterial fluids;
2. Lack of opportunity for phagocytosis;
3. Favourable oxygen tension.

It may be said here that not all observers have been able to confirm Rosenow's work, and many regard it as unproven. L. S. Kau, in 1933, stated that he could find no evidence of elective localisation after injecting filtrates and cultures of various kinds of streptococci into rabbits. The cultures were obtained from the eye, tonsils, teeth and sinuses of 21 patients with focal infections. He found that the filtrates, or toxins, produced about the same effects as the fresh cultures, and that the joints and pericardium were most commonly affected by both. He could find no particular incidence of effect on the tissues involved in the various patients.

When scientific work is inconsistent it is very hard for the clinician to know what is the truth. It is with the object of clarifying my own ideas on the subject that I have endeavoured to present to you some of the aspects of focal infection which appear to me at the present time to be true.

Definition

A focus of infection may be defined as a circumscribed area of tissue in which living pathogenic organisms are present. Focal infection, on the contrary, does not occur until such bacteria or their toxins produce secondary effects in the body generally or in some situation more or less remote from the original focus.

Situation of Foci

Almost any tissue in the body may become a focus of infection, but the commonest ones are round about the upper respiratory tract, the teeth, tonsils, accessory sinuses, adenoid tissue, mastoid and bronchi. The common occurrence of chronic arthritis in bronchiectasis is often quoted as an example. Other tissues which may act as foci are the skin (as for example in furunculosis), the gall-bladder, the appendix and bowel. Arthritis is also common in chronic ulcerative colitis and dysentery. The genito-urinary tract may be involved, especially the prostate and vesiculæ seminales in males and the Fallopian tubes in females. One focus may in turn infect other organs and so convert them into secondary foci. The appendix is believed to infect the gall-bladder in this way by lymphatic spread. I can remember only one case in which I was morally certain that the appendix was acting as a focus, and that case was so unusual in my experience that it is quoted briefly.

> A man of about thirty years of age was seen complaining of pain in the right lower quadrant of the abdomen. He had two operation scars. His appendix had been removed about two years before, and he had had an abscess opened and drained about a year ago. He had a lump in the right iliac fossa which was diagnosed as an abscess. Also it was noticed that he had very wheezy breathing, in fact he had quite definite bronchial asthma. He made the statement that he always became wheezy as soon as he got the pain in his side. A third exploring expedition opened into an abscess cavity and removed the tip of his appendix which had been left behind, attached to the lower pole of the kidney. When the patient woke up he had no asthma, and to my knowledge he had no more for several months.

Manifestations

It would be futile, if not impossible, to compile a list of all the con-

ditions which clinically are, or are thought to be, due to focal infection. Brief consideration will show that foci may manifest themselves along several broad lines.

A. The focus may remain entirely latent and produce only local effects.

It is an admitted fact that foci can be demonstrated in large numbers of people who are apparently enjoying excellent health, and this is a common argument of those who partly or wholly reject the theory. As in the case of Burdon-Sanderson and the tubercle bacillus, it is thought that a thing so common could not be the cause of any particular consequence. It does not follow, however, that because people do not seek medical aid they are perfectly well. Many suffer from minor disabilities which they neglect or ignore. Ill-health may be a very insidious growth, requiring an acute incident to bring in the medical man, so that many people are ill who are unaware of the fact. This applies to adults as well as children. There is a good deal of evidence that a focus which may be carried easily when things are going well with the individual impose a very obvious load when conditions of physical and mental strain are added. At any rate it is not uncommon to be consulted by patients whose chief complaint is loss of energy and a vague general malaise, and to find nothing much except possibly a slight fever and some focus of infection. Removal of foci will often enable these patients to rebuild their energies sufficiently to carry on.

B. A focus may produce a transient or persistent bacteriæmia, with all the effects consequent thereto.

That bacteria circulate in the blood-stream of apparently healthy persons without any discoverable focus, is shown by the comparatively common occurrence of conditions like osteomyelitis and subacute bacterial endocarditis. There are also cases of staphylococcal septicæmia which defy all efforts to find the portal of entry of the organisms. When no focus can be discovered it is reasonable to suppose that the bacteria have passed through some unprotected spot, possibly in the upper respiratory mucous membrane, without producing any visible signs or symptoms. Routine blood culture work in large hospitals shows that bacteriæmia occurs as a temporary phenomenon in many patients who have all kinds of ailments not necessarily infective in type. Experiment has shown in the case of the maxillary antrum that a suspension of minute particles like India ink makes its way into the cervical lymphatics within a few minutes. This being so, it is likely that transitory bacteriæmia occurs more frequently than one would suppose in minor upper respiratory infections such as colds, tonsillitis, pharyngitis and the like, which produce chilly feelings and fever. Such bursts of bacteria into the blood stream are usually mopped up by the defence forces of the body generally. Many infections are clinically well known to be accompanied by a bacteriæmia at their onset, as in typhoid fever, lobar pneumonia, meningococcal meningitis. Failure of the infection to localise is of fatal significance.

Serious and destructive invasion by pathogenic bacteria may result from most minute and almost insignificant foci, of which post-mortem wound infection is a good example. I once made a tentative diagnosis of typhoid fever on a boy of 18 who was admitted to the hospital in the evening with high fever, dry tongue, and palpable spleen. The light of morning disclosed an acute alveolar abscess about to rupture, so that case of obscure fever quickly recovered. I also remember very distinctly a young man who entered hospital in the evening with a temperature of 104 and a hail-fellow-well-met euphoria which erroneously suggested alcohol. At post-mortem

the next day the most significant finding was a little turbid fluid in the sphenoidal sinus in which were large numbers of hæmolytic streptococci. We are impressed with the fact that tonsillitis may be a dangerous condition when we see the occasional case develop a persistent septicæmia and die after a brief illness. Persons who have foci over a long period of time develop local and general resistance to the bacterium involved, and so are not so liable, perhaps, to a sudden fatal dissemination of the infection as those in whom foci develop acutely.

C. Foci may produce suppurative or ulcerative conditions elsewhere.

Suppurative conditions secondary to focal infection have been well known to clinical medicine for hundreds of years, common examples being suppurative arthritis, osteomyelitis, perinephric abscess following boils. Rosenow expanded previous conceptions of this process by showing that many cases of gastric and duodenal ulcer were in reality due to infected emboli and so of essentially the same etiology. Any practitioner of any experience can recall cases in which the inference of infection from a focus was too strong to be ignored. This makes one think that in many people who have no apparent focus one may be present nevertheless. With your indulgence I should like to quote a few illustrative examples:

A man of 45 was seen with a complaint of swelling of the legs following two severe hæmorrhages from the duodenum. Several infected teeth had been found and removed after the bleeding. The findings were a temperature of 99, a systolic heart murmur, hæmoglobin of 45, rapid pulse and œdema of the legs. A diagnosis of infective endocarditis was considered, but with rest and iron the hæmoglobin returned to normal, and the patient to work. A few weeks later he was seized with a sudden dyspnœa and palpitation while at work, and was found to be suffering from auricular fibrillation. This condition persisted until halted by quinidine. Further scrutiny revealed the fact that the tonsils were questionable, and might easily be a focus of infection. They were removed. Apart from one short paroxysm of fibrillation this man has remained well ever since, that is about two years.

A young man of about 28 was admitted to hospital suffering from a perforated duodenal ulcer following a sore throat several days before. At operation the appendix was found also to be red, swollen and acutely inflamed. The perforation and the appendicitis were both considered to be secondary to the throat infection.

A young man of 25 had complained of increasing weakness, pallor and shortness of breath for two months. Examination disclosed a loud to and fro aortic murmur, clubbed fingers, palpable spleen and slight fever. Opposite the root of an upper premolar was a sinus from an apical abscess which had ruptured about the time of onset of his symptoms.

Semon and Wright, in the *Lancet* of 1933, describe Semon's own case of intractable boils with general symptoms. The infection was finally tracked down to an area of infection in the alveolar margin, left behind after extraction of an infected tooth. Removal of a piece of dead bone led to the disappearance of the boils and restoration of normal health.

Cases such as these are rather commonplace. Chronic ulcer cases are well known to resist treatment until foci in the mouth and throat are dealt with. Subacute bacterial endocarditis is frequently associated with the extraction of abscessed teeth. I have never seen focal infection blamed for coronary thrombosis, but it is a very probable precipitating cause. It is important in patients who have some acute inflammatory condition which requires urgent treatment, not to forget to look elsewhere for a possible primary source, and to urge radical treatment in order to prevent other worse troubles or a recurrence of the old one. I should regard this as very good preventive medicine, but it is not always easy to be sure of foci until they have declared themselves in some way, and it is not always easy to persuade patients of the necessity for treatment.

D. Foci may produce non-suppurative or so-called toxic effects.

A case was quoted above in which bronchial asthma was found in association wih appendicular abscess. Asthma belongs to the allergic group of diseases and is probably rarely due to septic absorption. Other allergic manifestations, particularly in the skin, are not uncommon as a result of focal infection, as in the following case:

> A young man was admitted to hospital with the most intractable giant urticaria. No cause could be found until attention was directed to his nose. A rhinologist found a frontal sinus full of pus which was evacuated with immediate relief of symptoms.

Here is another case of somewhat different type:

> A man of 43 complained of paroxysmal attacks of giddiness, so severe and sudden that he would have to cling to any handy support until able to proceed. A diagnosis of labyrinthitis was made. X-ray of his teeth showed seven devitalised, with two that were definitely infected. He was persuaded to have all his avital teeth removed. His attacks ceased within a month, and he has remained well for three months.

Iritis and irido-cyclitis are considered by most ophthalmologists to be most frequently due to focal infection, and here the teeth, tonsils and nasal sinuses are certainly frequently involved. Evans, an ophthalmologist, writing in the *Lancet,* 1933, considers that focal infection in eye conditions produces its effects not so much by toxic absorption, but by the agency of short and long axon reflexes through the nervous system. He says that in his experience the focus is most frequently on the same side of the body as the eye affected, and suggests that in focal infection generally we know very little about the part played by antidromic impulses in the autonomic nervous system. He notes that viscero-sensory impulses can cause changes in the skin and thinks that a good many of the phenomena ascribed to toxic absorption could equally well be explained by an imbalance in the autonomic system. Whatever the mechanism of production of symptoms is, the results of treatment of the foci suggest strongly that they are the primary cause.

There is another large group of patients who have aches and pains which originate in muscles, joints and nerves. Amongst these I place a good many who have pain and tenderness in the upper intercostal spaces, often over the heart, around the scapula, in the abdominal wall, often on the right side, those with lumbago, and some of those with sacro-iliac and sciatic pain and tenderness. Some of these people may have an early arthritis of the spine with referred pain, others have myositis. A few of these patients turn out to be gouty, and in some the symptoms can be relieved by avoidance of oxalate-containing foods, but there is a large number in whom attention to foci brings about very gratifying results, particularly if they are attended to early. It is at times remarkable how much chronic disability can apparently be due to one devitalised tooth, and how dramatic can be the recovery after the removal of such a tooth. In patients of this type I believe that it never pays to leave behind any dead teeth, even though the dentist and the radiologist agree that they can see nothing wrong with them. Probably the most active apical infections show nothing at all on an *x*-ray film. It was pointed out by Leary, of Boston, in 1919, that at least 20% of radiographically dead teeth could be demonstrated to be infected by culture. It has happened more than once in my experience that teeth and tonsils which had been regarded as harmless shortly afterwards obliged by producing acute symptoms, and showing themselves up, as it were. Also it has happened that symptoms have failed to clear up until a dead but harmless-appearing tooth had been removed.

In cases of this type, when all foci that can be found have been dealt with to the best of our ability, and relief from pain is not secured, it is worth while to try a bacterial vaccine like that of Warren Crowe. The fact that such a vaccine works a remarkable cure in at least some of these cases is not proof of their infective origin, but it does render it highly probable.

We come now to a brief consideration of the most chronic group of diseases which modern medicine teaches are due to focal infection, namely, the rheumatic group of diseases, rheumatic fever and the arthritides. The most cordial disagreement exists regarding their etiology, especially that of rheumatoid arthritis, some stating dogmatically that rheumatism in all its forms is a focal infection, others, of whom Douthwaite of London is an example, maintaining just as emphatically that rheumatoid arthritis is a metabolic disease, and that infection is purely secondary and incidental. In rheumatic fever, the accumulated evidence is favour of infection as an important factor is very strong, but the results of removal of foci such as the tonsils in preventing recurrences are practically negligible. The bacteriological evidence in rheumatoid arthritis is very conflicting. In 1929 Cecil, Nicholls and Stainsby announced that they had isolated a hæmolytic streptococcus from the blood and joints of over two-thirds of their patients with chronic rheumatoid arthritis. Previously a streptococcus viridans had been found in a few cases by several workers. Wainwright, of Johns Hopkins, gives a resume of the reports since that time, as follows:

> Klugh isolated a streptococcus in 72% of cases, Grey and Gowen in 58%, Wetherby and Clawson in 50%, all classified as streptococcus viridans. Dawson, Olmstead and Boots, working on blood, synovial fluid and nodules, found streptococci in only 2.5% of cases, Nye and Waxelbaum found no streptococci.

Wainwright himself, in 94 cultures by Cecil's technique, was unable to confirm Cecil's results. He regards the presence of agglutinins in the blood and the high percentage of positive skin reactions to streptococci found in these patients as the strongest evidence of a streptococcal causation.

With regard to the results of treatment of foci in arthritis, Miltner and Kuloski, of Steindler's clinic, make a report on 100 cases of rheumatoid and 100 cases of osteoarthritis. They state that in this clinic arthritis is regarded as a focal infection, and in these 200 cases great care was taken in locating and eradicating foci. They estimate the results as about 25% better than those in which no attention was paid to foci. In the rheumatoid cases the results were much better in the patients under 16 years of age, also in those adults who had had the disease under two years. No case of osteoarthritis was cured, and only 9 were improved by the treatment. Myer Solis-Cohen explains the poor results obtained by surgical measures alone by saying that the foci are not really eradicated by removing teeth and tonsils, as the organism can be grown readily from neighboring tissues. He claims that too much stress has been laid on infected tissues, and not enough on the infecting organism, and advocates building up the patient's resistance with a correctly chosen vaccine.

The mechanism of focal infection in arthritis is difficult to understand, so much so that many think there is some other factor as yet unappreciated. It is taught that when removing foci succeeds the arthritis has been caused by a toxic absorption. When it does not succeed, the joints are supposed to have become actually infected and to be secondary foci. I find it a little incredible that an organism like the streptococcus, living in and around joints, should never produce suppuration in these cases. Besides, why should

the experts have such difficulty in finding it even in acutely inflamed joints? In other situations, such as pleural effusion or meningitis, it is usually not a very difficult germ to isolate. The toxic theory is a little incredible to me also, because I believe that people go on having arthritis after their foci are adequately removed. Arthritis appears to me to be more analogous to nephritis than to any other condition. Take for instance the nephritis of scarlet fever. It arises usually between the 10th and 25th days of the disease at a time when it is often impossible to demonstrate any streptococci in the throat. This resembles very much what Bradley found to be the case in rheumatic fever, the organisms being gone from the throat when the attack came on. The nephritis may disappear quickly, or may last for years. It is difficult to believe that the streptococci are still causing it, say by toxic action, long after the patient has become immune to scarlet fever. It is possible to believe that they have initiated some change somewhere in the body, a change which is irreversible by our present therapeutics. My own belief is that something similar to this happens in arthritis and that until we solve the nature of that change we will continue to have difficulty in curing infective arthritis. Some think that the change which occurs is in the nature of an allergic hypersensitivity of the joint tissues to streptococcal protein, and this idea is supported by the occasional dramatic results of non-specific protein shock with milk or T.A.B. vaccine, and by the proportion of cases which improve on proper use of a suitable bacterial vaccine.

Conclusions

Focal infection occurs in a large number of individuals in whom it appears to be latent and productive of no particular symptoms.

In other individuals foci may bring about a transitory or a persistent condition of bacteriæmia, often with fatal results.

As a result of giving off infected emboli, foci may cause suppurative lesions or ulceration at a distance, probably at sites of election of the bacterium involved.

In another group of individuals foci may produce remote effects of a toxic or allergic nature. The rheumatic diseases probably belong in this group, but no theory so far evolved is entirely satisfactory in all cases. Infection probably plays a dominant part, but there may be other factors which up to the present have not been appreciated.

WILLIAM OSLER

William Carleton Gibson

[The Bulletin takes great pleasure in publishing this address given by Mr. Gibson before the Monro Pre-Medical Club some time ago. It gives a very fascinating account of the life of a man of whom we can never hear too much, and the writer is to be congratulated on a labour of love.—Ed.]

"In the continual remembrance of a glorious past individuals and nations find their noblest inspiration."—Osler.

"The iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity."—Religio Medici—Sir Thomas Browne.

William Osler, who has been referred to as "the outstanding figure of the English-speaking medical world, and possibly of world medicine," was born at Bond Head, Ontario, on July 12, 1849. The son of an Anglican missionary, he was one of nine children raised in "the best of all environ-

A paper read before the Monro Pre-Medical Club, University of B. C., January, 1934.

ments," a country parsonage. His father was a sailor of the seven seas who took Holy Orders in the English Church and came to Canada to minister to the new settlers north of Toronto, then "Muddy York." His mother was of Cornish descent and of an olive complexion, which fact gave rise to many wild suggestions that she was of Indian extraction. She lived to the age of 101 years, and continued the tradition of longevity in the Osler family.

William was the youngest son and probably the most mischievous, history recording the fact that when very young he chopped off his small sister's finger, was expelled from school for locking a flock of geese in the schoolhouse, and later spent a few nights in the Toronto jail, where he was fined one dollar for participating in what was possibly a justified "smoking out" which the school boys had given a much disliked old school matron. He first went to school in the town of Dundas, Ont., whither his father moved, as he says, "in order to give my boys a better education." Here he received his classical grounding, but little else. When he was "sent down," his father next sent him to Trinity College School at Weston, where he came under his great teacher and inspirer, Father Johnson. The circular published by the school stated that "the elder boys were to be allowed to enter the drawing room in the evening for singing and dancing," and this decided where the lively school boy was to go.

At Weston the young student learned of "the old humanities and the new science," under Father Johnson. He excelled in sports and was the head prefect of the school. Johnson was a keen student of natural history, and knew how to interest his boys in Nature. He had a microscope with which his boys soon learned to explore the great invisible world of Nature: the scum on the frog pond, the diseases of plants and animals, sections of bone, etc. Osler's training here was preparatory to entering Trinity College, Toronto, the Divinity School of the English Church in Canada.

At Toronto he carried on his work in Divinity, but was more interested in natural history. On entering the second year he suddenly decided to change to Medicine, and under the influence of Dr. James Bovell, the Dean of Medicine, who had been a frequent and enthusiastic visitor at Father Johnson's school at Weston, he came to know the possibilities which lay before him in medicine. He lived with Dr. Bovell, in whose library he found the finest books anyone could desire. It was here that Osler's great literary genius became evident and was cultivated. He "kept office" for Dr. Bovell, and describes very vividly the oft-repeated episode of Bovell getting his desk full of bank notes and then, the next moment, giving them away to some needy patient. Bovell was a very religious man, and ultimately became a priest. How strange and unique that he should have influenced a theological student to become a doctor, whilst he himself was veering round in the opposite direction. The magnitude of Bovell's influence on Osler is well seen in his endless scribbling on programmes, lecture notes and scraps of paper, the name "James Bovell, M.D., M.R.C.P.," over and over again.

In order to gain access to better clinical facilities, Osler with several friends left Toronto after two years and went to McGill. His literary foundation had been laid in Toronto, chiefly through his intimate knowledge of, and his great love for, "Religio Medici," the first book he bought, and the "companion of his life's journey." At McGill he was to lay the foundation of his great clinical experience under his staunch friend, R. Palmer Howard, Dean of Medicine. These three men, Johnson, Bovell and

Howard, continued to be, to the end of Osler's life, his greatest inspiration. He dedicated his *magnum opus,* the "Practice of Medicine," to them.

Osler's student days at McGill were not productive of high marks, for, then, as now, examinations were but "a plague of mind and purse," which view Osler held till his death. His graduating thesis on pathological anatomy was awarded a special prize for originality and excellence, both in text and in the slides which he made and which were later presented by him to the faculty museum. To quote his fellow student, Francis J. Shepherd, afterwards one of McGill's greatest professors of anatomy: "As a student he gave early promise of a great future; he was always investigating and trying out things, working independently with his microscope, an instrument which at that time was a rarity (Dr. Bovell had given him this long-necked affair), and spending much time in the wards of the General Hospital and the post mortem room. He did not cram for examinations and took no high place in his class. . . ."

After his graduation in 1872, Osler went to Europe for two years of post-graduate work. He studied under the great master Virchow in Berlin, where he saw in daily use the pathological methods which he was to bring back to America. With several English students he attended the ward clinics in Vienna. For fifteen months he worked under Burdon-Sanderson in London. Thirty years later he was to follow this great physiologist as Regius Professor of Medicine at Oxford. In his London work he described accurately for the first time the blood platelets and laid the foundation for his later work on the blood in malaria. The writer was recently privileged to go over some of the student note books of "the Great Physician" now in the Osler Library at McGill and found in them every evidence of the virtue of systematic work, which he came to recommend so earnestly to his students. His researches on the blood served to establish the fact that certain excitants and depressors worked on the nervous system and not on the blood system.

Returning from England he was made lecturer in the Institute of Medicine at McGill, a course given in pre-clinical years consisting chiefly of physiology and histology. The following year he was made full professor and set about his work with great energy. He put out his "shingle" but was never "at home" for consultations. He offered himself as physician to the smallpox ward of the Montreal General and became a member of the faculty of the Veterinary School. His great interest in natural history continued, and he became a member of the editorial board of the Canadian Medical and Surgical Journal. His greatest work consisted in introducing demonstrations in pathology and in establishing the first laboratory in physiology. He was a "practical" man, if ever there was one. He had no use for the barren didacticism and unwholesome dogmatism which had so long characterized these courses in American institutions.

The welfare of the students always received his first consideration. He helped to found their undergraduate society in 1877. He wrote by hand the many pages of notes which always accompanied his pathological demonstrations and ward clinics. As Registrar of the Faculty he gave them their first and best welcome to the medical school. His introductory addresses to the freshmen invariably mentioned two things, the virtue of systematic work and Religio Medici. He encouraged reading for half an hour before going to bed every night and in this way he himself came to master the best in literature.

The Montreal General Hospital appointed him pathologist, much to the

consternation of the older doctors, but Osler worked hard and won the admiration of all. The careful clinical reports which he edited, the first, in fact, that the Montreal General ever had, later formed the basis of his great textbook. He studied disease in the wards, and followed it into the post mortem room. His students did the same. He said: "To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all." With his ward clinics he put McGill in the forefront of medical schools in America. It was his greatest hope that he should be remembered as being the one who enabled the student to study disease at the bedside. In this he revolutionized medical education, a fact by which we benefit immeasurably today.

He left Montreal in 1884 to take over the chair of Clinical Medicine at the University of Pennsylvania in Philadelphia, as he says, "a rich man, not in worldly goods, for such I have the misfortune, or the good fortune, lightly to esteem, but rich in the goods which neither moth or rust are able to corrupt, friendship and good-fellowship, wider experience and fuller knowledge."

He was a great man for playing practical jokes on people—some of which turned out badly for him—but his frolicsome nature endeared him to all those who really mattered. With a nature "sloping towards the sunny side," he was ever the peace maker, the conciliator, in the many disputes which occurred in medical bodies. At the same time he could make it uncomfortable for "certain narrow-minded Philistines," as he called them, who, through ignorance or vested interests, tried to hold up true progress. Thus, when the head of the Montreal Veterinary School projected the theory of inter-transmission of bovine and human tuberculosis, Osler was the only one at the meeting who would have the paper published; all the other doc-

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tors were afraid of alarming the public. His interest in tuberculosis is proverbial, and some of the finest educational work in T.B. is due to him.

McGill was stunned at the prospect of losing her famous son, and gave him leave of absence so that he could still return if Philadelphia did not suit him. The story of his going-away is many-sided and rather humourous. He was in Europe when the position was offered to him by letter to his Montreal address. Professor Shepherd forwarded the communication to him and for a long time Osler took no action, thinking his Montreal colleagues were playing a joke on him. However, Professor Weir Mitchell of Philadelphia was in London and decided he must find Osler at once and "look him over." The test of a gentleman, fit to be a Pennsylvania professor, was to see how he disposed of the stones in his cherry pie. Osler was up to the trick, however, and did the genteel thing, put the stones in his spoon, "and got the job"!

His classes in the University of Pennsylvania soon became popular and he was sought after by numberless societies. His post mortems at the Blockley Hospital were as a breath of fresh air to the teaching of pathology at the time. His student clinics were attended by all years, and whenever he spoke at the College of Physicians and Surgeons he was sure of a large audience. He made friends of the men at Jefferson Medical School in the city and did a great deal to acquaint the medical fraternity with their own fine library. For five busy years he held the stage in Philadelphia. His familiar ways with students were unheard of and his pranks were at first thought to be terrible.

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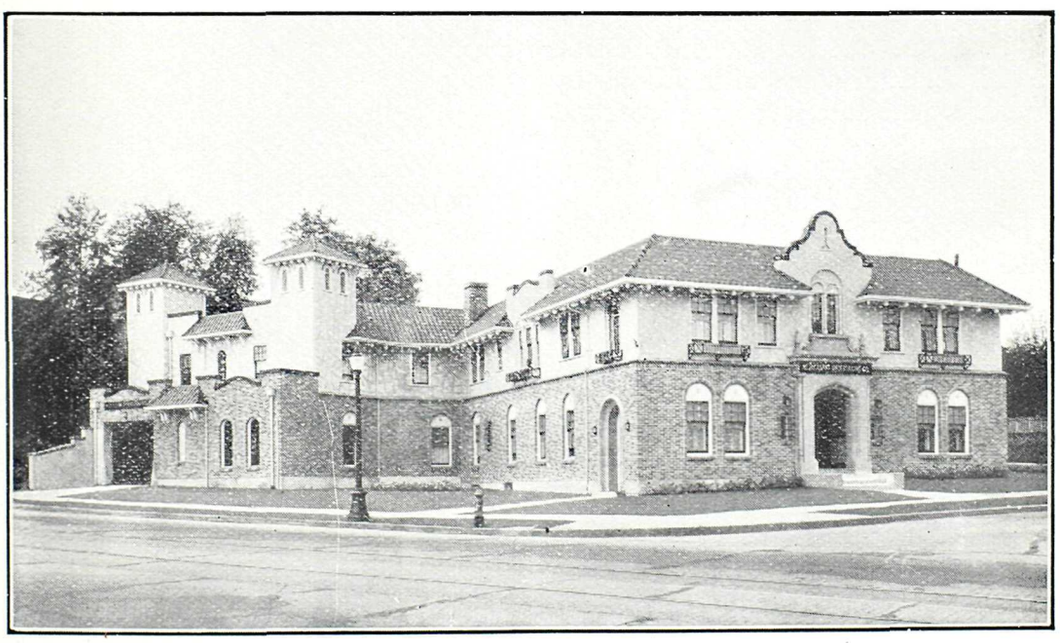

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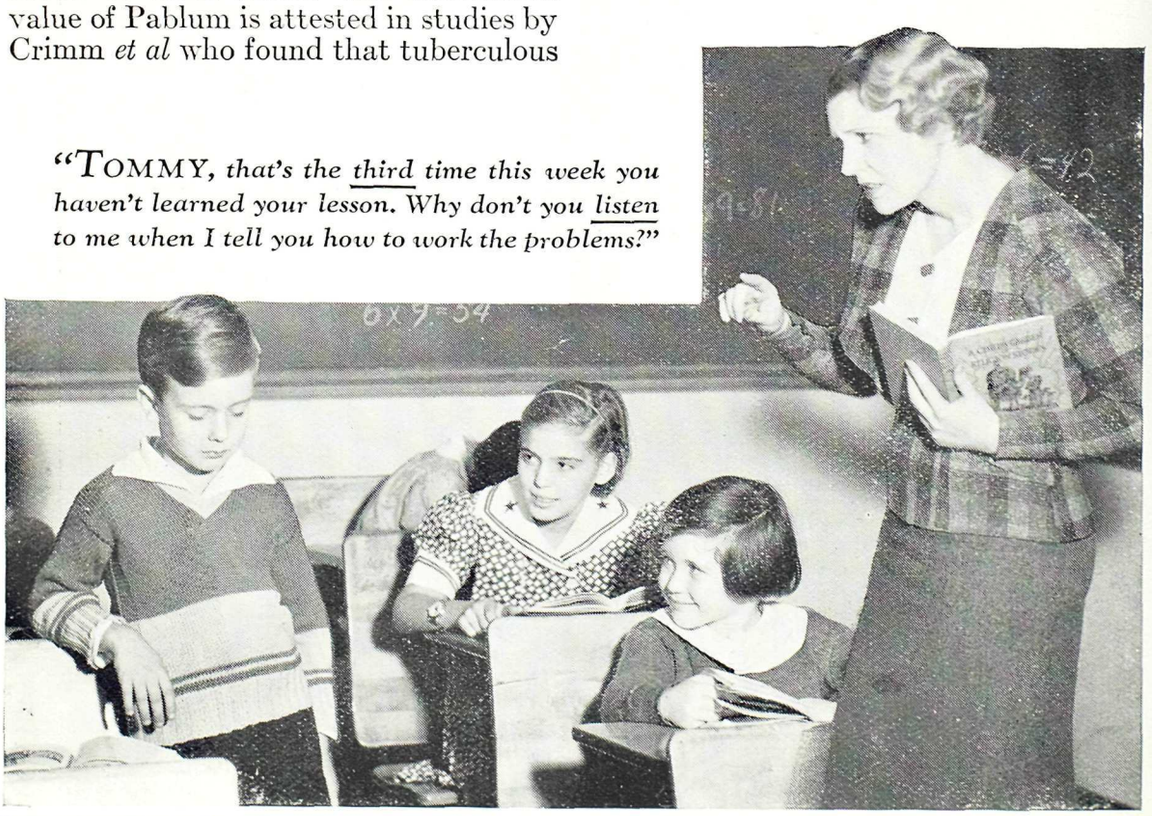

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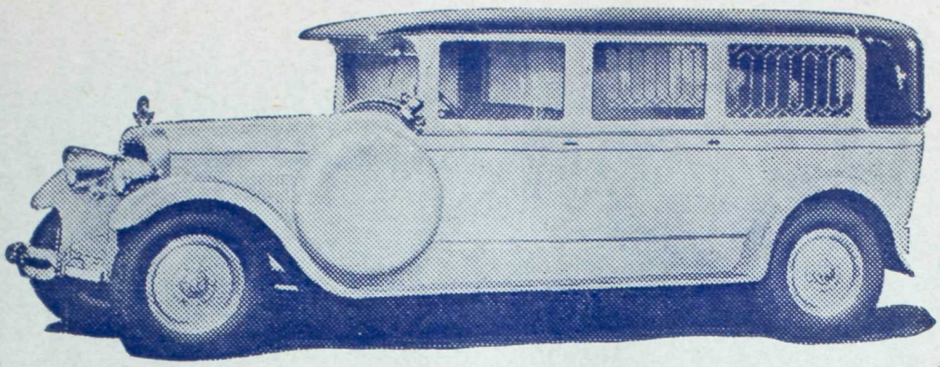

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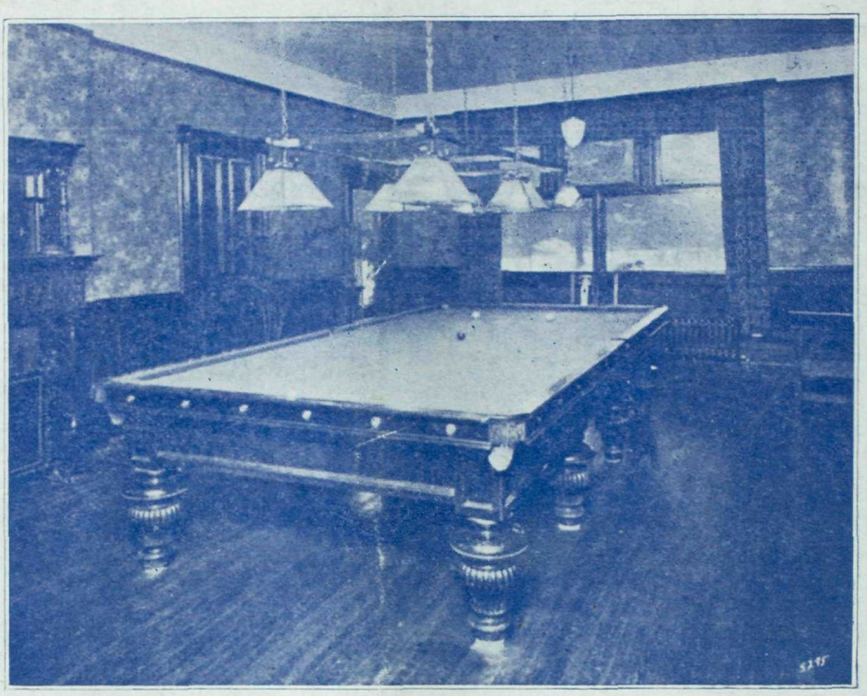

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